## 4.7. Whangarei

Maps of predicted inundation depth and maximum water speed for Whangarei are presented in Figures 35 - 40. Inundation from the South American tsunami is evident at Waioneone Creek, the port of Whangarei, the banks of the Hatea river from the Port Rd Bridge (Over Limeburners Creek) to the Riverside Dr Bridge and Woods Rd Bridge (Figure 35). Current speeds reach 1.5 m $s^{-1}$ in the harbour. When sea level rise is included in the scenario there is an increase in the depth of inundation and the extent of the inundation, particularly in Limeburners Creek, West of Whangarei Port and Port Rd near the bridge (Figure 36).

The TKSZ $M_w$ 8.5 scenario results in inundation at Waioneone Creek, the banks of the Hatea River and the Raumanga Stream the port of Whangarei and Limeburners Creek (Figure 37). The current speed near Whangarei is generally in the 0.005 to 0.5 m $s^{-1}$ range. Sea level rise causes an increase in depth and in extent of the inundation particularly on the banks of the Hatea River, Waioneone Creek and Limeburners Creek (Figure 38).

The TKSZ $M_w$9.0 scenario produces inundation at Waioneone Creek, the banks of the Hatea River and the Raumanga Stream, the port of Whangarei and Limeburners Creek (Figure 39). Current speeds reach up to 1.5 m $s^{-1}$ in the Port. Depth of inundation increases when sea level rise is included in the scenario and inundation extends along the banks of the Hatea River, Waioneone Creek and Limeburners Creek (Figure 40).

