



Ref: 117019

11th Feb 2021

Ross Cooper
West Plaza Tower
Level 11, 1-3 Albert Street
Auckland 1010

Dear Ross,

Re: S92 Request for Ruakaka Services Station (LUC2000057)

Please see response for each of the RFI items below in [blue](#).

5. Wastewater Plant

It is unclear from the application report and accompanying plans as to the location of the on-site wastewater facility that will service the development.

Could you please provide further detail in regard to this?

Please refer to [Maven plan C501A](#) for the location of the treatment plant location. Plant itself is labelled as "Private total onsite wastewater treatment plant"

6. New Zealand Fire Service (NZFS)

Could you please confirm whether any consultation with the New Zealand Fire Service (NZFS) has been undertaken in regard to the proposal?

If not, could you please contact the NZFS to discuss the proposal and provide written evidence of those discussions.

NOTE: The first point of contact at the NZFS Whangarei branch is Mr. Craig Bain. His contact details are below:

E: craig.bain@fireandemergency.co.nz

M: (027) 2262160

[Initial consultation has been carried with Mr Craig Bain. Once the consultation process has been completed. Full details will be provided.](#)

11. Stormwater

This aspect of the proposal has been assessed by r2 Consulting, who have requested the following additional information:

- *For the HEC-RAS modelling, please provide information as to how the post development site was incorporated into the model- was terrain modification undertaken?*

[The terrain of the model was updated to include the post development terrain. The terrain was built from:](#)

- [2018/19 LiDAR dataset from northland regional Council](#)
- [Site Survey](#)
- [Proposed Surface](#)
- *Please provide indicative profiles at the site showing the pre and post development terrain levels and flood elevations.*



Section through the site at the below location have been provided. Please refer to the attached image below:



