



Public Transport Optimization Action Plan for the Unified Public Transport System of Šiauliai District and Šiauliai City

Project Report

Šiauliai City Municipality Administration

Vilnius, 2020

Table of Contents

| | |
|--|-------------------------------------|
| List of tables..... | 3 |
| List of pictures | Error! Bookmark not defined. |
| List of annexes | Error! Bookmark not defined. |
| Abbreviations and concepts | Error! Bookmark not defined. |
| Summary | 8 |
| Introduction..... | Error! Bookmark not defined. |
| 1 Functional areas of public transport optimization action plan | 12 |
| 1.1 Limits observed by public transport optimization plan | 12 |
| 1.2 Description of functional area..... | Error! Bookmark not defined. |
| 2 Description of principal actors involved, their role and potential impact..... | 23 |
| 2.1 Subjects operating within functional area | Error! Bookmark not defined. |
| 2.2 EU, national, regional and local funding for public transport | 26 |
| 2.3 Role of institutions at national, regional and local level..... | 31 |
| 3 Overview of current mobility situation within FA | 34 |
| 3.1 Overview of current strategies and policy | 34 |
| 3.1.1 Analysis of the EU legal regulation | 34 |
| 3.1.2 Analysis of national legal regulation | 35 |
| 3.1.3 Analysis of regulation at self-government level..... | Error! Bookmark not defined. |
| 3.2 Analysis of plans and studies conducted | 47 |
| 3.3 Current mobility systems within the territory analysed by CMP..... | 54 |
| 3.4 Current situation SWOT analysis | Error! Bookmark not defined. |
| 4 CMP strategic objective/ vision and underlying CMP principles..... | 66 |
| 5 List of CMP priority implementation areas, including core objectives related to these priority areas | 70 |
| 6 CMP implementation plan..... | 78 |
| 6.1 Measure implementation plan..... | Error! Bookmark not defined. |
| 6.2 Implementation, monitoring and updating..... | Error! Bookmark not defined. |
| List of references | Error! Bookmark not defined. |
| Annexes | Error! Bookmark not defined. |



List of tables

| | |
|---|----|
| Table 1. EU legislation..... | 34 |
| Table 2. National strategic documents | 35 |
| Table 3. Articles establishing procurement law activities | 39 |
| Table 4. Articles establishing activities of the permit issuance rules | 39 |
| Table 5. Articles establishing activities of the income foregone reimbursement procedures | 40 |
| Table 6. Articles establishing activities of the loss compensation procedures | 41 |
| Table 7. Articles establishing activities of the operation licence rules | 41 |
| Table 8. Articles establishing activities of the passenger and luggage transport rules | 42 |
| Table 9. Articles establishing activities of the requirements to streets and roads..... | 42 |
| Table 10. Summary of national legislation regulating public transport organisation..... | 43 |
| Table 11. Condition and age of vehicles in 2016. | 54 |
| Table 12. Measure implementation plan | 80 |



List of pictures

| | |
|--|----|
| Picture 1. Functional area and surrounding territories for public transport optimization | 12 |
| Picture 2. Number of inhabitants in Šiauliai city and Šiauliai district at the beginning of the year, thous. . | 13 |
| Picture 3. Fluctuation in occupancy rates among inhabitants of Šiauliai city and district, % | 14 |
| Picture 4. Fluctuation in the number of routes and buses in Šiauliai city and district, pcs. | 14 |
| Picture 5. Run of local city transport routes in Šiauliai city and district, mln. km | 15 |
| Picture 6. Run of local suburban transport routes in Šiauliai city and district, mln. km..... | 15 |
| Picture 7. Fluctuation in the number of passenger cars within the period from 2009 to 2019, cars/1 thous. inhabitants..... | 16 |
| Picture 8. Main purposes why respondents travel to Šiauliai | 17 |
| Picture 9. Frequency of trips to Šiauliai for purposes specified | 17 |
| Picture 10. Purposes and frequency of the main trips to Šiauliai | 18 |
| Picture 11. Distribution according to types of public transport users | 18 |
| Picture 12. Frequency of the use of public transport | 19 |
| Picture 13. Objects of attraction in Šiauliai city | 20 |
| Picture 14. Residential places of the respondents participated in the survey | 21 |
| Picture 15. Local authorities of Šiauliai district municipality..... | 22 |
| Picture 16. Public transport organisation in functional area..... | 23 |
| Picture 17. Sources of subsidies allocated in Sweden..... | 31 |
| Picture 18. Lithuanian public transport organisation module | 33 |
| Picture 19. Locations of day traffic intensity meters | 48 |
| Picture 20. Distribution of traffic flows during the morning rush hour..... | 49 |
| Picture 21. Distribution of traffic flows during the evening rush hour | 50 |
| Picture 22. Public transport accessibility scheme of Šiauliai city | 52 |
| Picture 23. Fluctuation in Šiauliai city public transport passenger flows, mln | 52 |
| Picture 24. Fluctuation in Šiauliai suburban public transport passenger flows, thous..... | 53 |
| Picture 25. Public transport passenger flows in the central area of Šiauliai city during rush hour | 53 |
| Picture 26. Scheme of the routes of Šiauliai city buses and inbound buses | 56 |
| Picture 27. Distribution of daily traffic flows in Šiauliai city | 58 |
| Picture 28. Distribution according to types of public transport users | 58 |
| Picture 29. Average length of trips by public transport in the morning and in the evening | 59 |
| Picture 30. Average length of trips to final destination in the morning and in the evening | 60 |
| Picture 31. Average prices for trips to final destination in the morning and in the evening | 60 |



