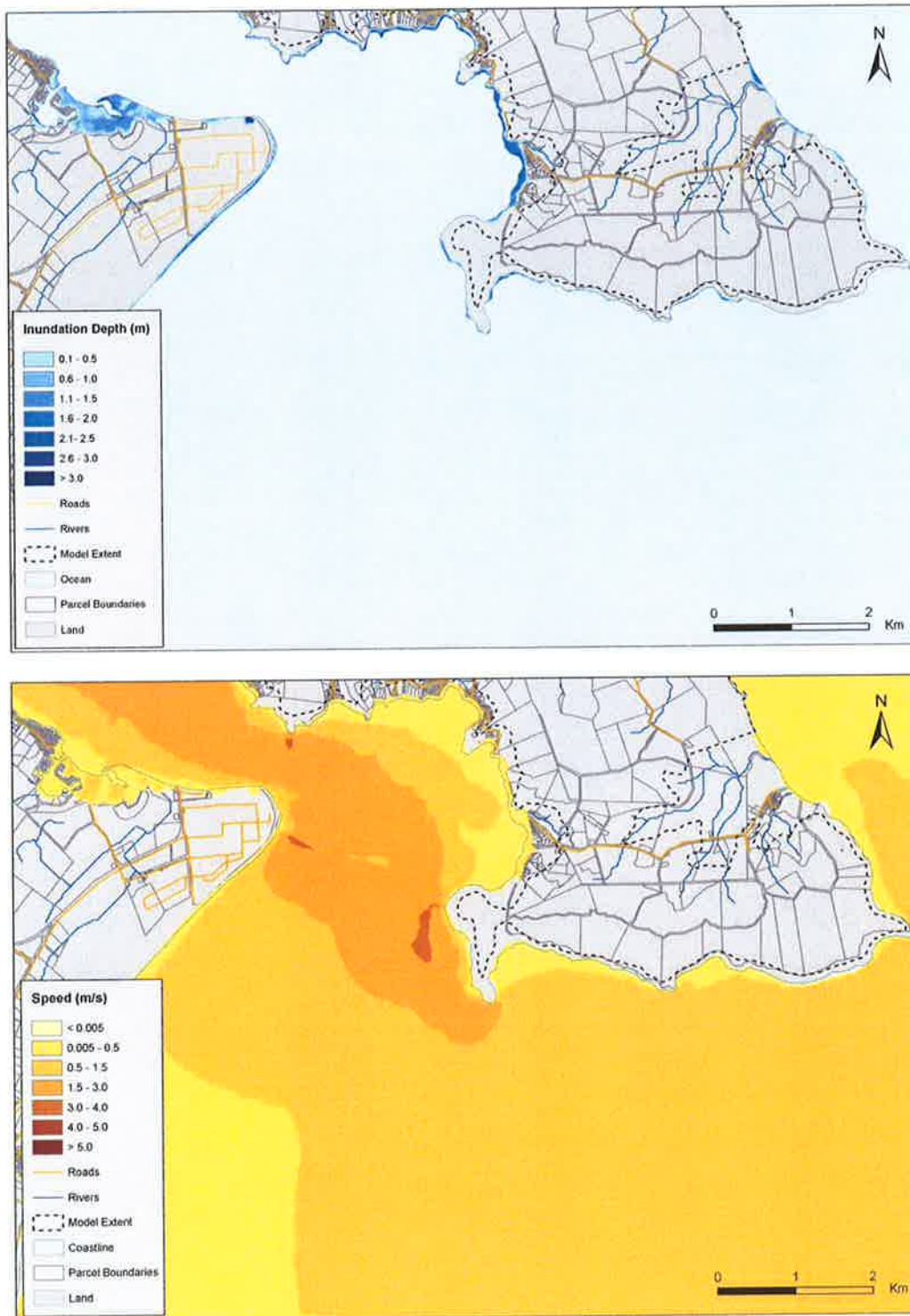


#### 4.8. Bream Head

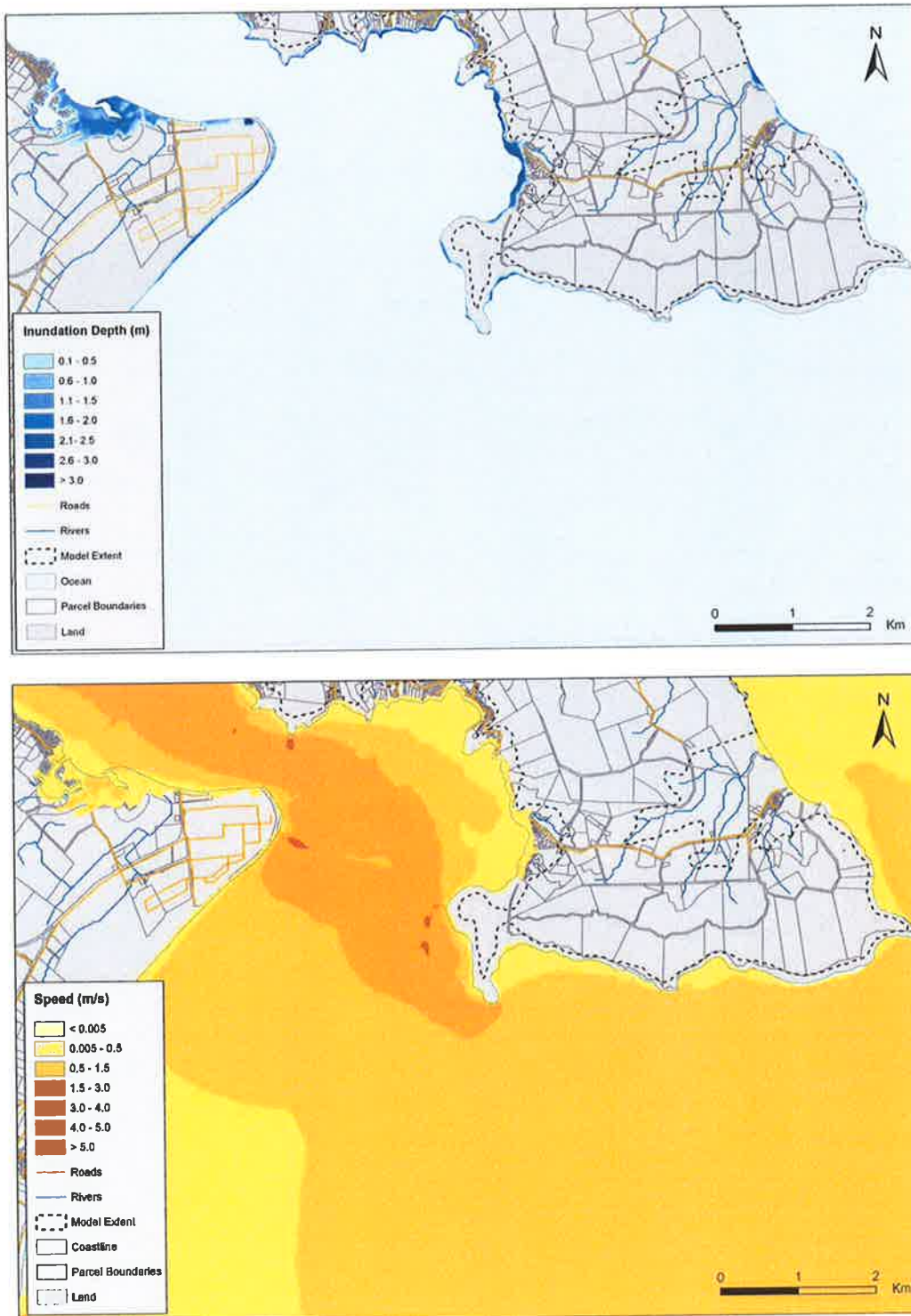
Maps of predicted inundation depth and maximum water speed for Bream Head are presented in Figures 41 - 46. Inundation from the South American tsunami is evident in Urquharts Bay and Ocean Beach. Taurikura Bay also shows some inundation (Figure 41). Current speeds in Taurikura and Urquharts Bays are in the  $0.005 - 0.5 \text{ m s}^{-1}$  range, increasing towards the centre of the channel up to  $3 \text{ m s}^{-1}$ . Around Ocean Beach velocities reach up to the  $0.5 - 1.5 \text{ m s}^{-1}$  range. When sea level rise is included in the scenario there is an increase in the depth of inundation. The extent of the inundation stays largely the same (Figure 42).