Figure 1: Downstream cross section & flood flow direction

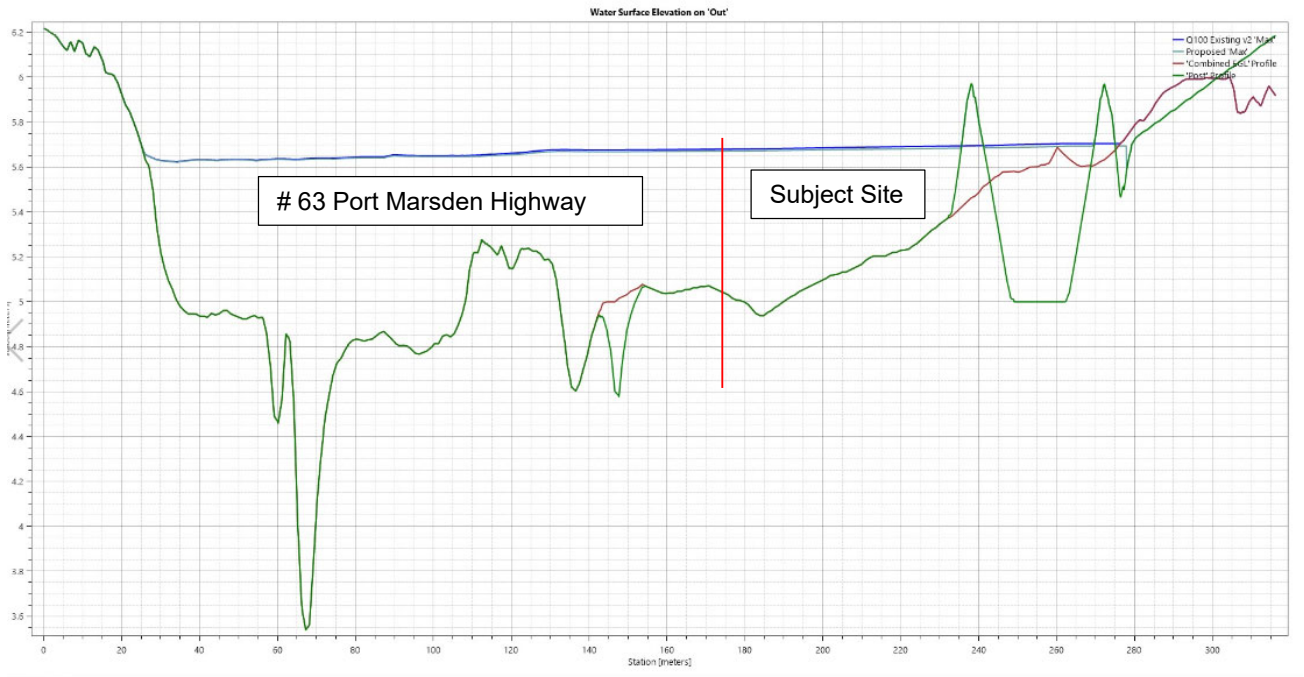


Figure 2: Downstream flood depth cross section

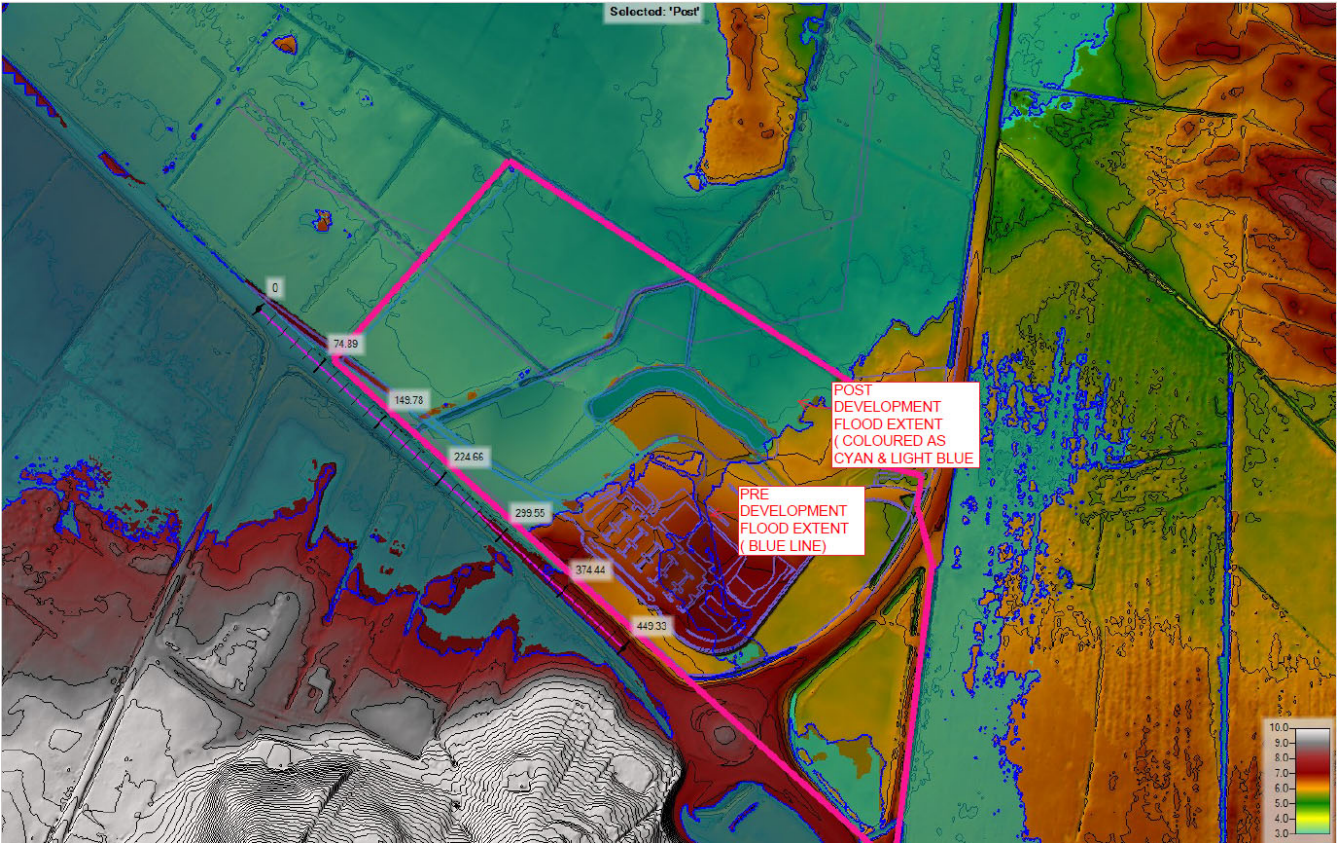


Figure 3: Upstream cross section and flood extent

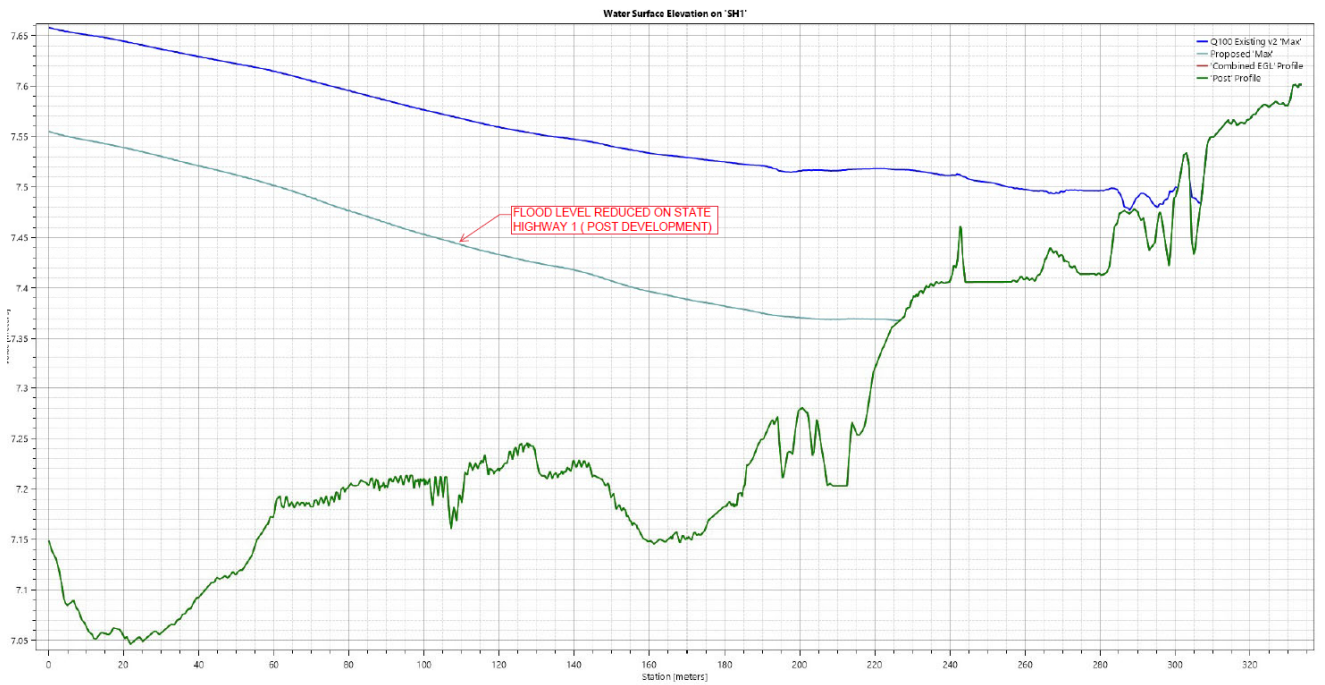


Figure 4: Upstream flood depth cross section

- *Figure 3.9 shows an area adjacent to Port Marsden Highway that is shown as within the NRC flood extents but is not shown as flood susceptible in the modelled outputs. Please comment on the anomaly in terms of the site pre and post development, noting that it is in the vicinity of the proposed access.*

the NRC model has been developed using 2018/2019 Lidar information while the model which we developed is based on the surveyed data on site along with 2018/2019 Lidar information. The pre development modelling which we provided also differs in this location from the NRC model.

- *Figure 3.9 also indicates that access to the site from SH1 and building areas are within the floodplain post development for the design event, although the proposed site layout is not clear in the scale of the figure.*

Yes, we anticipate overtopping at the culvert. Please refer to image below for clarification of the building areas and access from SH1 within the flood plain post development