Picture 32. Paid car parking area in Šiauliai city..... 61

Picture 33. Scheme of bicycle paths in Šiauliai city..... 63

Picture 34. Public transport routes served in functional area 72

Picture 35. Strategy implementation levels..... 83



List of annexes

| | |
|---|----|
| Annex 1. Distribution of traffic flows | 90 |
| Annex 2. Information on traffic intensity during the morning, evening rush hour and 24 hours per day | 91 |



Abbreviations and concepts

| | |
|-----------------------|--|
| Project | Public transport optimization action plan for the unified public transport system of Šiauliai district and Šiauliai city |
| Consultant | Smart Continent LT UAB |
| EU | European Union |
| RL | Republic of Lithuania |
| Customer | Šiauliai city municipality administration |
| Functional area | Municipalities of Šiauliai city and Šiauliai district |
| FA | Functional area |
| CMP | Commuting Master Plan |
| Commuting Master Plan | Public transport optimization action plan for the unified public transport system of Šiauliai district and Šiauliai city for convenient travelling of district inhabitants to the city for work and/ or study purposes |
| Survey | Survey of inhabitants' travelling habits and opinion in order to access public transport system of Šiauliai city and Šiauliai district |
| LTSA | Lithuanian transport safety administration |



Summary

The public transport optimization action plan for the unified public transport system of Šiauliai district and Šiauliai city was prepared in accordance with the Šiauliai city Sustainable Urban Mobility Plan (SUMP), Development Strategies of Šiauliai city and Šiauliai district, national strategic documents, EU strategic documents and the Survey of travel habits and opinions of the citizens. Based on the indicated sources, which distinguish the directions of urbanization and public transport development, a vision of CMP optimization was prepared - Šiauliai city and district public transport is a sustainable, accessible, convenient and safe way to travel quickly in both the city and the district. The vision is formed as a set of two essential priority directions of the transport system - the transport system of the functional zone must be 1) friendly to the population and the environment; 2) Competitive and efficient.

The first priority direction – population and environment, is implemented on the basis of the following principles: 1) environment-friendly transport; 2) intermodal transport and its infrastructure; 3) accessible, punctual and frequent public transport; 4) safe public transport; socially responsible public transport; 5) attractive public transport.

The second priority direction is efficiency and competitiveness. It is implemented on the basis of the following principles: 1) combined urban and suburban transport administration; 2) a coherent and integrated network of the public transport system; 3) integrated ticketing system; 4) competitiveness; 5) integrated passenger information system; 6) development perspectives.

In accordance with the above-mentioned priority directions, and taking into account the principles presented, a list of priority areas of CMP implementation and implementation measures was prepared. The first priority area is a public transport. There are three objectives in the priority area. Objective I - renewal and development of public transport infrastructure, which will be achieved by: 1) installing 26.5 km of additional bus lanes in Šiauliai city and 6 km of additional bus lanes in Šiauliai district municipality, 2) by installing the infrastructure of 9 terminal stops (toilets, roofs, asphalted of the areas of turnarounds). Objective II - renewal of the public transport fleet, which will be achieved 3) by renewing the public transport fleet with alternative fuels and electric vehicles (55% of the total fleet), 4) by installing the charging infrastructure for the alternative fuels and electric vehicles (4 fast electric charging stations, 3 gas filling stations.). Objective III is to improve the accessibility of public transport, which will be achieved by 5) ensuring that 100% of all vehicles are adapted for people with reduced mobility.

The second priority area of the plan is sustainable mobility. There are two objectives in the priority area. Objective I is the renewal and development of the infrastructure of the alternative transport, which will be achieved by 6) construction and installation of about 4 km of additional footpaths, 7) construction and installation of about 7 km of additional bicycle paths. Objective II is to ensure intermodal transport, which will be achieved by 8) installing 5 park and ride lots on the outskirts of the city, 9) installing 5 bicycle sharing lots.

The third priority area of the plan is the integration of the public transport of Šiauliai city and Šiauliai district. There are three objectives in the priority area. Objective I is the optimization and reorganization of public transport routes, including the FA, which will be pursued by 10) the preparation of the plan of the optimization of public transport routes in Šiauliai city and Šiauliai district, 11) ensuring the implementation of regular public opinion surveys. Objective II is the deployment and integration of smart IT systems and solutions, which will be achieved through 12) the implementation of integrated e- ticket



information system. Objective III - creation of a regional mobility system, which will be achieved 13) development of a common system of organization of urban and district public transport.

