

The purposes of a census may be detailed as follows :—

- (1.) To determine the average daily volume of traffic using the highway, and the nature and destructive effect of the traffic :
- (2.) To establish a record of the development and increase of motor traffic and the decrease of horse traffic :
- (3.) To determine the variation in volume and congestion of different periods of the day, week, month, and year :
- (4.) To enable an estimate to be formed showing the probable speeds of vehicles and the average distances between them :
- (5.) To determine the difference in volume of traffic before and after any improvement or reconstruction :
- (6.) To enable the cost of road-maintenance per unit vehicle to be determined :
- (7.) To assist the engineer in designing, maintaining, or reconstructing the highway :
- (8.) To assist the police authorities in allocating staff for regulation of traffic at congested or dangerous points :
- (9.) To assist in drafting regional town-planning schemes :
- (10.) To assist in making an equitable distribution of Government funds.

A general traffic census is now taken annually in England.

PARKING OF VEHICLES.

While this question does not crop up in connection with rural thoroughfares, still the problem of parking has become so acute in the large American cities, and even in the main streets of relatively small towns, that a few remarks may be opportune.

The width of a street is quickly and cheaply fixed in the early history of a town, but the cost of increasing the width of a street when congestion of traffic demands such a step is usually appalling. The parking problem has considerably aggravated the position, so that even where seemingly ample widths of streets originally were provided in many American cities the condition of affairs to-day is very sad. New Zealand is a country of great wealth *per capita*, and a very heavy increase in motor-vehicles is sure to follow main-highway developments. Therefore, in planning main streets of young towns or city streets that are likely to become busy thoroughfares an additional 16 ft. should be allowed for parking two lines of vehicles over and above the estimated widths required for moving traffic.

DETOURS AND BY-PASSES.

One of the great problems in England is the question of constructing detours around towns and villages. The old English towns are noted for their narrow tortuous streets, with the result that through traffic is seriously held up, the local traffic is impeded, and there is considerable danger to the inhabitants. On account of high land-values in the suburban areas, the construction of detours will involve enormous sums.

The possibilities of such difficulties in the future should be anticipated in New Zealand. There are already indications that there is trouble ahead—for example, the traffic coming from the north into Wellington is requested to travel via Featherston Street rather than by Lambton Quay.

HORSE TRAFFIC.

There is still considerable horse traffic in New Zealand, particularly in the country districts ; and, while it is likely that such traffic will gradually decrease as time goes on, nevertheless when a decision is being made as to a type of pavement it must receive its share of consideration. In the United States the problem of horse traffic receives scant attention, but in England of recent years there has been considerable agitation against the modern types of bituminous pavement. This agitation cannot stay the progress in road-construction which is demanded by motor-vehicles, and so some means of rendering the modern smooth pavement reasonably safe for horses is being sought. There seem to be two possible remedies. The first is the practice of gritting the pavements when they become slippery, just as is done to the ice coating on pavements in the east of the United States. This is not looked on with favour, on account of possible damage to the dense asphalt surfaces, and also the grit turns into dust or mud.

The second possible remedy is to design special shoes for the horses which will give the necessary adhesion. Shoes have been designed with rubber pads, and have been used quite successfully in a small way in England. A committee of experts set up by the Ministry of Transport in 1919 failed to find a satisfactory solution for the difficulty, but considered a reasonable measure of safety could be obtained by using such special designs of shoes.

In tar or bitumen surfacing of roads the use of chips instead of sand gives the horse an advantage.

A matter which often creates difficulty is that the camber usually given to a water-bound-macadam road is excessive for horse traffic when that same road is tar or bitumen sealed.

The horse-owner naturally is to some extent prejudiced against the new types of pavement which have been brought about by his rival in the sphere of transportation, and it is an interesting historical fact that when the road-roller was first introduced and macadam roads with smooth surfaces began to be made, the farmers of England objected strongly on account of their slipperiness. It is to be hoped that the objections to the bituminous surfaces will be as easily overcome.

PNEUMATIC VERSUS SOLID RUBBER TIRES.

The substitution of the pneumatic tire for the solid rubber tire on motor-vehicles cannot be too strongly urged. An elaborate series of tests carried out by the Bureau of Public Roads showed that probably this change would do more to save the roads from wear and heavy maintenance charges