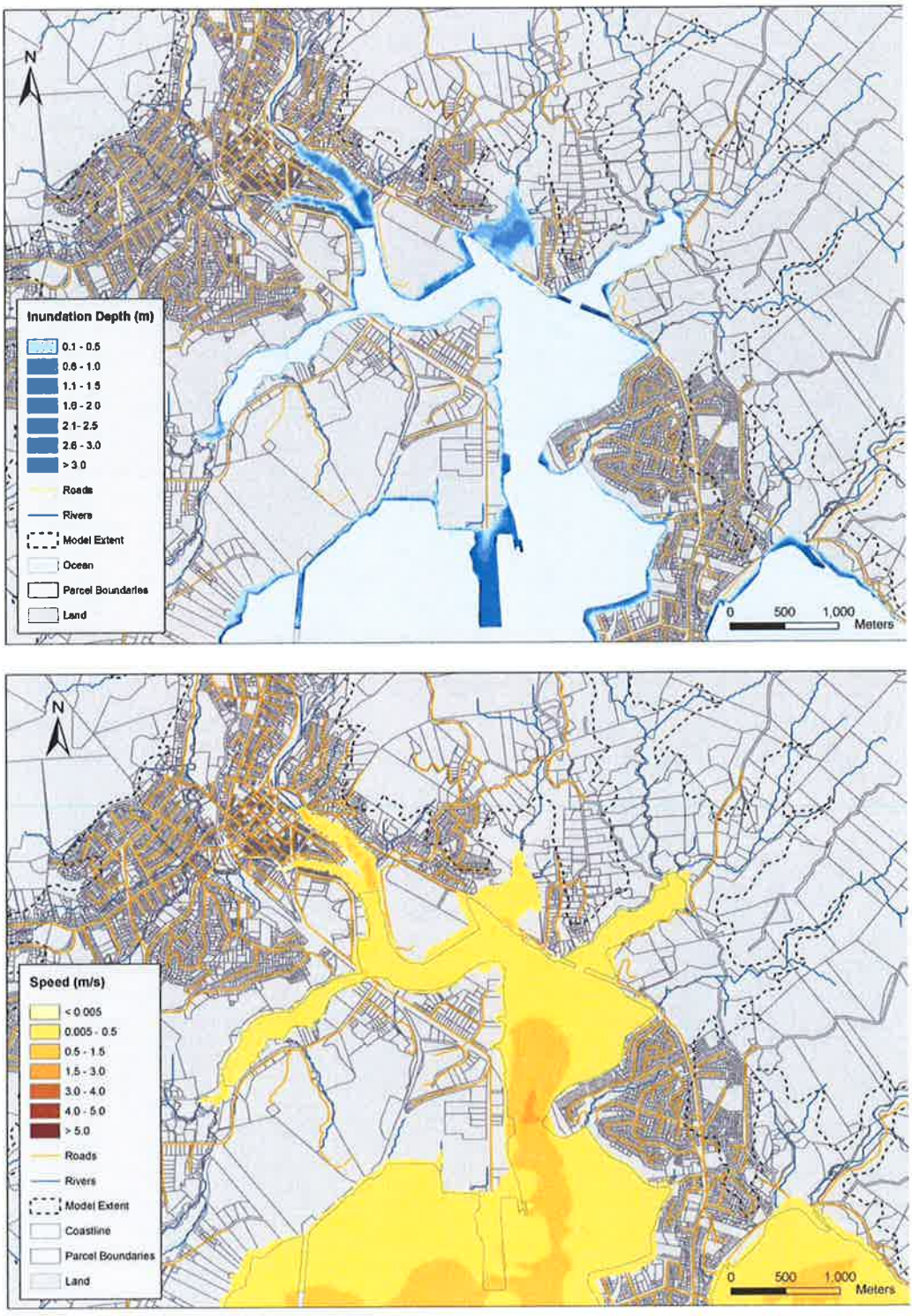


**Figure 35: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR) in the Whangarei Harbour.**

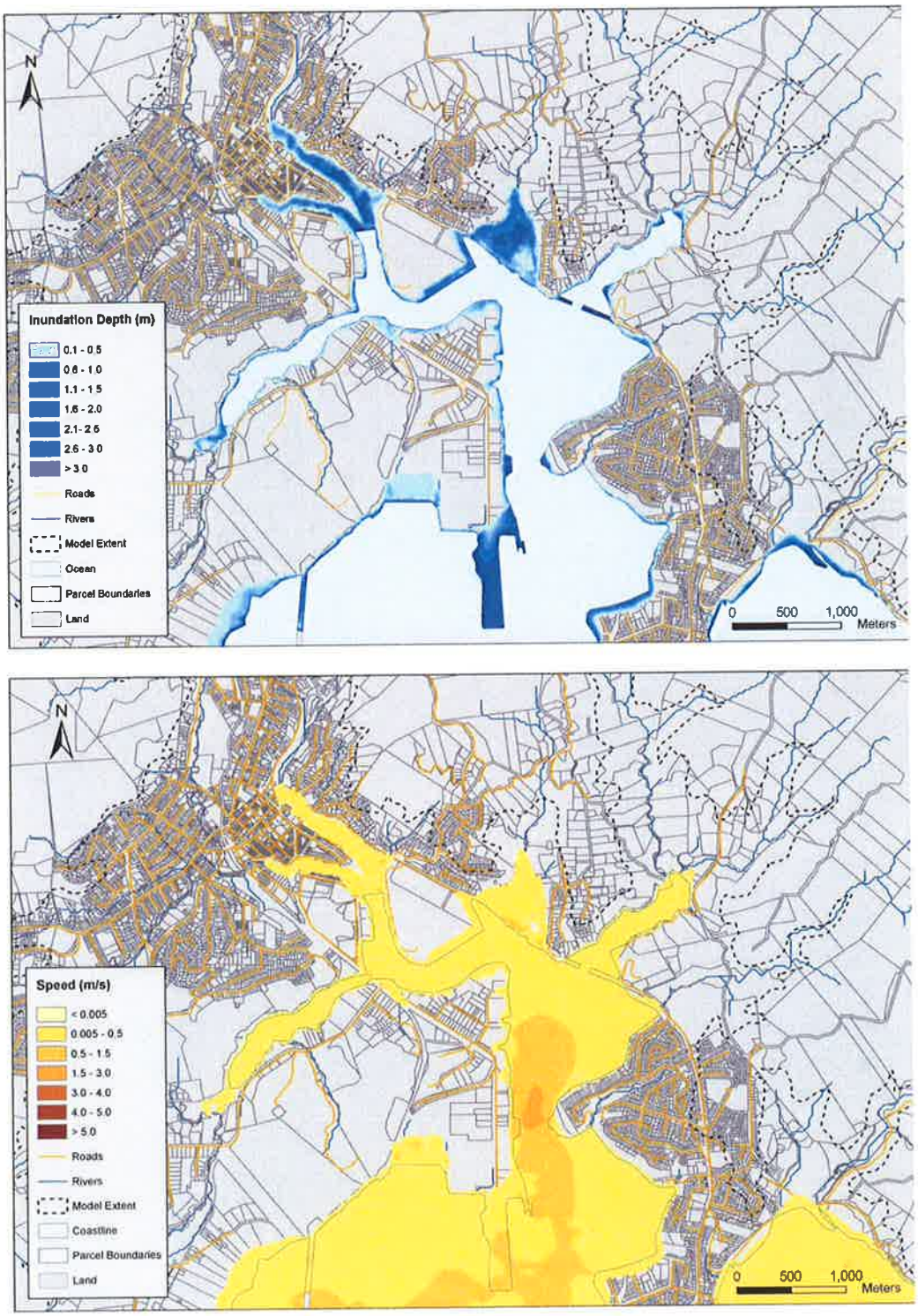


**Figure 36: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR) in