

Mr James Innes  
Legal Director  
Independent Planning Commission  
Level 15, 135 King Street  
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[REDACTED]

23 April 2025

Received by the IPC 24 April 2025

'Allfarthing' 2 Brisbane Grove Road Planning Proposal (PP-2024-295) and 137 Brisbane Grove Road Planning Proposal (PP-2024-291) Gateway Determination Reviews Request for further information

Dear Mr Innes

Thank you for your correspondence and request for further information on the above. I am pleased to provide the following response to the IPC's questions:

1. *Why has the Department chosen to rely upon the recommended 12-hour maximum period of isolation within the Shelter in place guideline for flash flooding as a guide for the acceptable maximum site isolation period given the Commission's understanding that the Guideline is not formally engaged for this Planning Proposal? (e.g. are there any technical assessments, or agency policy positions that support the 12- hour maximum period of isolation);*

The Department acknowledges that the *Shelter-in-Place Guideline for Flash Flooding* (SIP Guideline) does not strictly apply to the planning proposals as the sites themselves are above the Probable Maximum Flood level and so the proposals do not strictly meet the definition of shelter-in-place provided in the SIP Guideline. However, the general intent of the SIP Guideline, and recommended acceptable maximum isolation time, was considered relevant during the assessment of the planning proposals. Importantly the SIP Guideline identifies that isolation is only considered appropriate when the development warrants consideration of alternative strategies and the risks associated with isolation are less than the risk of evacuation.

The NSW SES maintains that there is no safe period of flood isolation, given the exposure to secondary risks such as fire and medical emergency and this position is supported by *Manual 22 of the Australian Disaster Resilience Handbook Collection*.

Flood isolation gives rise to flood rescues for people that attempt to drive or wade through floodwaters for various reasons such as seeking emergency assistance or trying to get home, to work, family or to access shops etc. Driving through floodwaters is the biggest cause of

flood fatalities and planning decisions should not encourage people or emergency services to drive through flood waters.

The 12-hour maximum isolation period identified in the SIP Guideline is based on isolation of 6 hours plus an additional 6 hours for flood waters to rise. Any longer than 12 hours isolation increases the potential for secondary risks such as medical emergencies and requires greater access to sanitation (working toilets/sewer), food and drinking water.

2. *Provide the Department's reasons, including any technical source upon which it relies, for defining site isolation as being the period of time where small vehicle egress from the Site is not possible (being H2 or greater flood hazard classification), in response to the Proponent's Page 2 of 3 further information regarding emergency vehicle access to the Site being potentially possible through floodwaters classified as H2.*

The Department's reasons, including technical sources relied upon for its determination of isolation risk, was drawn from the planning proposals and supporting flood assessment reports and advice provided by the Government's expert agencies namely DCCEEW and the NSW SES.

According to the *Australian Institute for Disaster Resilience (AIDR) Guideline 7.3*, once floodwaters reach the H2 hazard classification, it becomes unsafe for small vehicles to travel. This classification is part of a system that sets hazard thresholds based on the vulnerability of the community when interacting with floodwaters. The State Emergency Service (SES) recommends evacuation via vehicle, but once floodwaters reach H2 or above, vehicle evacuation is no longer considered a safe emergency response.

DCCEEW has advised the Department:

- The information from the proponent that assumes specific hazard H categories are safe to drive through should be considered with caution as they have been derived with wide ranging assumptions which cannot be assumed to apply in an actual flood event. During actual flood producing rainfall events, the rate of rise, peak flood level, velocity and duration cannot be readily estimated and conditions in an actual flood can be very different to a design flood.
- Due to questions about modelling accuracy and the real possibility of road surface failure, it is not recommended that vehicles are planned to drive through floodwaters. Flood isolation risks should be assessed on the basis that once a road is inundated it is no longer safe to use for land-use planning purposes. It is noted that GRC Hydro only assessed inundation of Braidwood Road and did not consider Brisbane Grove Road which is also inundated, isolating the proposed new residential lots and potentially increasing the duration of isolation.
- The proponent's information estimates the flood depths over the road to the nearest 0.01m however there is no quantification of the assumptions made of the confidence

limits for such accurate depth estimations. It is quite possible that the roads will be inundated (with depths and velocities) beyond the H1 category in smaller floods and more frequently than provided by the proponent. The trigger from H1 to H2 is therefore largely irrelevant to the decision of when precisely the area is isolated for safe access by residents and / or emergency services.

