

4.3. Paihia

Maps of maximum inundation depth and water speed for Paihia are presented in Figures 10-15. Inundation from the South American tsunami is limited, although some inundation from the Haumi River into Paihia and Te Haumi is evident. The spit supporting Paihia Road heading south is inundated. Current speeds in the river mouth exceed 2.6 m s^{-1} , enough to cause potential erosion. Although inundation depths are greater when sea level rise is included, the extent of inundation does not appear to increase significantly.

Predicted inundation from the TKSZ $M_w 8.5$ event is similar in extent and depth to the South American event. However, the TKSZ $M_w 9.0$ event causes significantly more inundation, particularly into Paihia directly from the bay to the North-east. This inundation extends up to half a kilometre inshore. Inundation around the Haumi River is also greater in depth, though not in extent, for this event. Current velocities across the entrance spit exceed 5 m s^{-1} . Sea level rise exacerbates the extent and depth of inundation

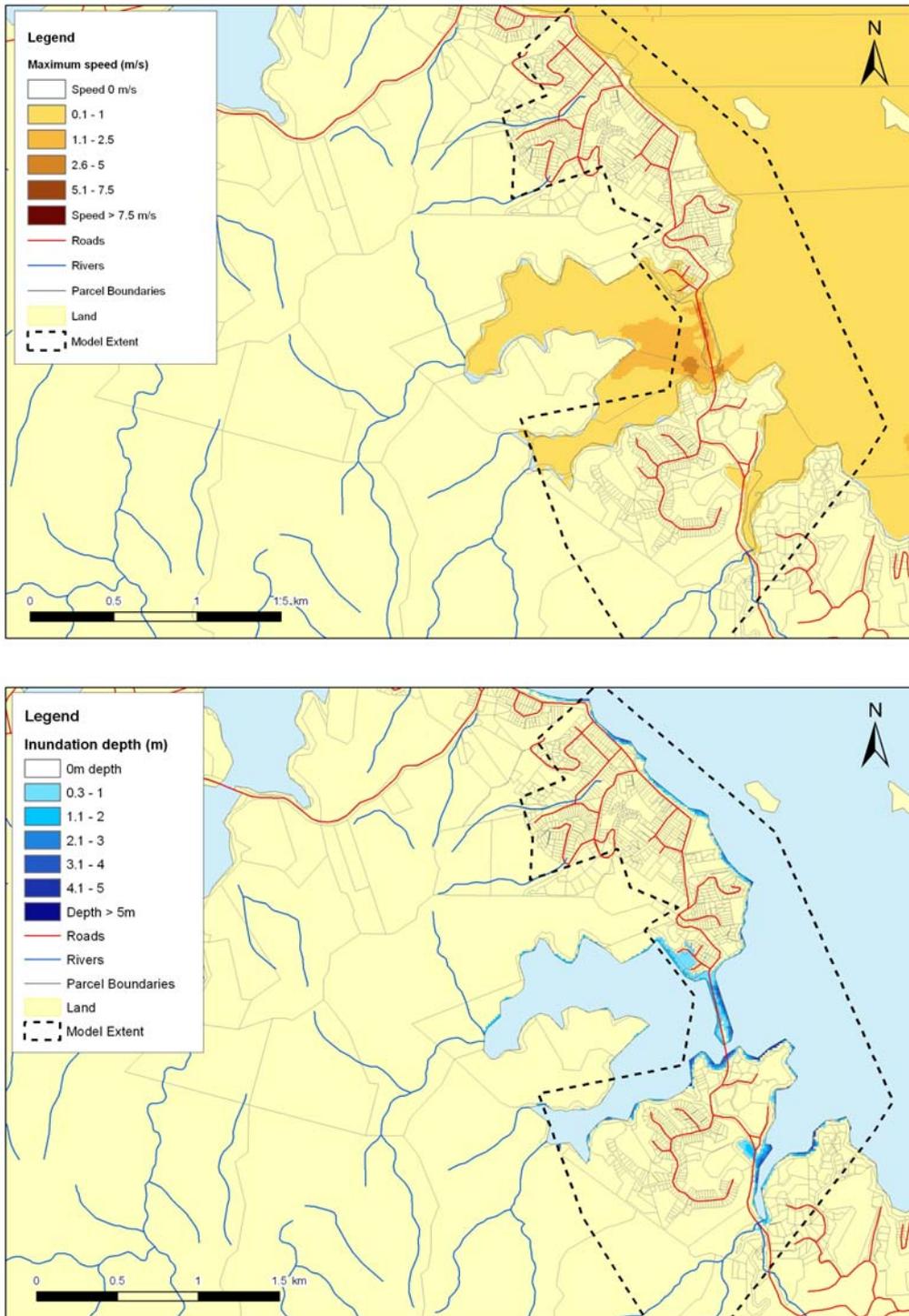


Figure 10: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR).

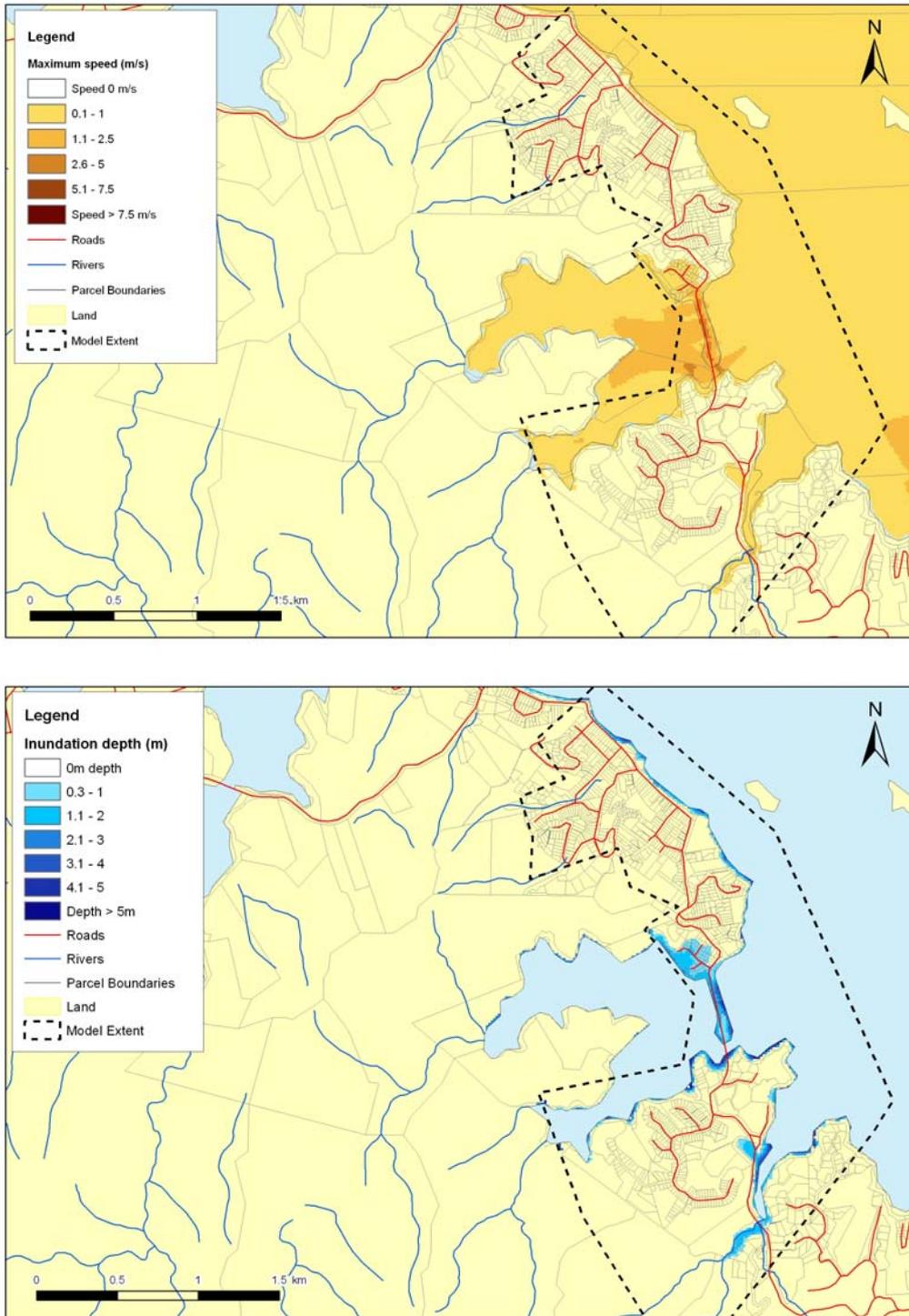


Figure 11: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR).

