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To: [Do-Not-Reply IPCN Submissions Mailbox](#)
Cc: [Mark Leotta](#); [Myfanwy McNally](#); [Paul Clark](#); [Alex McDougall](#)
Subject: SSD-34919690 (Novus BTR) at 39-43 Hassall St, Parramatta - Public Submission OBO City of Parramatta Council
Date: Thursday, 14 March 2024 3:15:50 PM
Attachments: [Outlook-arrzdex0.png](#)
[Outlook-iaw4q45u.png](#)
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[Outlook-hnk5mpas.png](#)

Attn: Office of the Independent Planning Commission NSW,

Please see the below public submission made on behalf of City of Parramatta Council in relation to SSD-34919690 (Novus BTR) at 39-43 Hassall Street, Parramatta. Please note, the below submission has not been reviewed or formally endorsed at a councillor meeting.

Response to additional material re flood risk 39-43 Hassall Street

After reviewing all of the material shared by the Commission, Council is of the view that the proposed development will present significant risk of harm to occupants and others in a severe storms.

Council's concerns may be summarised as follows:

1. Lyall Associates flood model underestimates rainfall intensity by approx. 20% as it does not allow for real measured rainfall for decades and calibration against this rainfall of observed river flow behaviour in the Parramatta River Catchment.
2. This means the Lyall Associates study, and all the commentary based on it, understates flood levels flows and hazards from both mainstream flow and overland flow by approx. 20%, possibly more.
3. The calibrated 1 in 100 chance per year flow in Clay Cliff Creek is therefore predicted by Council to be approx. 50 m³ per second. The flow predicted by Lyalls is approx. 42 m³ per second. As such using the Lyalls model will result in substantially lower flood levels, depths, velocities and hazard conditions than using Council's calibrated method in modelling.
4. The Council adopted flood levels from 2005 SKM predicted a flow of 30 m³ /s and this resulted in a predicted 1 in 100 chance per year flood level of RL 6.2m AHD. Increasing the flow to 50 m³/s will result in a significantly higher flood level than that issued in the original flood certificate.
5. In addition the Lyall Associates study appears to be modelled using supercritical flow in Clay Cliff Creek channel. This artificially reduces flood water levels because in a real situation with numerous obstructions, debris etc, flow could not be super-critical and must be sub-critical, ie flowing at greater depth and lower velocity. This will result in higher flood levels than those modelled by Lyall Associates. Lyall and Associates advised:

"Another feature of the flow in the channel is its inherently unstable nature. This is

characteristic of mildly supercritical flow, where any minor change in the bed slope of the channel or any obstruction to the flow will cause the water surface to rise rapidly toward critical depth, and under certain conditions even higher to its conjugate subcritical flow depth. This effect can be observed in the water surface profile shown on Figure 6 where minor changes in the bed slope translate into relatively large changes in the depth of flow in the channel. This finding is important as it indicates that under less-than-ideal flow conditions floodwater could surcharge the channel during a flood event and exacerbate flooding conditions in the subject property.” Lyall & Associates 2022 P6

6. It is noted that GRC Hydro proposed 0% blockage of bridges and culverts, which would artificially lower flood levels. It is noted that Lyall and Associates proposed 15% blockage in these bridges and culverts. Lyall and Associates stated:

“Given the highly urbanised nature of the catchment, the enclosed nature of the drainage system upstream of the subject property and the presence of the large detention basin in Ollie Webb Reserve, the likelihood of debris availability, mobility and transportability is considered to be low. Based on this assessment, the procedures set out in ARR 2019 for deriving appropriate probability - neutral blockage factors for application to the four bridge openings yields values of zero for storms up to 0.5% AEP in intensity.” Lyall 2022 page 5

Council believes all of these assumptions have little basis in evidence at this site and is aware from practical experience of much greater amounts of debris and blockages likely to occur in Clay Cliff Creek. These assumptions therefore cannot be relied upon for evidence-based, risk to life evaluations.

7. Molino Stewart and others have sought to reduce the duration of shelter in place from Council’s DCP requirement of 72 hours to 6 hours or slightly more. Council does not support the Molino Stewart proposition, which has been made regularly over a number of years. Council is aware of the nature and recurring patterns of severe storms which extend such floods often over several days. These have occurred in Parramatta. Council, as an Emergency Response agency, is fully aware of the aftermath which can result in devastation across the city and the widespread unsafe conditions that prevail long after the flood itself has subsided.
8. For the last five years, Council and Stantec have been working on a comprehensive flood study with the support and funding of DCCEEW. This has been at a cost of millions of dollars. It has been subject to intense scrutiny and independent peer review by leaders in the field and applies the latest knowledge of the catchment, floodwaters and rainfall behaviour. As such it is far more detailed and comprehensive than the Lyall and Associates study for this development. The results of the Council flood study are now publicly available to everyone on Council’s website. Council and DCCEEW are of the view that such information must be considered in risk assessments. Extracts from this study were presented to the Commission and these highlight the extreme hazard conditions that will prevail on this site in severe storms. Despite it being fully accessible and the most scientific basis available for flood risk assessment and risk to life evaluation, the Council flood study has not been used by Professor Westra or the Applicant, even in the latter’s latest responses. Not using this information exacerbates risk to life.

In relation to the independent report prepared for the IPC, two key conclusions are supported by Council.

1. *There is no pedestrian evacuation in a 1% event. In fact the proposed 'jetty' deposits people in the most hazardous area of the site (H5).*

Council Comment: The Department has indicated that Clause 7.11 3 (b) only needs to be satisfied in relation to compliance with the adopted flood levels. Council disagrees. As indicated in the review completed for the IPC, it is more prudent to consider a level that has been adjusted to account for a blockage of the culvert and the impact of climate change.¹

2. *The scheme needs to be reviewed with a view to accommodating the flood levels taking into consideration the 15% blockage and climate change.*

Council Comment: It is Council's view that the Lyall study fails to take into account the calibration factor of 20 % and other factors that increase flood levels or the flow of 50 m³ /s in the Clay Cliff Creek alignment. Notwithstanding, the Council agrees that the scheme needs to be amended to take account of revised flood levels.

The Department response indicates that changes have been made to the FPL to take account of the more conservative levels. We have not seen these plans so cannot comment on the impact of these changes. In any event, the jetty directing people to the area of highest hazard also needs to be removed.

Conclusion Summary

From this it is reasonable to conclude that flood properties and behaviour will be at least 20% more than those modelled by the Applicant, and could be significantly more than that - if correct flow channel behaviour is taken into account and bridge culvert blockage is more realistic.

Horizontal evacuation is not possible and so the development relies on shelter in place, but the proponent has sought to minimise this to an unserviceable and unsafe level, contrary to Council advice and DCP requirements.

There is doubt that the building would survive a PMF flood predicted by Council to be in the range H5 to H6, and so there is a real risk that shelter in place is not viable and would not meet the LEP requirements.

The best scientific information on flood risk and behaviour is now freely available to the public but has not been taken up.

Should the commission have any questions or wish to clarify any of the above matters, please contact Myfanwy McNally, Manager City Significant Development Team to discuss.

Kind Regards,

Douglas Bennett

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