In order to efficiently organize and provide public transport services in the functional area, it is proposed to transfer the functions related to public transport services to an independent legal entity – the public transport centre. The centre would organize local and regional public transport, form a network of routes within the functional area, organize surveys, approve timetables, carry out tenders, issue permits, control carriers, supervise e. ticketing system and perform other functions related to public transport.



Introduction

Public transport optimization action plan for the unified public transport system of Šiauliai district and Šiauliai city was drawn up based on opportunities and goal commitment provided by nowadays public transport. This action plan is drawn up in order to implement the ambition of public transport optimization in two municipalities, this way contributing to sustainable transport solutions, social involvement and efficient implementation of supply of the public transport services. The document is an important guide in the process of public transport optimization in Šiauliai city and district, providing principles and main guidelines for achievement of the objectives pursued.

While Šiauliai city and district are facing such challenges, as a decreasing number of inhabitants, ageing population, increasing urbanization, uptake of new and alternative ways of mobility, etc., it is important to adapt to the current tendencies as well as to develop services and infrastructure of public transport based on the aforementioned. Today, a concept of public transport comprises not solely the individual vehicles ensuring mobility of people; it actually plays more important and a wider role in everyday context of the society, namely it encourages connectivity, socialization, shows inhabitants' urbanization tendencies, and becomes a part of inhabitants' pastime. The main goal and challenge set to the nowadays public transport is actually the competition with a private car. Due to high tendencies among inhabitants to choose a private car, suppliers and organisers of public transport are obliged to consistently and strategically improve the services provided by public transport along with their quality.

Since territorial fragmentation aggravates the opportunities of mobility by public transport, makes public transport inconvenient to user and encourages the use of a private car, the cooperation in the field of public transport between municipalities of Šiauliai city and district is emphasized in the public transport optimization plan, strong focus is on the needs of inhabitants of these municipalities, and the fulfilment of international and national obligations. Taking account of the geographical link of Šiauliai city and district, any needs and tendencies of mobility of the inhabitants between these two territories, the document was prepared by accentuating the main areas of cooperation between the municipalities and possibilities for improvement of the public transport services and infrastructure therein. It provides an integrated model proposed for adaptation in these two municipalities under which cooperation between the municipalities would be encouraged, along with the consistent review of the public transport system and its adaptation to the modern mobility needs and tendencies.

Having regard to the future mobility policies stemming from the global tendencies and international documents, the new CMP is based on two principal priority directions, i.e., inhabitant- and environmentally friendly as well as efficiency and competitiveness. It is pursued to develop such system of public transport which would ensure a harmonised and socially involving method for efficient, safe and convenient movement within both, the territory of Šiauliai city and district. The model of public transport activity based on efficiency gives rise to development of the competitive conditions for the supply of public transport services, by ensuring innovative and client-focused solutions, at the same time keeping in mind the aspects of sustainability and integrity. It means that by having systematically reorganized the services provided.

While sustainable and environmentally friendly solutions become increasingly urgent worldwide.

Having regard to the national and international recommendations, current advantages and potential of public transport, by means of the CMP it is pursued to reduce social exclusion, to increase accessibility of



the objects located within functional area, to reduce any negative air pollution consequences, to increase safety of trips as well as to ensure economic competitiveness of public transport. In order to achieve these objectives, a vision was formulated by the CMP: public transport of Šiauliai city and district is a sustainable, accessible, convenient and safe way of travelling within the territory of the city and district.

Upon implementation of the objectives set in the public transport optimization plan and by following the outlined principles, activity of public transport in Šiauliai city and district would be organised in a much more efficient way: greater cooperation, smoother distribution and organisation of works, and integration of the serving area would allow to attract more drivers, and would set up incentives to carry out operations of public transport in a more efficient manner. The proposed solutions for improvement of the infrastructure would make public transport more efficient and more attractive to public. The goal is that the inhabitants of neither city nor district suffer any inconveniences with regard to their residence and can enjoy unhindered travelling by public transport as the essential tool of mobility.



1 Functional areas of public transport optimization action plan

This chapter defines the limits of the functional areas, establishes the municipalities within these areas, analyses fluctuation in the number of inhabitants and their occupancy in the functional area along with the changes in vehicles, routes and run, and discusses the models of travelling and attractions within the limits of the functional area.

1.1 Limits observed by public transport optimization plan

Public transport optimization action plan (CMP) is developed by covering the limits of the municipalities of Šiauliai city and Šiauliai district located within Šiauliai county. This location of the functional area (FA) is in the Northern Lithuania; common area of Šiauliai city and Šiauliai district includes 1888 km² (81 km² in the city and 1807 km² in the district). Šiauliai city is the city of the county, its territory is surrounded by the territory of Šiauliai district municipality. The county is bordered to the north by the territory of the Republic of Latvia, to the west by Telšiai county, to the southwest by Tauragė county, to the south by Kaunas county and to the east by Panevėžys county. The territory of Šiauliai county consists of 7 municipalities: Akmenė district, Joniškis district, Kelmė district, Pakruojis district, Radviliškis district, Šiauliai district and Šiauliai city (see Picture below).