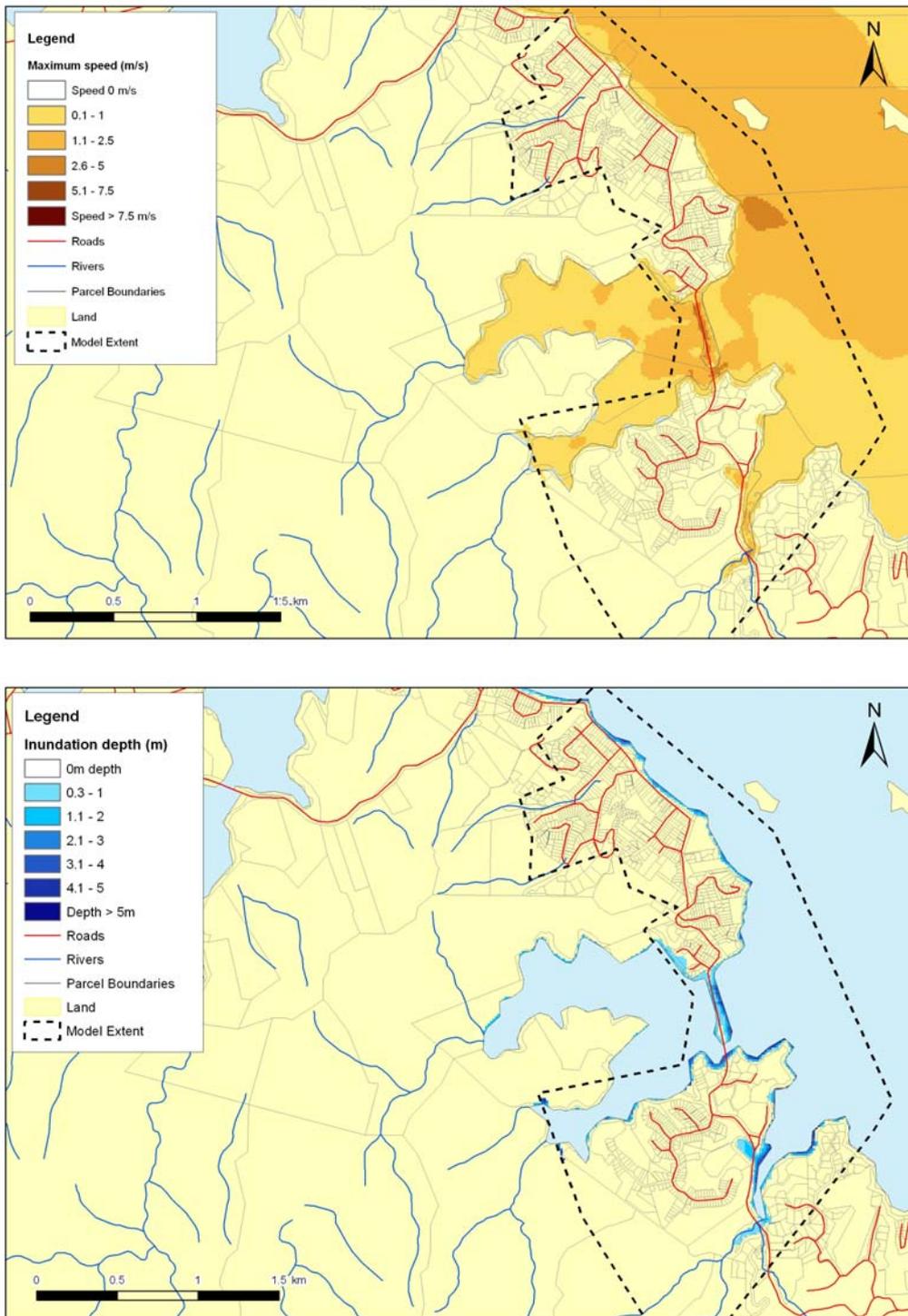


Figure 12: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 8.5$ Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).

