

Available online at www.sciencedirect.com**ScienceDirect**

Procedia Engineering 187 (2017) 756 – 762

**Procedia
Engineering**www.elsevier.com/locate/procedia10th International Scientific Conference Transbaltica 2017:
Transportation Science and Technology

Ways to Increase Population Mobility through the Transition to Sustainable Transport

Irina Makarova^a, Anton Pashkevich^b, Ksenia Shubenkova^{a,*}, Eduard Mukhametdinov^a^a*Kazan Federal University, Naberezhnye Chelny, Russia*^b*Tallinn University of Technology, Estonia*

Abstract

Ways to increase sustainability of the city transport system and, particularly, measures to promote safe public transport and non-motorized means of transport are considered in the article. Analysis of the existing positive experience shows that complex decisions for a sustainable development of the urban transport system are necessary. Technical and organizational ways to increase sustainability and safety of the transport system are studied. The results of solution for separate tasks, which are aimed to meet the goal, are presented: they include definition of transport preferences for the citizens of Naberezhnye Chelny and a model of an adaptive smart-bicycle. It is shown that the reasonable combination of public transport and non-motorized transport systems for strategic and operational management will help to enhance efficiency and safety of transport system.

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

[\(http://creativecommons.org/licenses/by-nc-nd/4.0/\)](http://creativecommons.org/licenses/by-nc-nd/4.0/).

Peer-review under responsibility of the organizing committee of the 10th International Scientific Conference Transbaltica 2017

Keywords: sustainable mobility, public transport, last mile, control system, smart-bike, sensors, controllers

1. Introduction

Demographers predict that by 2050 there are going to be 2.5 billion more people, which will live in urban areas. Transport plays a crucial role in the urban development, because it provides an access for people to different activities including education, markets, employment, recreation, health care and other key services. Overall demand

* Corresponding author.

E-mail address: ksenia.shubenkova@gmail.com