Engineering Referral Response

Application Number:	DA2023/0995
Proposed Development:	Demolition works and construction of seniors housing
Date:	07/03/2024
To:	Adam Croft
Land to be developed (Address):	Lot A DP 384323 , 54 Brighton Street FRESHWATER NSW 2096 Lot 38 DP 14450 , 52 Brighton Street FRESHWATER NSW 2096

Reasons for referral

This application seeks consent for the following:

- New Dwellings or
- Applications that require OSD where additional impervious area exceeds 50m2 or
- Alterations to existing or new driveways or
- Where proposals affect or are adjacent to Council drainage infrastructure incl. watercourses and drainage channels or
- Torrens, Stratum and Community Title Subdivisions or
- All new Commercial and Industrial and RFB Development with the exception of signage or
- Works/uses in flood affected areas

And as such, Council's development engineers are required to consider the likely impacts on drainage regimes.

Officer comments

The proposed works are in Region 2. The site is subject to overland flow flooding. The proposal also includes re-alignment of existing Council stormwater infrastructure. A DRAINS model, TUFLOW model and proposed plan of Council pipe re-alignment has been submitted.
The following amendments to the submission are required:

1. The Council pipe re-alignment as per stormwater plans by RTS Consulting Engineers dated 09.05.2023 is not supported.
(i) The 90 degree bend is excessive. Changes in pipe alignment should generally be limited to 45 degrees.
(ii) The proposed pipe alignment is not contained within the main overland flow path.

2. The proposed pipe alignment is to be amended to reflect the existing alignment as much as possible.
(i) A 750 RCP is to be shown on the western side of the property to connect to existing Council pit SPP07395.
(ii) The realignment shall begin at the "new 1050 stormwater manhole" and connect to the proposed 750 RCP on the western boundary.
(iii) The design should minimise pit losses by maximisng the internal angle at changes of direction in

pipes.
(iv) Both connections between pipe alignments near the southern boundary of site shall be composed of appropriately designed pipe bends, to limit energy losses. Provide a sealed access pit at the downstream end of each connection
(v) Pits in the easement should be grated unless the DRAINS modelling indicates that it is beneficial for them to be sealed. Please refer to comments from Council's Floodplain Planning team.
(vi) The minimum drainage easement required by pipe size is 3 metres. This however may need to be widened to allow for overland flow path requirements. Please refer to comments from Council's Floodplain Planning team.

3. The dwelling development shall be moved east to better reflect existing conditions and allow for increased overland flow conveyance.

Engineering Comments 07.03.24
Development engineering has reviewed the Stormwater Management plans by RTS Consulting Engineers rev D, dated 08.12.23.
Existing development engineering concerns have not been addressed. These being:
1. The 90-degree pipe alignment internal angle at Pit 4 is not supported as this results in excessive head losses. Alignment should be revised to create a 135-degree internal angle by shortening the length of pipe from Pit 3 to Pit 4.
2. The 0.4% longitudinal grade between Pit 4 and Pit 5 is not supported. Adjust levels from New Pit 2 to New Pit 5 to provide an absolute minimum grade of 0.5%.

The proposal is therefore unsupported.

Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Engineering Conditions:

Nil.