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From: **Marc Daley** <Marc.Daley@environment.nsw.gov.au>
Date: Tue, Sep 8, 2020 at 11:00 AM
Subject: RE: Moonee SSD 7198
To: Jason Wasiak <jason@jwplanning.com.au>
Cc: Emma Butcher <Emma.Butcher@planning.nsw.gov.au>, Krister Waern
<krister.waern@environment.nsw.gov.au>

Hi Jason,

Thank you for your response and that from Jeff Fulton. I have reviewed the information and I am satisfied through the information provided by Jeff, that impacts of tidal inundation have been considered through the flood modelling process.

Please note the request wasn't for a 1% AEP flood and 1% AEP ocean water level to occur concurrently, per Jeff's reply. Only that proper consideration has been given to the tidal inundation through the ocean water level component, including the future impacts of projected climate change. From the flood modelling report initially provided, though scenarios 5 and 10 were listed, it wasn't clear how these scenarios were determined and the considerations given in relation to the ocean water boundary.

Thank you for providing this clarity.

Regards,

Marc Daley

Dr Marc Daley

A/Senior Team Leader – Water, Floodplain & Coast (NE)

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The Department of Planning, Industry and Environment 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.

From: Jason Wasiak <jason@jwplanning.com.au>
Sent: Monday, 7 September 2020 3:22 PM
To: Marc Daley <Marc.Daley@environment.nsw.gov.au>
Cc: Emma Butcher <Emma.Butcher@planning.nsw.gov.au>; Eric Fuller <e.fuller7@icloud.com>; Kerry Albert <kerry.albert@uniteadvisory.com.au>
Subject: Moonee SSD 7198

Dear Marc,

Thank you for clarifying in our call last week the information sought by BCD.

Please see **further below** my request for clarification (which I subsequently discussed at length with Jeff Fulton at Martens), and Jeff's reply **below**.

Martens confirm that their 2015 modeling is consistent with current industry best practice; that is, the requirements in NSW OEH's flood risk management guide & NSW ECCW's flood risk management guide.

Please see their explanation in the email **below**.

Can you please confirm that this response addresses your request for clarification at your earliest opportunity?

Thanks Marc.

Regards

Jason Wasiak

Director - Principal Urban Planner

JW Planning Pty Ltd

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----- Forwarded message -----

From: **Jeffrey Fulton** <JFulton@martens.com.au>

Date: Thu, Sep 3, 2020 at 6:05 PM

Subject: RE: Moonee SSD 7198

To: Jason Wasiak <jason@jwplanning.com.au>, Eric Fuller <e.fuller7@icloud.com>, Kerry Albert <kerry.albert@uniteadvisory.com.au>

Hi Jason,

With reference to Section 3.2.3 of our flood assessment report, we have run various flood modelling scenarios. The worst case scenarios (5 and 10 in our report) assessed a 1% AEP flood with a 5% AEP climate change ocean level plus climate change of 0.91m (being 3.01 mAHD).

The above modelling is considered industry best practice and is based on the requirements in NSW OEH's flood risk management guide & NSW ECCW's flood risk management guide, as shown below:

Table 8.1: Combinations of Catchment Flooding and Oceanic Inundation Scenarios

Design AEP for peak levels/velocities	Catchment Flood Scenario	Ocean Water Level Boundary Scenario	Comment/Reference
50% AEP	50% AEP	HHWS(SS)	Dynamic hydrograph can be taken from Appendix C with peak flood to coincide with HHWS(SS) highest peak for highest water levels Peak HHWS(SS) 1.25m AHD
20%	20% AEP	HHWS(SS)	
10%	10% AEP	HHWS(SS)	
5%	5% AEP	HHWS(SS)	
2%	2% AEP	5% AEP	Dynamic ocean water level boundary hydrograph Appendices A or B for relevant waterway type
1% Envelope level	5% AEP	1% AEP	Envelope provides 1% AEP design flood estimate Dynamic ocean water level boundary hydrograph Appendices A or B for relevant waterway type
1% Envelope level	1% AEP	5% AEP	
1% Envelope velocity	1% AEP	ISLW	Dynamic hydrograph can be taken from Appendix C with peak flood to coincide with ISLW lowest trough for peak velocities in entrance. Fixed ISLW approx. -0.95m AHD
0.5%	0.5% AEP	1% AEP	Dynamic ocean water level boundary hydrograph Appendices A or B for relevant waterway type
0.2%	0.2% AEP	1% AEP	
PMF	PMF	1% AEP	
1% Catchment	1%	HHWS(SS)	Suggested envelopes for analysis of catchment flooding only
PMF Catchment	PMF	HHWS(SS)	

Note: Individual projects are likely to specify the use of only a select number of AEPs outlined in the table.

7.6 Envelope scenarios for determining flood planning levels and areas

Determining flood planning areas in tidal waterways requires consideration of the interaction of catchment and coastal flooding and requires the selection of peak flood levels and flow velocities from an envelope of scenarios such as:

- estimated 1% AEP ocean flooding with 5% AEP catchment flooding with coincident peaks
- estimated 5% AEP ocean flooding with 1% AEP catchment flooding with coincident peaks
- neap tide cycle with 1% AEP catchment flooding with coincident peaks.

These scenarios assume that initial water levels within a tidal waterway are based upon the peak tidal water level in the waterway (section 7.5) or the height of any controlling entrance outlet. They provide an envelope of peak levels and velocities that can be used to estimate the 1% AEP flood effects in the tidal waterway.

The BCD request for modelling a 1% ocean level plus 0.91m is contrary to the above. It also differs from the previous advice and discussions that we had with Council and WBM (experts acting on behalf of the Council). We note that applying BCD's request would mean modelling a very rare event, given that the 1% events for the flood and the inundation would need to occur concurrently. I expect this is why the various department guidelines noted above do not require such events to be modelled for design.

In light of the above, our flood assessment is considered satisfactory to assess impacts from tidal inundation and not further modelling is considered necessary.

Regards,

Jeff

Jeff Fulton

Project Manager / Senior Engineer
BSc, MEngSc



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From: Jason Wasiak <jason@jwplanning.com.au>

Sent: Wednesday, 2 September 2020 4:37 PM

To: Jeffrey Fulton <JFulton@martens.com.au>; Eric Fuller <e.fuller7@icloud.com>; Kerry Albert <kerry.albert@uniteadvisory.com.au>

Subject: Moonee SSD 7198

Hi Jeff,

I called today and heard you are on sick leave. I hope you are getting well.

Regarding the Moonee matter, the BCD within DPIE have a query in relation to the 2015 flood modelling by Martens.

I spoke directly with BCD (to a Dr Marc Daley) yesterday.

He is seeking clarification as to whether tidal inundation was included in the flood modelling. He said it was unclear from the data within the Marten's report.

He suggests that normally a 1% ocean water level + Sea Level Rise is factored into modelling, but believes this may not have been necessary if local catchment flooding is equal to or greater than ocean water flood level. Does this make sense to you, and can you please call me to discuss ASAP?

Thanks, Jeff.

Regards

Jason Wasiak

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