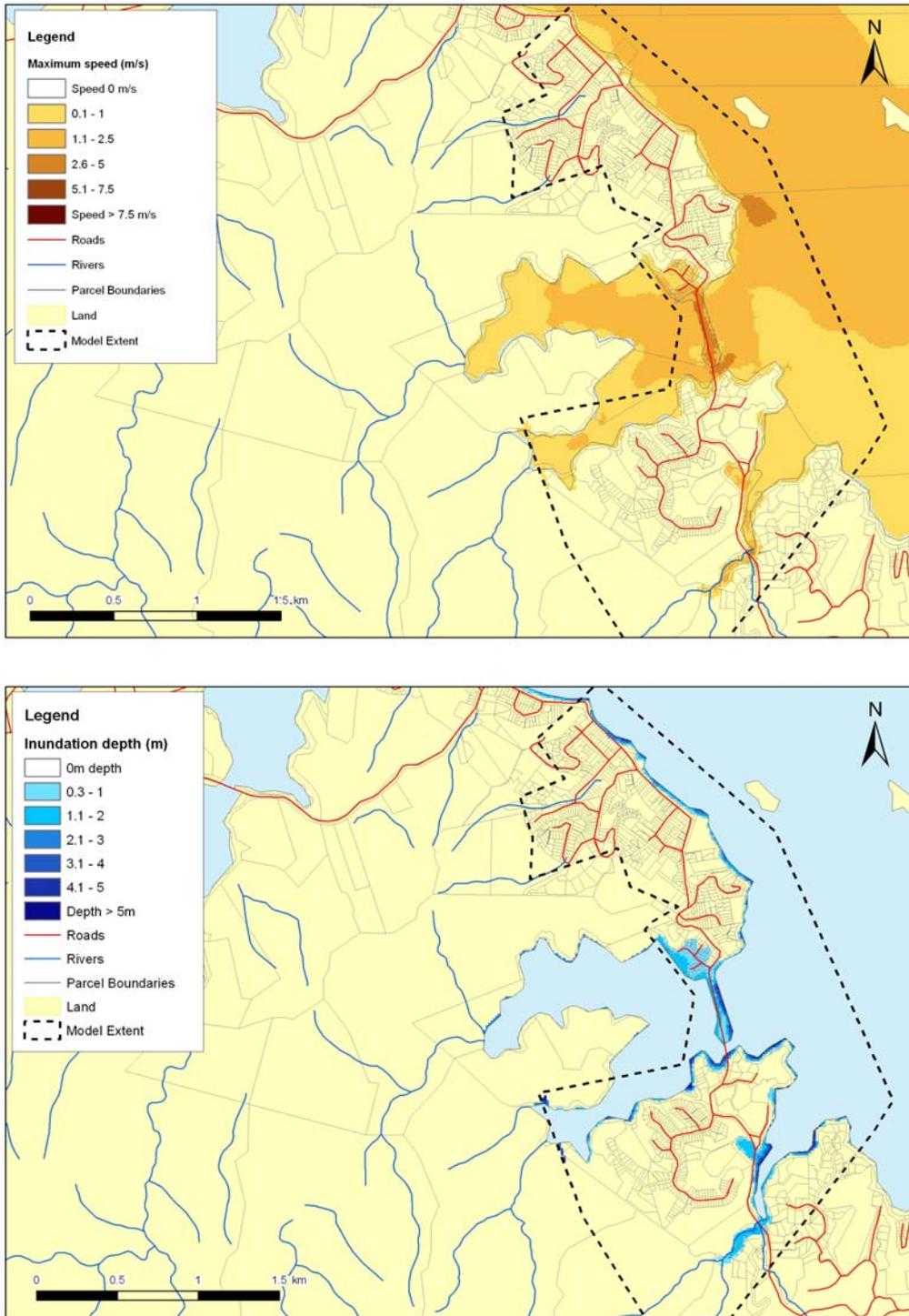


Figure 13: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 8.5$ Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).