Whangarei Harbour.**

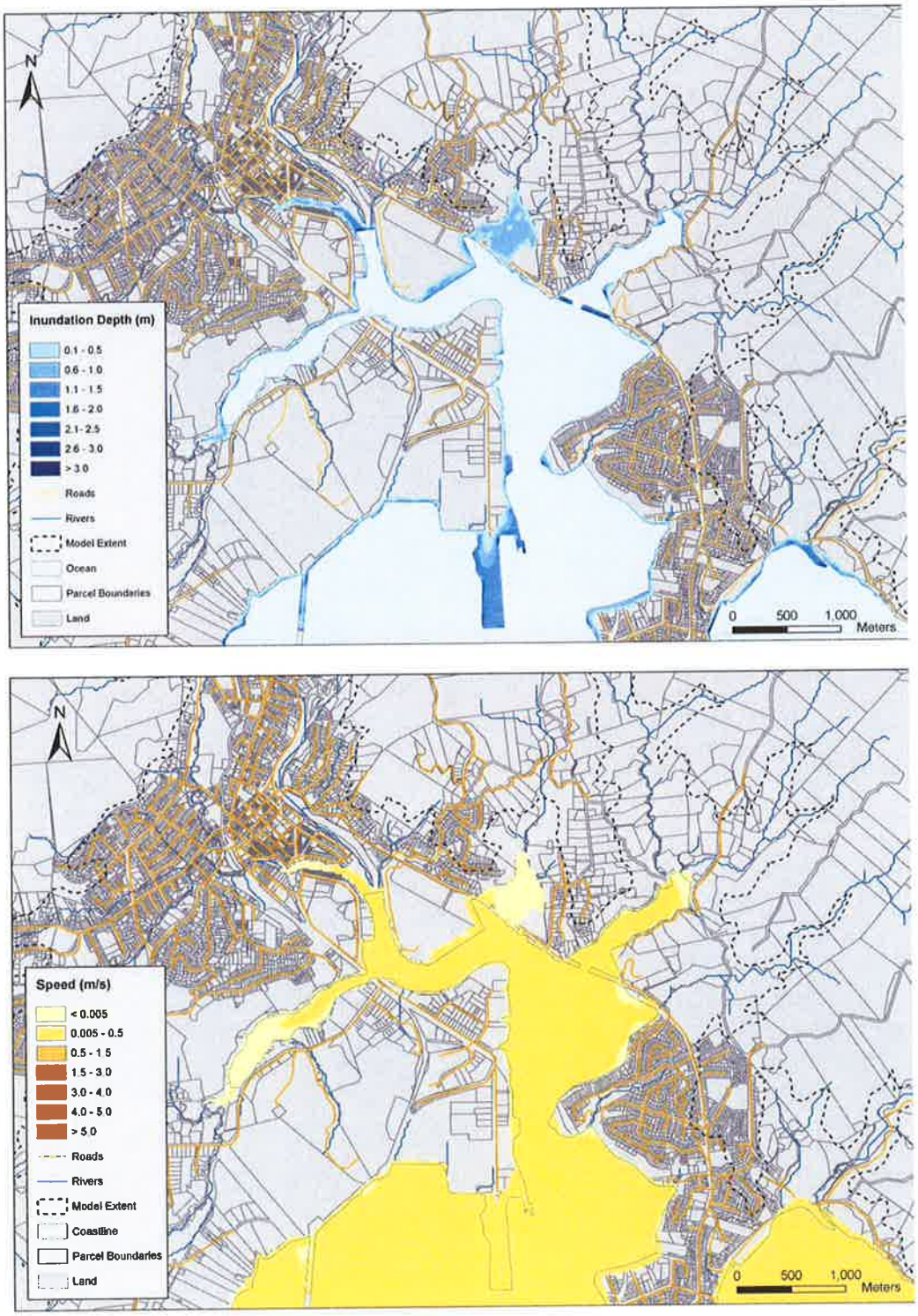


**Figure 37: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the $M_w$ 8.5 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR) in Whangarei Harbour.