

4.13. Pataua South

Maps of inundation depth and maximum current speed for Pataua South are presented in Figures 70 – 75. Predicted inundation from the South American event is quite extensive on the low-lying lands to the south of Pataua, but does not appear to threaten the settlement itself. However, if 50 cm sea level rise is included, then private properties in Pataua South are impacted from both the Pataua and Taiharuru Rivers. Maximum current speeds exceed 2.5 m s^{-1} in the entrance to the Pataua River. Pataua North is largely unaffected.

The TKSZ $M_w 8.5$ event results in greater inundation than the South American event, with Pataua South inundated from waves propagating up both rivers. When sea level rise is included, inundation is deeper and more extensive, with most of Pataua South subjected to flooding. Maximum current speeds exceed 5 m s^{-1} in the entrance to the Pataua River. The $M_w 9.0$ event leads to far more serious inundation of Pataua South, with water depths exceeding 5 m. Pataua North is also heavily inundated from this event, and more widespread inundation is evident around the local headlands. Maximum current speeds exceed 5 m s^{-1} over relatively wide areas, with consequent risk of damage and erosion.

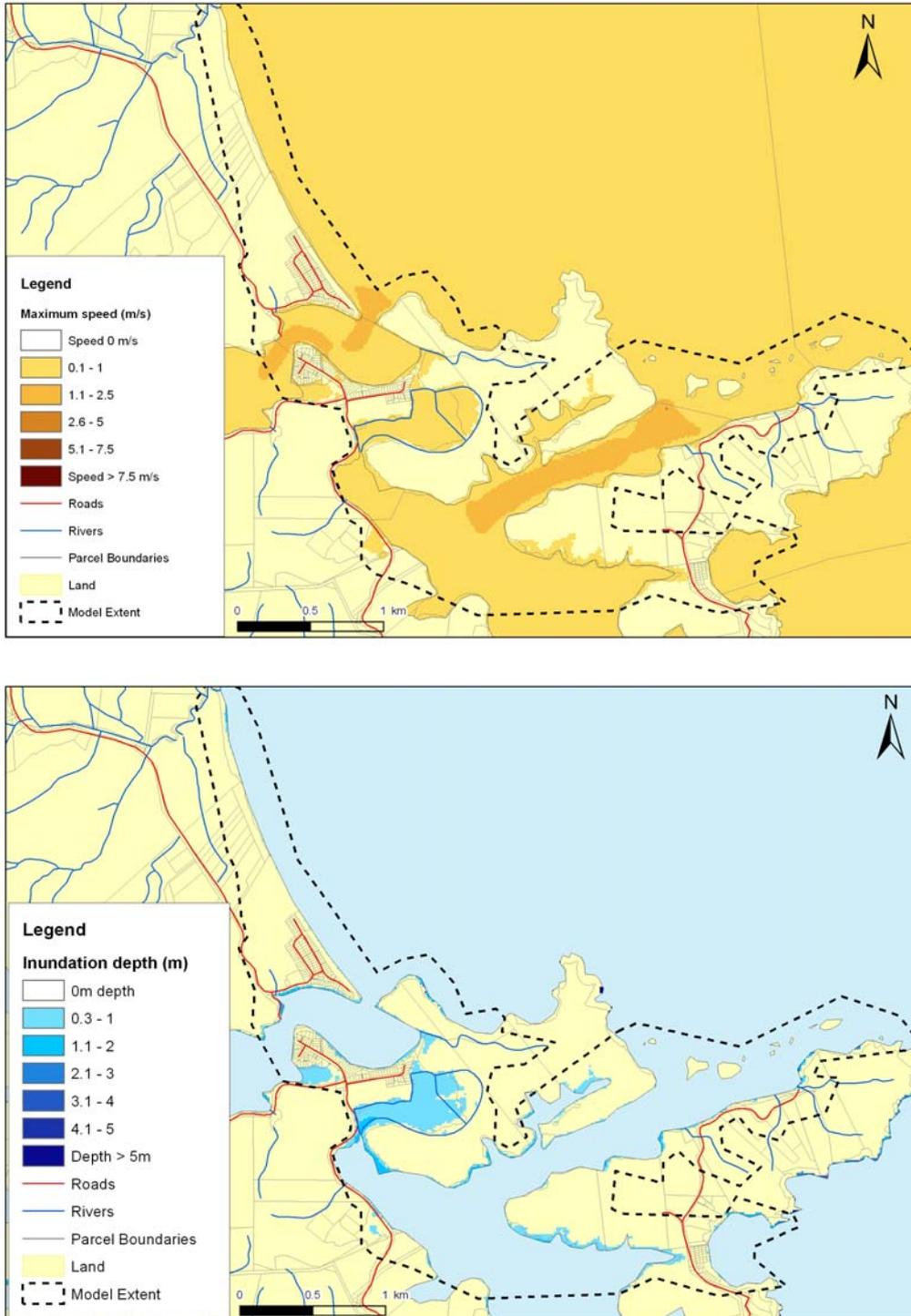


Figure 70: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS (to extent of LIDAR).

