

2008A

Title of Research Subject	Research on development of safe and comfortable road environment with electric personal mobility
Background and Objective	<p>Various electric personal mobility such as Segways and Mini Segways, as well as electric kick skaters and ultra-compact vehicles have been developed, and expectations are placed on their diffusion as the next-generation mobility for realizing a safe and comfortable transportation society. However, in Japan, there are concerns about problems that can occur when they are mixed with existing mobility on sidewalks and roads. Although social experimental studies are being conducted, legal provisions have yet to be developed at the moment.</p> <p>Therefore, in this research, we will investigate case examples of introduction of the aforementioned personal mobility that has already been implemented in Europe and clarify the barriers that need to be cleared when introducing them in Japan. On that occasion, we will analyze the user's psychology, behavior, and conflicts on the sidewalks and roadway spaces being used by various types of electric personal mobility, targeting Japan and multiple countries with different road space usage concepts centering on automobiles or pedestrians.</p>
Expected results (including foresight and practicality)	<p>Due to the issues of rapidly declining birthrate, aging population, and declining population in Japan, it is necessary to identify road infrastructures that are truly necessary and promote spatial reconstruction. There is no doubt that not only autonomous vehicles, but also various types of electric personal mobility will play a major role in realizing a safe transportation society. However, at present, the position of these mobility on the roadway spaces is not clear, and the effects caused by their using the same roadway spaces with existing mobility have yet to be quantitatively assessed based on actual behavior.</p> <p>In this research, we will aim at presenting a solution to the above issues as follows: (1) Clarify practical problems related to the introduction of electric personal mobility through a survey of European government agencies; (2) clarify the impact of electric personal mobility on sidewalks and roadways by analyzing from the perspectives of various users' psychology, behavior, and physiological indicators based on surveys in experimental facilities and in actual fields; and (3) clarify the conditions of places where the users of various electric personal mobility that can coexist safely and comfortably, necessary road spaces and facilities, etc. by simulating the effects on traffic flow based on the results of (2).</p>