

4.5. East Beach, Houhora/Pukenui

Maps of maximum inundation depths and current speeds affecting the Houhora area are presented in Figures 22-27. Inundation from the South American tsunami reaches up to 1m along the coastal strip of the north-west side of Houhora Harbour. Water speeds range between 1.1 and 5 m s⁻¹ at the mouth of the harbour. The addition of sea level rise data sees a small increase in the extent of the area inundated, at the head of the harbour near Waihopo Landing.

For the TKSZ M_w8.5 event, inundation is similar to that for the South American tsunami event in terms of extent and speeds, but with the addition of inundated areas at the mouth of the Ariawa Stream, the Motutangi Stream, and at the north of East Beach. Maximum water speeds range between 1.1 and 2.2 m s⁻¹ around the majority of the coastline, with small pockets at the harbour mouth, Stanley Point, Farmer Point and Henderson Bay, reaching up to 5 m s⁻¹. Sea level rise has a small increase in the depth of the inundation, but little impact on the extent or speed. For the TKSZ M_w9.0 event, a 2.5 km stretch of coastline to the north of East Beach and up the Motutangi Stream mouth is submerged in depths of up to 5 m. Speeds around the harbour mouth, Stanley Point, Farmer Point and Kowhai Beach increase to 5.1-7.5 m s⁻¹. Again, the addition of sea level rise has only a marginal effect on the extent or depth of the inundation, or water speeds.

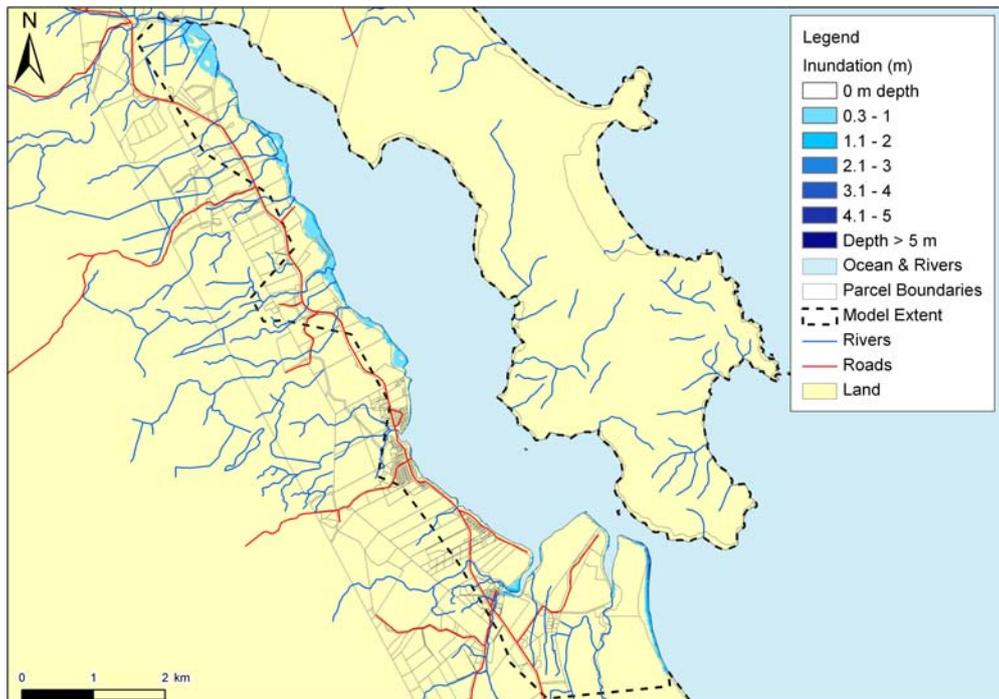
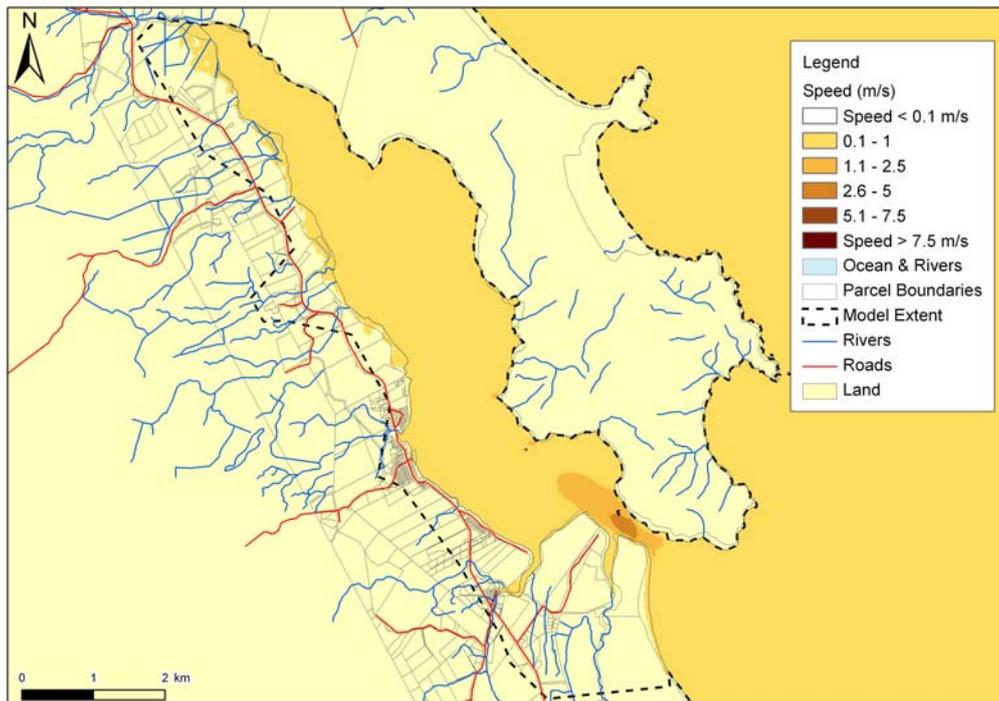


