In central Japan, the Philippine Sea Plate (PHP) subducts beneath the Tokyo Metropolitan area, Kanto region. In western Kanto, the Izu-Bonin arc (IBA) within the PHP has been colliding with the Honshu arc from the south, forming a complex structure called the Izu-Collision zone (ICZ). Several active faults were formed in and around the ICZ. The geometry of the subducting PHP and the overlying crustal structure of the ICZ are important to constrain the process of earthquake occurrence and the crustal evolution process associated with arc-arc collision. A series of dense seismic array observations were undertaken in 2005, 2008 and 2009 to obtain a detailed structural image beneath the ICZ. Arrival times of earthquakes were used in a joint inversion for earthquake locations and velocity structure. The velocity structure shows that high Vp zones exist beneath the Tanzawa Mountains and Misaka Mountains, which are considered as fragments of the IBA. Low Vp and low Vp/Vs zones exist along the estimated deeper extension of the active faults. The relocated hypocenter distribution shows the seismicity under the eastern part of Tanzawa Mountains is located near the top boundary of a high-velocity body, which we interpret as the PHP. On the other hand, the seismicity under the western part of Tanzawa Mountains is located inside of the PHP. The former are interpreted as interplate seismicity. The latter are interpreted as intraplate seismicity. These characteristic velocity structure and seismicity are strongly controlled by the collision process of the IBA with the Honshu arc.