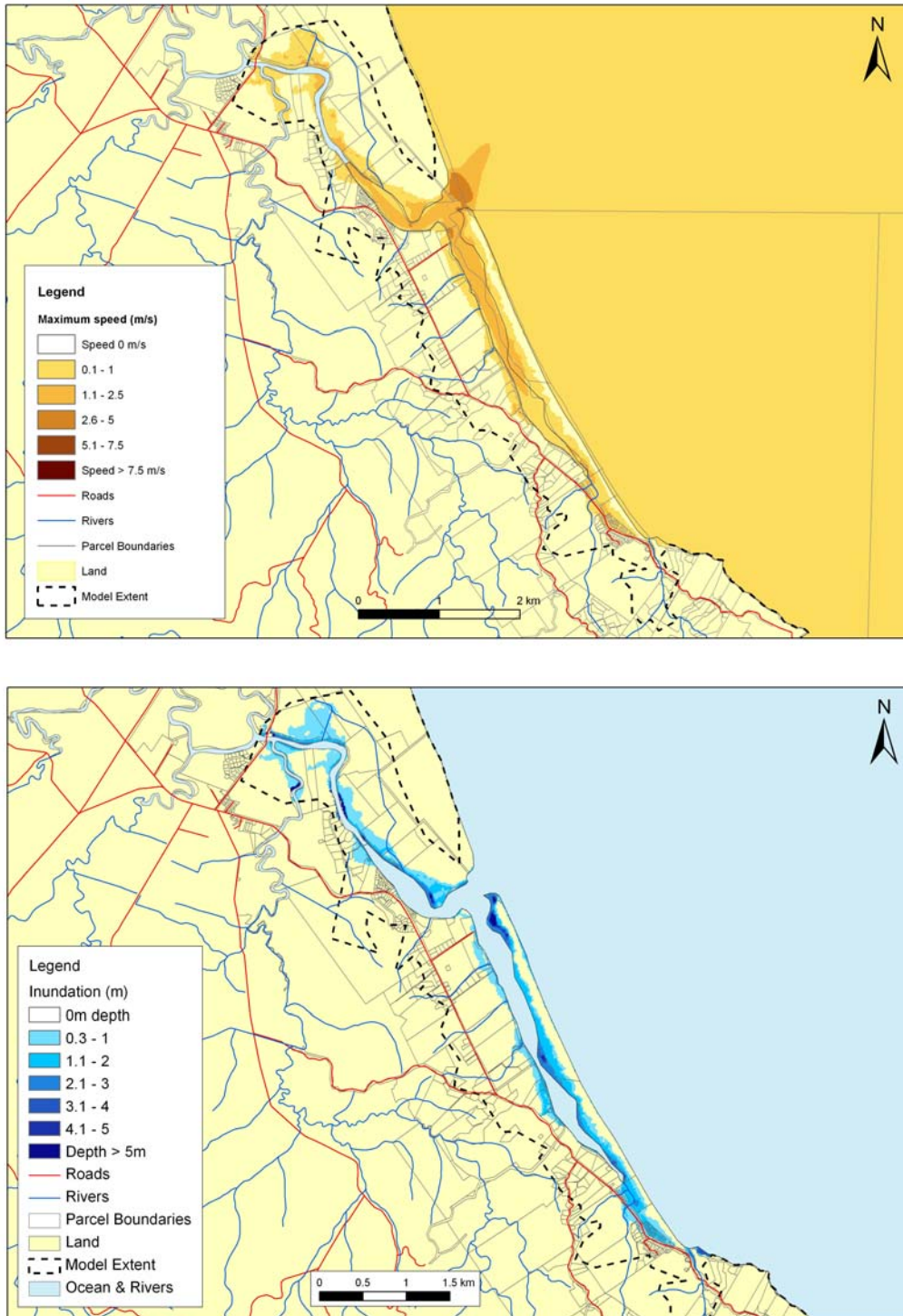


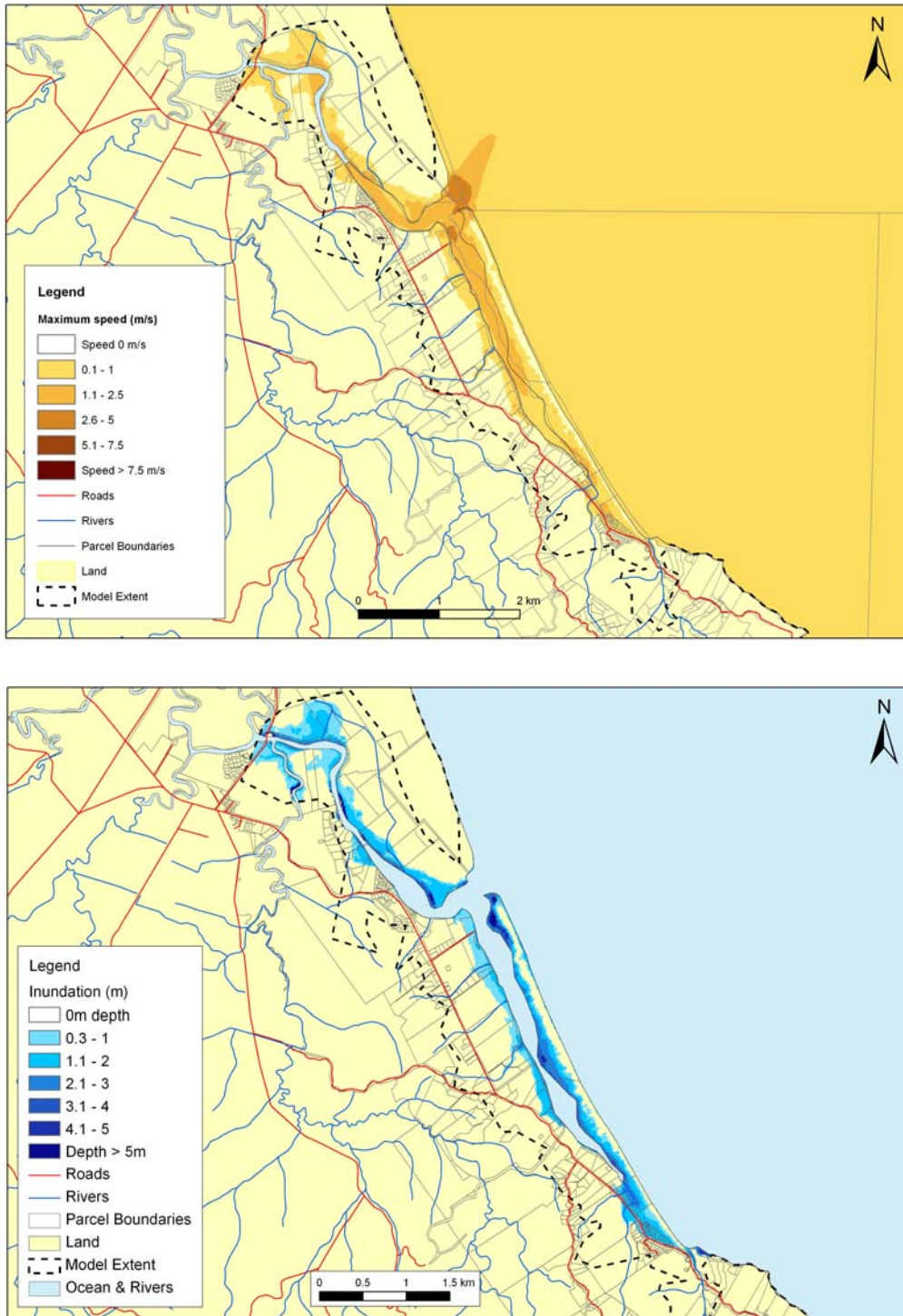
#### 4.12. Waipu Cove

Maps of inundation depth and maximum current speed for Waipu Cove are presented in Figures 64 – 69. Inundation from the South American event is predicted along the coastline and the shores of the estuary inside the sand spit. The settlements in Waipu Cove, particularly those seaward of Cove Road, are impacted with inundation depths up to 3 m. To the north, inundation depths exceed 5 m near the mouth of the estuary, with maximum current velocities exceeding  $2.5 \text{ m s}^{-1}$ , presenting a strong erosion risk. The Inundation extent and depth increase with sea level rise, with the sand spit being fairly heavily inundated.