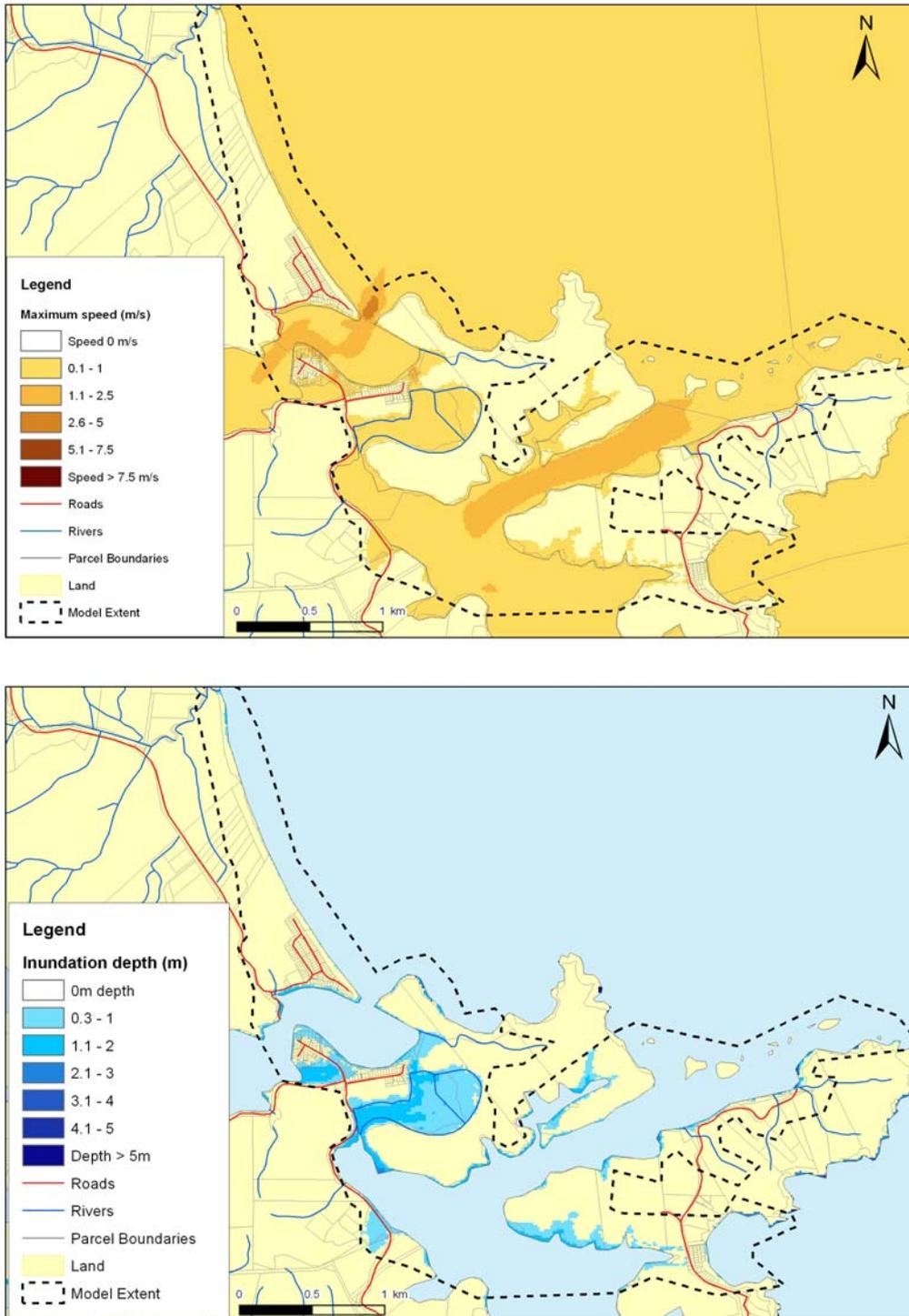


Figure 71: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the South American tsunami scenario at MHWS + 50cm (to extent of LIDAR).