3. *Clarify the specific circumstances and duration in which floodwaters crossing Braidwood Road change flood hazard classification (i.e., from H1 to H2, H2 to H3), including the period of inundation of flood hazard classification H2 or above in a 1% AEP flood event and rarer. Please include clarification of the total duration that the Department considers:*
  - a. *small vehicle egress would be impeded during a 1% AEP flood event and rarer; and*
  - b. *emergency services access would be impeded during a 1% AEP flood event and rarer.*

DCCEEW has advised the Department:

- For flood isolation, consideration should be given to all roads that are inundated due to both mainstream and local overland flooding, noting that proposed lots are isolated from smaller floods on Brisbane Grove Road preventing access to Braidwood Road. Small vehicle access is impeded the moment that the road is inundated so it is not safe to plan for vehicles to travel across a flooded road. This is because the road surface can be eroded, vehicles can be hit by floating debris and the hydraulic flood hazard (depth & velocity) can quickly change. Access by emergency vehicles through a flooded road could only be anticipated to occur in an imminent life or death situation, and where the emergency vehicle had back-up assistance for flood rescue of the emergency management personnel.
- The proponent's consultants provided some estimated durations of inundation of Braidwood Road of 4 hours in a 5% AEP and 23 hours in a 1% AEP. There was no assessment of depths or durations of flooding of other roads including local Brisbane Grove Road (to access Braidwood Road) or additional roads that would enable safe access by emergency services.
- For the purposes of planning, it can also be expected that the proposed lots will be isolated for shorter durations in frequent events (eg 10% AEP) giving rise to likelihood of complacent / ad hoc driving through floodwater episodes increasing the likelihood and risks. In events greater than the 10% AEP even longer flood isolation periods will occur ranging from 23 hours to 38 hours.
- The actual condition of roads inundated by flood waters can be variable and a conservative approach should be taken to assess the hydraulic hazard classification. The hydraulic flood hazard is a function of the depth and velocity and localised hydraulic structures such as bridges, culverts and approach roads and are influenced by factors that affect the flow characteristics such as hydraulic roughness,

sedimentation, erosion, flood debris and blockages. These factors have not been assessed or qualified in the proponent's flood assessment.

- Once roads are overtopped there are additional risks to the utility of road surfaces which can be degraded, have submerged obstacles, experience flood debris or potentially be completely eroded and failed. The design flood modelling does not take these factors into account and as such, it is not advisable to interpret the H1 to H2 or H2 to H3 classifications provided with certainty based on its accuracy. That is, once a road is inundated, it should be deemed as isolated for access by the public or by emergency services for the land-use planning purposes.

Should you have any further questions, please contact me on [REDACTED]

Yours sincerely

[REDACTED]

Chantelle Chow  
**Acting Director, Southern, Western and Macarthur Region**  
**Local Planning and Council Support**

Encl: Comments provided by DCCEEW and the Department's Risk and Resilience Team

## Attachment – DCCEEW Advice

## **Brisbane Grove Planning Proposals - Goulburn Mulwaree Council**

### **Gateway Determination Reviews IPC Request for additional information - DPHI**

#### **DCCEEW-CPHR - Regional Delivery Water Floodplains and Coast (WFC) – South East 16 April 2025**

**-DRAFT-**

#### **Context:**

Reference is made to Email from DPHI on 11 April 2025 seeking comments on the IPC questions to DPHI (IPC letter-11April 2025) regarding three flood related matters directed to the Department of Planning, Housing and Infrastructure (DPHI) for two Planning Proposals (PP-2-24-295 & PP-2024-291) Gateway Determination Reviews. The following comments are offered to assist DPHI ("the Department") in its response to the IPC.