Predicted inundation from the TKSZ  $M_w 8.5$  event is less extensive than that for the South American event. However, some flooding into Waipu Cove from the estuary is predicted, particularly when sea level rise is included. The  $M_w 9.0$  event results in heavy inundation of the sand spit, along the banks of the estuary, and into Waipu Cove. Inundation depths exceed 5 m in places, and maximum current speeds exceed  $2.5 \text{ m s}^{-1}$  over large parts of the estuary. The situation is exacerbated when sea level rise is included.

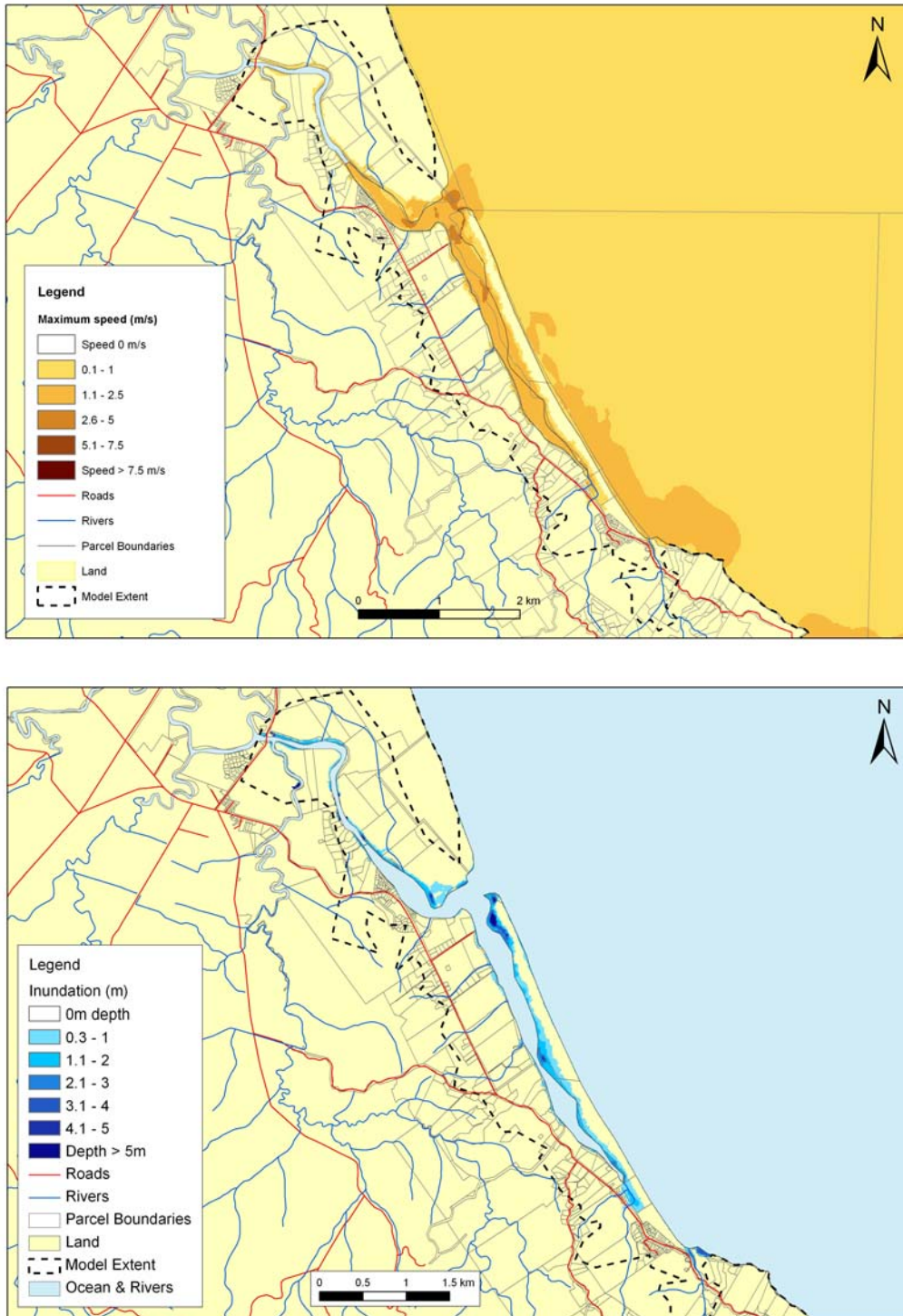


**Figure 64:** Waipu Cove: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR).

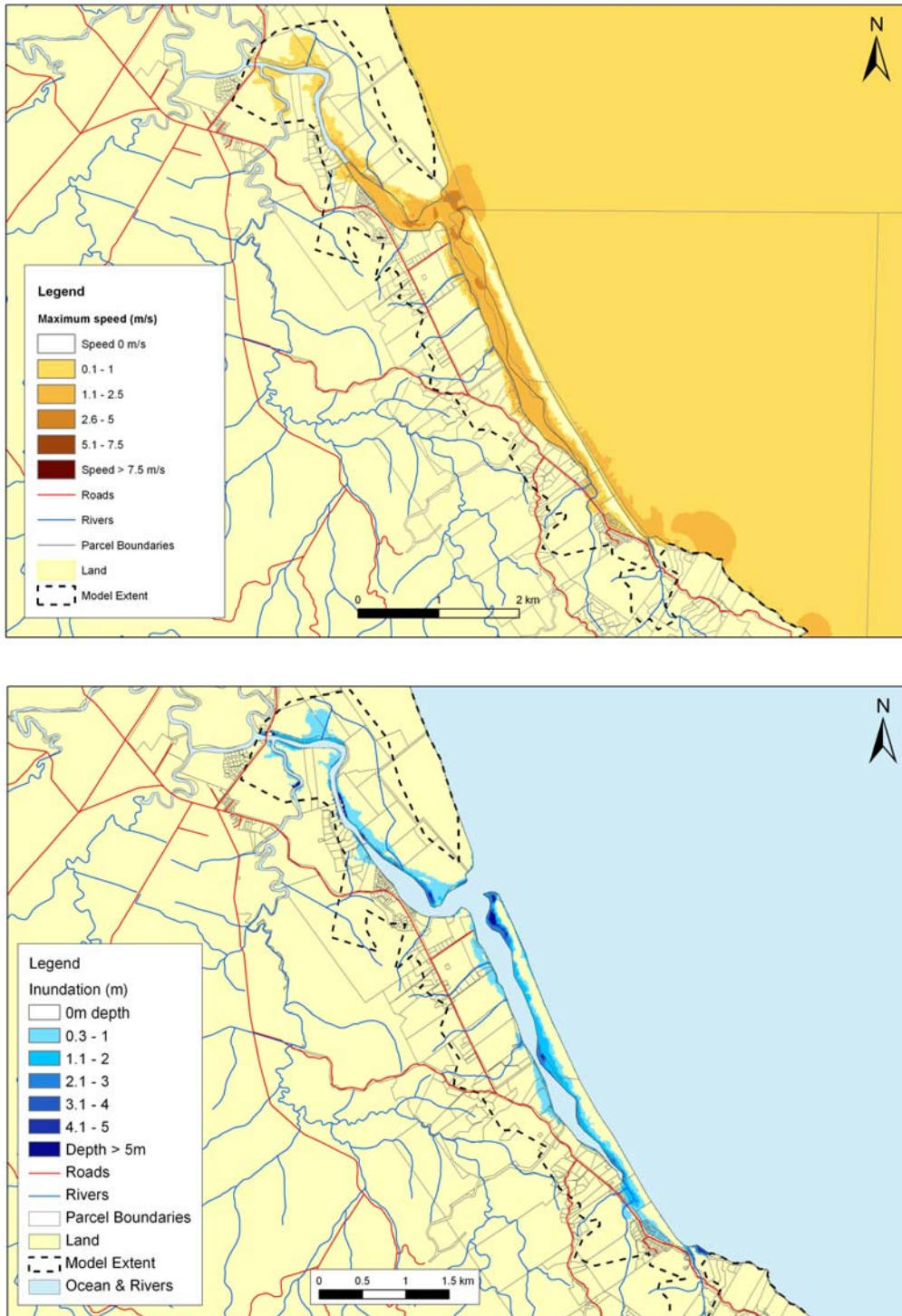