Picture 1. Functional area and surrounding territories for public transport optimization

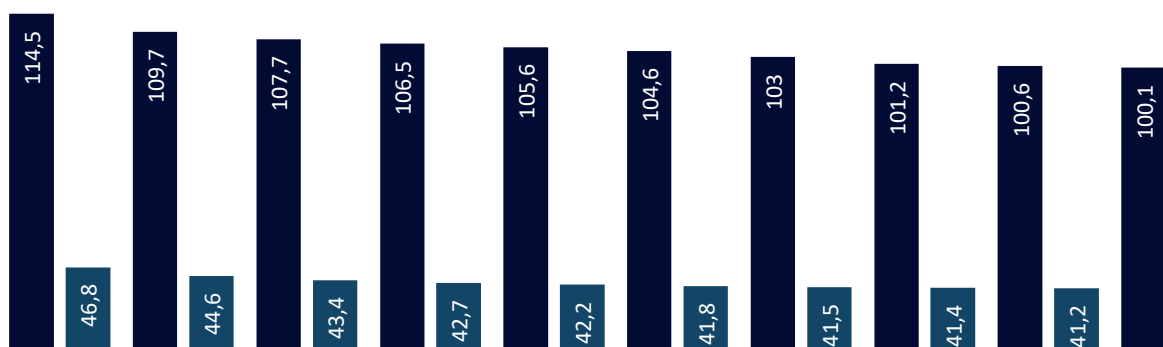
Source: formed by the Consultant

When considering strategic opportunities for public transport optimization in the future, it is also expedient to plan further development of the unified CMP into other FA-relevant county municipalities located nearby, and especially those which are characterized by a large traffic flows towards the county centre, namely Šiauliai city.

1.2 Description of functional area

Inhabitants

Based on the preliminary data of the Department of Statistics of 2020, there were 101,9 thous. of inhabitants in Šiauliai city, 41,3 thous. in the district, and over 143 thous. of inhabitants within the generally relevant functional area in the beginning of 2020. During the last decade since 2010, the number of inhabitants has been decreasing in both municipalities (by 19% in the city and by 14% in the district) (see Picture below). Shifting demographic situation in the functional area may also dictate any varied needs and loads of public transport to which the current public transport infrastructure is not necessarily adapted.

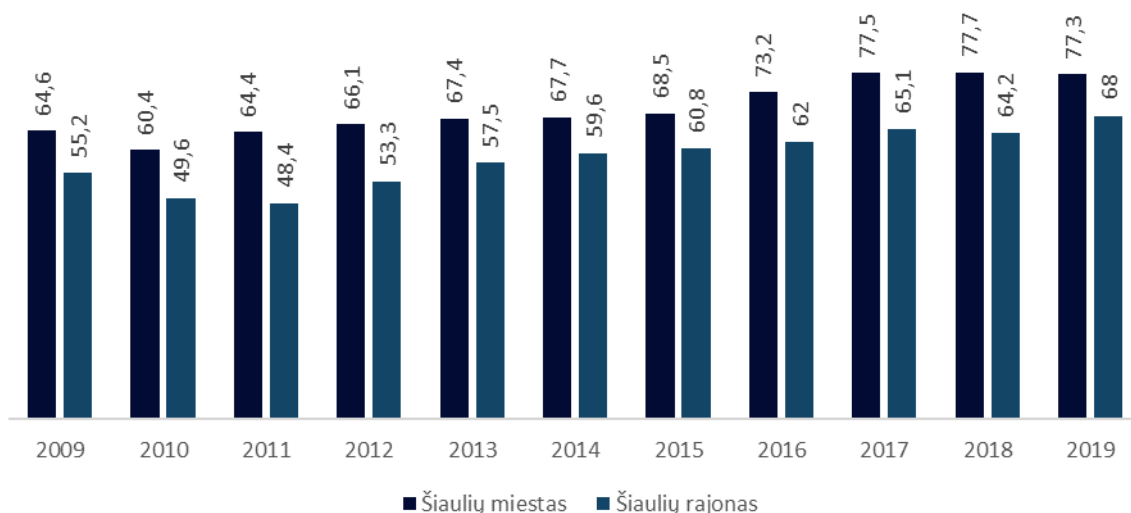


Picture 2. Number of inhabitants in Šiauliai city and Šiauliai district at the beginning of the year, thous.

Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics

The relevant functional area (FA) of Šiauliai city and district includes 81 km² within the city municipality and 1807 km² within the district municipality which comes to the density of 1257,5 inhabitants/km² in the city municipality and to the density of 22,9 inhabitants/km² in the district. General density of FA inhabitants comes to 75,8 inhabitants/km².

Based on the data of the Department of Statistics, occupancy of the inhabitants of Šiauliai city within the period from 2009 to 2017 increased from 65% to 77% and until 2019 remained rather similar. The level of occupancy in Šiauliai district municipality is slightly lower, even though it also increased within the same period, from 2009 to 2019, from 55% to 68% (see Picture below).