Figure 22: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LiDAR).

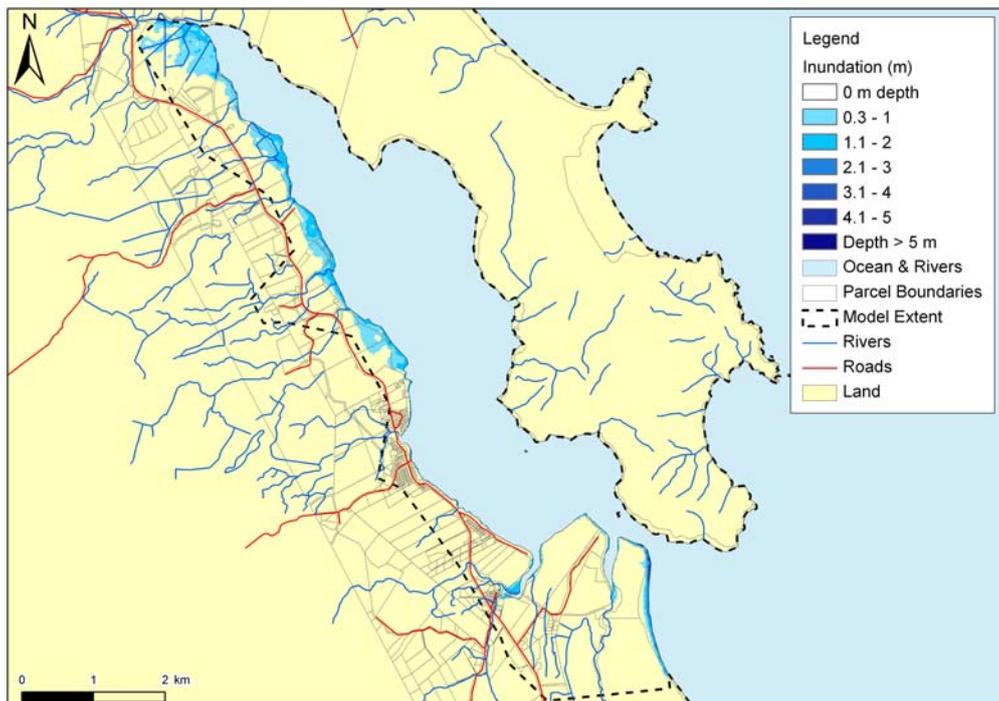
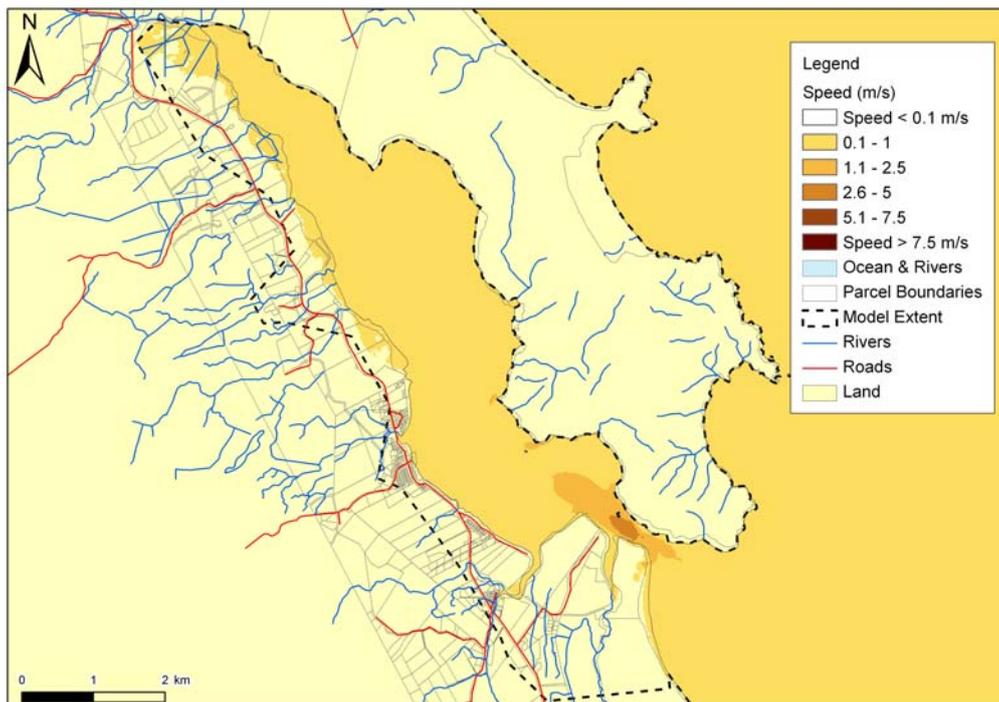


