

4.7. Tauranga Bay, Whangaroa

Tauranga Bay inundation and maximum current speed are illustrated in Figures 34-39. Inundation from the South American tsunami reaches up to 1 m depth, covering 0.5 km inland of the mouth of the Tauranga Stream, to the west of Tauranga Bay Road. Water speeds do not exceed 1 m s^{-1} . When sea level rise is taken into account, the extent of the area affected extends further upstream to 1 km inland, flooding the road connecting the motor camp with the main Tauranga Bay Road. Water speeds again generally do not exceed 1 m s^{-1} .

Inundation from the TKSZ $M_w 8.5$ event covers a similar extent as the South American event with sea level rise, but depths are increased to up to 2 m. Water speeds are also increased in the bay, reaching up to 5 m s^{-1} at the mouth of the Tauranga Stream and to the west in Tauranga Bay itself. Sea level rise slightly increases both the extent of the inundation and the water speeds. The TKSZ $M_w 9.0$ event sees the flooding of the entire of the Tauranga Stream valley and the Tauranga Bay Road, to depths exceeding 5 m. Current velocities also increase to over 7.5 m s^{-1} . Sea level rise has little further effect on the extent of the inundation and the current speeds.

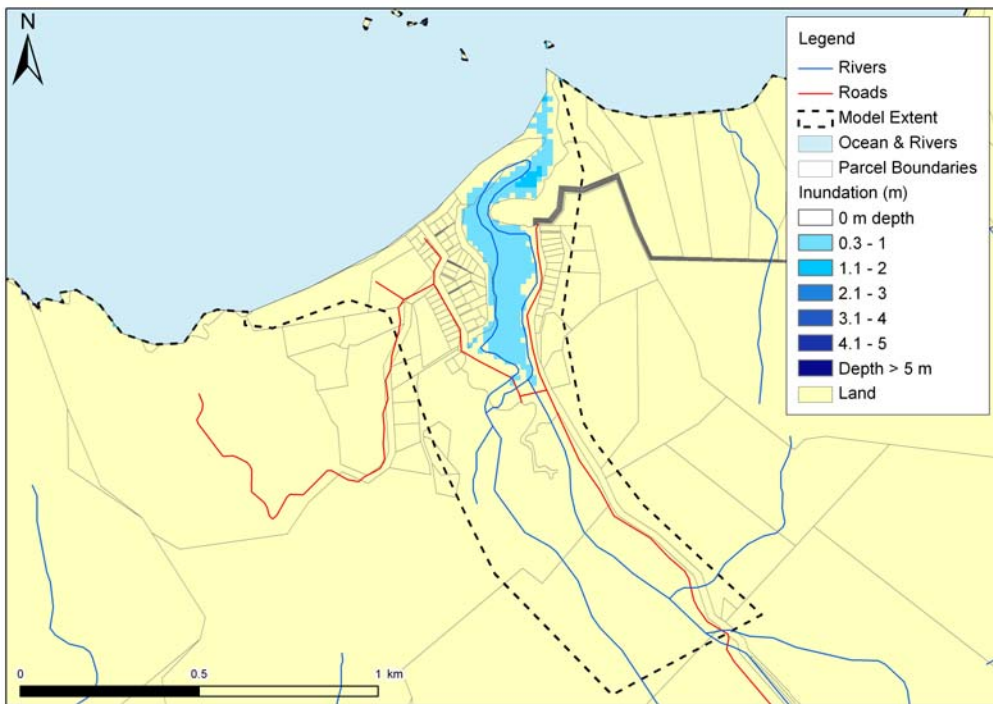
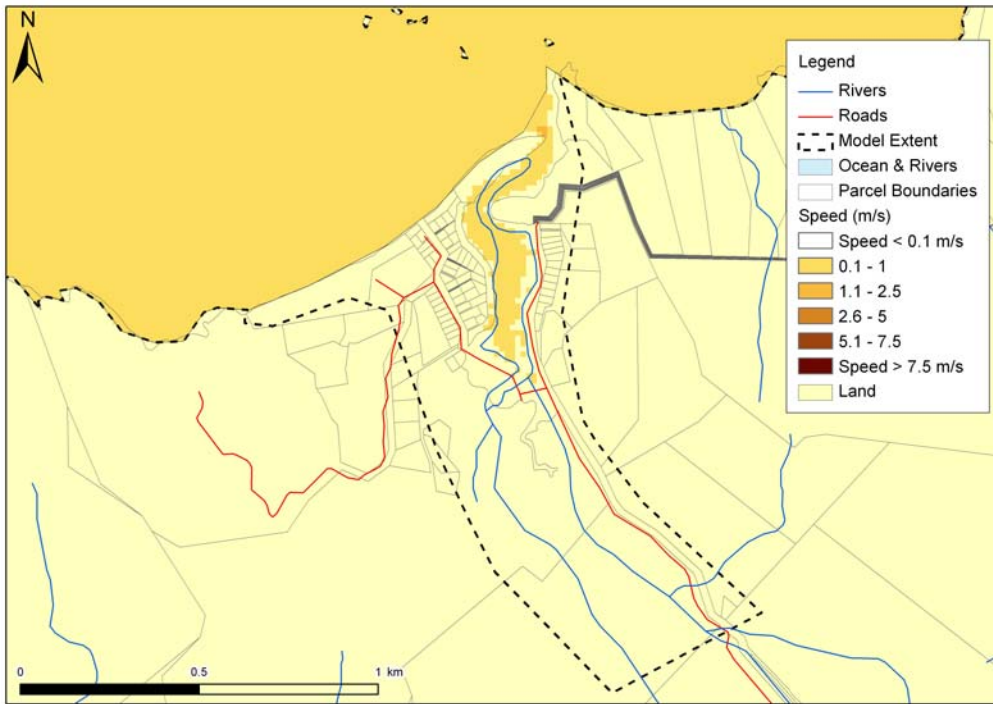