**

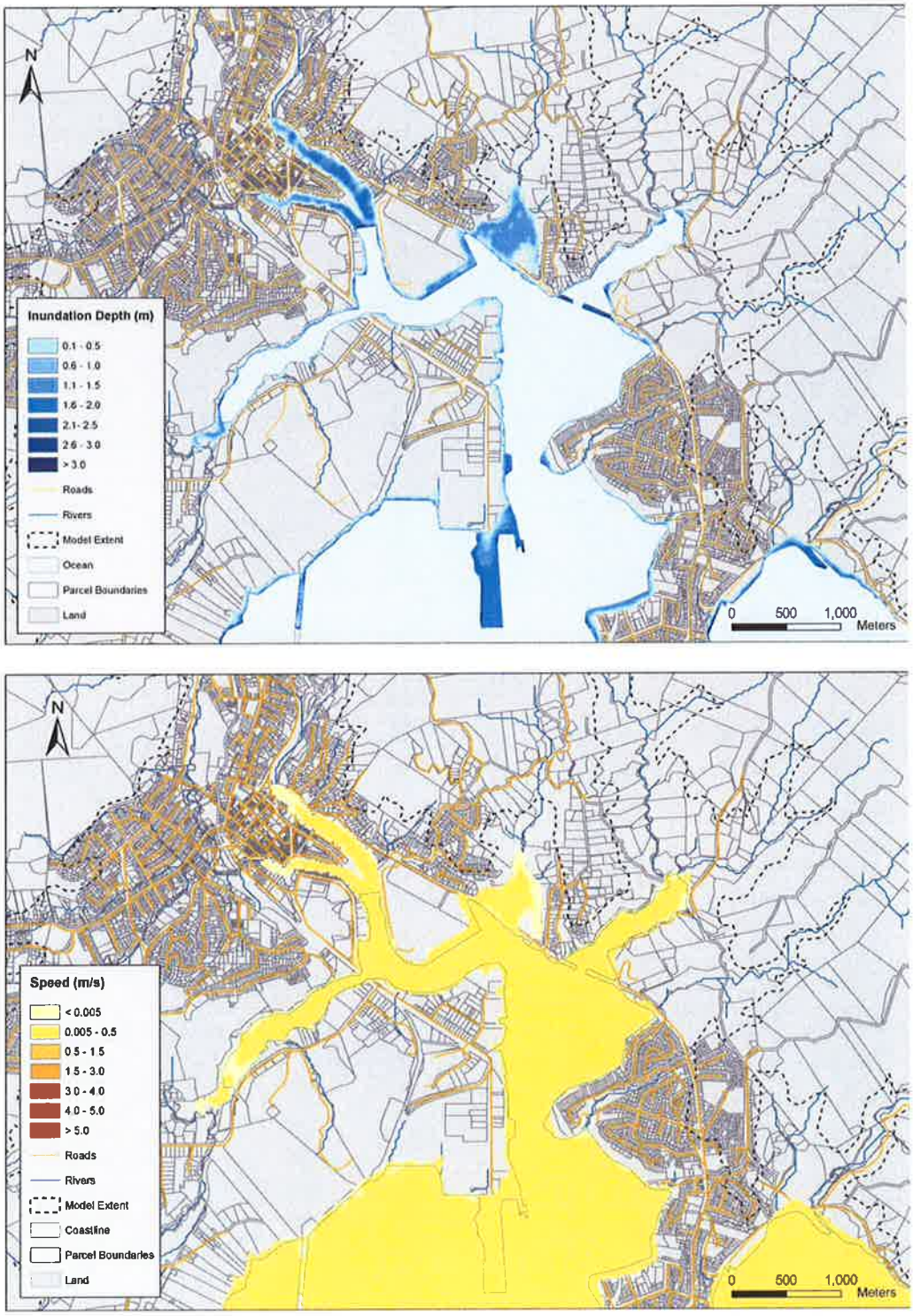


**Figure 38: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the $M_w$ 8.5 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR) in Whangarei Harbour.**

