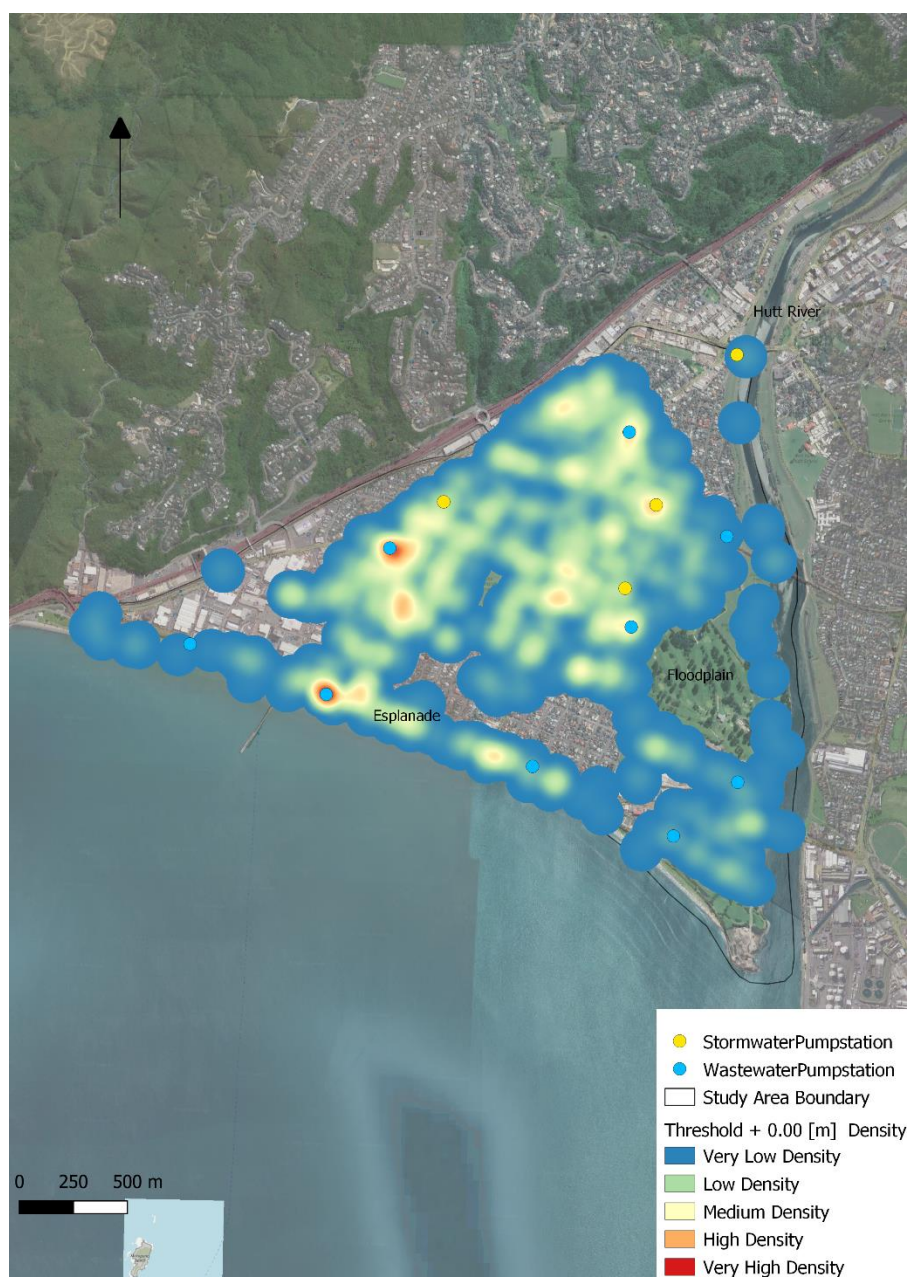


### Supplementary information

The output for a current 1% Annual Exceedance Probability (AEP) event in Figure S1 (see below) was developed using a 'heatmap' based on a Kernel Density Estimation and provides a value based on the occurrence of points in the proximity of an area. It shows that during a current 1% AEP event, there is a high density of assets exposed in the west lower side of the Petone area, between the two wastewater pumping stations. The reason for higher occurrences around the pumping stations is due to the increased number of asset components in and around the pumping station. Other increased density areas are due to a high occurrence of exposed wastewater assets. Although this method produces non-quantifiable values, it is very effective in pinpointing a high occurrence of points, or in this case, assets. Comparing this to a 1% AEP event at +0.50 m, it is clear that throughout the different thresholds, intensification of asset exposure occurs in the same areas. This is an important observation, as it provides an indication of where to focus a closer examination of assets located in that area for potential compartmentalizing or replacement. Furthermore, it is evident that intensification of hazard exposure occurs in the slightly elevated area behind the Esplanade, where the main wastewater pipes and wastewater pumping stations are located.



**Figure S1.** Location of asset exposure intensification at a current 1% AEP event.