

## **Improving road traffic by rerouting flows based on various regulation scenarios analysis**

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### **Abstract**

One of the major road traffic problems in Pitesti is manifested in the roundabout at Podul Viilor, which, although occupying a fairly generous space, has a very low level of service during peak hours, due to difficult access from one of the arms. The research, based on traffic measurements performed with DataFromSky software and micro-simulation traffic analyses performed with Vissim PTV software, indicated as the only solution the redirection of road flows from the intersection, which required traffic analysis for a larger area. The results obtained for the proposed scenarios - by estimating the degree of road congestion not only in the respective intersection, but also in the adjacent intersections, through which some road flows are reoriented - indicate that in this way a substantial improvement of the road traffic can be obtained for the intersection of Podul Viilor, without significantly affecting the traffic in the adjacent area. Thus, it is found that the service level of an intersection can be increased not necessarily through new road arrangements, but only through better regulation of road traffic in the area, based on the analysis of various scenarios using measurement software and traffic modelling.

*Keywords: road traffic, road flows, road congestions*

### **References**

1. Rodrigue J P et al 2013 Site Web Géographie des Transports (Hofstra University, Department of Economics and Geography)  
[Go to reference in article](#)  
[Google Scholar](#)
2. Boroiu A A and Boroiu A 2020 Geografia sistemelor de transport (Pitesti: University of Pitesti Publishing House)  
[Go to reference in article](#)  
[Google Scholar](#)

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3. Vilcan A et al 2017 The Plan of Sustainable Urban Mobility of the Municipality of Pitesti (Beneficiary S.C. SYNERGESTICS CORPORATION SRL Bucharest)

[Go to reference in article](#)

[Google Scholar](#)

4. Hall F L 1995 Fundamentals of transportation. Traffic stream characteristics (Ontario: McMaster University)

[Go to reference in article](#)

[Google Scholar](#)

5. Kimber R M 1980 The traffic capacity of roundabouts (Crowthorne: TRRL Laboratory Report LR 942. Transport and Road Research Laboratory)

[Go to reference in article](#)

[Google Scholar](#)

6. Boroiu A A, Neagu E, Boroiu A and Vieru I 2018 Proposals for the reorganization of road traffic in the central area of Pitesti municipality based on micro-simulation performed traffic analyses IOP Conf. Series: Materials Science and Engineering **444** 072021

[Go to reference in article](#)

[Google Scholar](#)

7. Boroiu A A, Neagu E, Boroiu A and Parlac S 2019 Proc. 30th SIAR International Congress of Automotive and Transport Engineering Science and Management of Automotive and Transportation Engineering SMAT 2019, Craiova Study of the Possibilities to Improve the Service Level of Traffic Light Intersections by Road Traffic Micro-simulation 349-358 ISBN: 978-3-030-32563-3 WOS 000528526600041

[Go to reference in article](#)

[Google Scholar](#)

8. 2000 Roundabouts: an informational guide (U.S. Department of Transportation: Federal Highway Administration, Publication No FHWA RD-00-067)

[Go to reference in article](#)

[Google Scholar](#)

9. <https://phantom.net/products>

[Go to reference in article](#)

[Google Scholar](#)

10. Bliion A 2018 - Scientific research to improve road traffic in the roundabout of Podul Viilor (University of Pitești, Fourth year internship report traffic dynamic study)

[Go to reference in article](#)

[Google Scholar](#)

11. [www.google.com/maps](http://www.google.com/maps)

[Go to reference in article](#)

[Google Scholar](#)

12. 2010 Standard for the Development of Intersections at Public Roads (Road Technical Bulletin, no.4/2010, Designer Search Corporation)

[Go to reference in article](#)

[Google Scholar](#)