#### **Comments on the three matters:**

- 1. why has the Department chosen to rely upon the recommended 12-hour maximum period of isolation within the Shelter in place guideline for flash flooding as a guide for the acceptable maximum site isolation period given the Commission's understanding that the Guideline is not formally engaged for this Planning Proposal? (e.g. are there any technical assessments, or agency policy positions that support the 12-hour maximum period of isolation);***

This question relates to the Shelter in Place (SIP) guideline developed by DPHI and specific questions relating to isolation periods and data used to inform the SIP should be directed to DPHI – Resilience Planning team.

It is noted that the SIP is not considered a policy position that supports a period of isolation for planning proposals. Rather it is guidance to assist councils in determining development applications in already zoned urban areas that are subject to flash flooding so there is a place of refuge above the PMF which may not have otherwise existed or been considered. The NSW SES maintains that there is no safe timeframe for flood isolation, given the exposure to secondary risks such as fire, medical emergency. Flood isolation and gives rise to flood rescues for people that attempt to drive or wade through floodwaters for various reasons such as seeking emergency assistance or trying to get home, work, family or to access shops etc. Driving through floodwaters is the biggest cause of flood fatalities and planning decisions should not be on the basis that requires people or emergency services to drive through flood waters.

- 2. provide the Department's reasons, including any technical source upon which it relies, for defining site isolation as being the period of time where small vehicle egress from the Site is not possible (being H2 or greater flood hazard classification), in response to the Proponent's***

***further information regarding emergency vehicle access to the Site  
being potentially possible through floodwaters classified as H2; and***

For the two PPs, it is noted that NSW SES has provided detailed advice to council regarding flood isolation risks and they identify isolation in at least the 10% AEP design flood event at 2 Brisbane Grove & 5%AEP at 137 Brisbane Grove, Goulburn.

Relevant guidance includes Flood Hazard – Flood risk management guideline FB03 which provides technical framework upon which to understand flood hazard and categorisation based on velocity and depth relationships. The guideline clearly states “*The information provided is not designed to provide thresholds for development controls relating to people safely traversing floodwaters*”. The guideline can be found here [Flood Hazard | Environment and Heritage](#) and includes references to various technical resources including national best practice guidance from the Australian Institute of Disaster Resilience (AIDR) [Managing the Floodplain Handbook](#)

The information from the proponent that assumes specific hazard H categories are safe to drive through should be considered with caution. They have been derived with wide ranging assumptions which cannot be assumed to apply in an actual flood event. During actual flood producing rainfall events, the rate of rise, peak flood level, velocity and duration cannot be readily estimated and conditions in an actual flood can be very different to a design flood. Also detailed local flood modelling of the road (which will have variable heights at crest/verges) and the bridge / waterway opening has not been undertaken or sensitivity of the modelling assumptions. In the absence of reported confidence limits on design flood information, there is an underlying uncertainty of the accuracy of both the design flood depths (reported by GRC to two decimal places ie 0.01m), the duration and the reported duration that the depth is greater than 0.5m.

There is a small threshold in the guidelines between H1 and H2 and that combined with modelling accuracy and the real possibility of road surface failure, it is not recommended that vehicles are planned to drive through floodwaters. Flood isolation risks should be assessed on the basis that once a road is inundated it is no longer safe to use for land-use planning purposes. It is noted that GRC Hydro only assessed inundation of Braidwood Road and did not consider Brisbane Grove Road which is also inundated, isolating the proposed new residential lots and potentially increasing the duration of isolation.

The technical source for the DPHI consideration in its determination would have been drawn from advice provided from the proponent, council the NSW SES and DCCEEW. The proponent’s information estimates the flood depths over the road to the nearest 0.01m however there is no quantification of the assumptions made of the confidence limits for such accurate depth estimations. It is quite possible that the roads will be inundated (with depths and velocities) beyond the H1 category in smaller floods and more frequently than provided by the proponent. The trigger from H1 to H2 is therefore largely irrelevant to the decision of when precisely the area is isolated for safe access by residents and / or emergency services.