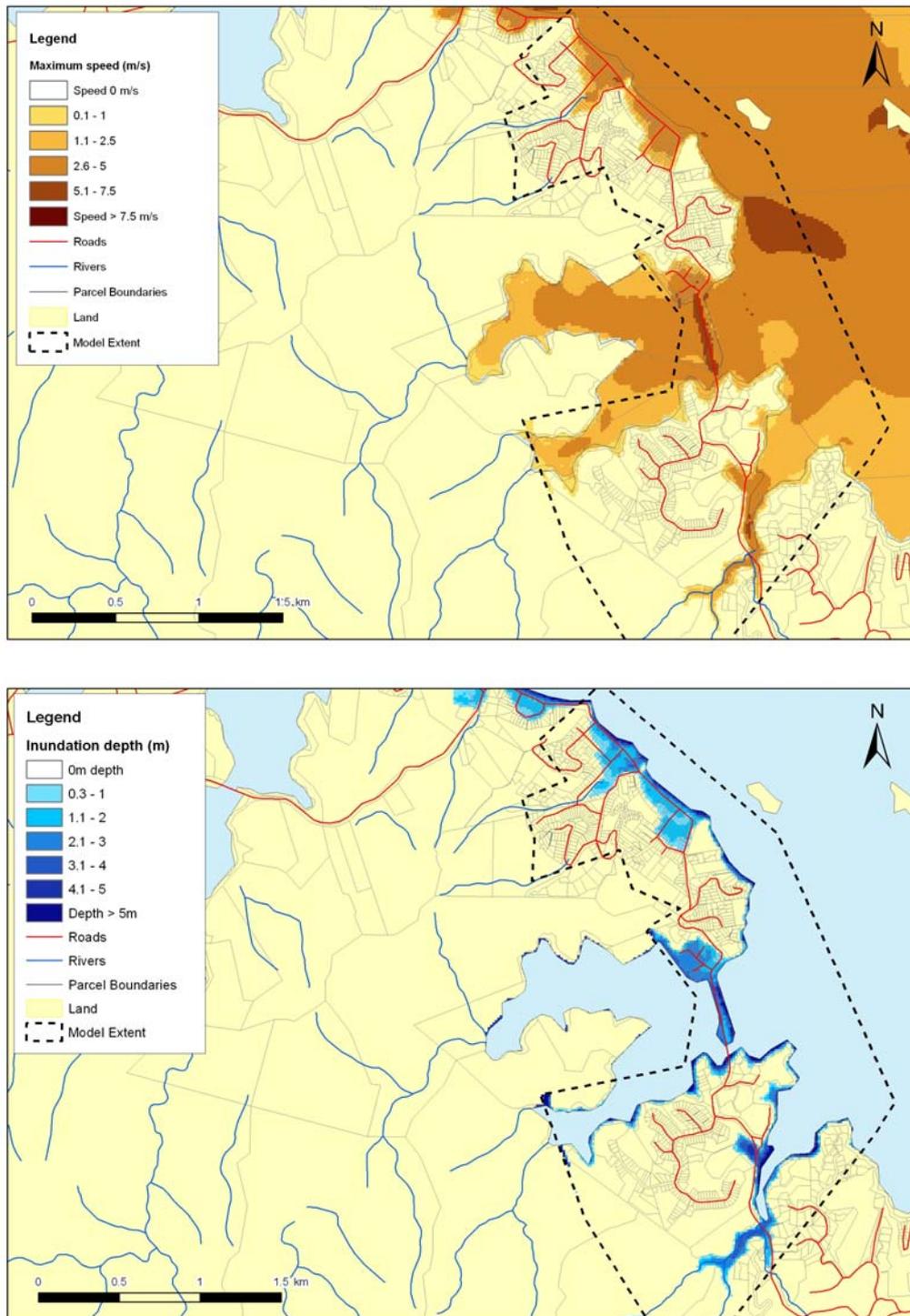


Figure 14: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 9.0$ Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).