Figure 34: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LiDAR).

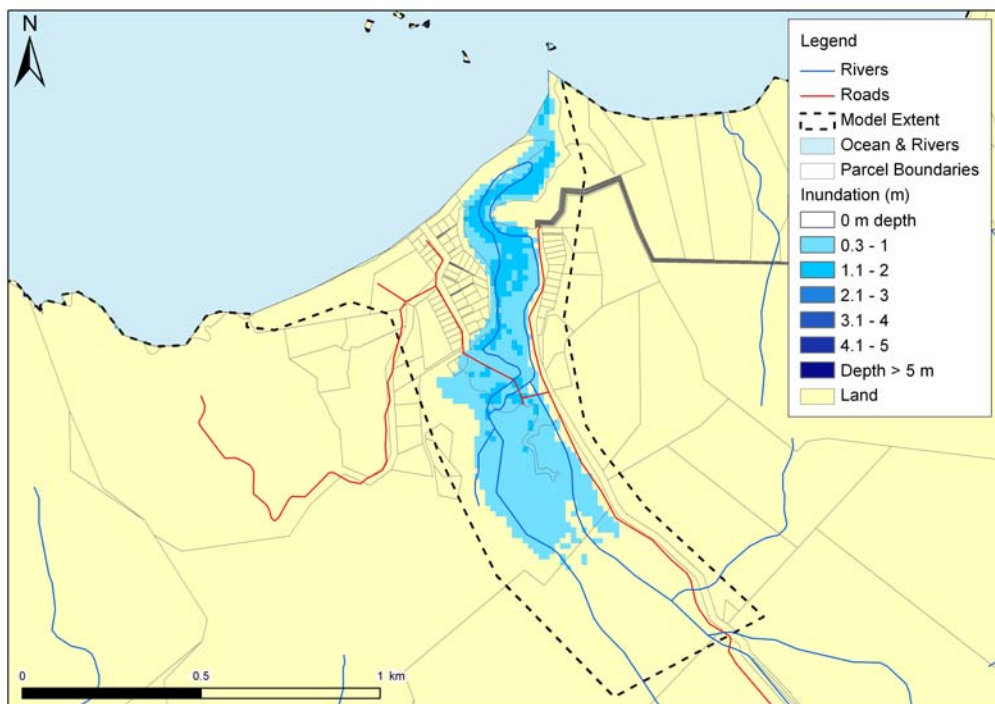
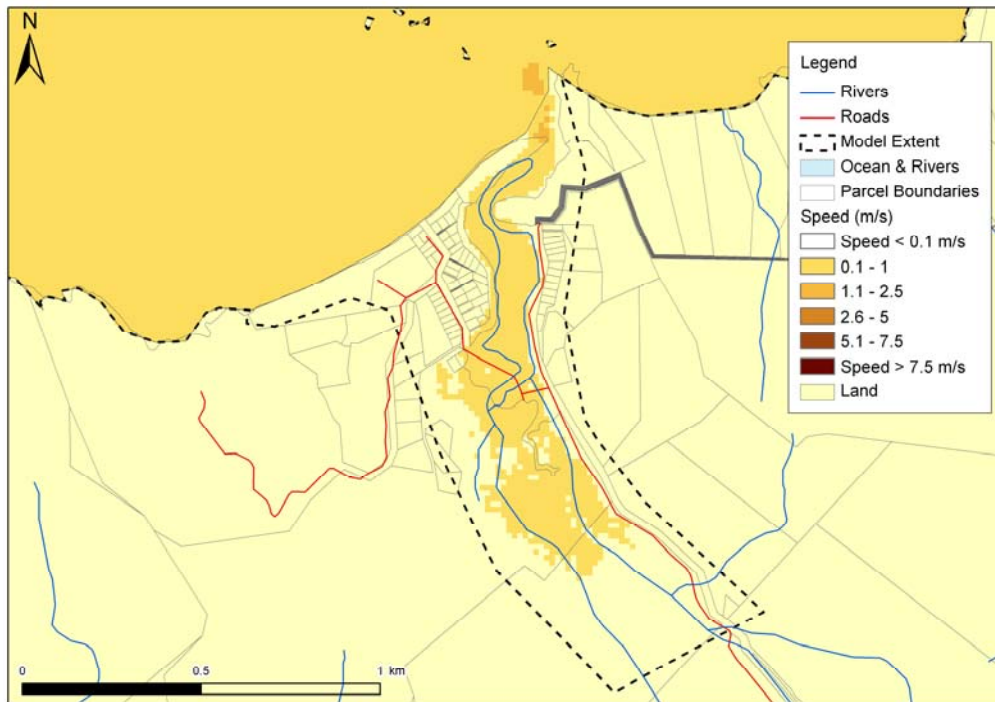