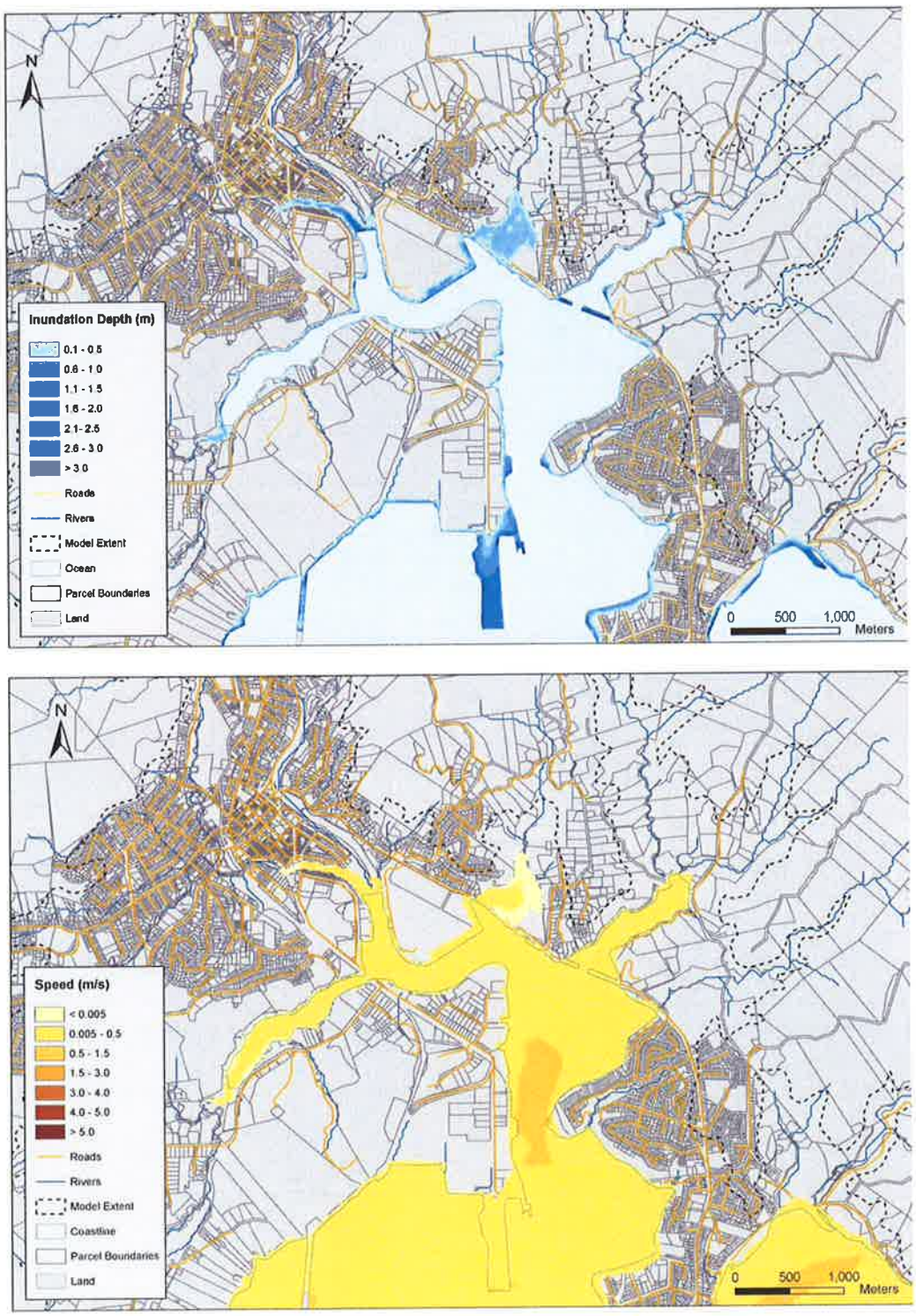


**Figure 39: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the $M_w$9.0 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR) in Whangarei Harbour.**

