
Sent: 10/02/2017 3:48:57 PM
Subject: Draft Planning Proposal (Rezoning) - 6 Jacksons Rd, 10 and 12 Boondah Rd Warriewood
Attachments: 10.2.17 planning proposal 6 Jacksons Rd_10_12 Boondah rd Warriewood.pdf;
10.2.17 planning proposal 6 Jacksons Rd_10_12 Boondah rd Warriewood.pdf;

To: The Land Release Team (Andreas Olsen)

Attached is the NSW State Emergency Service submission on the planning proposal for 6 Jacksons Rd, 10 and 12 Boondah Rd Warriewood.

Regards,



Marcus Morgan

Planning Coordinator

NSW State Emergency Service

P 02 4251 6665 E marcus.morgan@ses.nsw.gov.au

6-8 Regent Street Wollongong NSW 2500

FOR EMERGENCY HELP IN FLOODS AND STORMS CALL THE NSW SES ON 132 500

www.ses.nsw.gov.au



This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of the NSW State Emergency Service.

10 February 2016



The General Manager
Northern Beaches Council
Civic Centre, 725 Pittwater Rd
Dee Why NSW 2099

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Your Ref: PP0005/16

Attention: Mr Andreas Olsen, Land Release Team

Dear Mr Olsen

**PLANNING PROPOSAL (REZONING) FOR 6 JACKSONS ROAD, 10 AND 12 BOONDAH ROAD
WARRIEWOOD**

Thank you for the opportunity to review the Planning Proposal for 6 Jacksons Road, 10 and 12 Boondah Road Warriewood. This letter is in response to the correspondence sent to the NSW State Emergency Service (NSW SES) on 20th January 2016.

The NSW SES is the legislated combat agency for floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. The NSW SES has a strategic interest in the public safety aspects of the development of flood prone land, in particular, the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW. Additional information about the NSW SES responsibilities and emergency management arrangements in flood can be found in the State Flood Plan, which is available via the NSW SES website at: <http://www.ses.nsw.gov.au/communitysafety/floodsafe/floodplanning/>.

The NSW SES has had a significant involvement in commenting on previous rezoning proposals for land in the Warriewood Valley. Of particular relevance is the previous correspondence relating to sites within the Warriewood Valley. The NSW SES position on the proposed rezoning of land within the Warriewood Valley remains the same as that of the correspondence on 12th July 2013 (Attachment 1) and the recent submission on 13th December 2016 (Attachment 2).

Boondah Rd precinct proposal

The planning proposal indicates that Boondah Rd will be raised to the 1% AEP flood level (plus allowance for climate change). However, the inherent risks to the occupants of the site will not disappear above that level. When flooded above this level, it is likely that egress routes will be impassable to motor vehicles. When the roads close, residents and visitors to the proposed bulky goods retail centre will become isolated.

The proposal also indicates that land above a 100 year ARI flood at the site is 'flood free' (figure 5, Calibre consulting flood and stormwater management report (December, 2016)). It

is a misnomer to say that land above a 100 year ARI flood is 'flood free'. Although this land may not be subject to current planning controls, it is still flood prone and affected by floods larger than the 1% AEP flood. The probable maximum flood (PMF) extent in the Pittwater overland flow flood study and report (Cardno, October 2013) shows this to be the case, as the flood depth at the site is between 1-3m in a PMF (Attachment 3).

Above the 1% AEP flood (including climate change), the proposed occupants will have their access cut and become isolated. Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water (i.e. the so called 'vertical evacuation'), are not equivalent in a risk management context to evacuation. When considering future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.

Generally, sheltering in buildings surrounded by flood water presents a greater risk than a well-conducted evacuation. 'Sheltering in place' should only be used where evacuation is not possible due to greater risks of evacuating, or where evacuation from an at-risk area has failed. Where evacuation is not possible, the risks of sheltering should be adequately assessed to determine the tolerability of isolation, before any strategy of sheltering in place can be considered. In the current proposal, there is no analysis of whether it will be tolerable or not for the future occupants of the site to be isolated during a flood.

Tolerability of isolation

a) Risks in relation to human behaviour and driving during flooding

Encouraging a strategy of isolation or 'shelter in place' must take into account risks such as the unpredictable nature of human behaviour during a flood including the desire to escape from a hazard when it is unsafe to do so. People may also have the desire to access isolated areas to reunite with loved ones or return to a home away from the impacted area.