Figure 35: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LiDAR).

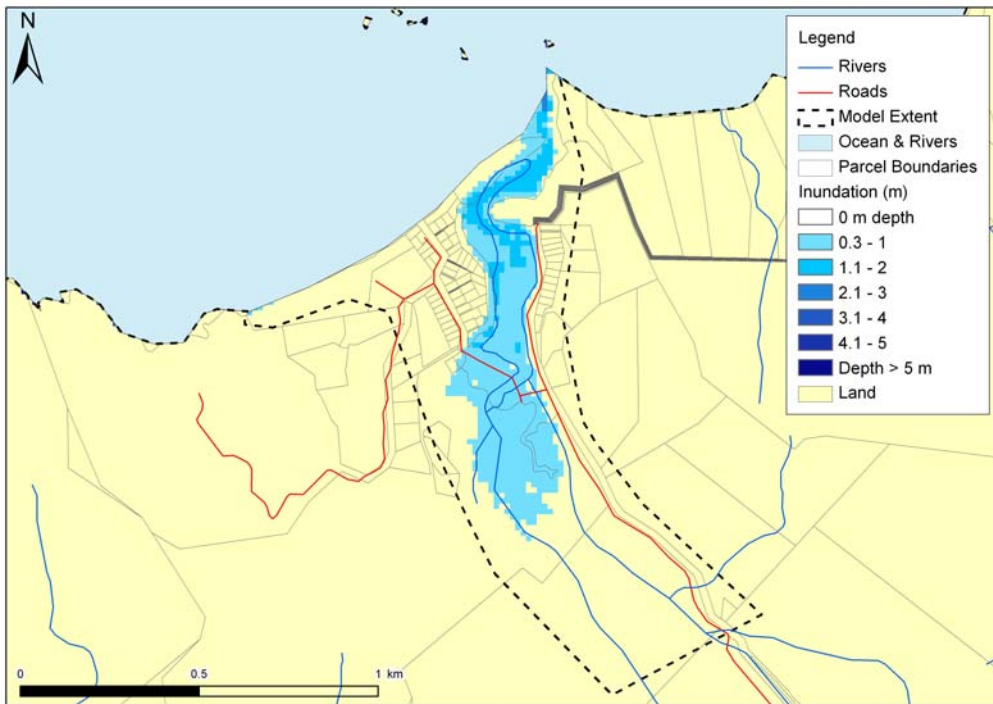
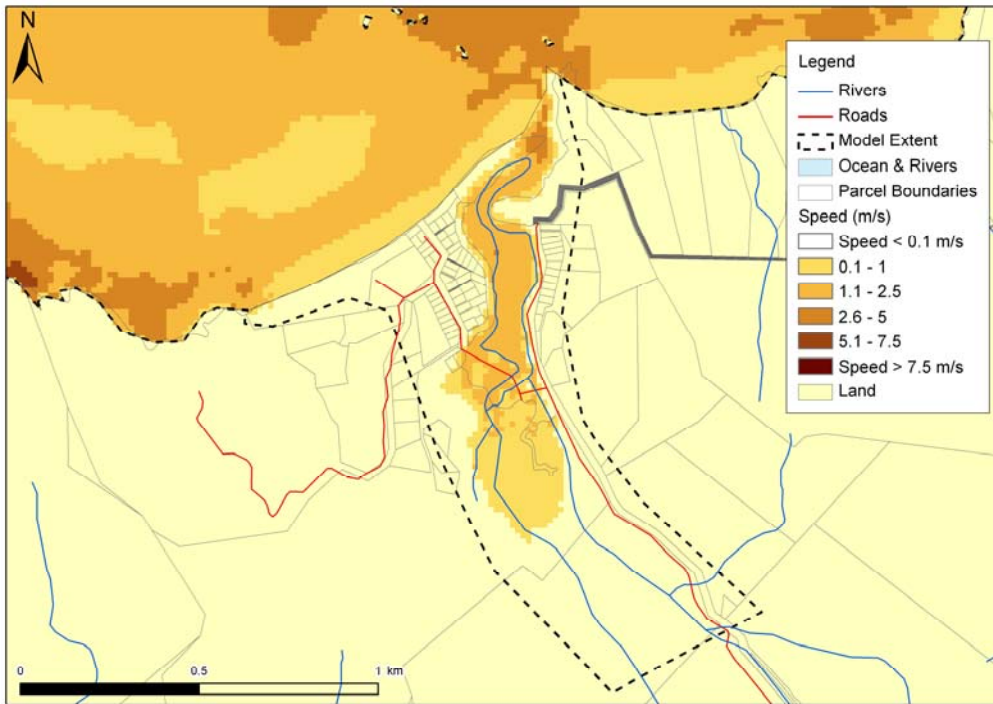


Figure 36: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the M_w 8.5 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LiDAR).