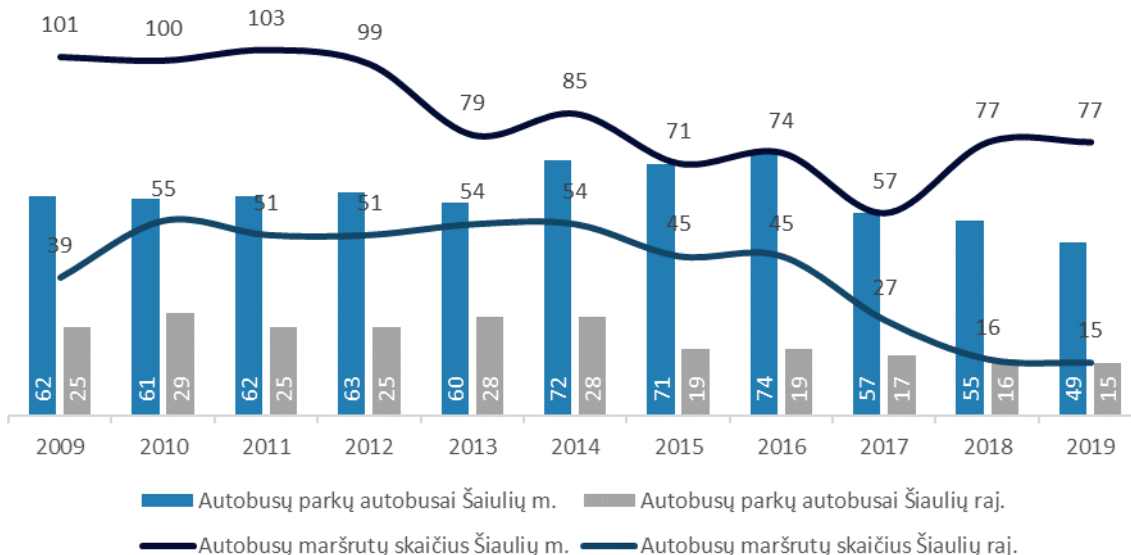


Picture 3. Fluctuation in occupancy rates among inhabitants of Šiauliai city and Šiauliai district, %

Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics.

Transport

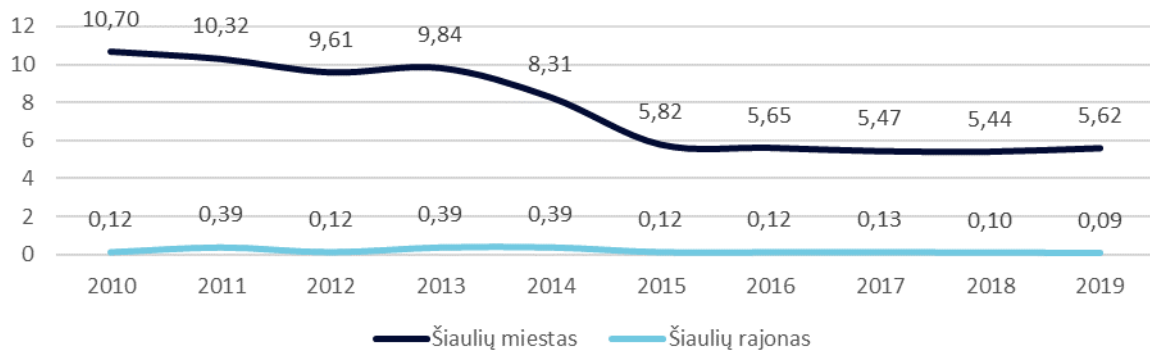
Since 2009, the number of public transport buses in Šiauliai city has changed unevenly: from 2012 to 2013 their number significantly decreased if to compare with the previous period, from 2009 to 2011, whereas from 2015 it was increasing by every year and in 2019, 77 bus routes were recorded; however, solely 49 buses were in the bus fleet which is the least number during the last decade. Within the period from 2009 to 2019, the number of the bus routes in Šiauliai district decreased by every year, from 39 routes in 2009 up to only 15 in 2019. At the same time, the number of buses owned by the bus fleet in the district also decreased: from 25 buses in 2009 to 15 buses in 2019 (see Picture below).



Picture 4. Fluctuation in the number of routes and buses in Šiauliai city and district, pcs.

Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics.

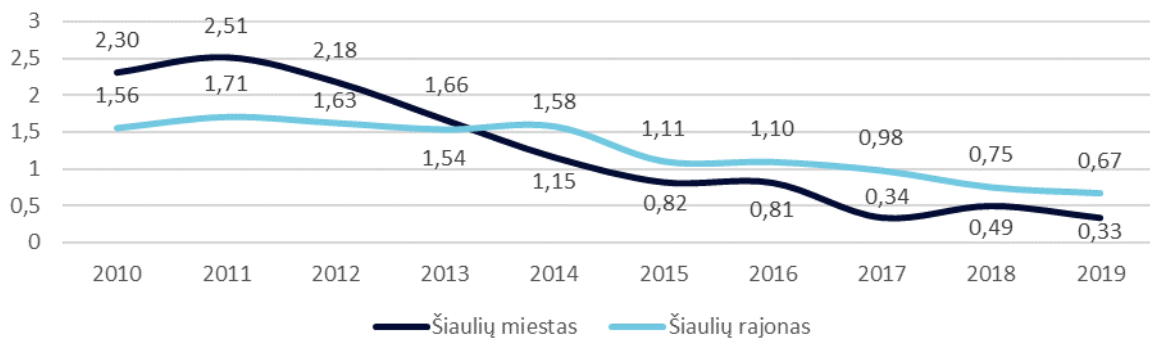
Based on the material of the Department of Statistics, in 2019, a run of the buses generated throughout local urban and local suburban routes in Šiauliai city came almost to 5,96 mln. km, and to almost 0,77 mln. km in Šiauliai district.