Additionally, the construction of community retail outlets in flash flood prone areas inadvertently draws people into high flood risk areas. This increases the potential for the NSW SES to have to conduct flood rescues. It also increases the potential for fatalities from driving on flooded roads. A recent study by Haynes (2016) has shown that since 2002, 90 people have died trying to cross flooded roads in Australia.

The proposal also suggests that car parking will act as undercroft flood storage (p 5) and that 'vehicle barriers will be provided to prevent floating vehicles leaving the site' (Calibre consulting flood and stormwater management report, December 2016, p 9). This is acknowledging that there will be inherent damage to property from this proposal during a flood. There is no analysis in the current proposal to say if such damage will be acceptable to the current or future community. The risk of damage and acceptability of this risk during a flood should be addressed in the proposal. Moreover, the NSW SES questions the efficacy of the vehicle barriers in this situation.

b) Risks in relation to secondary emergencies

Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies requiring emergency response.

c) Risks to emergency personnel

Moreover 'shelter in place' strategies, such as those proposed in the planning proposal (p 31) and the Calibre consulting flood and stormwater management report (December 2016, p 9 and 10), increase the risk to emergency service personnel. Before attempting rescue, emergency service personnel will assess the risk to their own safety. There is therefore no guarantee that rescue will be available to residents who are effectively entrapped in a building during a flood. This will be the case if the risks are considered unacceptable for emergency service personnel to undertake such rescue.

Concluding remarks

The NSW SES recommends that Council give due consideration to the risks that this development proposal will create. Intensifying development in an area that is already prone to high velocity flood water will mean more people are placed in a position at risk from the impacts and effects of flooding. Moreover, the NSW SES is responsible for flood rescue and will likely have to perform rescues in this area if the rezoning proposal is approved and development proceeds

Furthermore, the NSW SES considers the intensification of development in the floodplain and exposure of more people to the effects of flooding without sufficient evidence to show isolation is tolerable during such flood events, as an unacceptable planning outcome. In contrast to what the planning proposal reports (page 7), if this proposal is approved there will be an increase in demand on emergency service agencies through increasing the population vulnerable to the effects of flooding.

I trust that the above advice will assist Council in its review of the Planning Proposal for 6 Jacksons Road, 10 and 12 Boondah Road Warriewood. Please contact me on (02) 4251 6665 if you wish to discuss any of the matters raised in this correspondence.

Yours sincerely,



Marcus Morgan
Planning Coordinator
NSW State Emergency Service

Cc: Barry Griffiths, Deputy Region Controller, Sydney Northern SES Region
Manager, Emergency Risk Management

Attachments/References

1. NSW State Emergency Service submission – Request by Pittwater Council for NSW SES Comment – The Draft Planning Proposal for 2 & 18 Macpherson St and 23, 25 & 27 Warriewood Rd (12 July 2013).
2. NSW State Emergency Service submission – Request by Pittwater Council for NSW SES Comment – Planning Proposal for 2 Macpherson St Warriewood Rd (13 December 2016)
3. Extract from the Pittwater overland flow flood study (Cardno, October 2013).
4. Haynes, K., Coates, L. & van den Honert, R. An analysis of human fatalities and building losses from natural disasters: Annual project report 2015-2016. (Bushfire and Natural Hazards CRC, 2016).

Attachment 1:



12 July 2013

The General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Attn: Mr Andrew Pigott
Your Reference: PP0002/13

Dear Mr Pigott

REQUEST BY PITTWATER COUNCIL FOR NSW SES COMMENT THE DRAFT PLANNING PROPOSAL FOR 2 & 18 MACPHERSON STREET AND 23, 25 & 27 WARRIEWOOD ROAD

I refer to Council's correspondence to the NSW State Emergency Service (NSW SES) dated 11 June 2013 seeking the views of the service in relation to the draft Planning Proposal for the above land.

Please be advised that the NSW SES position on such matters remains unchanged from previous correspondence submitted in relation to the draft planning proposal for Mona Vale Road, Jubilee Avenue and Boundary Street on 9 January 2013 and meetings, telephone conversations and e-mail correspondence relating to the Warriewood Valley Strategic Review in 2011 and 2012. This position, as outlined in Attachment A, can be used as general advice for individual development applications or planning proposals and other floodplain development matters across the Pittwater Council area.