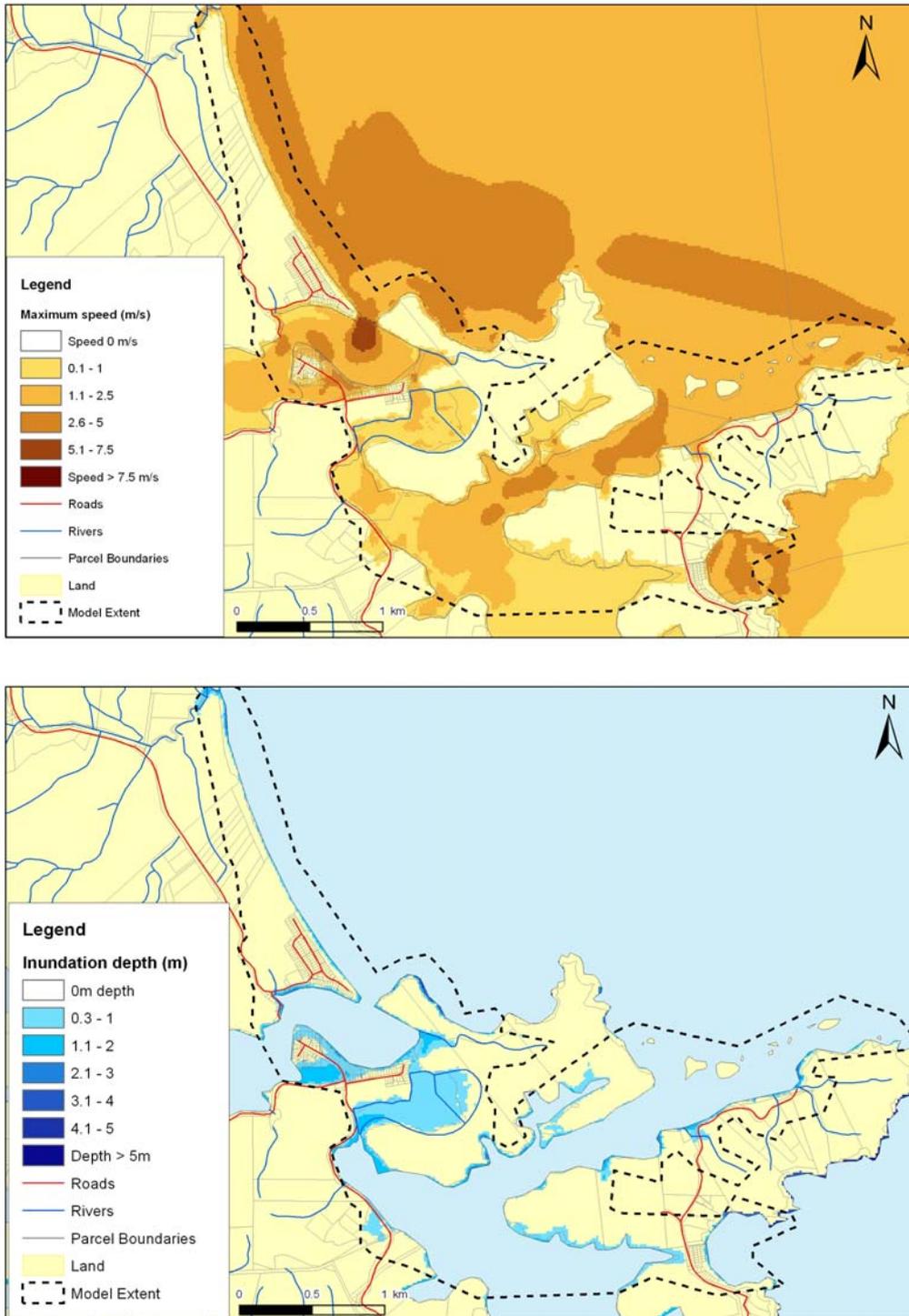


Figure 72: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the $M_w8.5$ Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).

