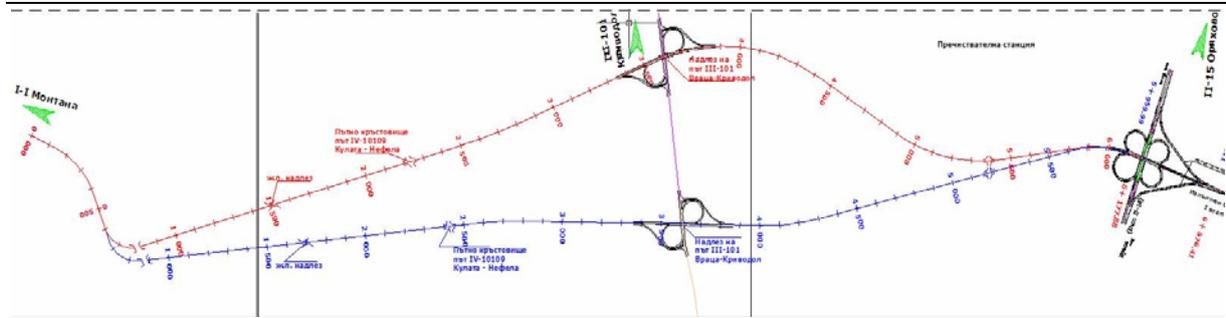


Cost-Benefit Analysis for the Bypass road of Vratsa



A CBA for the bypass road of the town of Vratsa, which is part of road I-1 Vidin - Botevgrad from km 141+300 to km 147+600 was commissioned by the National Road Infrastructure Agency (NRIA).

The analysis aims at the study of the traffic flow, justification of height clearance (choice of standard cross section) and selecting the most cost-effective alternative for the route, based on economic indicators, including cost-benefit components of investment, road safety audit and environmental impact assessment.

Three new design solutions were developed, red, blue and green versions, respectively.

The red version was developed with a view to bypass the city from as further distance as possible, therefore it is bit longer, and the blue one is closer and shorter. The green version was developed at the request of the Council of Technical and Economic Experts of the NRIA and with the prior consent of the contracting authority with a view to a wider bypass of the city.

All three options go through a Trumpet-shaped junction with an underpass, designed to separate them from the I-1 road, Montana - Vratsa.

The most effective social and economic option was chosen considering the cost of land acquisition, construction, supervision, as well as the revenues from the margins in the transport and operational costs.

In the auditing of the different option, with regard to road safety, the speed - time feature was considered.

Road safety was insured on the basis of the following three criteria:

1. Comparison of design speed with V85
2. Study of the change in V85 in the different road sections.
3. Study of the difference between the definite skid-resistance in the curves and the desired one.

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