It is noted that the proposed development is located within the area covered by the Warriewood Valley Strategic Review. As noted in the Warriewood Valley Strategic Review, the NSW SES provided verbal and e-mail advice in relation to the Draft Hydrology Study, 2011, prepared as part of the Review. Notwithstanding the endorsement of the strategic review earlier this year, the issues the NSW SES raised relating to information in the hydrology report from an emergency management and community safety perspective are still of concern. One of these concerns was the risk of inadequate consideration of the cumulative impact of development, a matter covered in the attached general advice.

As Council is aware, the NSW SES worked with the DP&I and the Office of Environment and Heritage during the DP&I commissioned study to review the flood safety requirements for flash flood events on flood prone land. Whilst the results of this research have not been circulated by the DP&I, the new National *'Guideline on Emergency Planning and Response to*

Protect Life in Flash Flood Events has recently been endorsed by the Australasian Fire Authorities Council (AFAC). Councils required to assess proposals for developments which propose 'shelter in place' as a strategy in flash flood environments are urged to consider the contents of this guideline (copy enclosed) in making decisions on such matters.

Council would also be aware that the area under consideration is subject to localised flash flooding which regularly closes Macpherson Street in a number of locations, even in small and frequent rainfall events. With the proximity of Narrabeen Creek to the lots in question and the fact that flood rescues by the NSW SES have occurred at the specific section of Macpherson Road on more than one occasion (one as recently as the last weekend in June 2013) the risk to life from flooding cannot be easily overlooked.

If you require any further information, or if you are unsure whether the attached advice is relevant for a specific matter, please do not hesitate to contact me on (02) 4251 6665.

Yours sincerely

Melanie Howard
Landuse Risk Management Officer
NSW State Emergency Service

CC: Deputy Region Controller, Sydney Northern SES Region

Liza Cordoba, Principal Planner Land Release, Pittwater Council

**GENERAL NSW SES ADVICE FOR FLOODPLAIN DEVELOPMENT MATTERS WITHIN THE
PITTWATER COUNCIL**

The State Emergency Service Act (1989, as amended) dictates that the NSW SES has a legal responsibility for planning, preparation and response to deal with flood, storm and tsunami risk for existing communities. In that context, the Service also has a strategic interest in the potential for new development to either create new risk, or exacerbate existing risk.

In the interest of efficiency and strategic effectiveness, the NSW SES aims to work in partnership with local government councils as they prepare floodplain or coastal risk management plans, Local Environmental Plans (LEPs) and Development Control Plans (DCPs). Unless there is some critical factor indicating otherwise, the NSW SES does not generally involve itself in development applications or planning proposals relating to individual or small numbers of properties. This is because the NSW SES is not resourced to assess individual development proposals. In addition, the NSW SES does not provide detailed advice or support to individuals or consultants in relation their development proposals.

The NSW Floodplain Development Manual (the Manual) advocates that ad-hoc analysis cannot take into account the cumulative impact of gradual on-going development over time, a key issue to be addressed in a Floodplain Risk Management Plan. As Council has not yet completed the Floodplain Risk Management Process in accordance with the Manual, such comprehensive assessment of flood risk, including consideration of the emergency management issues for the area, cannot be reasonably undertaken.

In an urban planning context it is also possible that ad-hoc decisions taken today could result in the inability to develop other more significant land at a later date. As prescribed in the Manual, such a strategic approach must underpin floodplain risk management to avoid repeating the many examples that we see around NSW of poor local urban planning outcomes on floodplains.

The NSW SES recommends that consideration of flooding issues is undertaken in accordance with the requirements of NSW Government's Flood Prone Land Policy as set out in the Floodplain Development Manual, 2005 (FDM) and relevant planning directions under the Environmental Planning and Assessment Act, 1979. The floodplain risk management issues which are of concern to the NSW SES are addressed in the FDM.

In brief, the NSW SES considers the following principles to be of particular importance, although this list should not be considered to be exhaustive:

- ◆ Development should not result in an intolerable increase in risk to life, health or property of people living on the floodplain.
- ◆ Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood.
- ◆ Risk assessment should have particular regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes.
- ◆ In the context of future development, self evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.
- ◆ Development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community.
- ◆ Evacuation must not require people to drive or walk through flood water.
- ◆ Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water are not equivalent, in risk management terms, to evacuation.
- ◆ Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.
- ◆ The NSW SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound landuse planning and flood risk management.