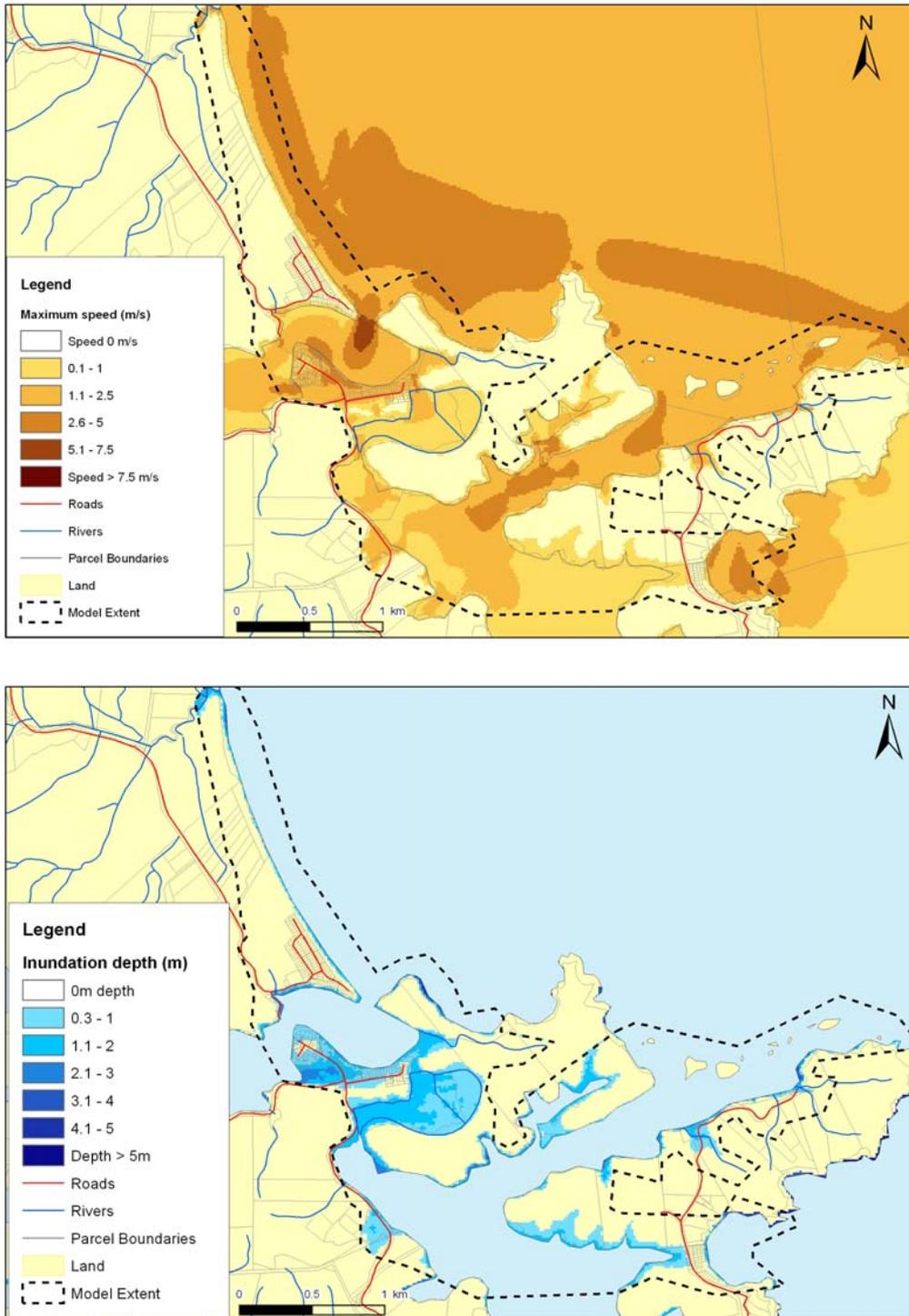


Figure 73: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the $M_w 8.5$ Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).