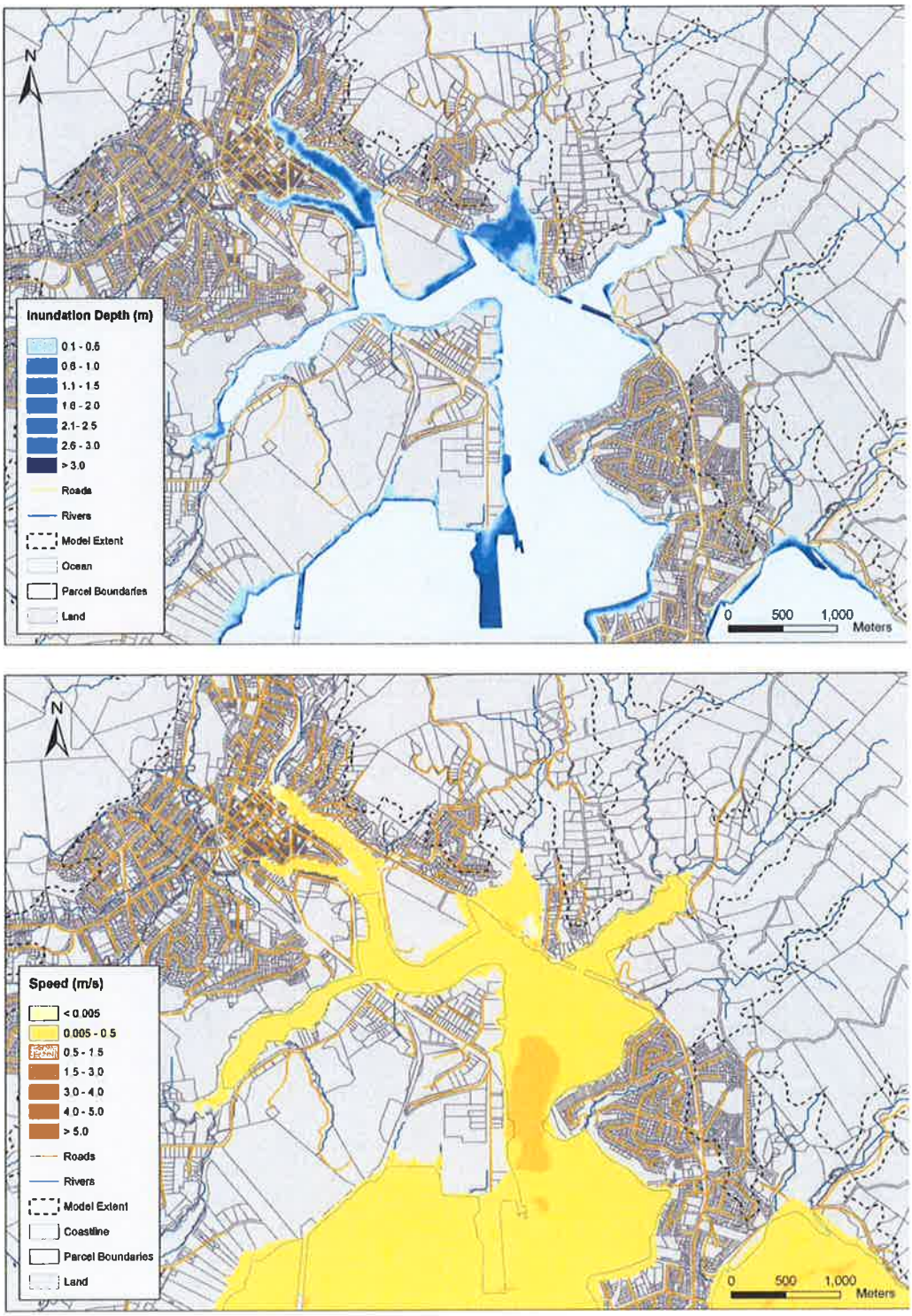


**Figure 40: Whangarei: Maximum inundation depth (upper) and speed (lower) plots for the $M_w$9.0 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR) in Whangarei Harbour.**