Additional information is included in the enclosed Developer's Guide which includes some flood planning questions and considerations used by the NSW SES. As the consent authority, Council will need to be satisfied that these considerations are adequately addressed as part of the assessment process. Due entirely to the need to meet priorities dictated by legislated responsibilities, the NSW SES is not in a position to assess any detailed development proposal or to work with developer's consultants in preparing any such proposal.

Attachment 2:

13 December 2016



The General Manager
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Civic Centre, 725 Pittwater Rd
Dee Why NSW 2099

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Your Ref: PP0003/16

Attention: Strategic Planning Team

Dear Sir/Madam

PLANNING PROPOSAL (REZONING) FOR 2 MACPHERSON STREET, WARRIEWOOD

Thank you for the opportunity to review the Planning Proposal for 2 Macpherson St, Warriewood. This letter is in response to the correspondence sent to the NSW State Emergency Service on 24th November 2016.

The NSW SES is the legislated combat agency for floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. The NSW SES has a strategic interest in the public safety aspects of the development of flood prone land, in particular, the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW. Additional information about the NSW SES responsibilities and emergency management arrangements in flood can be found in the State Flood Plan, which is available at:
<http://www.ses.nsw.gov.au/communitysafety/floodsafe/floodplanning/>.

The NSW State Emergency Service has had a significant involvement in commenting on previous proposals for rezoning of the Warriewood Valley. Of particular relevance is the correspondence relating to the same site, which is attached to this letter (Attachment 1).

The NSW State Emergency Service position on the proposed rezoning of 2 Macpherson St Warriewood remains the same as that in 12th July 2013.

Although the current proposal states that Macpherson St will be raised to the 1% AEP flood level (plus climate change), the inherent risks to the potential occupants of the site will not disappear above that level, especially being in proximity to a high hazard floodway.

Above the 1%AEP flood (including climate change), the proposed occupants will have their access cut and become isolated and flooded above the floor level. Development strategies relying on deliberate isolation or sheltering in buildings (i.e. the so called 'vertical evacuation') surrounded by flood water are not equivalent, in risk management terms, to

evacuation. In the context of future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.

Sheltering in buildings surrounded by flood water presents a greater risk than a well-conducted evacuation. It should only be used where evacuation is not possible, or where evacuation from an at-risk area has failed. Where evacuation is not possible, the risks of sheltering should be adequately assessed to determine the tolerability of isolation, before any strategy of sheltering in place can be considered. The proposal states the 'site is unlikely to be isolated for unacceptable periods of time' (Bonacci flood assessment report, p 4) but there is little evidence to support this statement. There is no analysis of whether it would be tolerable or not for the future occupants of the site to be isolated during a flood.

Encouraging a strategy of isolation must take into account risks such as the unpredictable nature of human behaviour during a flood including the desire to escape from a hazard when it is unsafe to do so. People may also have the desire to access isolated areas to reunite with loved ones or return to a home cannot be underestimated. A recent study by Haynes (2016) has shown that since 2002, 90 people have died trying to cross flooded roads.

Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.

Moreover 'shelter in place' strategies increase the risk to emergency service personnel. Before attempting rescue, emergency service personnel will assess the risk to their own safety. There is therefore no guarantee that rescue will be available for residents who are effectively entrapped in a building during a flood.

The NSW State Emergency Service recommends that Council give due consideration to the risks that this proposal will create. The NSW State Emergency Service is responsible for rescue and will likely have to perform rescues in this area if the proposal is approved. Intensifying development in an area that is already prone to high velocity flood water will mean more people are placed in a position at risk from the impacts and effects of flooding.

The NSW State Emergency Service considers the intensification of the floodplain and exposure of more people to the effects of flooding without sufficient evidence to show isolation is tolerable during such flood events, as an unacceptable planning outcome.

I trust that the above advice will assist Council in its review of the Planning Proposal for 2 Macpherson St, Warriewood. Please contact me on (02) 4251 6665 if you wish to discuss any of the matters raised in this correspondence further.