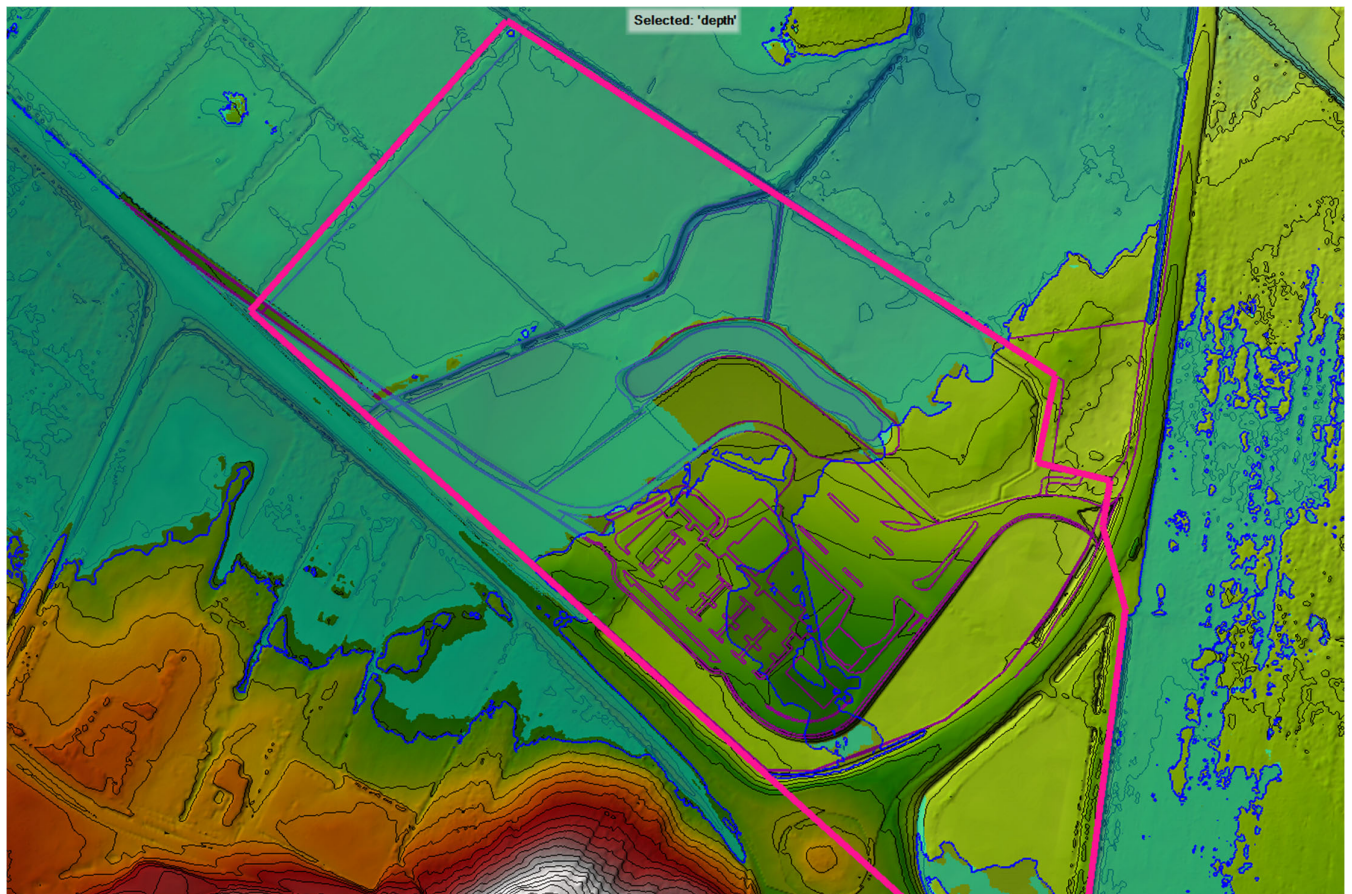


Figure 5: Extend of flooding post development

- *Could you please provide a site plan only with the pre- and post-development flood extents clearly identified in relation to the site access, buildings and amenities.*

Refer to figure 5 above for clarification of the building areas within the flood plain post development



ADVICE NOTES (Included in the Peer Review Report)

- The stormwater modelling report shows that the 100Y flood control weir is to be set at 5.56mRL, however drawing C432 uses 5.8m. This can be addressed at Engineering Plan Approval Stage.
[Noted, information will be provided at Engineering plan approval and building consent stage.](#)
- The Pond only shows a 5Y orifice and spillway outlet for 100Y. Emergency spillway details and freeboard elevations will need to be included at Engineering Plan Approval Stage.
[Noted, information will be provided at Engineering plan approval and building consent stage.](#)
- Supporting calculations demonstrating swales and raingardens meet TP10 requirements will be required at Engineering Plan Approval Stage.
[Please refer to the TP10 calculation for the rain garden and rain garden attached.](#)

Please do not hesitate to contact me should you have any queries.

Kind regards,

Ken Ha

CIVIL ENGINEER
NZDE, BENGTECH
Maven Associates Limited