**Figure 65:** Waipu Cove: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR).

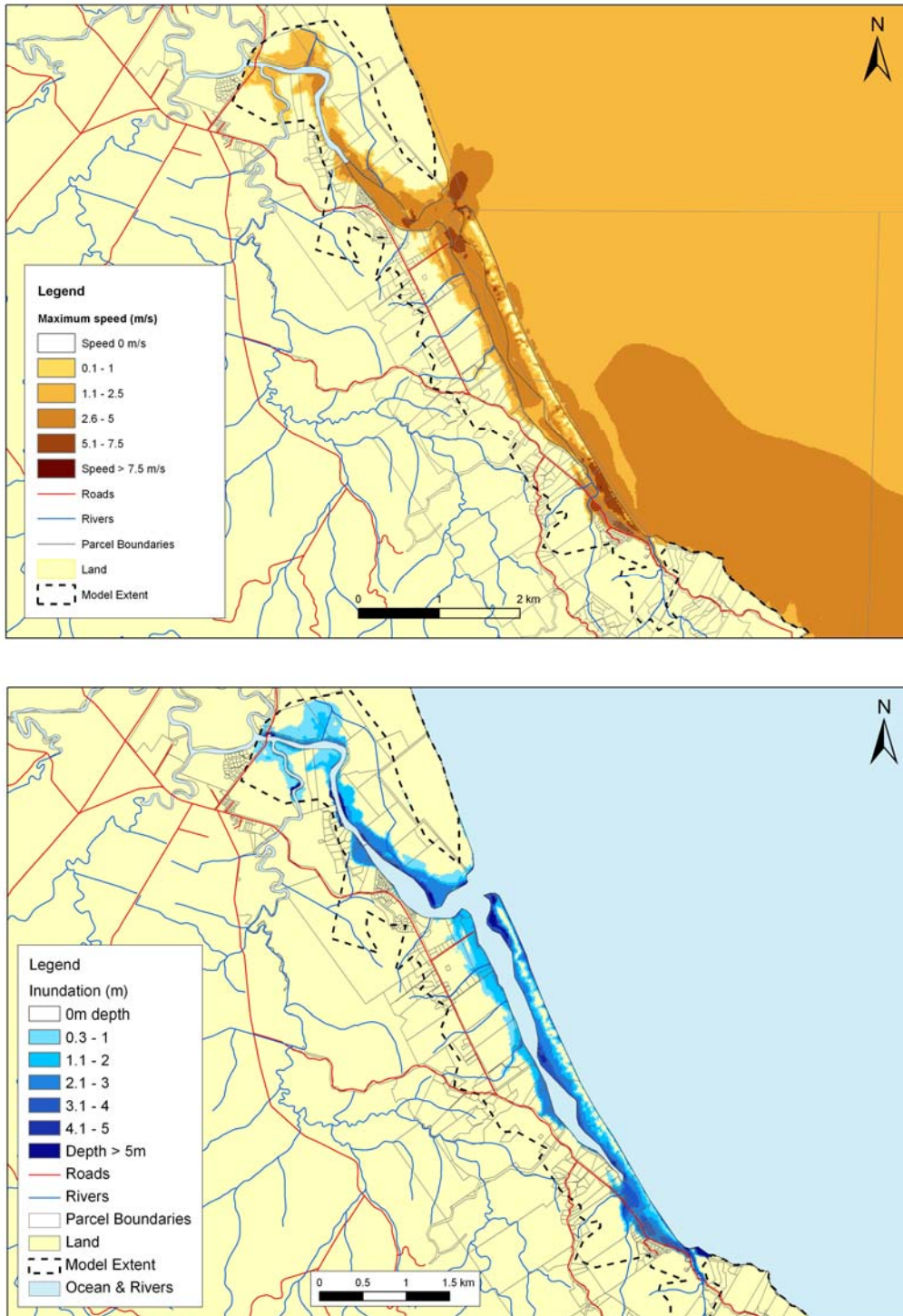




**Figure 66:** Waipu Cove: Maximum inundation speed (upper) and depth (lower) plots for the  $M_w 8.5$  Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).

