



PRACTICAL MEASURES TO ENSURE ROAD SAFETY

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Annotation

Applying existing methods of assessing road safety on city streets, when assessing the danger of geometric elements of streets and various traffic situations, it is necessary to use probabilistic approaches that take into account the probabilistic essence of the driver-car-road-environment (VADS) system. In contrast to the deterministic approach, the probabilistic approach gives the value of the studied value, the probability of its implementation, and also evaluates traffic safety not only in a particular way (on curves in the plan, convex curves), but also using aggregated indicators.

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In the previous chapters, the following measures were justified on the streets and roads of the city, increasing traffic safety by reducing traffic intensity: increasing the width of traffic lanes on the trunk, street (road), transferring part of the "traffic flow to alternative roads and streets, the arrangement of ring intersections. It was also found that the risk of an accident increases with the increase in the number of trucks in the traffic flow.

In the first variant of the organization of traffic with a change in planning decisions, in comparison with existing conditions, the following composition of work:

1. Disassembly and removal of the tramway, contact and cable network.
2. Installation of structural layers of the base and covering similar to the carriageway of the street in place of the tramway.
3. The device of horizontal road markings.
4. A coordinated control device based on the "green wave" principle.

Transportation costs depend on various factors: the speed of movement, the time spent by goods and passengers on the road, the level of accidents on the street, the intensity and composition of traffic, the capacity and carrying capacity of the road, the quality of the road surface and geometric parameters of the road, fuel consumption and tire wear, the amount of mileage, etc.

The complex of these activities includes:

- creation of new streets;
- modernization of existing streets by their complete or partial reconstruction;
- increasing the distances between intersections;

- modernization of public transport facilities;
- creation of a bicycle traffic system isolated from the main street network;
- Improvement of means and methods of traffic regulation. Introduction of improved designs of traffic control means; application of coordinated regulation systems; use of centralized traffic light control schemes using computers, etc.;

Traffic management is a complex of engineering, technical and organizational measures aimed at maximizing the use by traffic flows of the opportunities presented by the geometric parameters of the road and its condition. It includes: placement and separation of traffic flows by the width of the carriageway and directions of movement, orientation of drivers about the direction of movement; separation of flows into groups of cars traveling at different speeds; separation of traffic paths in difficult sections; providing the possibility of switching from one lane to another, etc. The organization of traffic also includes information about the most appropriate routes and traffic conditions.

The road component of the organization and traffic safety includes a set of geometric parameters of the plan, longitudinal and transverse profiles of the road, their engineering equipment and arrangement, as well as indicators of operational condition and maintenance level, eliminating the likelihood of road accidents due to road conditions and reducing the severity of the consequences of accidents for other reasons.

The main methods of traffic management consist in dividing flows into homogeneous groups of vehicles and rationally distributing them by type, place and time in order to reduce the likelihood of conflicts between individual types of vehicles, as well as vehicles moving at different speeds and in different directions.

On the operated roads, the main technical means of organizing traffic are markings, guiding devices, road signs and pointers, traffic lights. The measures for the organization of traffic also include the improvement of road conditions, which is carried out during the repair process; improvement of the layout of intersections, the device of additional lanes on the ascents, guiding islands, etc.

To separate flows by level, intersections with roads and railways are built at different levels; aboveground and underground pedestrian crossings.

The separation of flows by direction provides for the ordering of traffic flows and the allocation of special lanes for each direction of movement. It is carried out by arranging independent carriageways for movement in different directions with a dividing strip between them or by drawing solid marking lines; by arranging dividing islands on curves of small radii; by arranging channeled intersections at the same level by constructing guiding islands or by marking them with a coating.

The separation of moving vehicles from standing cars is carried out by installing a reinforced parking lane of the curb and separating it by marking; construction of bus shelters near bus stops, food outlets, etc.

The separation of traffic flows by speed is of great importance for improving the convenience and safety of traffic, leading to a reduction in the number of overtaking. For these purposes, when operating roads, additional lanes are arranged for slow-moving cars on the ascents; widen the carriageway and allocate acceleration and braking lanes at intersections and junctions of roads, as well as at bus stops; limit the upper, lower or both speed limits on separate lanes; prohibit the passage of slow-moving vehicles on highways.

The rules of the road on highways allow the movement of: passenger cars and trucks with a permitted maximum mass of no more than 3.5 tons on motorways - at a speed of 110 km / h, on other roads - no more than 90 km / h; intercity and especially small buses and motorcycles on all roads no more than 90 km/ h; other buses, trucks with a permitted maximum mass of more than 3.5 tons on motorways - no more than 90 km / h, on other roads no more than 70 km/ h. In populated areas, all vehicles are allowed to move at a speed of no more than 60 km/h.

However, in real conditions, the speed of movement of single cars, and even more so of traffic flows, is in many cases lower than permissible and varies unevenly in different sections. The greatest influence on the reduction of speed in free flow is exerted by the evenness and coupling qualities of the coatings, rolling

resistance, the width of the carriageway, the visibility of the road surface, longitudinal slopes and radii in the plan. With an increase in the density of the traffic flow, the speed of its movement decreases in proportion to the intensity. Observations show that, on average, the speed of the traffic flow is 0.6-0.8 of the calculated or maximum secured.

The objectives of speed regulation are to increase traffic safety, average speed of traffic flow and throughput. As a rule, the solution of these tasks is interrelated. However, their priority and significance depends on specific conditions. The most important and long-term task is to increase the average speed of traffic flow. It can be solved by increasing the maximum safe speed provided throughout, reducing the speed span on each section of the road and reducing the influence of the intensity and composition of traffic flow on the speed of movement. The increase and alignment of traffic speeds along the length of the road can be achieved by improving the evenness and coupling qualities of the pavement, marking, widening the carriageway, strengthening roadsides, softening longitudinal slopes, increasing the radii of curves in the plan, increasing visibility and other measures included in the complex of maintenance and repair of roads.

To increase the throughput, depending on traffic conditions, it may be necessary to both limit and increase the speed, which follows from the dependence of the throughput on the speed of movement. The highest throughput value is achieved at speeds of 55-60 km/h for dry coating; 50-55 km/h for wet rough; 35-40 km/h for snow rolling (see Chapter 8). Therefore, from the standpoint of increasing throughput in areas where the speed is higher than the specified values, it is necessary to take measures to limit the speed, and in areas where the speed is lower than the specified values, it is necessary to take measures to ensure higher speeds during periods of high traffic intensity.

The results of road safety activities should be the achievement of sustainable and throughout the country compliance with generally recognized norms and rules of the road, the rights and legitimate interests of road users, namely:

- use of high-quality road and transport infrastructure that meets modern safety requirements;
- quick access to means of communication in order to inform law enforcement agencies or your family about the commission of a traffic accident and the state of the road and transport infrastructure;
- Prompt access to high-quality administrative, medical and emergency services.

To establish the types of interval distributions in vehicle flows at the local UDS, including to assess the impact of regulated intersections. In accordance with the established distributions, select models for calculating throughput and delays for unregulated and compact roundabouts.

Methods for calculating the capacity of compact roundabouts, as well as vehicle delays on them, should be based on a dichotomous distribution of intervals in the flow of vehicles, which takes into account the presence of a connected part of the flow of vehicles.

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