

# A proposal for ways to deal with vehicles parked or stopping on roads for safe and comfortable bicycle traffic

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## 1. Introduction

Today, bicycle traffic spaces, such as bicycle lanes, visually separated from car lanes are being installed on roads. Many bicycle lanes are being installed in urban areas, whereas many vehicles are parked on roads in urban areas. Vehicles parked in bicycle traffic spaces are impeding the traffic of bicycles in some cases. Coming up with ways to deal with vehicles parked or stopped on roads has therefore become an important issue along with the installation of bicycle traffic spaces (photo 1).



Photo 1: Examples of vehicles parked on bicycle traffic spaces

Conventional ways to deal with vehicles parking or stopping on roads include providing parking spaces based on parking demand. Meanwhile, such measures are often difficult on roads with limited widths.

Therefore, the National Institute for Land and Infrastructure Management (NILIM) is seeking methods to reduce the parking or stopping of vehicles in bicycle traffic spaces. This paper introduces these activities.

## 2. Vehicles parking or stopping on bicycle traffic spaces

Vehicles can easily enter bicycle traffic spaces when bicycle and vehicle traffic spaces are not physically separated. Thus, ways to prevent vehicles from parking or stopping in bicycle spaces may be necessary in some cases.

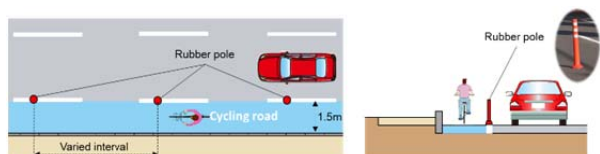


Figure 1: A way to prevent vehicles from parking or stopping using rubber poles

Thus, the authors focused on methods to prevent vehicles from parking or stopping in bicycle spaces by installing rubber poles with a certain height at the boundary between bicycle and vehicle traffic spaces (Figure 1).

## 3. Examination of a measure to prevent parking and stopping of vehicles using rubber poles

The expected effects of installing rubber poles include the reduction of parking or the stopping of vehicles and increased sense of safety among bicycle users. On the other hand, when rubber poles are installed at short intervals, they would affect the passing of bicycles (sense of being confined). Thus, the authors conducted an experiment to find the proper installation interval of rubber poles focusing on the sense of safety for bicycle riders and the effects on the passing of bicycles. In the experiment, twenty bicycle riders and vehicle drivers rode bikes and drove cars on a road mimicking a bicycle lane with a width of 1.5 meters in six cases, including 3, 6, 8, 10, and 12-meter intervals among the rubber poles. The participants answered a survey on the sense of being confined with the rubber poles and the effects to prevent vehicles from parking or stopping in the bicycle space after the experiment.

The experiment found that shorter intervals meant more preventive effects for vehicles from parking in the bicycle space and stronger sense of being confined for bicycle riders (Figure 2).

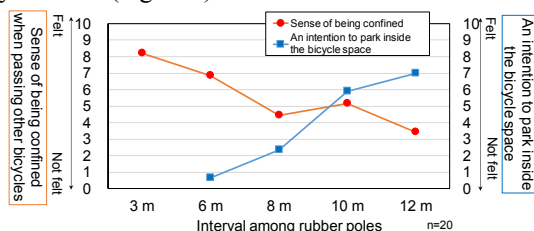


Figure 2: Result of the survey after the experiment

## 4. In the end

In addition to ways to reduce parking or the stopping of vehicles as discussed above, the authors are going to continue exploring effective ways to reduce vehicles parking or stopping on roads, including ways to install parking spaces based on parking demand.