Picture 5. Run of local city transport routes in Šiauliai city and district, mln. km

Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics

Within the period from 2010 to 2019, a run of local city routes in Šiauliai city decreased by 47,43% or by 5,08 mln. km, whereas a run of local suburban routes in Šiauliai city decreased by 85,57% or by 1,97 mln. km (see Picture above).

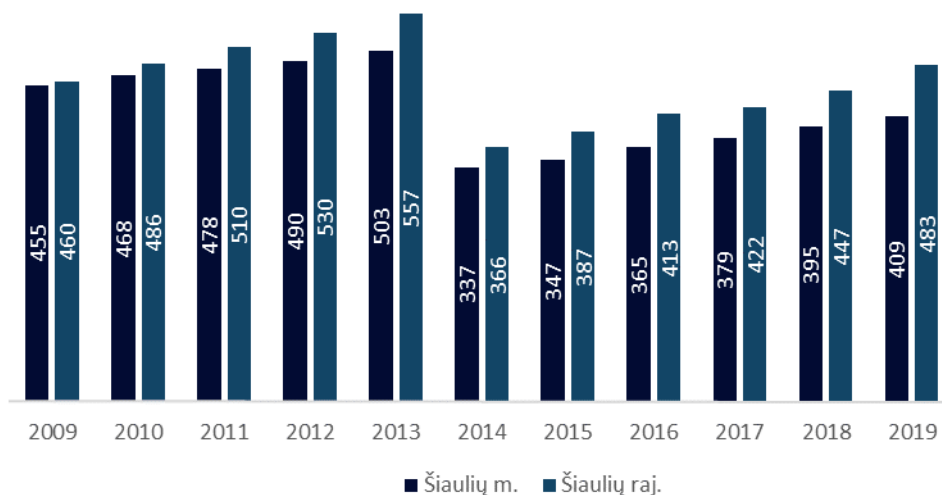


Picture 6. Run of local suburban transport routes in Šiauliai city and district, mln. km

Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics

Within the period from 2010 to 2019, a run of local city routes in Šiauliai district decreased by 22,72% or by 0,03 mln. km, whereas a run of local suburban routes in Šiauliai district decreased by 56,8% or by 0,89 mln. km (see Picture above).

Within the period from 2009 to 2019, a number of road vehicles changed unevenly: prior to 2014, this number varied from 39 thous. (2014) to 58 thous. (2013) in Šiauliai city and from 16 thous. (2014) to 24,4 thous. (2013) in Šiauliai district, whereas since 2014, it has permanently increased in both municipalities. In 2019, a number of vehicles in Šiauliai city came to 46,5 thous., and to 21,3 thous. in Šiauliai district. A number of passenger cars per 1000 inhabitants within the period from 2009 to 2019 increased in two stages in both, Šiauliai city and Šiauliai district: up to 2014 and from 2014.



Picture 7. Fluctuation in the number of passenger cars within the period from 2009 to 2019, cars/1 thous. inhabitants

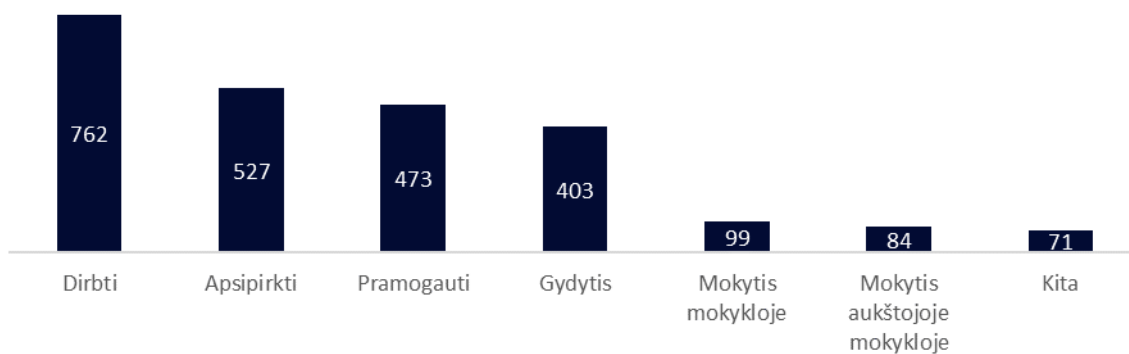
Source: formed by Consultant, based on the data of the Lithuanian Department of Statistics

It should be noted that in 2014, a sudden decrease in vehicles was predetermined by the deregistration of the vehicles not conforming to the requirements set in the Law on road safety. In accordance with the records of 2019, 49 private passenger cars fell on 1000 inhabitants in the city, and 483 in the district (see Picture below). It means that traffic becomes more intensive due to the increasing number of vehicles on the roads, and that inhabitants of Šiauliai district tend to acquire a private car more often than the inhabitants of the city.