Figure 23: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LiDAR).

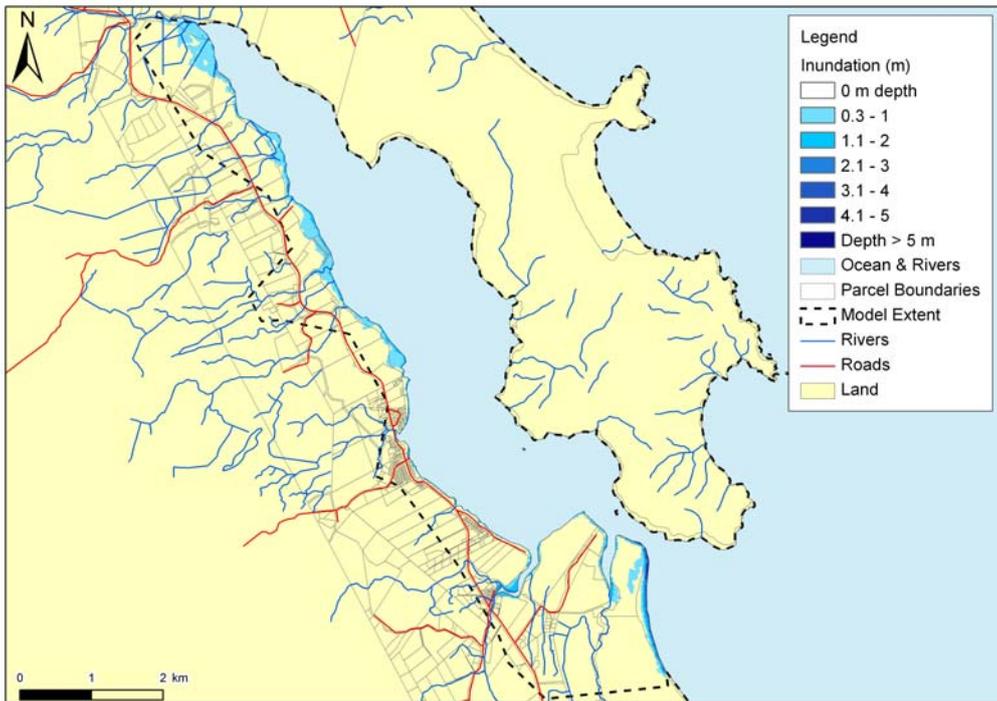
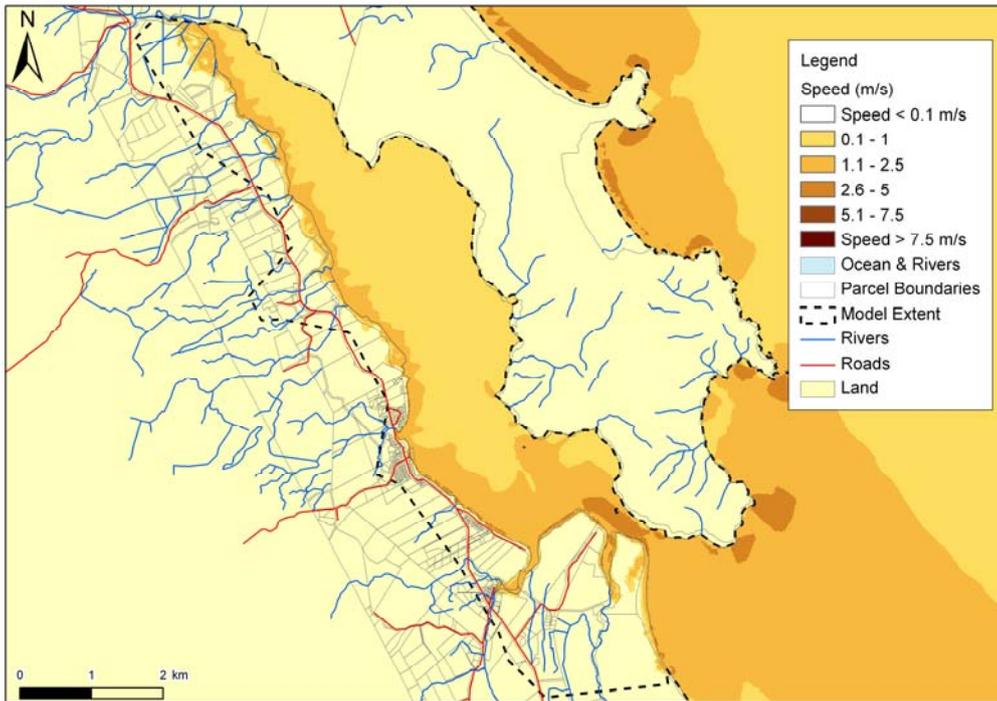


Figure 24: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the $M_w8.5$ Tonga-Kermadec subduction zone scenario at MHWS (to extent of LiDAR).