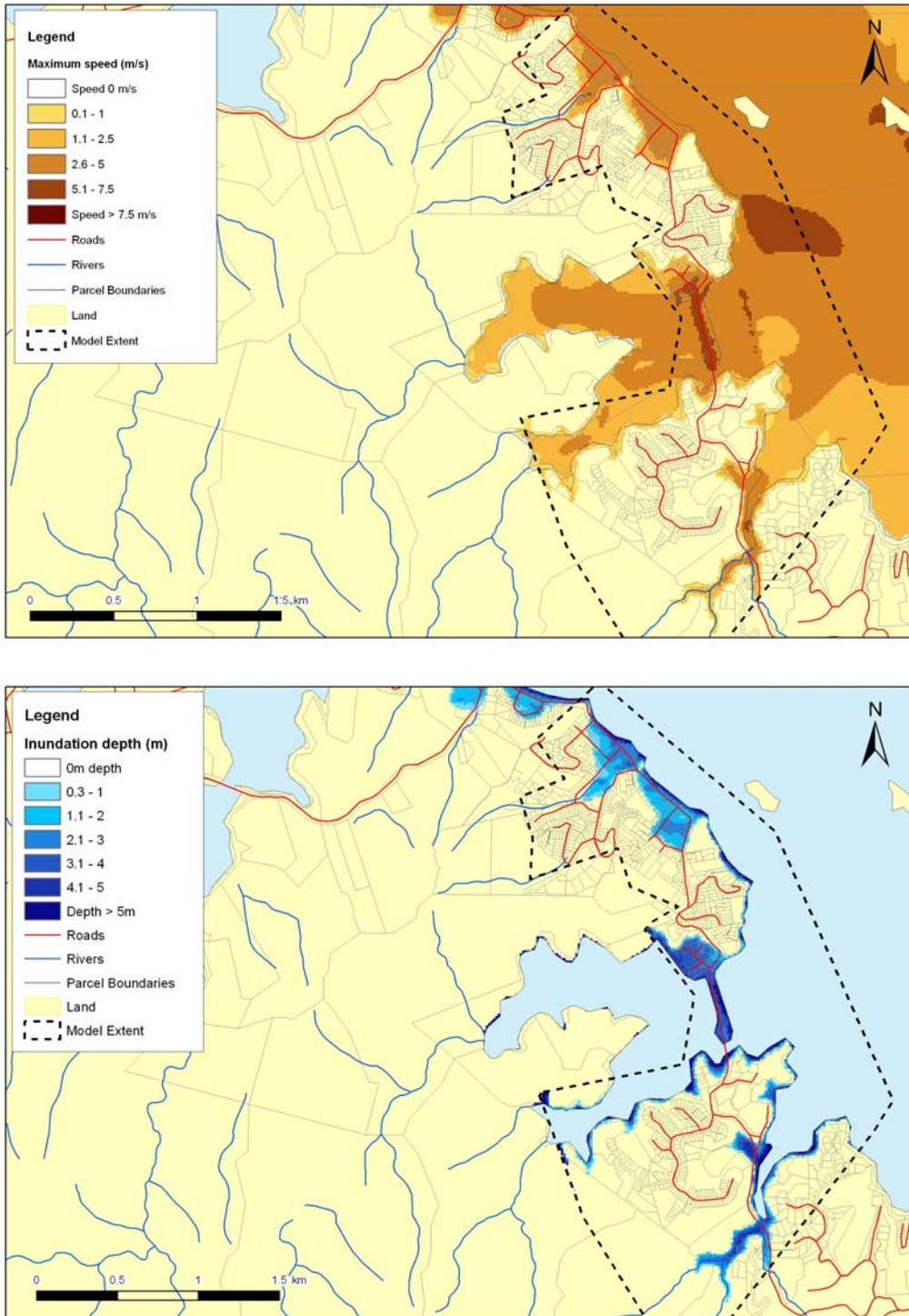


Figure 15: Paihia: Maximum inundation speed (upper) and depth (lower) plots for the Mw9.0 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).