Yours sincerely,

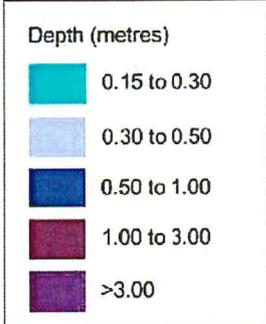
Marcus Morgan
Planning Coordinator
NSW State Emergency Service

Cc: Barry Griffiths, Deputy Region Controller, Sydney Northern SES Region
Manager, Emergency Risk Management

Attachments/References

1. NSW State Emergency Service submission – Request by Pittwater Council for NSW SESD Comment – The Draft Planning Proposal for 2 & 18 Macpherson St and 23, 25 & 27 Warriewood Rd (12 July 2013)
2. Haynes, K., Coates, L. & van den Honert, R. An analysis of human fatalities and building losses from natural disasters: Annual project report 2015-2016. (Bushfire and Natural Hazards CRC, 2016).

Attachment 3: Extract from the Pittwater overland flow flood study (Cardno, October 2013)



10 February 2016



The General Manager
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Dee Why NSW 2099

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Your Ref: PP0005/16

Attention: Mr Andreas Olsen, Land Release Team

Dear Mr Olsen

**PLANNING PROPOSAL (REZONING) FOR 6 JACKSONS ROAD, 10 AND 12 BOONDAH ROAD
WARRIEWOOD**

Thank you for the opportunity to review the Planning Proposal for 6 Jacksons Road, 10 and 12 Boondah Road Warriewood. This letter is in response to the correspondence sent to the NSW State Emergency Service (NSW SES) on 20th January 2016.

The NSW SES is the legislated combat agency for floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. The NSW SES has a strategic interest in the public safety aspects of the development of flood prone land, in particular, the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW. Additional information about the NSW SES responsibilities and emergency management arrangements in flood can be found in the State Flood Plan, which is available via the NSW SES website at: <http://www.ses.nsw.gov.au/communitysafety/floodsafe/floodplanning/>.

The NSW SES has had a significant involvement in commenting on previous rezoning proposals for land in the Warriewood Valley. Of particular relevance is the previous correspondence relating to sites within the Warriewood Valley. The NSW SES position on the proposed rezoning of land within the Warriewood Valley remains the same as that of the correspondence on 12th July 2013 (Attachment 1) and the recent submission on 13th December 2016 (Attachment 2).

Boondah Rd precinct proposal

The planning proposal indicates that Boondah Rd will be raised to the 1% AEP flood level (plus allowance for climate change). However, the inherent risks to the occupants of the site will not disappear above that level. When flooded above this level, it is likely that egress routes will be impassable to motor vehicles. When the roads close, residents and visitors to the proposed bulky goods retail centre will become isolated.

The proposal also indicates that land above a 100 year ARI flood at the site is 'flood free' (figure 5, Calibre consulting flood and stormwater management report (December, 2016)). It

is a misnomer to say that land above a 100 year ARI flood is 'flood free'. Although this land may not be subject to current planning controls, it is still flood prone and affected by floods larger than the 1% AEP flood. The probable maximum flood (PMF) extent in the Pittwater overland flow flood study and report (Cardno, October 2013) shows this to be the case, as the flood depth at the site is between 1-3m in a PMF (Attachment 3).

Above the 1% AEP flood (including climate change), the proposed occupants will have their access cut and become isolated. Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water (i.e. the so called 'vertical evacuation'), are not equivalent in a risk management context to evacuation. When considering future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.

Generally, sheltering in buildings surrounded by flood water presents a greater risk than a well-conducted evacuation. 'Sheltering in place' should only be used where evacuation is not possible due to greater risks of evacuating, or where evacuation from an at-risk area has failed. Where evacuation is not possible, the risks of sheltering should be adequately assessed to determine the tolerability of isolation, before any strategy of sheltering in place can be considered. In the current proposal, there is no analysis of whether it will be tolerable or not for the future occupants of the site to be isolated during a flood.

Tolerability of isolation

a) Risks in relation to human behaviour and driving during flooding

Encouraging a strategy of isolation or 'shelter in place' must take into account risks such as the unpredictable nature of human behaviour during a flood including the desire to escape from a hazard when it is unsafe to do so. People may also have the desire to access isolated areas to reunite with loved ones or return to a home away from the impacted area.

Additionally, the construction of community retail outlets in flash flood prone areas inadvertently draws people into high flood risk areas. This increases the potential for the NSW SES to have to conduct flood rescues. It also increases the potential for fatalities from driving on flooded roads. A recent study by Haynes (2016) has shown that since 2002, 90 people have died trying to cross flooded roads in Australia.