Models of travelling

Šiauliai city municipality administration together with Smart Continent LT, UAB in accordance with the agreement of 14 August 2020, conducted a survey of the inhabitants' travelling habits and opinion in order to assess the public transport system in Šiauliai district and Šiauliai city (hereinafter referred to as the Survey). One of the goals of the Survey is to analyse the flows of the inhabitants of Šiauliai city and district travelling to work/ study in Šiauliai as well as their motives for choosing the way of travelling. Below are provided the results obtained in the survey on the models of travelling that are selected by inhabitants of Šiauliai city and district. Based on this survey, the main habits of inhabitants of Šiauliai city and district were attempted to identify.

When asked to indicate the main purpose for which the respondents travel more often from Šiauliai district to Šiauliai city, the majority indicated that they travel to Šiauliai city for the purpose of work (762 responses or 31,5% of all responses), other popular responses included shopping (21,8%), entertainment (19,6%), and treatment (16,7%). Less popular indicated reasons include studying at school (4,1%) or high school (3,5%) (see Picture below).

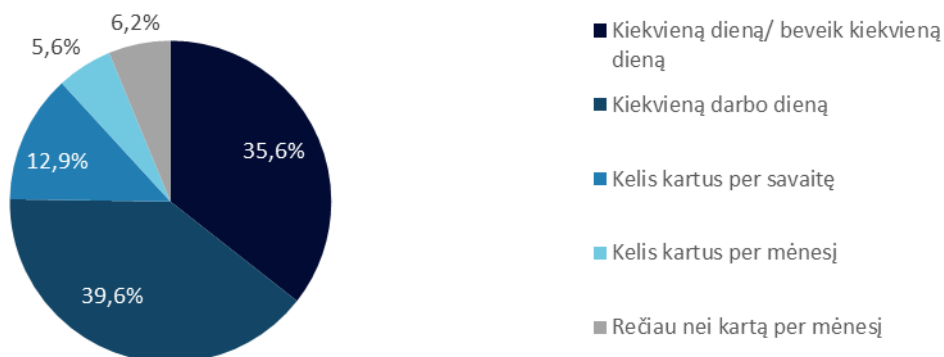


Picture 8. Main purposes why respondents travel to Šiauliai

Source: formed by Consultant, based on the survey data

The survey also included other reasons (2,9%), among which the most popular – possibility to make use of other provided services (hairdresser's and other beauty services, sports clubs, state institutions, libraries, etc.) (1,2%), taking the children to schools, nurseries or after-class activities (0,7%), visiting family members, relatives and friends (0,6%).

When asked to indicate, how often the respondents travel to Šiauliai for the purposes specified, they indicated that most often they travel to Šiauliai every business day (39,6%) or every day / almost every day (35,6%). 12,9% of the respondents travel to Šiauliai for the purposes indicated few times per week, rarely – 5,6% of the respondents travel to the city once per month. 6,2% of the respondents travel to Šiauliai less than once per month (see Picture below).



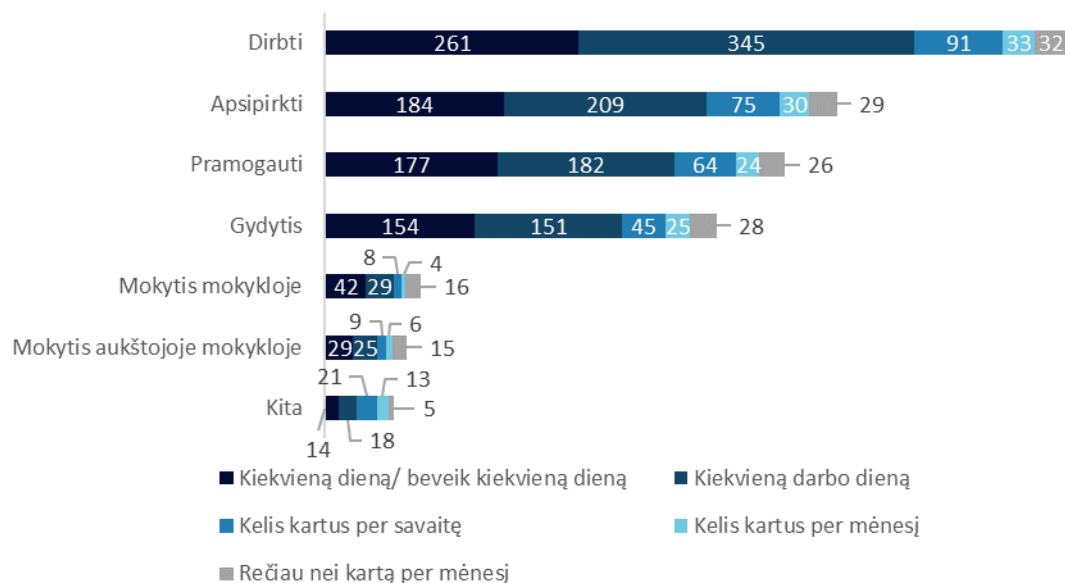
Picture 9. Frequency of trips to Šiauliai for purposes specified