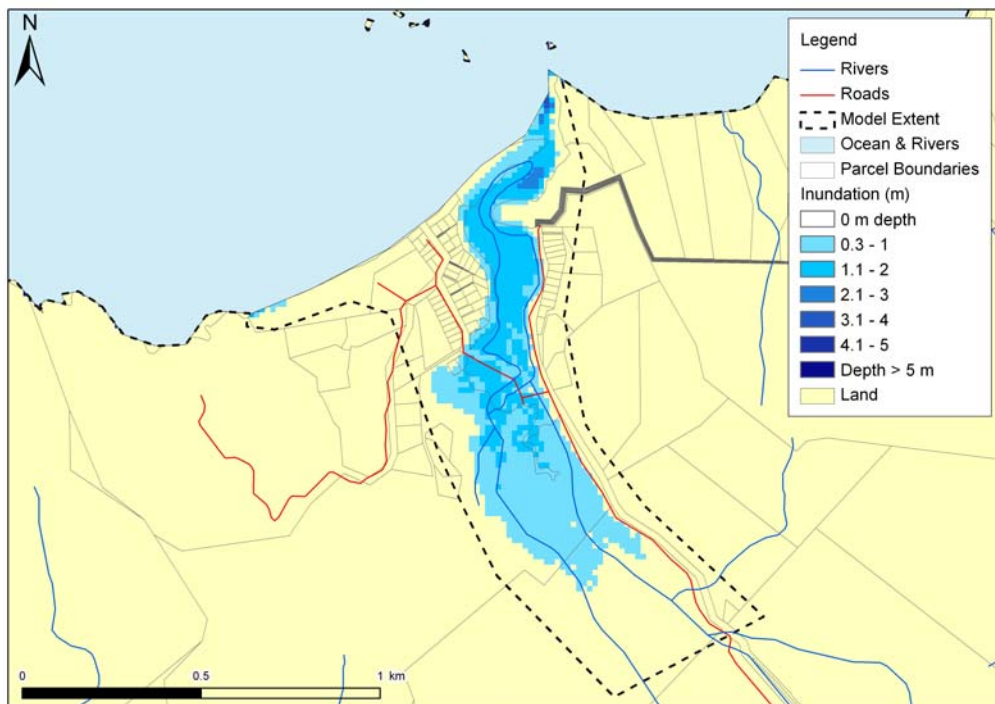
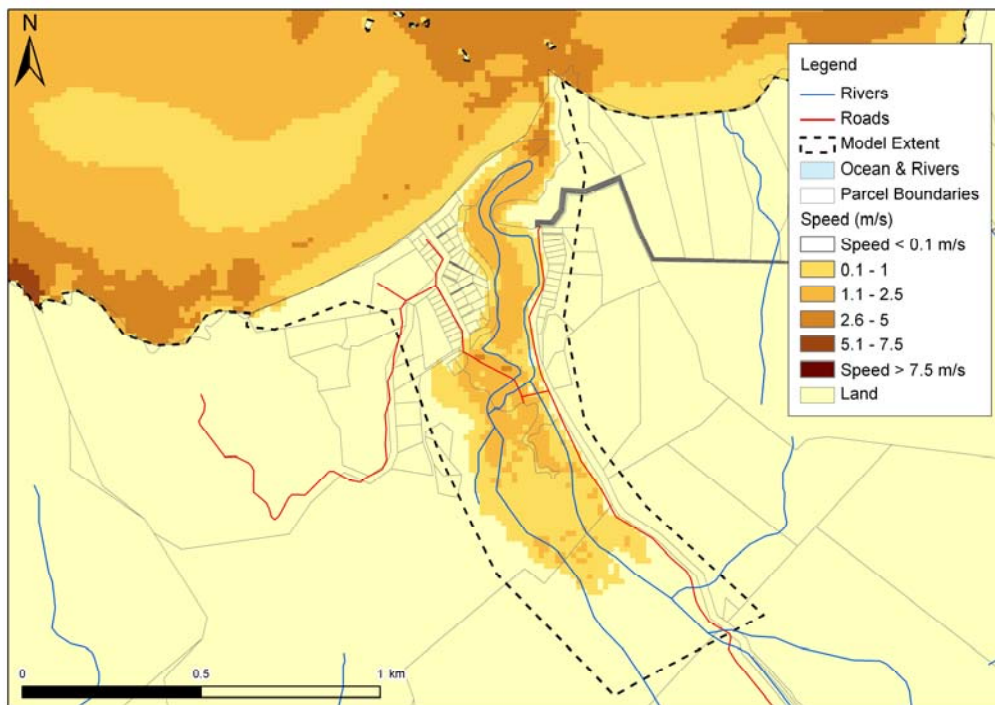


Figure 37: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the M_w 8.5 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LiDAR).