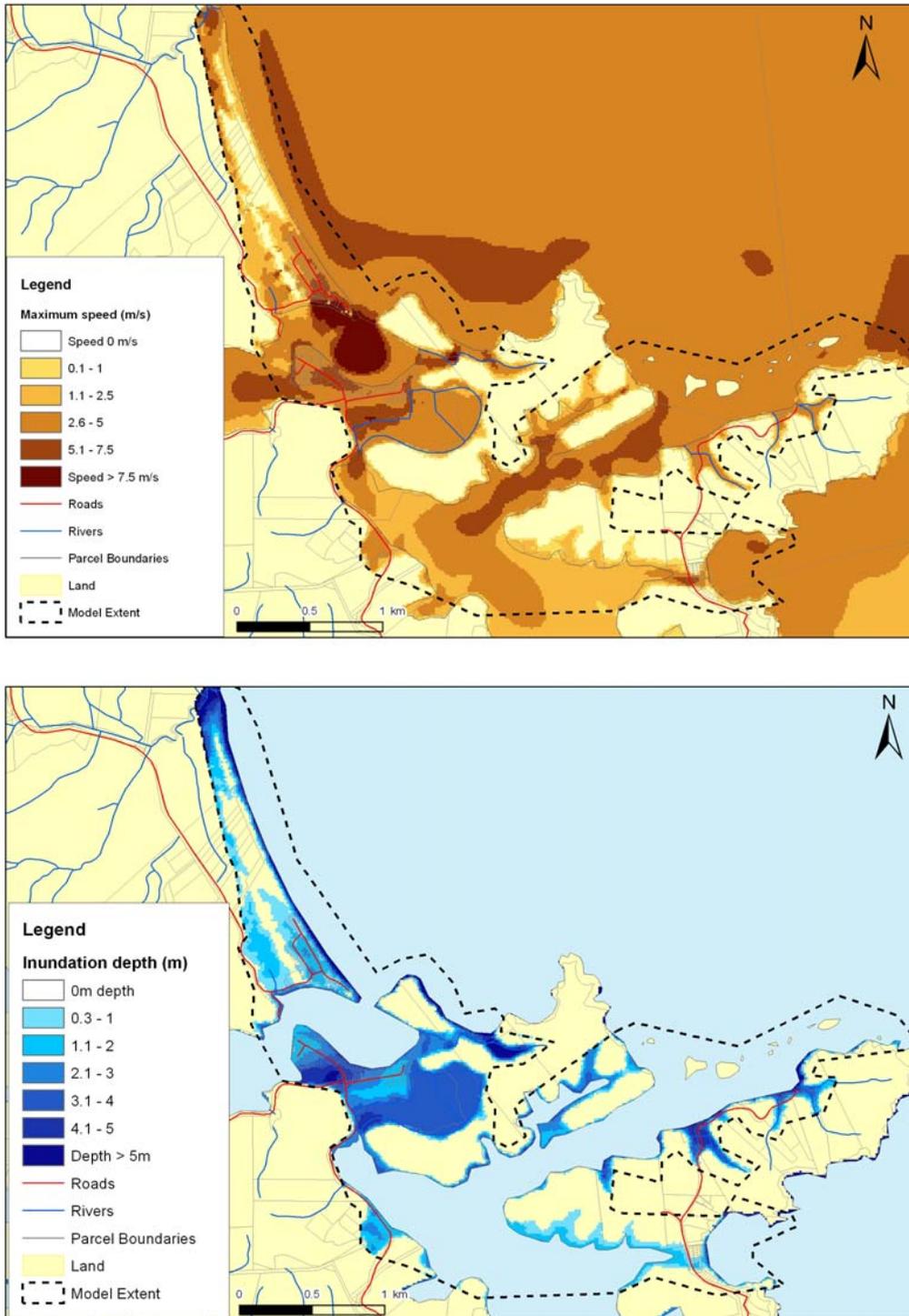


Figure 74: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the M_w 9.0 Tonga-Kermadec subduction zone scenario at MHWS (to extent of LIDAR).

