

12th International Conference "Organization and Traffic Safety Management in large cities",
SPbOTSIC-2016, 28-30 September 2016, St. Petersburg, Russia

Conceptual Justification of Town-Planning Design Standards for Streets and Roads in Large Cities for Ensuring Traffic Safety

Svetlana Ershova ^{a*}, Evgeny Smirnov ^b

Saint Petersburg State University of Architecture and Civil Engineering, 4 2nd Krasnoarmeyskaya str., Saint Petersburg, 190005, Russia

Abstract

The article considers approaches to the conceptual development of a street and road network in large cities at various times, peculiarities of the modern scientific and innovational conceptual justification of town-planning design standards for streets and roads as the basis for ensuring traffic safety in Saint Petersburg, and represents the analysis results as to Saint Petersburg street and road network density.

© 2017 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of the 12th International Conference "Organization and Traffic Safety Management in large cities"

Keywords: conceptual justification of town-planning design standards; street and road network; traffic safety

1. Introduction

The city transport system is one of the complex and overwhelmingly important elements of the big city structure. The investigation of its constituents, development arrangement and planning system is one of the actual directions of theoretical research having significant practical meaning for efficient use of territories as well as for the traffic safety. Changing the view as regards the role and place of the transport system in the city structure has been largely accompanied with changing the view on the transport development strategy, its dependence on the city planning policy and accepted territory planning system. Alongside with that there was a need for conceptual working out of methodological and methodic issues as to the justification of the regulatory requirements to the list of street and road

* Corresponding author. Tel.: +0-000-000-0000 ; fax: +0-000-000-0000 .

E-mail address: s.ershova@kga.gov.spb.ru^a, pnr@spbgasu.ru^b

network (SRN) indices ensuring traffic safety and to the calculation procedures as to their quantitative values for application in town-planning documents and territory planning design. In particular, Saint Petersburg city planning and transport planning specialists articulated the range of problems as to the necessity for positioning as mandatory for application to the city planning design and successive construction documents containing the standards for the street and road network development planning.

The problems related to difficulties in formation of the street and road network adequate for the city needs are attributed to numerous objective and subjective reasons many of which resulted from the new model of town planning policy formed in the post-socialistic period (1990–1991). The main reason lay in the under-developed legal mechanism of that time which resulted in priority of private interests of investors and developers over the public ones. It was reflected in the possibility of obtaining construction permits for tenement buildings (residential buildings as a rule) without consideration of the fact whether the developed areas were provided with engineering, social, and transport infrastructure. The development was formed without assessment of the possibility of providing the land plot with transport infrastructure, which served the cause of not only breaking of communications between the territories developed in various city districts but also of principal non-possibility for re-establishment of communications in future due to non-availability of territorial reserves for construction of roads and streets, transport infrastructure facilities. Experts relate the street and road network development lagging behind in the districts of intensive residential development, traffic congestion in the historical center of St. Petersburg, non-availability of the sufficient quantity of parking lots in the city center and in the districts of intensive residential development to the consequences of that period giving the negative impact up to date.

2. Main text

The City Planning Code of the Russian Federation effective from 30.12.2004 built the city planning relations anew and almost fully changed the city planning documents system. According to this concept, for the first time the City Planning Code of the Russian Federation provided for mandatory elaboration of new documents necessary for the city planning activity and previously not known to the Russian Federation legal and city planning system [State Duma (2005)]. As a consequence, the transport planning situation became better to some extent: in Saint Petersburg, the General Urban Plan of Saint Petersburg, the rules for the city land use and development, sectoral development schemes of the street and road network were developed and approved (2005) [Saint Petersburg Legislative Assembly (2005, 2009), Government of Saint Petersburg (2011)]. The main advantage of the developed documents was the fact that they established the uniform city planning requirements aiming at comprehensive development and a good balance between private and public interests. It did not mean that all the causes hindering efficient development of transport network were eliminated but for sure it contributed to the balanced city planning development of the territories.

Alongside with that, for the first time the City Planning Code of the Russian Federation introduced a new notion — the standards for the city planning design — and established the requirements to the development of regional standards for city planning design for each subject of the Russian Federation as the basics for favorable conditions for people's activities. According to Part 3, Article 24 of the City Planning Code of the Russian Federation, the standards for the city planning design formed the basic document for the territorial planning of settlements and city districts. However, the standards for city planning design were developed for a rather long time. The work over the document started in 2006 and was finished only in 2014 with the adoption of Saint Petersburg law dd. 22.01.2014 No. 23-9 On Regional Standards for City Planning Design Applied in Saint Petersburg. The authors consider that the main cause hindering the work over standards is non-availability of uniformity in opinions as to fundamental issues of the regulatory document, competing ideas as to its aims and tasks, non-availability of the formed concept of the document composition and contents, mainly in the part of ensuring the street and road network development. Enacted on 05.05.2014, Federal Law No. 131-FZ On Incorporation of Changes into the City Planning Code of the Russian Federation (hereinafter referred to as Law No. 131-FZ) once again changed the document composition and contents, introduced significant changes into the procedure for the preparation of the standards for the city planning design. Since Law No. 131-FZ stated parts 4–6, Article 24 of the City Planning Code of the Russian Federation, null and void, it became necessary to correct already accepted standards for the city planning design and, being guided by the requirements of the newly introduced Chapter 3.1. of the City Planning Code of the Russian Federation

Download English Version:

<https://daneshyari.com/en/article/5125278>

Download Persian Version:

<https://daneshyari.com/article/5125278>

[Daneshyari.com](https://daneshyari.com)