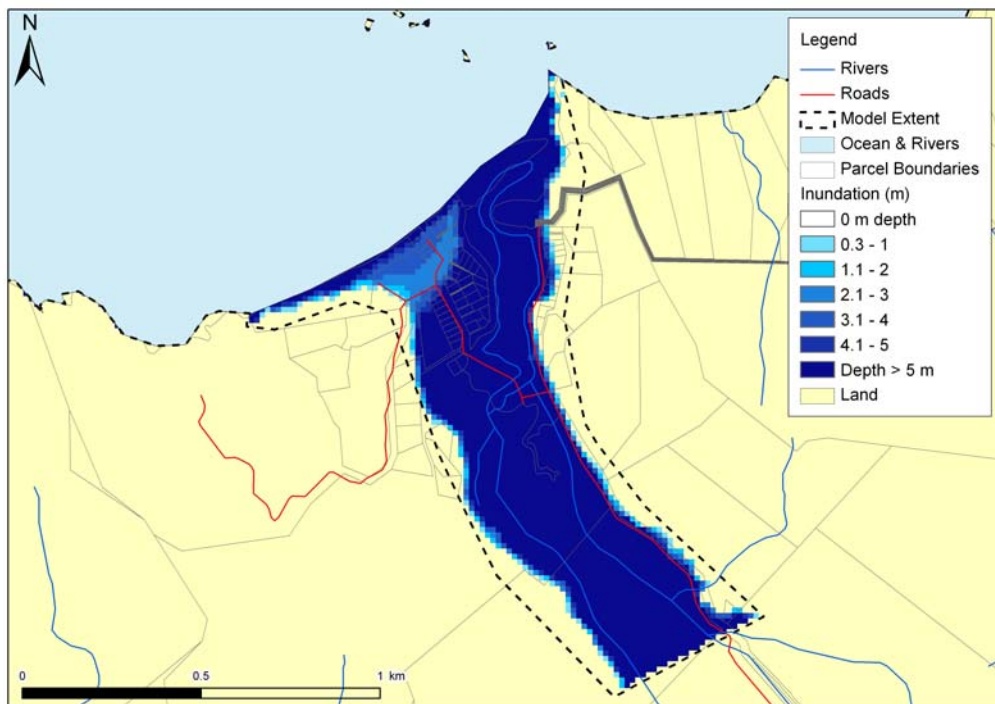
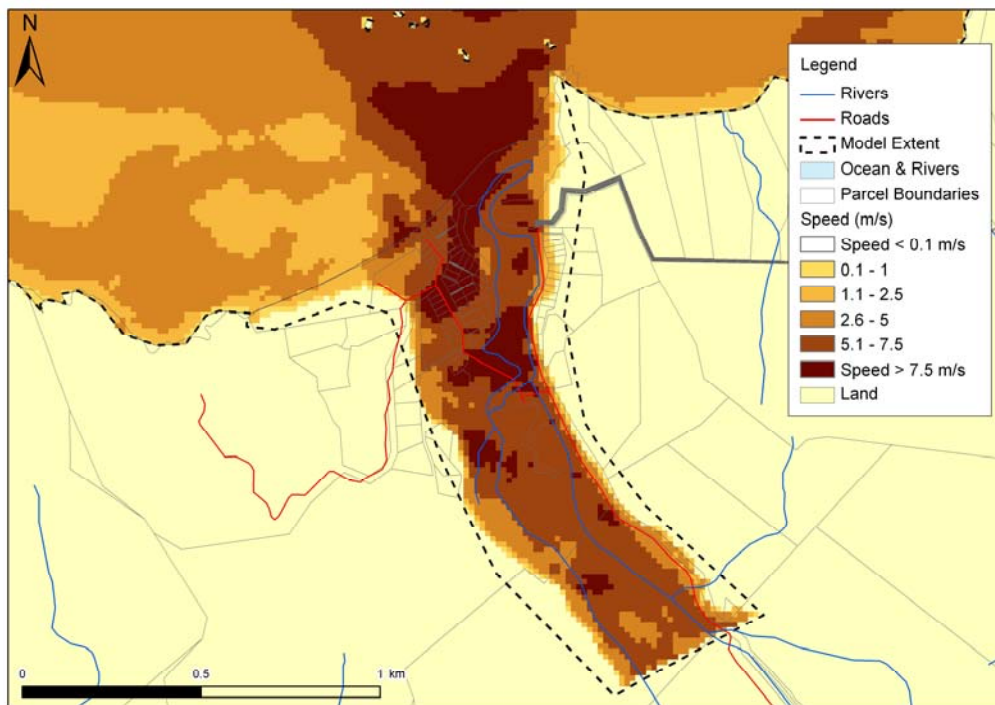


Figure 38: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 9.0$ Tonga-Kermadec subduction zone scenario at MHWS (to extent of LiDAR).