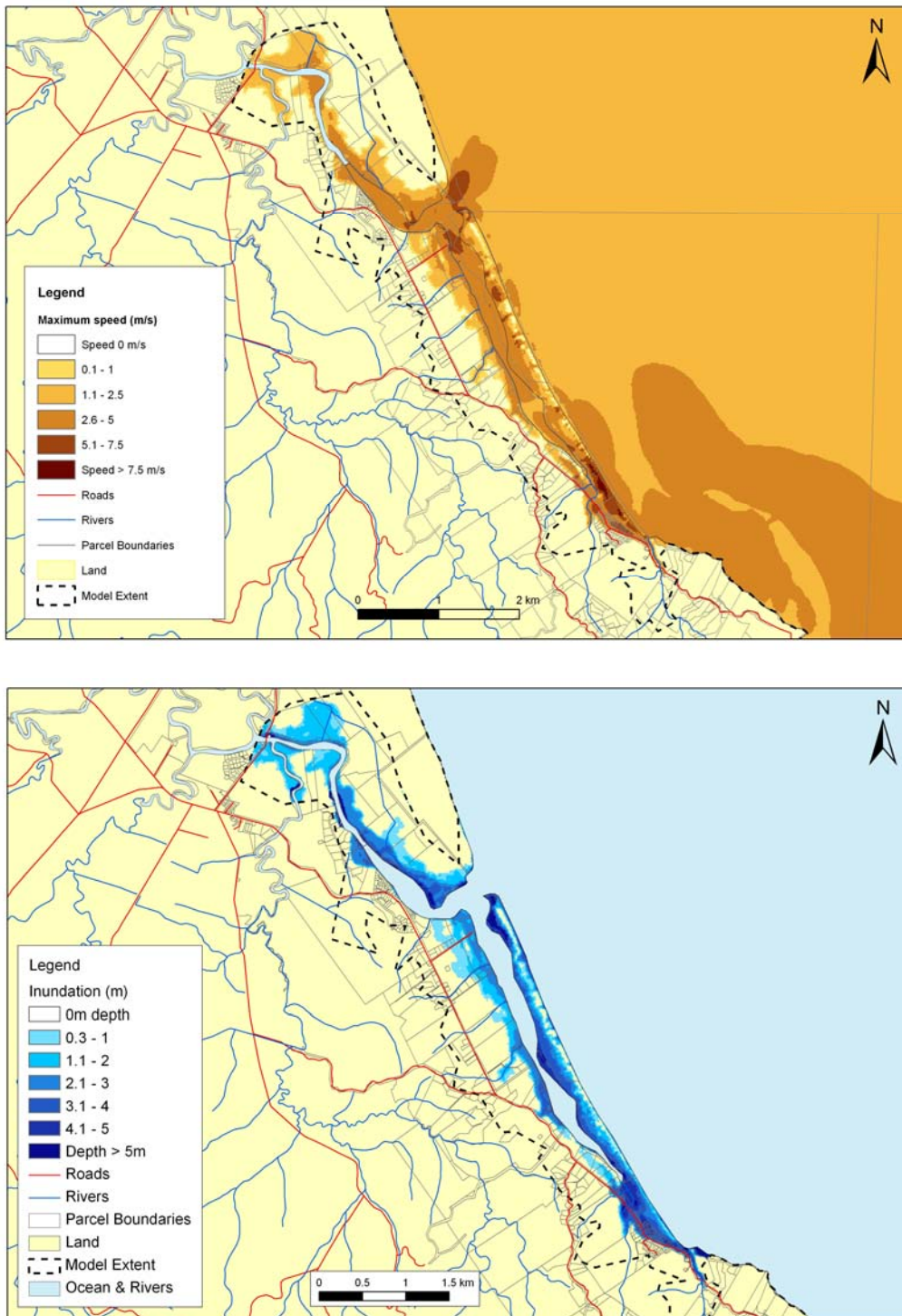


**Figure 67:** Waipu Cove: Maximum inundation speed (upper) and depth (lower) plots for the M<sub>w</sub>8.5 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).



**Figure 68:** Waipu Cove: 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 69:** Waipu Cove: 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).