The proposal also suggests that car parking will act as undercroft flood storage (p 5) and that 'vehicle barriers will be provided to prevent floating vehicles leaving the site' (Calibre consulting flood and stormwater management report, December 2016, p 9). This is acknowledging that there will be inherent damage to property from this proposal during a flood. There is no analysis in the current proposal to say if such damage will be acceptable to the current or future community. The risk of damage and acceptability of this risk during a flood should be addressed in the proposal. Moreover, the NSW SES questions the efficacy of the vehicle barriers in this situation.

b) Risks in relation to secondary emergencies

Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies requiring emergency response.

c) Risks to emergency personnel

Moreover 'shelter in place' strategies, such as those proposed in the planning proposal (p 31) and the Calibre consulting flood and stormwater management report (December 2016, p 9 and 10), increase the risk to emergency service personnel. Before attempting rescue, emergency service personnel will assess the risk to their own safety. There is therefore no guarantee that rescue will be available to residents who are effectively entrapped in a building during a flood. This will be the case if the risks are considered unacceptable for emergency service personnel to undertake such rescue.

Concluding remarks

The NSW SES recommends that Council give due consideration to the risks that this development proposal will create. Intensifying development in an area that is already prone to high velocity flood water will mean more people are placed in a position at risk from the impacts and effects of flooding. Moreover, the NSW SES is responsible for flood rescue and will likely have to perform rescues in this area if the rezoning proposal is approved and development proceeds

Furthermore, the NSW SES considers the intensification of development in the floodplain and exposure of more people to the effects of flooding without sufficient evidence to show isolation is tolerable during such flood events, as an unacceptable planning outcome. In contrast to what the planning proposal reports (page 7), if this proposal is approved there will be an increase in demand on emergency service agencies through increasing the population vulnerable to the effects of flooding.

I trust that the above advice will assist Council in its review of the Planning Proposal for 6 Jacksons Road, 10 and 12 Boondah Road Warriewood. Please contact me on (02) 4251 6665 if you wish to discuss any of the matters raised in this correspondence.

Yours sincerely,



Marcus Morgan
Planning Coordinator
NSW State Emergency Service

Cc: Barry Griffiths, Deputy Region Controller, Sydney Northern SES Region
Manager, Emergency Risk Management

Attachments/References

1. NSW State Emergency Service submission – Request by Pittwater Council for NSW SES Comment – The Draft Planning Proposal for 2 & 18 Macpherson St and 23, 25 & 27 Warriewood Rd (12 July 2013).
2. NSW State Emergency Service submission – Request by Pittwater Council for NSW SES Comment – Planning Proposal for 2 Macpherson St Warriewood Rd (13 December 2016)
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Attachment 1:



12 July 2013

The General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Attn: Mr Andrew Pigott
Your Reference: PP0002/13

Dear Mr Pigott

REQUEST BY PITTWATER COUNCIL FOR NSW SES COMMENT THE DRAFT PLANNING PROPOSAL FOR 2 & 18 MACPHERSON STREET AND 23, 25 & 27 WARRIEWOOD ROAD

I refer to Council's correspondence to the NSW State Emergency Service (NSW SES) dated 11 June 2013 seeking the views of the service in relation to the draft Planning Proposal for the above land.

Please be advised that the NSW SES position on such matters remains unchanged from previous correspondence submitted in relation to the draft planning proposal for Mona Vale Road, Jubilee Avenue and Boundary Street on 9 January 2013 and meetings, telephone conversations and e-mail correspondence relating to the Warriewood Valley Strategic Review in 2011 and 2012. This position, as outlined in Attachment A, can be used as general advice for individual development applications or planning proposals and other floodplain development matters across the Pittwater Council area.

It is noted that the proposed development is located within the area covered by the Warriewood Valley Strategic Review. As noted in the Warriewood Valley Strategic Review, the NSW SES provided verbal and e-mail advice in relation to the Draft Hydrology Study, 2011, prepared as part of the Review. Notwithstanding the endorsement of the strategic review earlier this year, the issues the NSW SES raised relating to information in the hydrology report from an emergency management and community safety perspective are still of concern. One of these concerns was the risk of inadequate consideration of the cumulative impact of development, a matter covered in the attached general advice.