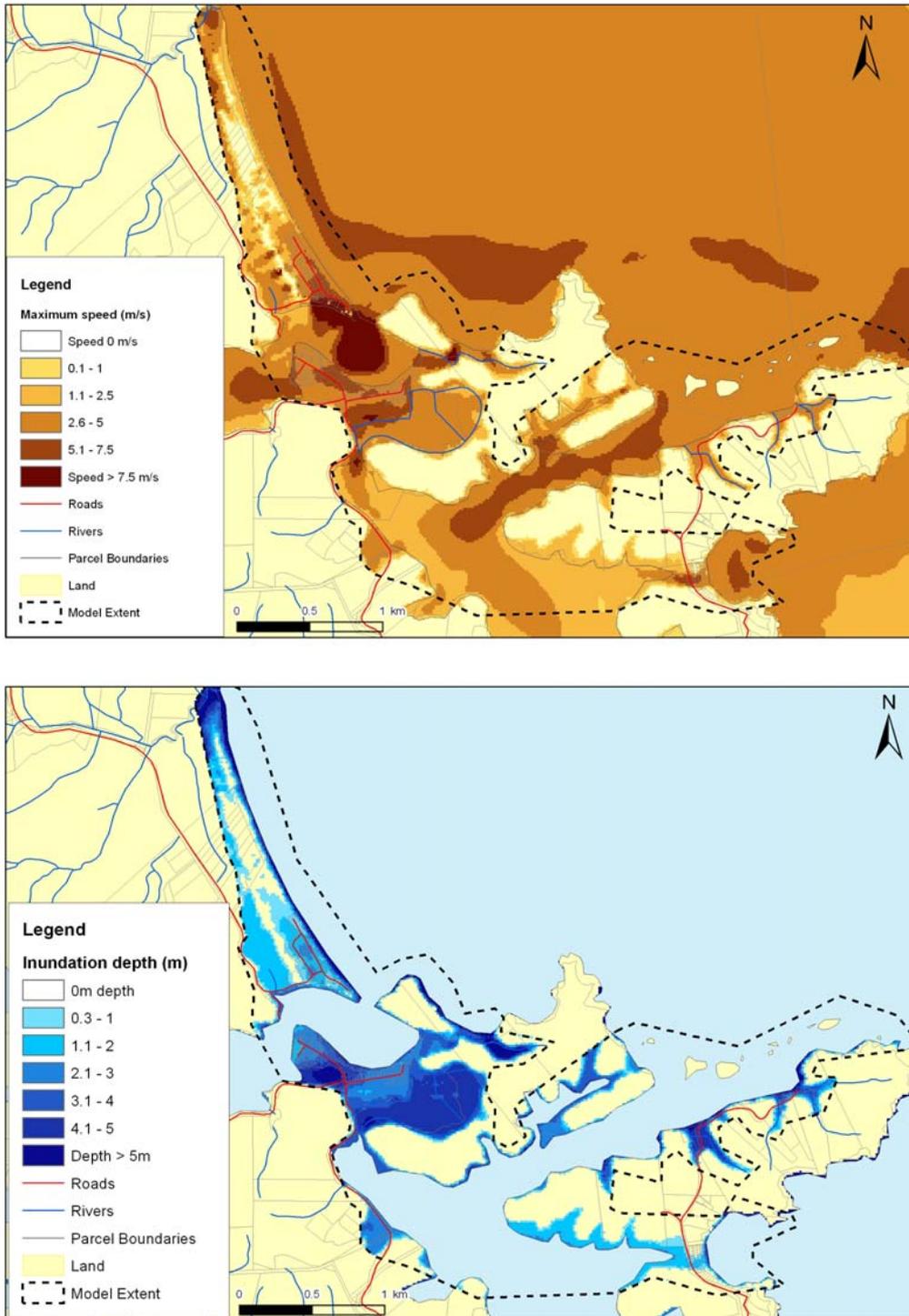


Figure 75: Pataua South: Maximum inundation speed (upper) and depth (lower) plots for the M_w 9.0 Tonga-Kermadec subduction zone scenario at MHWS + 50cm (to extent of LIDAR).