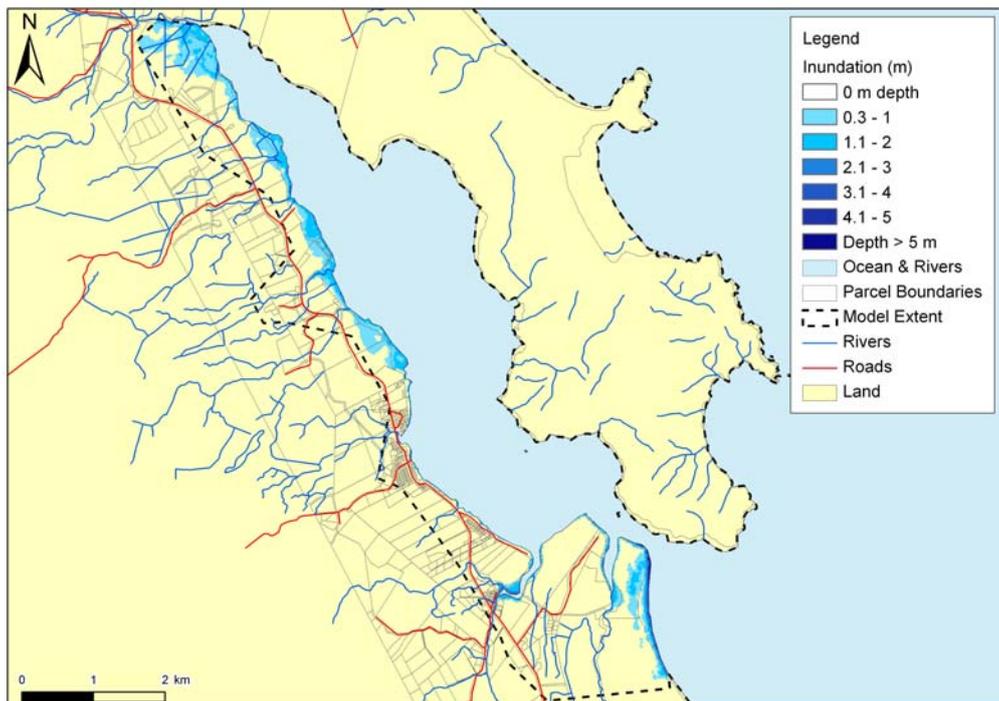
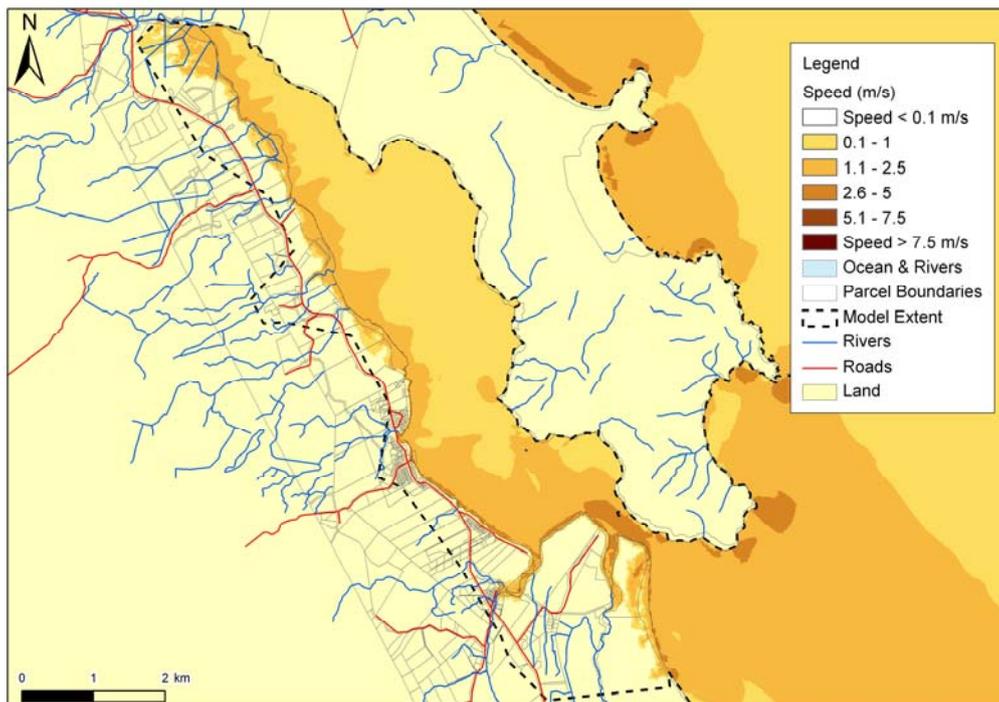


Figure 25: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 8.5$ Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LiDAR).

