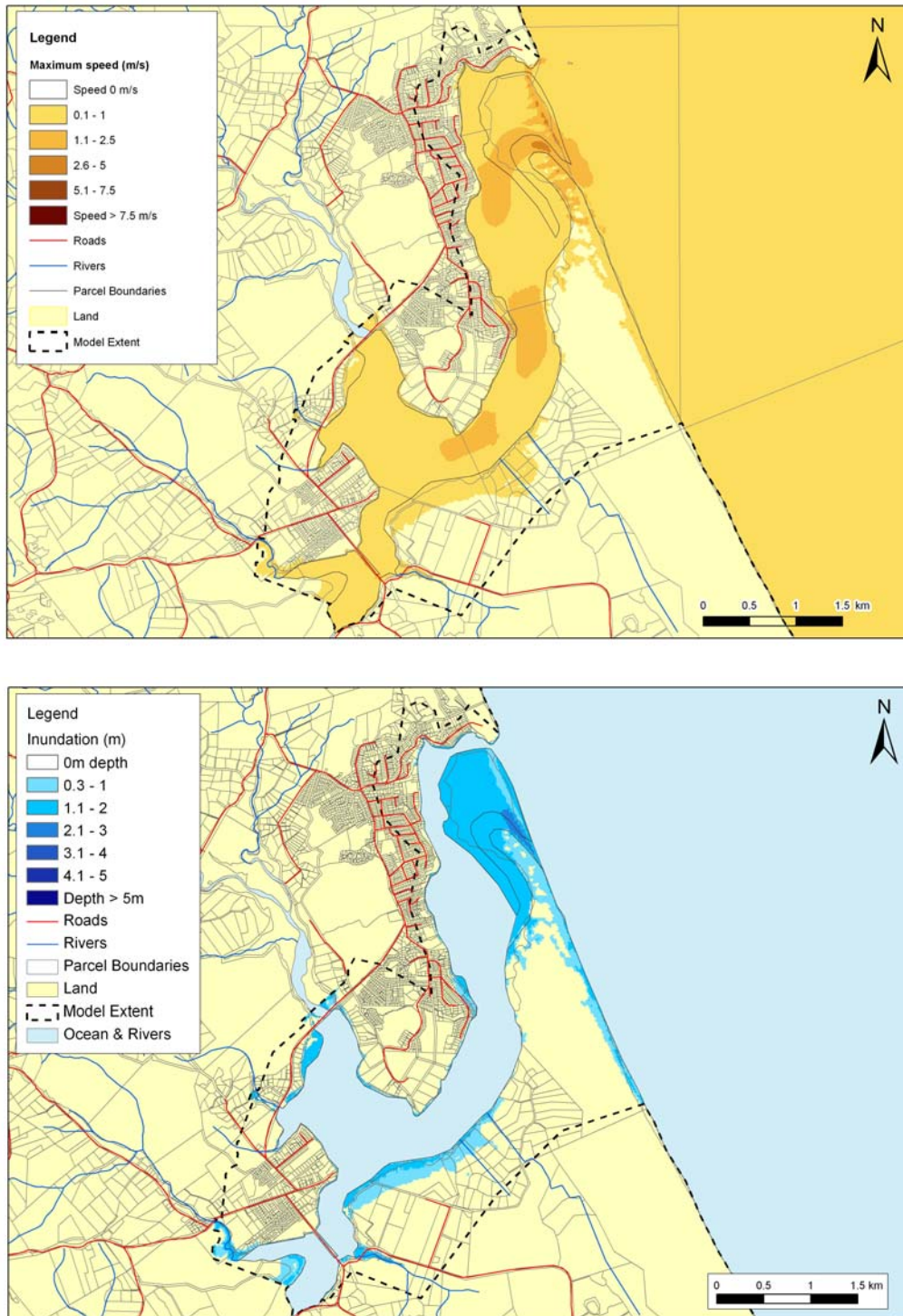


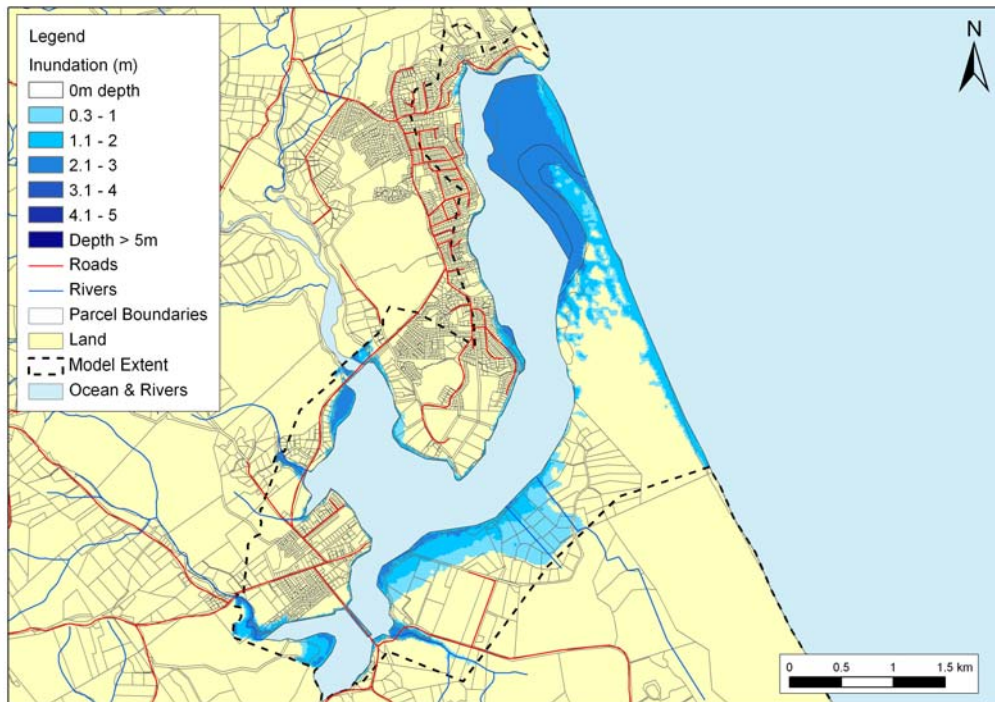
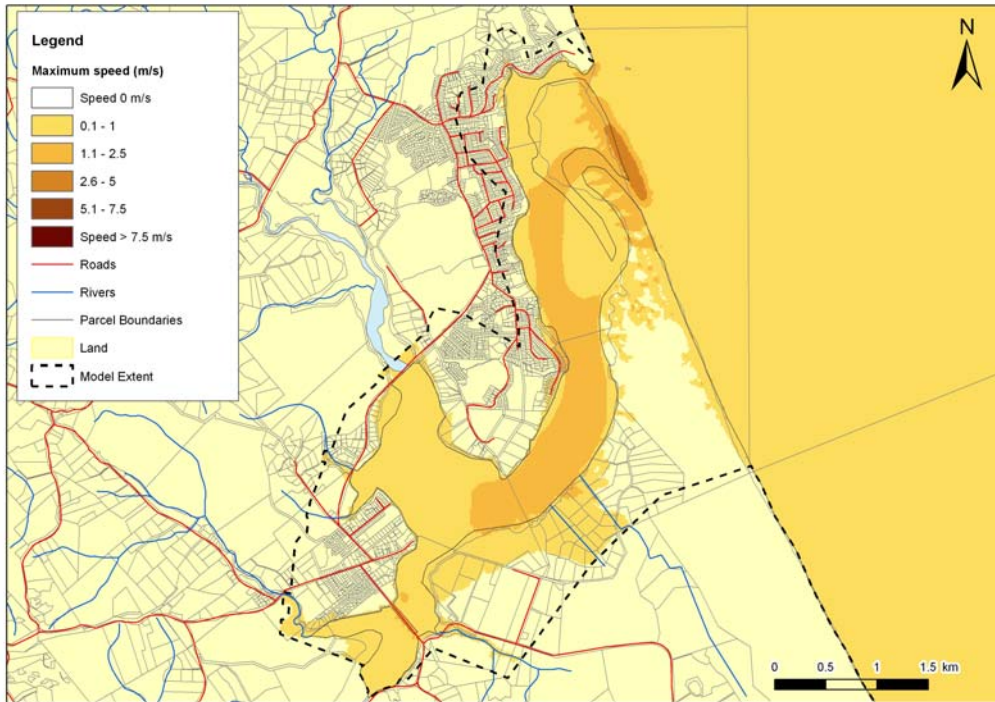
#### **4.6. Mangawhai**

Maps of predicted inundation depth and maximum current speed for Mangawhai are presented in Figures 28-33. Inundation from