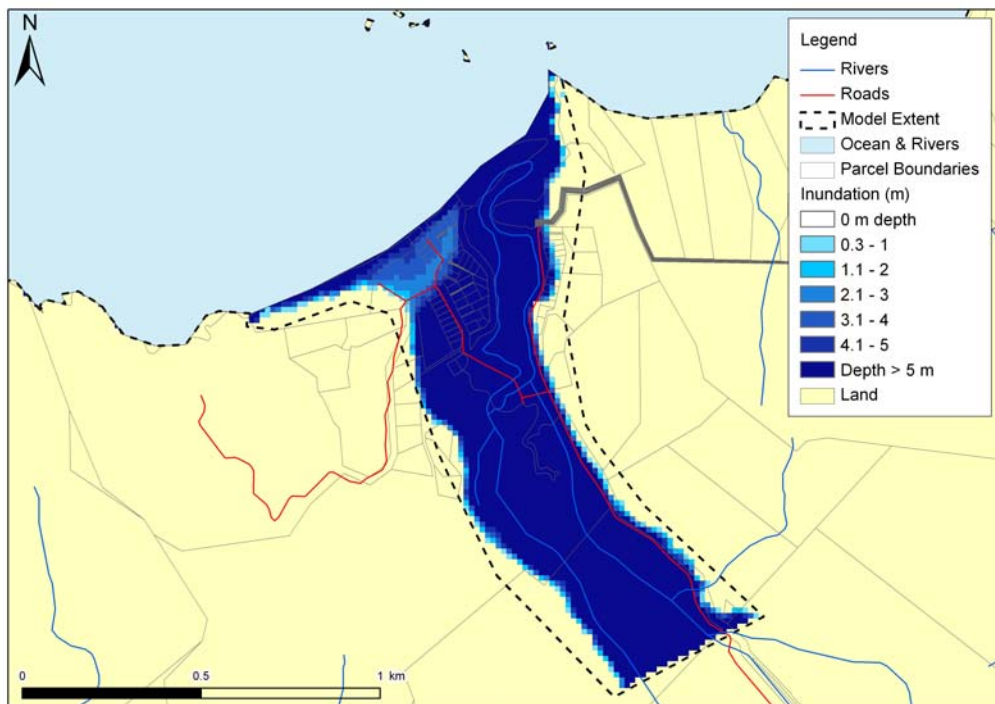
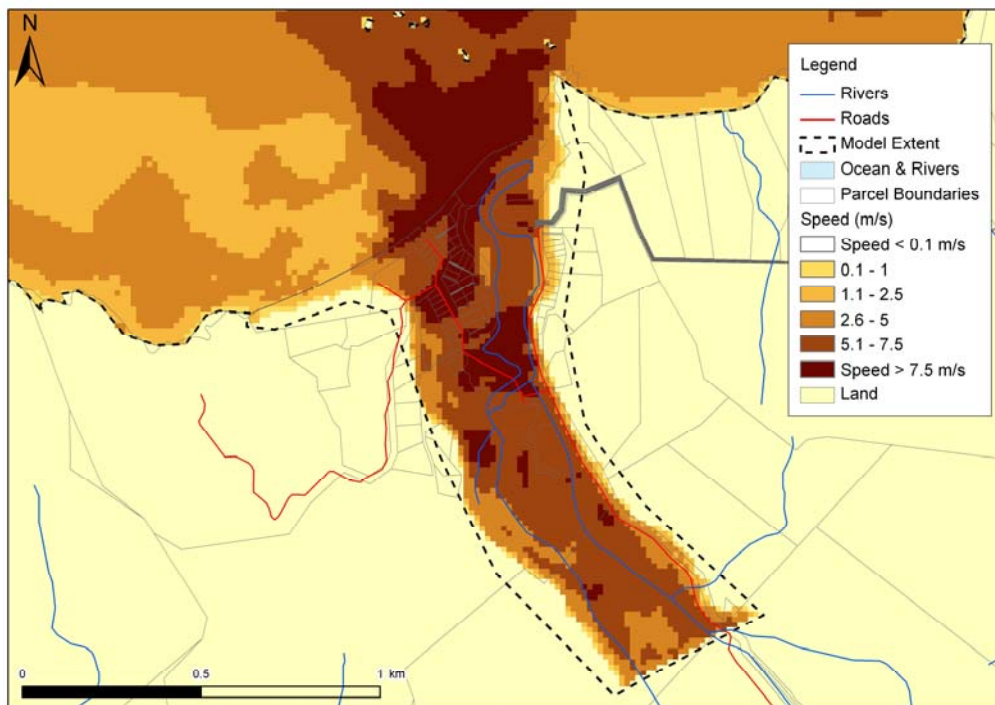


Figure 39: Tauranga Bay, Whangaroa: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 9.0$ Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LiDAR).