The influence of a major road on small mammals' movement was investigated. Muroid rodents were used as the model objects. Two years of our observations using the technique of extensive tetracycline bait marking have shown that the road could be an absolute obstacle to small mammal movements. The extreme barrier effect was determined by some construction features of the road, namely, the presence of a physically impassable median strip along it with the absence of any conduits for rodent movements connecting the road's sides. The migration disconnectedness among animals on the opposite sides of the road has resulted in the formation of demographically distinct units, which are equivalent to separate populations.