As Council is aware, the NSW SES worked with the DP&I and the Office of Environment and Heritage during the DP&I commissioned study to review the flood safety requirements for flash flood events on flood prone land. Whilst the results of this research have not been circulated by the DP&I, the new National *'Guideline on Emergency Planning and Response to*

Protect Life in Flash Flood Events has recently been endorsed by the Australasian Fire Authorities Council (AFAC). Councils required to assess proposals for developments which propose 'shelter in place' as a strategy in flash flood environments are urged to consider the contents of this guideline (copy enclosed) in making decisions on such matters.

Council would also be aware that the area under consideration is subject to localised flash flooding which regularly closes Macpherson Street in a number of locations, even in small and frequent rainfall events. With the proximity of Narrabeen Creek to the lots in question and the fact that flood rescues by the NSW SES have occurred at the specific section of Macpherson Road on more than one occasion (one as recently as the last weekend in June 2013) the risk to life from flooding cannot be easily overlooked.

If you require any further information, or if you are unsure whether the attached advice is relevant for a specific matter, please do not hesitate to contact me on (02) 4251 6665.

Yours sincerely

Melanie Howard
Landuse Risk Management Officer
NSW State Emergency Service

CC: Deputy Region Controller, Sydney Northern SES Region

Liza Cordoba, Principal Planner Land Release, Pittwater Council

**GENERAL NSW SES ADVICE FOR FLOODPLAIN DEVELOPMENT MATTERS WITHIN THE
PITTWATER COUNCIL**

The State Emergency Service Act (1989, as amended) dictates that the NSW SES has a legal responsibility for planning, preparation and response to deal with flood, storm and tsunami risk for existing communities. In that context, the Service also has a strategic interest in the potential for new development to either create new risk, or exacerbate existing risk.

In the interest of efficiency and strategic effectiveness, the NSW SES aims to work in partnership with local government councils as they prepare floodplain or coastal risk management plans, Local Environmental Plans (LEPs) and Development Control Plans (DCPs). Unless there is some critical factor indicating otherwise, the NSW SES does not generally involve itself in development applications or planning proposals relating to individual or small numbers of properties. This is because the NSW SES is not resourced to assess individual development proposals. In addition, the NSW SES does not provide detailed advice or support to individuals or consultants in relation their development proposals.

The NSW Floodplain Development Manual (the Manual) advocates that ad-hoc analysis cannot take into account the cumulative impact of gradual on-going development over time, a key issue to be addressed in a Floodplain Risk Management Plan. As Council has not yet completed the Floodplain Risk Management Process in accordance with the Manual, such comprehensive assessment of flood risk, including consideration of the emergency management issues for the area, cannot be reasonably undertaken.

In an urban planning context it is also possible that ad-hoc decisions taken today could result in the inability to develop other more significant land at a later date. As prescribed in the Manual, such a strategic approach must underpin floodplain risk management to avoid repeating the many examples that we see around NSW of poor local urban planning outcomes on floodplains.

The NSW SES recommends that consideration of flooding issues is undertaken in accordance with the requirements of NSW Government's Flood Prone Land Policy as set out in the Floodplain Development Manual, 2005 (FDM) and relevant planning directions under the Environmental Planning and Assessment Act, 1979. The floodplain risk management issues which are of concern to the NSW SES are addressed in the FDM.

In brief, the NSW SES considers the following principles to be of particular importance, although this list should not be considered to be exhaustive:

- ◆ Development should not result in an intolerable increase in risk to life, health or property of people living on the floodplain.
- ◆ Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood.
- ◆ Risk assessment should have particular regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes.
- ◆ In the context of future development, self evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.
- ◆ Development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community.
- ◆ Evacuation must not require people to drive or walk through flood water.
- ◆ Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water are not equivalent, in risk management terms, to evacuation.
- ◆ Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.
- ◆ The NSW SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound landuse planning and flood risk management.

Additional information is included in the enclosed Developer's Guide which includes some flood planning questions and considerations used by the NSW SES. As the consent authority, Council will need to be satisfied that these considerations are adequately addressed as part of the assessment process. Due entirely to the need to meet priorities dictated by legislated responsibilities, the NSW SES is not in a position to assess any detailed development proposal or to work with developer's consultants in preparing any such proposal.