the South American tsunami is evident along Mangawhai beach and at numerous locations around the estuary. Most of the township escapes inundation from this event, although there is flooding predicted along the foreshore adjacent to Lincoln Street. Predicted inundation is deeper and more extensive with sea level rise included. Peak current speeds in the estuary reach  $2 \text{ m s}^{-1}$ .

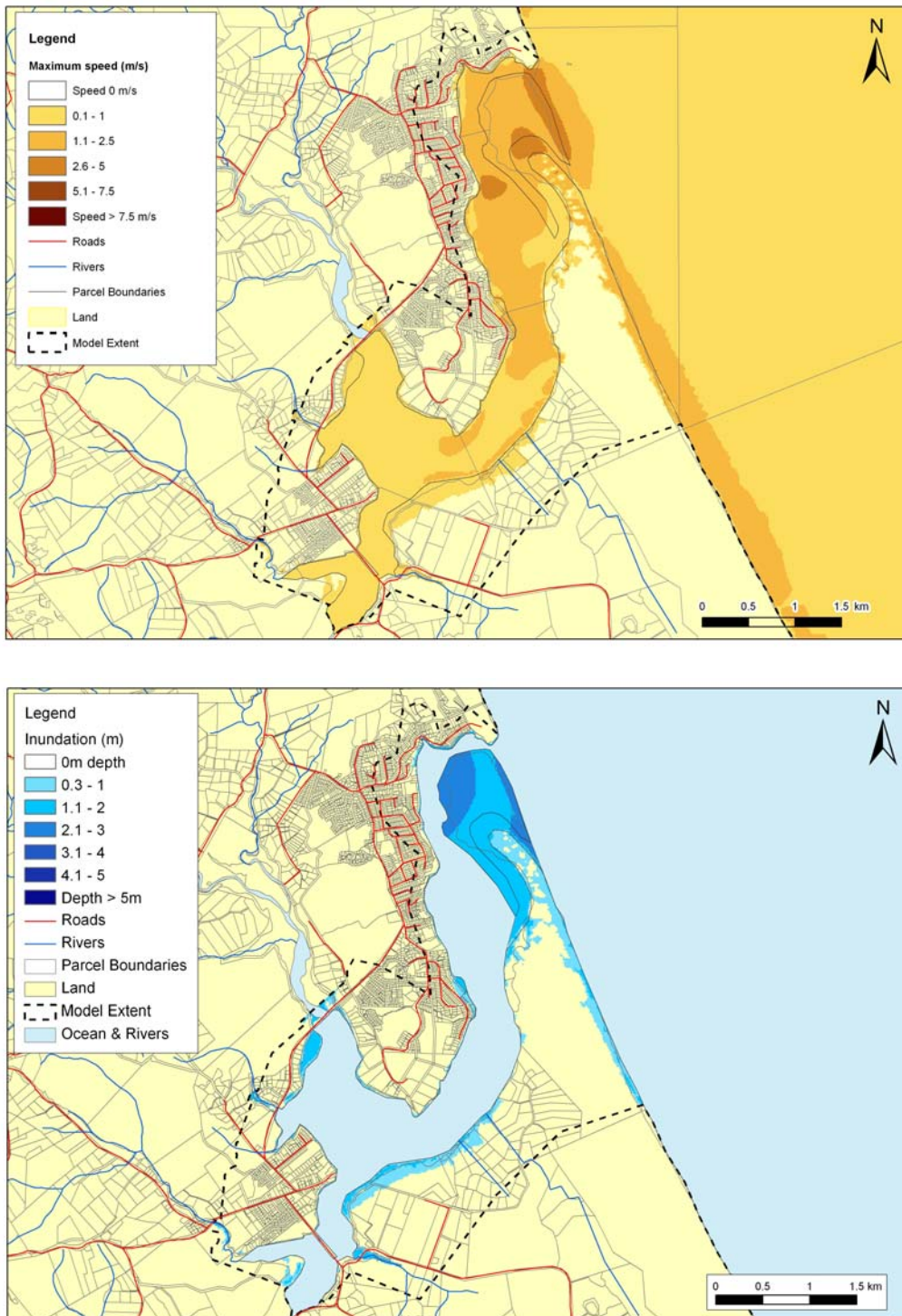
Slightly less inundation is predicted for the TKSZ  $M_w 8.5$  event than from the South American event. However, from