

## GENERAL INTRODUCTION

**INTRODUCTORY NOTE:** For more detailed information on the background, methodology, and reasoning behind the development of Transportation Planning Policy: TP 2 / 98 (Basic Design and Cross-section Standards) refer to the Transportation Systems Planning & Development Branch's "*Basic Design and Cross-section Standards - July 1997 Report.*"

### Design Standards

The "Basic Design Standards" recommended in the 1986 Manitoba Highways Classification Study were based upon 20 year projected traffic volumes that took highway function into account. This concept has served well. However, revisions to these standards are required due to changing vehicle and road construction technology, aging population, global environmental concerns, anticipated service to land adjacent to highway corridors and fiscal restraints.

Manitoba has unique characteristics (i.e., very flat terrain in the south, permafrost conditions in the north, very sparse population in rural areas and very large concentrations of population in and around Winnipeg). Large areas of farmland abutting highways in the south and extreme variations in seasonal conditions also require special consideration in design standards. Current economic constraints and a departmental mandate to provide, where justified, paved shoulders, also necessitated a review of the warrants and cross-section standards for each class of highway.

This report deals with basic design standards that are applicable for new construction and major reconstruction projects. The review undertaken has reassessed design speeds, traffic warrants for each cross-section, shoulder width, paving and edge treatments, basic right of way requirements and bridge widths. It was felt that economies also could be accomplished by the introduction of "Rehabilitation Standards" that would rehabilitate a road close to its original constructed state without compromising road safety. The "Rehabilitation Standards" will be the subject of a separate report.

### Design Speed

The design speed of a road is a value selected on the basis of highway functional classification, terrain, natural environment, roadside development, and anticipated traffic characteristics. The design speed affects the quality of service, safety, cost and the environmental impact of the facility. Once the road is constructed, the design speed is a permanent feature which cannot be altered without extensive reconstruction. Therefore, the selected design speed should be as high as practical in the interests of safety and service and compatible with terrain, roadside development and construction cost.

Some authorities relate posted speed to design speed. A value of 10 km / h less than design speed is also a common practice. While this may be a valid means of selecting posted speed, assuming the design speed is well chosen, the reverse should be avoided. It is therefore necessary for the design speed to be based on the function of the highway and on prevailing factors, not on posted speed.