Attachment 2:

13 December 2016



The General Manager
Northern Beaches Council
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Dee Why NSW 2099

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Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone 02 4251 6111

Your Ref: PP0003/16

Attention: Strategic Planning Team

Dear Sir/Madam

PLANNING PROPOSAL (REZONING) FOR 2 MACPHERSON STREET, WARRIEWOOD

Thank you for the opportunity to review the Planning Proposal for 2 Macpherson St, Warriewood. This letter is in response to the correspondence sent to the NSW State Emergency Service on 24th November 2016.

The NSW SES is the legislated combat agency for floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. The NSW SES has a strategic interest in the public safety aspects of the development of flood prone land, in particular, the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW. Additional information about the NSW SES responsibilities and emergency management arrangements in flood can be found in the State Flood Plan, which is available at:
<http://www.ses.nsw.gov.au/communitysafety/floodsafe/floodplanning/>.

The NSW State Emergency Service has had a significant involvement in commenting on previous proposals for rezoning of the Warriewood Valley. Of particular relevance is the correspondence relating to the same site, which is attached to this letter (Attachment 1).

The NSW State Emergency Service position on the proposed rezoning of 2 Macpherson St Warriewood remains the same as that in 12th July 2013.

Although the current proposal states that Macpherson St will be raised to the 1% AEP flood level (plus climate change), the inherent risks to the potential occupants of the site will not disappear above that level, especially being in proximity to a high hazard floodway.

Above the 1%AEP flood (including climate change), the proposed occupants will have their access cut and become isolated and flooded above the floor level. Development strategies relying on deliberate isolation or sheltering in buildings (i.e. the so called 'vertical evacuation') surrounded by flood water are not equivalent, in risk management terms, to

evacuation. In the context of future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.

Sheltering in buildings surrounded by flood water presents a greater risk than a well-conducted evacuation. It should only be used where evacuation is not possible, or where evacuation from an at-risk area has failed. Where evacuation is not possible, the risks of sheltering should be adequately assessed to determine the tolerability of isolation, before any strategy of sheltering in place can be considered. The proposal states the 'site is unlikely to be isolated for unacceptable periods of time' (Bonacci flood assessment report, p 4) but there is little evidence to support this statement. There is no analysis of whether it would be tolerable or not for the future occupants of the site to be isolated during a flood.

Encouraging a strategy of isolation must take into account risks such as the unpredictable nature of human behaviour during a flood including the desire to escape from a hazard when it is unsafe to do so. People may also have the desire to access isolated areas to reunite with loved ones or return to a home cannot be underestimated. A recent study by Haynes (2016) has shown that since 2002, 90 people have died trying to cross flooded roads.

Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.

Moreover 'shelter in place' strategies increase the risk to emergency service personnel. Before attempting rescue, emergency service personnel will assess the risk to their own safety. There is therefore no guarantee that rescue will be available for residents who are effectively entrapped in a building during a flood.

The NSW State Emergency Service recommends that Council give due consideration to the risks that this proposal will create. The NSW State Emergency Service is responsible for rescue and will likely have to perform rescues in this area if the proposal is approved. Intensifying development in an area that is already prone to high velocity flood water will mean more people are placed in a position at risk from the impacts and effects of flooding.

The NSW State Emergency Service considers the intensification of the floodplain and exposure of more people to the effects of flooding without sufficient evidence to show isolation is tolerable during such flood events, as an unacceptable planning outcome.

I trust that the above advice will assist Council in its review of the Planning Proposal for 2 Macpherson St, Warriewood. Please contact me on (02) 4251 6665 if you wish to discuss any of the matters raised in this correspondence further.

Yours sincerely,

Marcus Morgan
Planning Coordinator
NSW State Emergency Service

Cc: Barry Griffiths, Deputy Region Controller, Sydney Northern SES Region
Manager, Emergency Risk Management

Attachments/References

1. NSW State Emergency Service submission – Request by Pittwater Council for NSW SESD Comment – The Draft Planning Proposal for 2 & 18 Macpherson St and 23, 25 & 27 Warriewood Rd (12 July 2013)
2. Haynes, K., Coates, L. & van den Honert, R. An analysis of human fatalities and building losses from natural disasters: Annual project report 2015-2016. (Bushfire and Natural Hazards CRC, 2016).

Attachment 3: Extract from the Pittwater overland flow flood study (Cardno, October 2013)