The TKSZ  $M_w$  8.5 scenario results in inundation in Taurikura and Urquharts Bays and Ocean Beach (Figure 43). The current speeds near Taurikura and Urquharts Bays are in the  $0.005 - 0.5 \text{ m s}^{-1}$  range. At Ocean Beach Current velocities reach  $0.5 - 1.5 \text{ m s}^{-1}$ . Sea level rise causes an increase in depth and extent of the inundation (Figure 44).

The TKSZ  $M_w$  9.0 scenario produces inundation north in Taurikura and Urquharts Bays and Ocean Beach (Figure 45). Current speeds reach up to  $1.5 \text{ m s}^{-1}$  in Taurikura and Urquharts Bays and exceed  $1.5 \text{ m s}^{-1}$  at Ocean Beach. Current velocity tops  $5 \text{ m s}^{-1}$  at Busby Point. Depth of inundation increases when sea level rise is included in the scenario and inundation extends slightly (Figure 46).



**Figure 41: Bream Head: Maximum inundation depth (upper) and speed (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR) in Whangarei Harbour.**



**Figure 42: Bream Head: Maximum inundation depth (upper) and speed (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR) in Whangarei Harbour.**

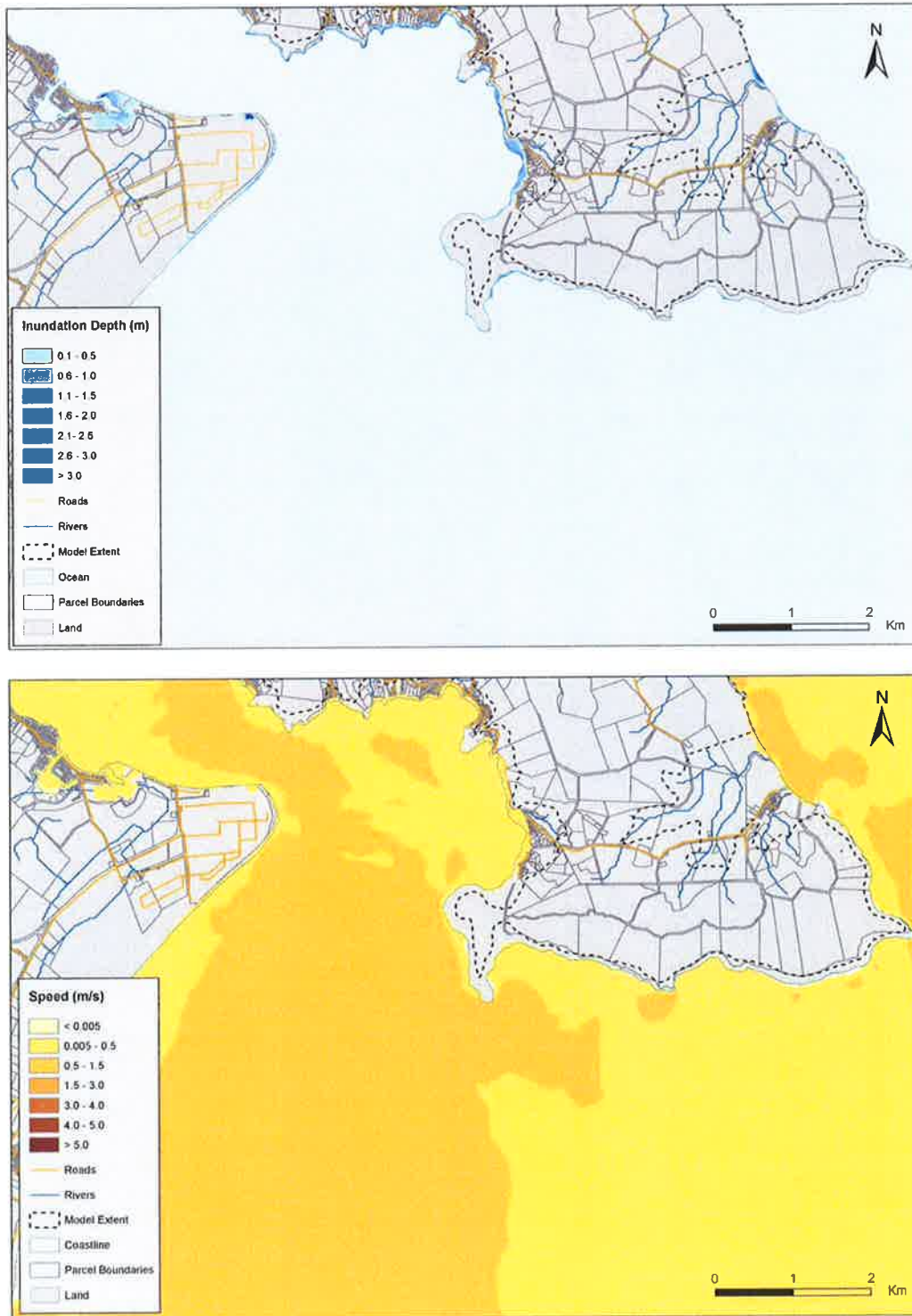
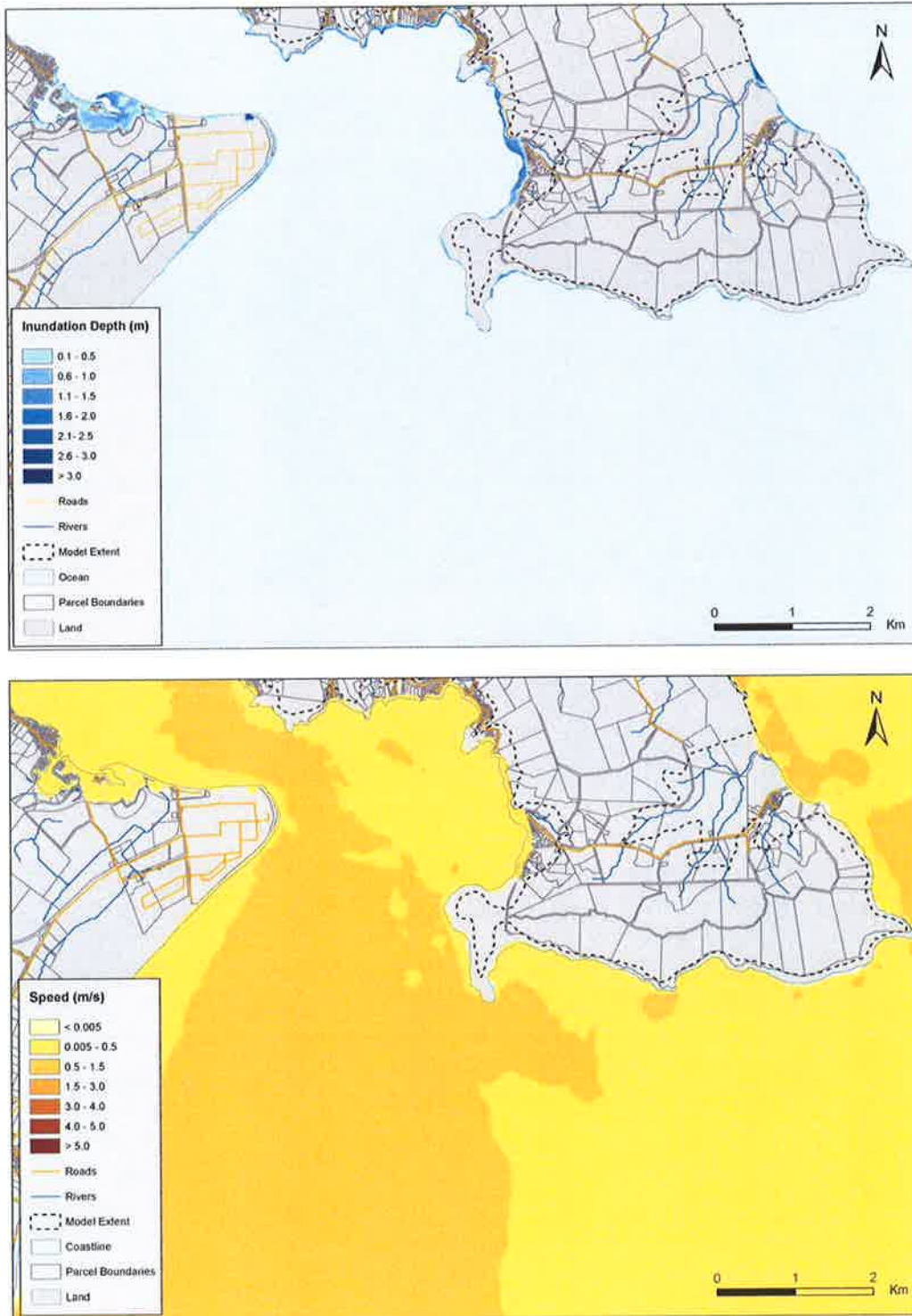
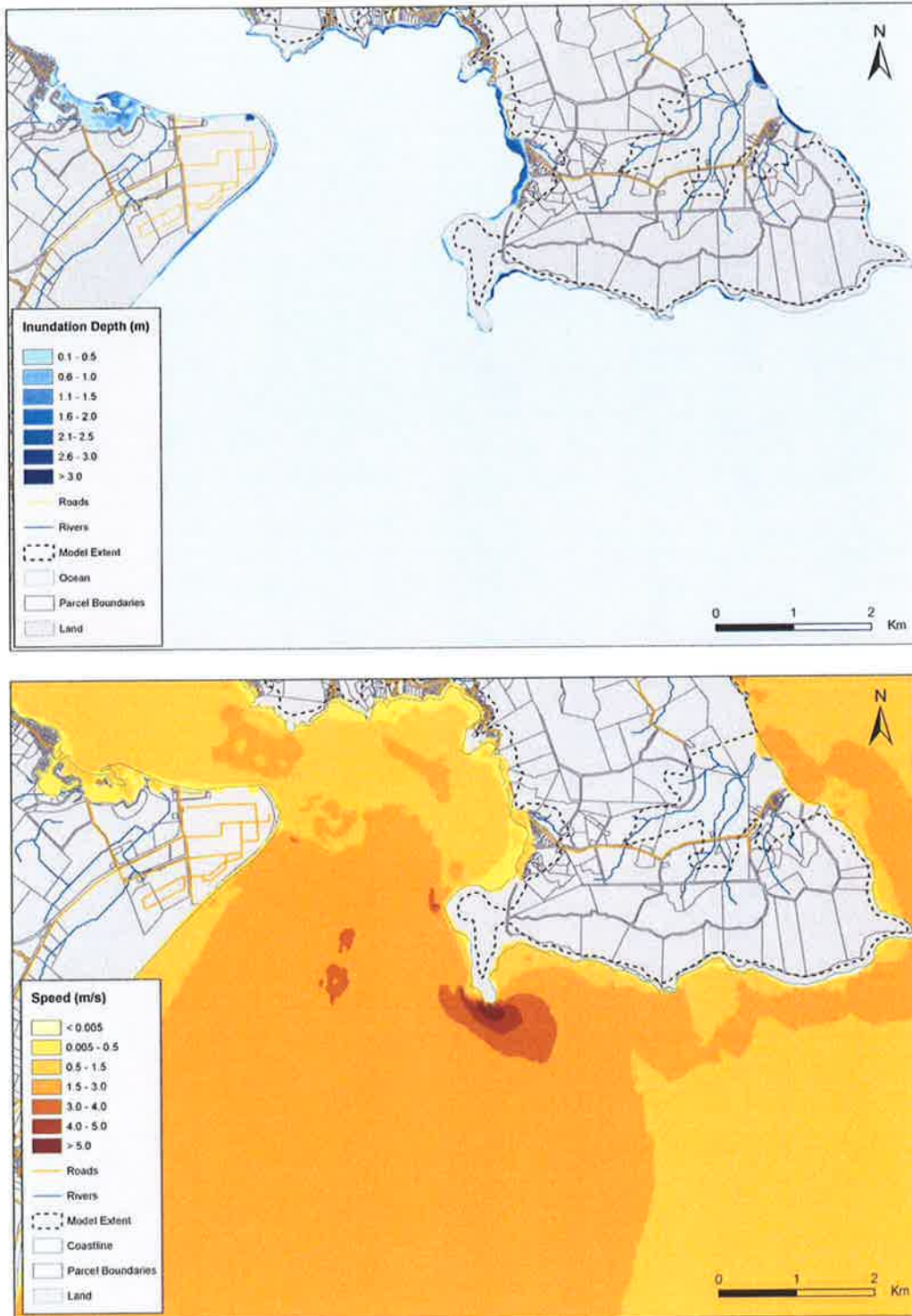


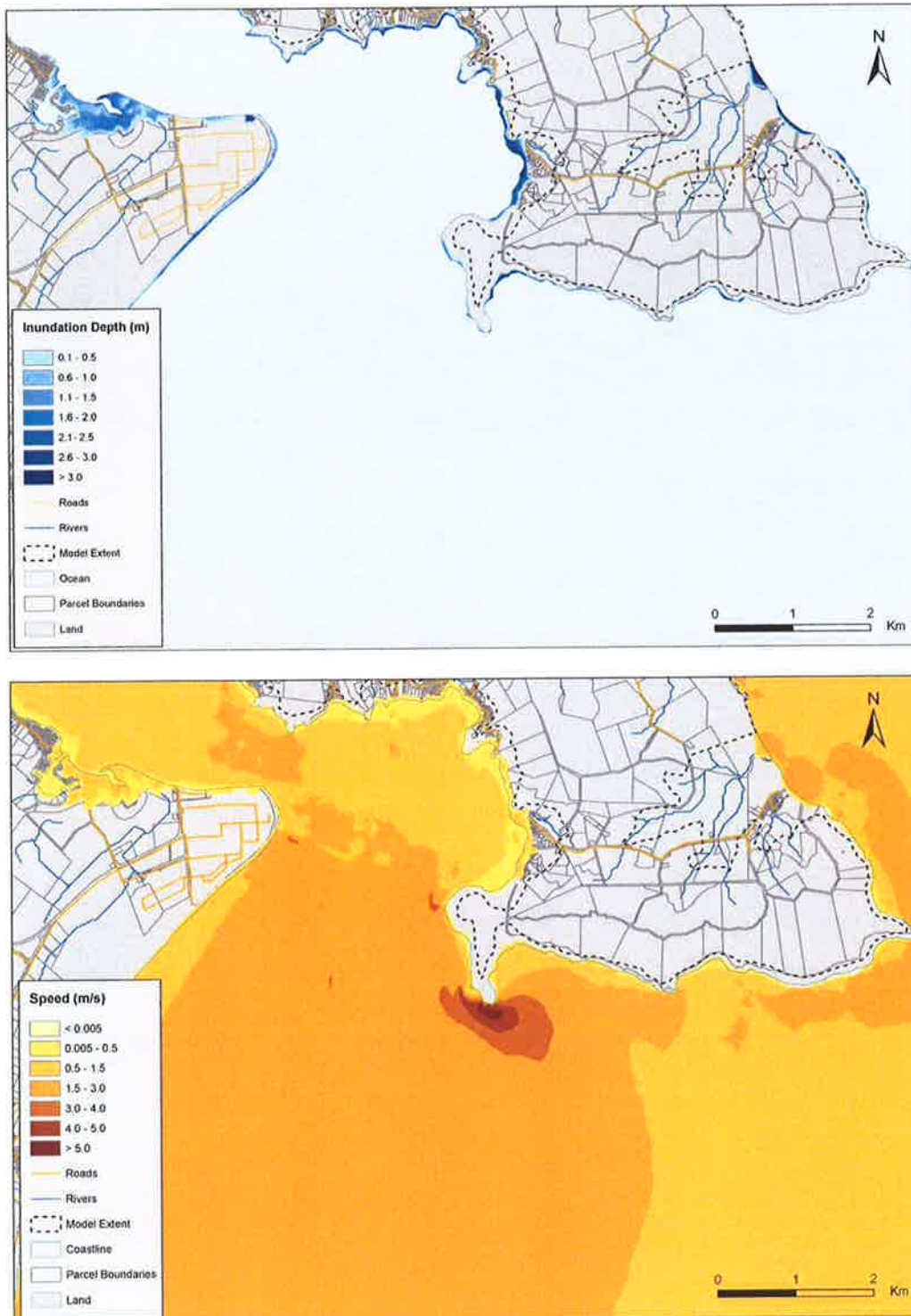
Figure 43: Breem Head: Maximum inundation depth (upper) and speed (lower) plots for the  $M_w$  8.5 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR) in Whangarei Harbour.



**Figure 44: Bream Head: 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 45: Bream Head: Maximum inundation depth (upper) and speed (lower) plot for the  $M_w 9.0$  Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR) in Whangarei Harbour.**



**Figure 46: Bream Head: 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.**