the  $M_w 9.0$  event, significant inundation is predicted over the beach, and into the township near the estuary mouth. Extensive inundation is predicted on the low-lying land to the south of the estuary. Maximum current speeds in the estuary and over the beach are very strong, leading to a high erosion risk. The inundation is exacerbated when sea level rise is included.



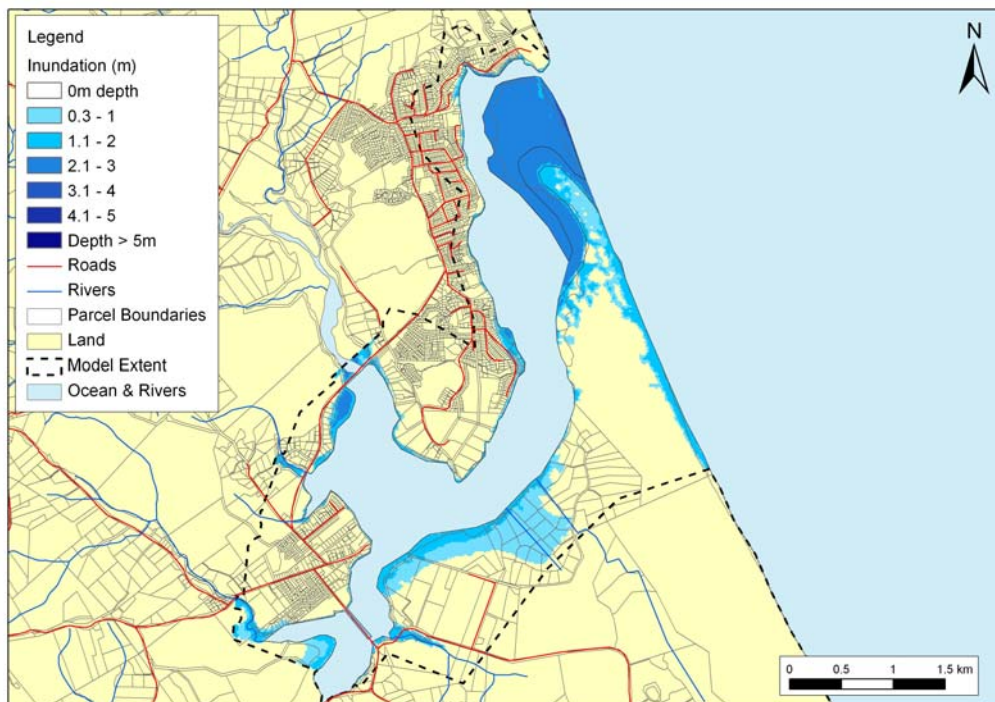
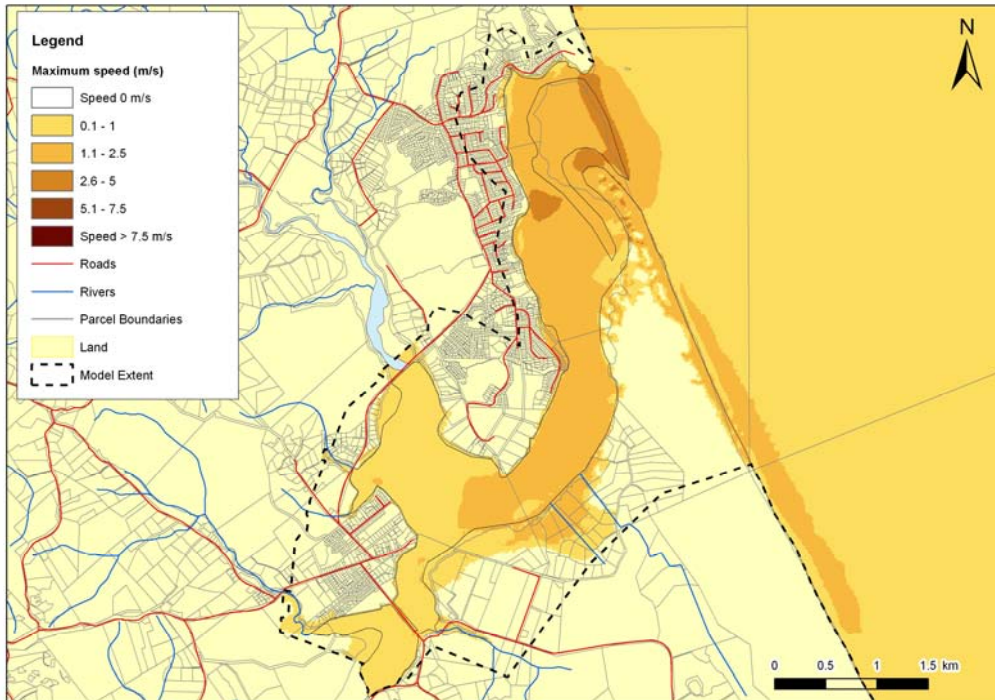
**Figure 28:** Mangawhai: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR).