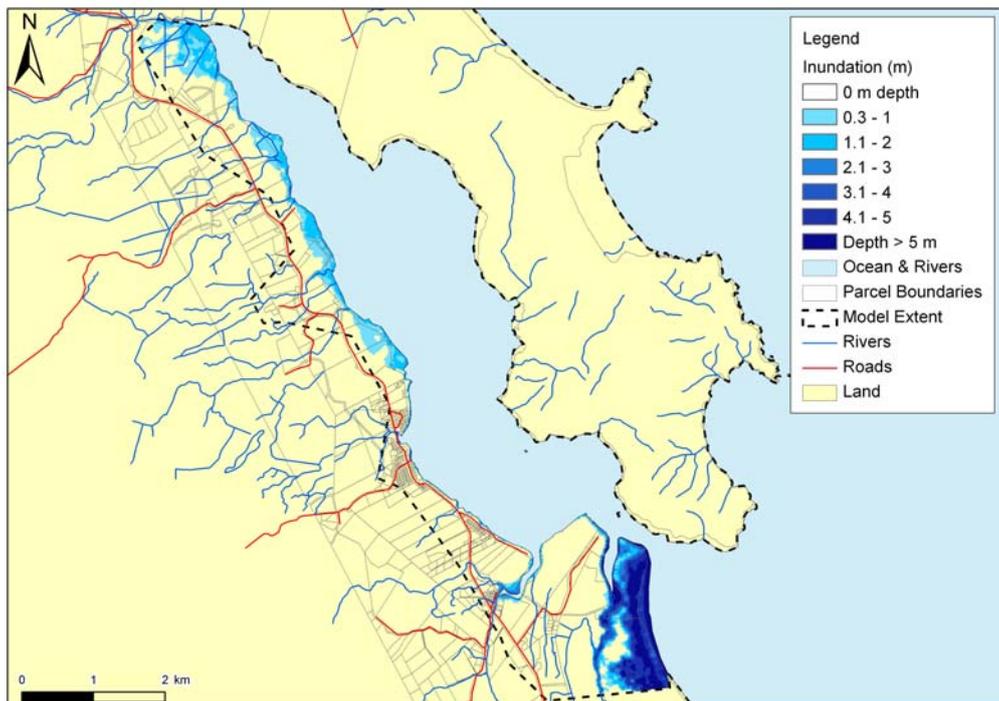
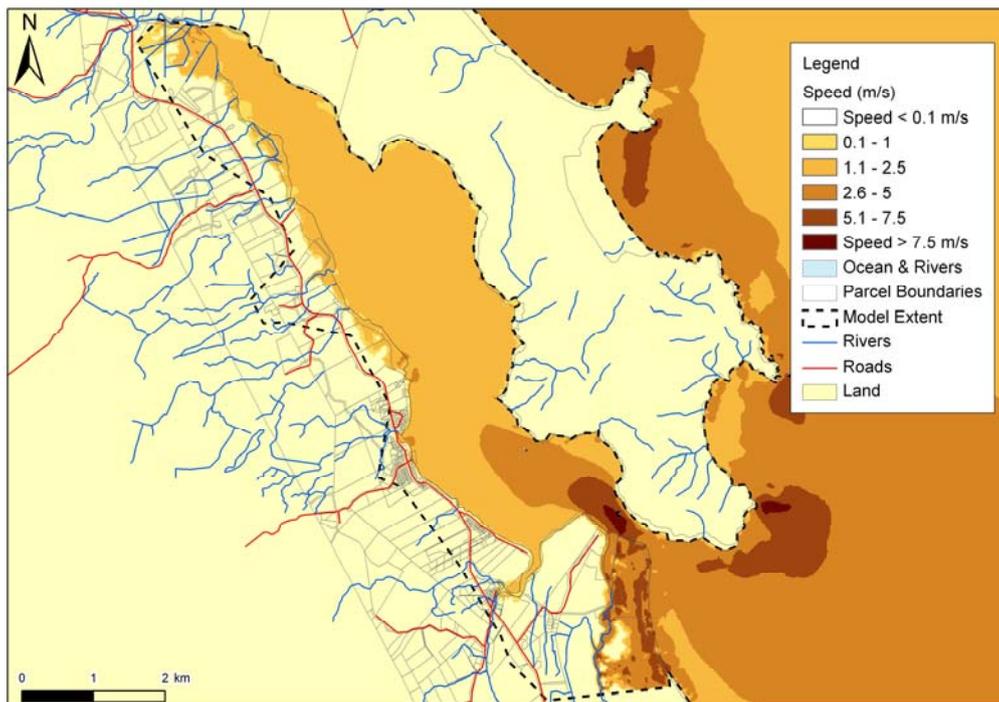


Figure 26: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the M_w 9.0 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LiDAR).