- 3. clarify the specific circumstances and duration in which floodwaters crossing Braidwood Road change flood hazard classification (i.e., from H1 to H2, H2 to H3), including the period of inundation of flood hazard***

***classification H2 or above in a 1% AEP flood event and rarer. Please include clarification of the total duration that the Department considers:***

- a. small vehicle egress would be impeded during a 1% AEP flood event and rarer; and***
- b. emergency services access would be impeded during a 1% AEP flood event and rarer.***

For flood isolation, consideration should be given to all roads that are inundated due to both mainstream and local overland flooding, noting that proposed lots are isolated from smaller floods on Brisbane Grove Road preventing access to Braidwood Road. Small vehicle access is impeded the moment that the road is inundated as it is not safe to plan for vehicles to travel across a flooded road. This is because the road surface can be eroded, vehicles can be hit by floating debris and the hydraulic flood hazard (depth & velocity) can quickly change. Access by emergency vehicles through a flooded road could only be anticipated to occur in an imminent life or death situation, and where the emergency vehicle had back-up assistance for flood rescue of the emergency management personnel.

The proponent's consultants provided some estimated durations of inundation of Braidwood Road of 4hours in a 5%AEP and 23hours in a 1%AEP. There was no assessment of depths or durations of flooding of other roads including local Brisbane Grove Road (to access Braidwood Road) or additional roads that would enable safe access by emergency services.

For the purposes of planning, it can also be expected that the proposed lots will be isolated for shorter durations in frequent events (eg 10%AEP) giving rise to likelihood of complacent / ad hoc driving through floodwater episodes quite frequently increasing the likelihood and risks. In events greater than the 10%AEP even longer flood isolation periods will occur ranging from 23hours to 38 hours.

The actual conditions of roads inundated by flood waters can be variable and a conservative approach should be taken to assess the hydraulic hazard classification. The hydraulic flood hazard is a function of the depth and velocity and localised hydraulic structures such as bridges, culverts and approach roads are influenced by factors that influence the flow characteristics such as hydraulic roughness, sedimentation, erosion, flood debris and blockages. These factors have not been assessed or qualified in the proponent's flood assessment.

Once roads are overtopped there are additional risks to the utility of road surfaces which can be degraded, have submerged obstacles, experience flood debris or potentially be completely eroded and failed. The design flood modelling does not take these factors into account and as such, it is not advisable to interpret the H1 to H2 or H2 to H3 classifications provided with any certainty on its accuracy. That is once a road is inundated, it should be deemed as isolated for access by the public or by emergency services for the land-use planning purposes.



## Attachment – DPHI Risk and Resilience Team Advice

## George Curtis

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**From:** Melanie Schwecke  
**Sent:** Wednesday, 16 April 2025 12:01 PM  
**To:** George Curtis  
**Cc:** Graham Towers  
**Subject:** RE: Brisbane Grove Goulburn Planning Proposals - Gateway Determination Reviews - Questions on notice from the Independent Planning Commission

George:

My suggested response to IPC question :

Q1: - why has the Department chosen to rely upon the recommended 12-hour maximum period of isolation within the *Shelter in place guideline for flash flooding* as a guide for the acceptable maximum site isolation period given the Commission's understanding that the Guideline is not formally engaged for this Planning Proposal? (e.g. are there any technical assessments, or agency policy positions that support the 12-hour maximum period of isolation);

1. **Shelter-in-Place (SIP) Justification:** The SES have noted to the Department that evacuation is the preferred flood risk response. SIP is generally only considered appropriate when the development warrants consideration of alternative strategies, and the risks associated with isolation are less than the risks of evacuation.
2. **No 'Safe Period of Isolation':** As noted in Manual 22 of the Australian Disaster Resilience Handbook Collection, there is no 'safe period of isolation'. The handbook notes isolation carries inherent risks, and the specific circumstances of the proposal should be considered in emergency planning. [manual-22-flood-response.pdf](#)
3. **Risk Considerations:** The increasing risk to life, health, or property due to shelter-in-place must be evaluated through a merits-based decision-making process. This involves assessing the specific circumstances and potential impacts on the affected population.
4. **Design Flood Guidelines:** The period of isolation should align with design flood guidelines, such as those provided by the **Australian Rainfall and Runoff** for flash flooding. These guidelines help in estimating flood characteristics and ensuring safety measures are appropriate.
5. **Risk Assessment for SIP:** The SIP guideline lists considerations for consent authorities to base their risk assessments on when determining if shelter-in-place is an appropriate strategy. This includes evaluating the potential hazards and ensuring that the decision is informed by the best available data and practices.