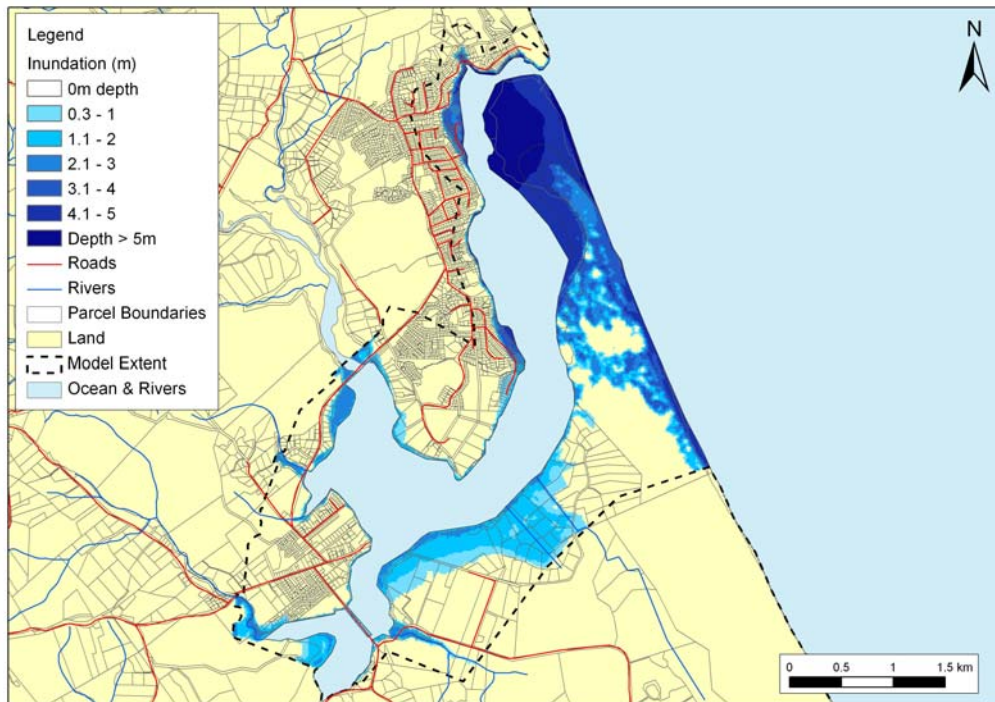
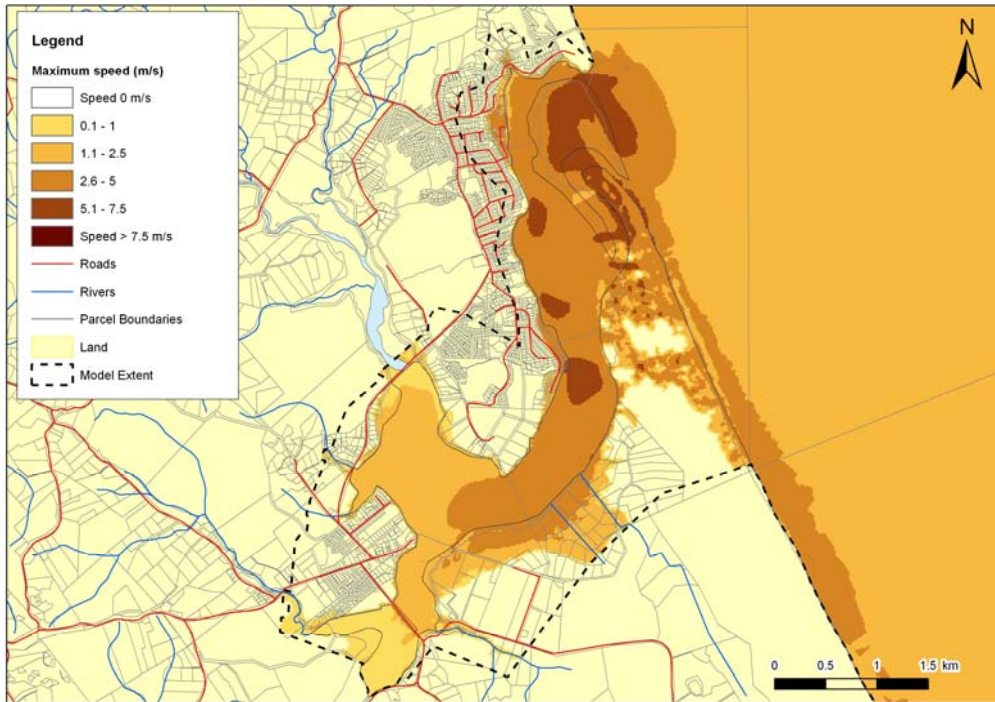
**Figure 29:** Mangawhai: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR).



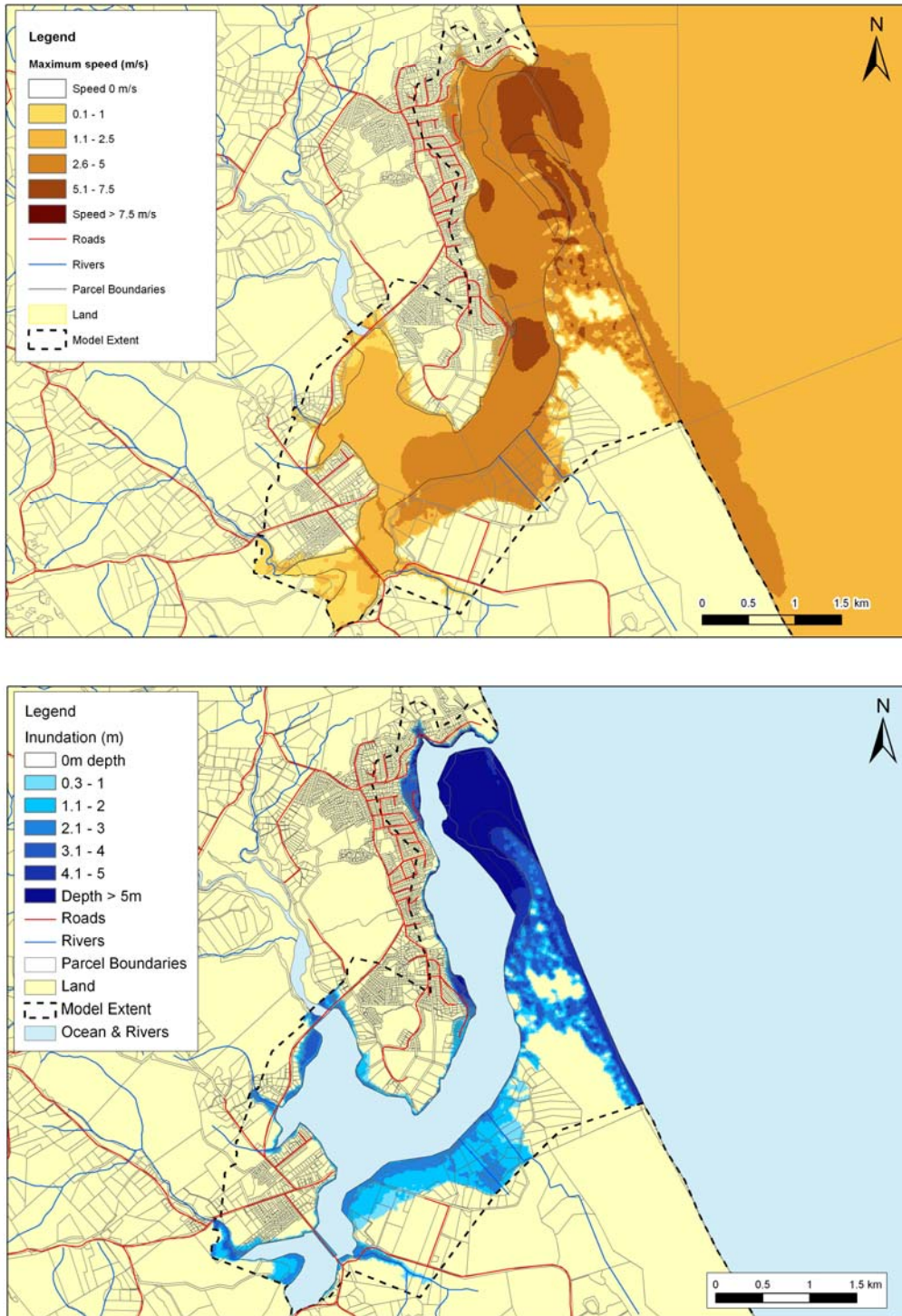
**Figure 30:** Mangawhai: Maximum inundation speed (upper) and depth (lower) plots for the  $M_w8.5$  Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).



**Figure 31:** Mangawhai: Maximum inundation speed (upper) and depth (lower) plots for the  $M_w8.5$  Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).



**Figure 32:** Mangawhai: Maximum inundation speed (upper) and depth (lower) plots for the  $M_w9.0$  Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).



**Figure 33:** Mangawhai: 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).