Desirable Roundabout Structures Issued

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1. Introduction

On August 8, 2014, Desirable Roundabout Structures (Notification by the Heads of the Planning, National Highway and Risk Management, Environment and Safety, and Expressway Divisions of the Road Bureau)¹⁾ (below referred to as, "Division Heads Notification) was issued to road managers (roads administered by the national and regional governments). The Division Heads Notification summarized immediate application conditions and precautions necessary for a road manager to plan and design a roundabout as the basic concepts for a desirable roundabout.

The NILIM has conducted surveys and research on roundabouts, and participated in the preparation of the immediate application conditions and precautions in the Division Heads Notification.

This report introduces an outline of the surveys done by the NILIM and the contents of the Division Heads Notification regarding the applicable traffic volumes and applicable geometric design that are the major items in the Division Heads Notification.

2. Applicable traffic volume

We surveyed overseas traffic capacity setting methods, simulated traffic flow, and measured the characteristics of driving on actual roads in Japan to organize traffic capacity that can be accommodated. As a result, the Division Heads Notification indicated that traffic handling capability is confirmed in two stages. At the first stage, even though a detailed study is not done, as the traffic volume that can be accommodated, less than 10,000 (vehicles/day) that enter a roundabout was set,





Figure 2 Image of traffic handling



and in this case, it was assumed that a roundabout can be applied. At the second stage, as a verification method requiring a relatively detailed study, its applicability was judged by using Figure 1 to confirm whether or not a total number of incoming traffic of 10,000 (vehicles/day) or more is or is not in a range that can be accommodated by each incoming road. And Figure 2 shows an image of traffic handling by a roundabout.

3. Applicable geometric design

A driving survey based on various widths (circular roadway, apron, etc.) was performed to organize appropriate geometric designs. As a result, the Division Heads Notification considered the width of the roundabout to be the constituent that can ensure safe and smooth traffic flow, to stipulate external diameter of 27m and four roads as the criteria.





[Sources]

1) Ministry of Land, Infrastructure and Transport web site: <u>http://www.mlit.go.jp/road/sign/kijyun/pdf</u>/20140901tuuti.pdf