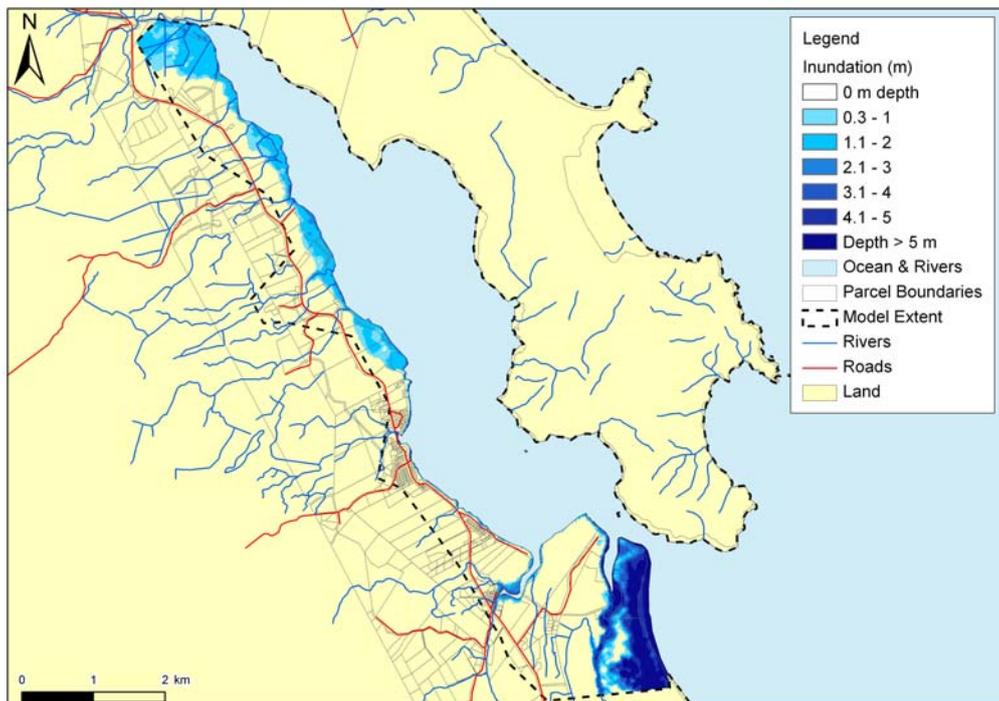
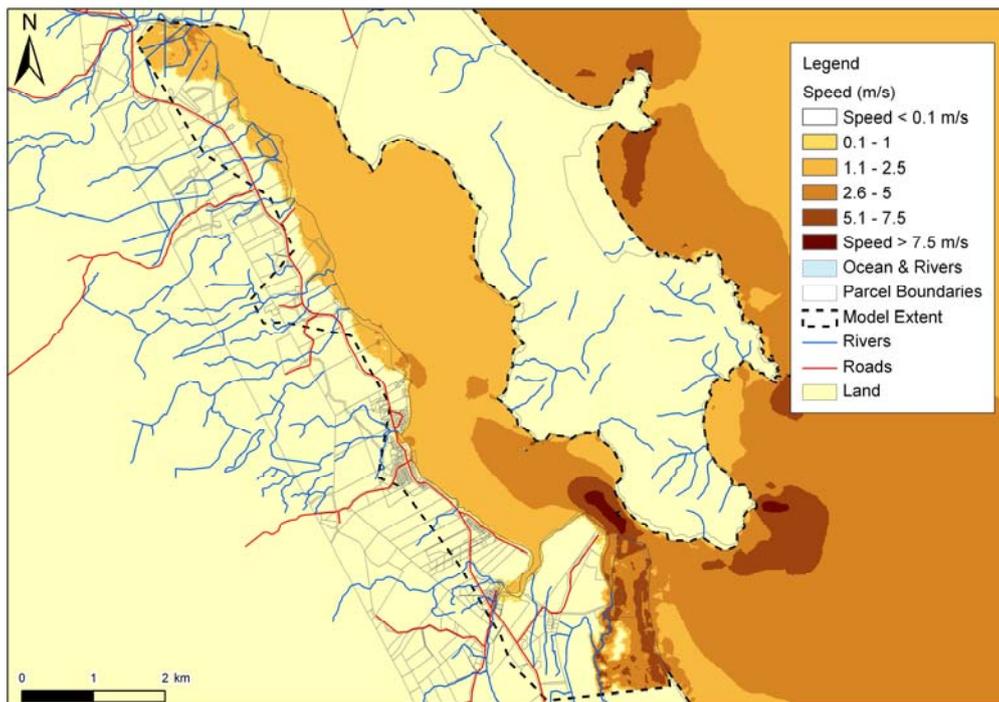


Figure 27: East Beach, Houhora/Pukenui: Maximum inundation speed (upper) and depth (lower) plots for the M_w 9.0 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LiDAR).