The Department developed the SIP guideline with NSW DCCEEW, NSW SES and INSW. The Department also undertook preliminary research review into evacuation and shelter-in place best practice, focusing on flooding related evacuation/shelter-in-place guidelines and development controls nationally and internationally. The 12 hours was based on isolation of 6 hours plus and additional 6 hours for flood waters to rise = 12 hours, any longer than 12 hours then secondary risks such as medical emergencies and access to sanitation (working toilets/sewer) and flood/water start to occur.

Q2: provide the Department's reasons, including any technical source upon which it relies, for defining site isolation as being the period of time where small vehicle egress from the Site is not possible (being H2 or greater flood hazard classification), in response to the Proponent's further information regarding emergency vehicle access to the Site being potentially possible through floodwaters classified as H2;

According to the Australian Institute for Disaster Resilience (AIDR) Guideline 7.3, once floodwaters reach the H2 hazard classification, it becomes unsafe for small vehicles to travel. This classification is part of a system that sets hazard thresholds based on the vulnerability of the community when interacting with floodwaters

The H2 hazard classification specifically indicates conditions where the depth and velocity of floodwaters make it dangerous for small vehicles. The State Emergency Service (SES) recommends evacuation via vehicle, but once floodwaters reach H2 or above, vehicle evacuation is no longer considered a safe emergency response

These ADR guidelines help ensure that emergency responses are based on the best available data and practices, prioritizing the safety of the community. [adr-guideline-7-3.pdf](#)

Q3. clarify the specific circumstances and duration in which floodwaters crossing Braidwood Road change flood hazard classification (i.e., from H1 to H2, H2 to H3), including the period of inundation of flood hazard classification H2 or above in  
this would need to be supplied by DCCEEW or NSW SES

regards  
Melanie

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**From:** George Curtis [REDACTED]  
**Sent:** Monday, 14 April 2025 11:50 AM  
**To:** Melanie Schwecke [REDACTED]  
**Cc:** Graham Towers [REDACTED]  
**Subject:** Brisbane Grove Goulburn Planning Proposals - Gateway Determination Reviews - Questions on notice from the Independent Planning Commission

Hello Melanie

We have received the attached questions on notice from the IPC regarding the gateway reviews for the “Alfarthing” 2 Brisbane Grove Road planning proposal (PP-2024-295) and 137 Brisbane Grove Road planning proposal (PP-2024-291). We would value your advice on the IPC’s questions, particularly question 1 which relates to the Shelter-in-Place Guideline and whether the Department has any other guidance regarding acceptable isolation risk.

We have also sought DCCEEW (BCS) advice on the IPC’s questions.

Chantelle and I attended a hearing with the IPC on Monday 24 March 2025 to brief the IPC on the planning proposals, the Department’s gateway determinations and to answer the IPC’s questions. The IPC raised a number of questions on notice following the hearing which we responded to in writing (attached - FYI).

I’ve also attached the gateway determinations for the two planning proposals which provides the reasons for the Department’s determinations not to support the planning proposals.

It would be appreciated if you can please provide comment by midday this Thursday 17 April so we can meet the IPC’s 22 April timeframe to respond to their questions.

Don’t hesitate to contact me.

Regards

**George Curtis**  
**Senior Planner**

Local Planning and Council Support – Southern, Western and Macarthur Region  
**Department of Planning, Housing and Infrastructure**

**(I work Mon, Wed-Fri)**

I live and work on Dharawal country 



**Our Vision:** Together, we create thriving environments, communities and economies.

*The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.*