Source: formed by Consultant, based on the survey data

When distinguishing the frequency of travelling according to the specific travelling purposes it is observed that more respondents travel to Šiauliai for the purpose of work on business days (45%), even though a great number of the respondents travel to the city for the purpose of work every day or almost every day (34%). The respondents travelling for the purpose of shopping (40% of all the respondents travelling for shopping) and entertainment (39%) also more often choose the business days. Those travelling to Šiauliai for the purpose of treatment, study in school or high school more often travel every day or almost every day.

The persons who indicated that they travel in order to make use of other services provided (beauty services, sports clubs, etc.) indicated that most often they travel few times per week (38%) or every

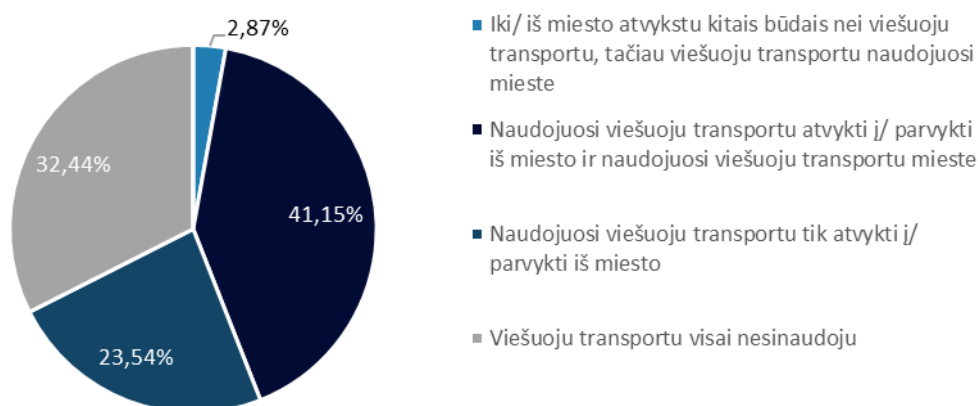
business day (21%), the respondents taking children to schools, nurseries or after-school activities indicated that most often this is done on business days (56%) (see Picture below).



Picture 10. Purpoks and frequency of the main trips to Šiauliai

Source: formed by Consultant, based on the survey data

When the respondents were asked to attribute themselves to one of the types of public transport users, the largest number of the respondents - 41,2% indicated that they use public transport for both, travelling to the city and back and also within the city, 23,5% indicated that they use public transport only for their trip to the city and back, whereas 2,9% of the respondents indicated that they use public transport only within the city. 32,4% of the respondents indicated that they do not use public transport at all (see Picture below).

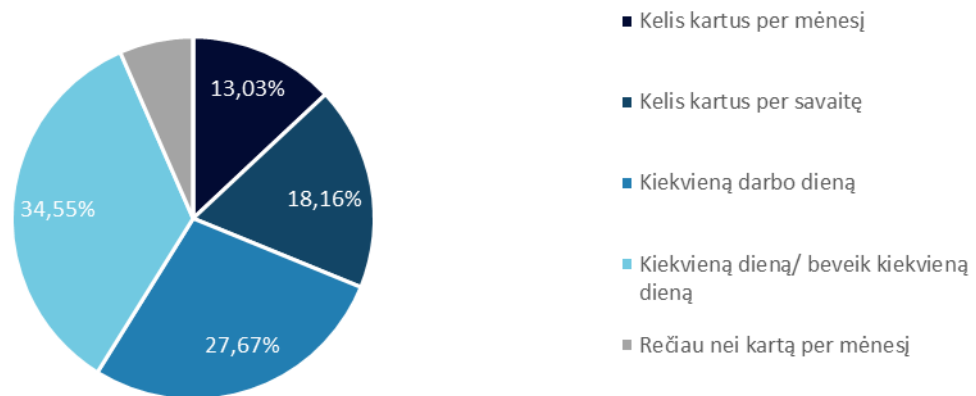


Picture 11. Distribution according to types of public transport users

Source: formed by Consultant, based on the survey data

As the frequency of the use of public transport among the respondents is assessed, the third of all the respondents - 34,6% indicated that they use public transport every day or almost every day, 27,7% of the respondents indicated that they use public transport every business day. In total, 18,2% of the survey respondents use public transport less commonly, namely few times per week, and 13% of the

respondents use public transport few times per month. As much as 6,6% of the respondents use public transport less than once per month (see Picture below).



Picture 12. Frequency of the use of public transport

Source: formed by Consultant, based on the survey data

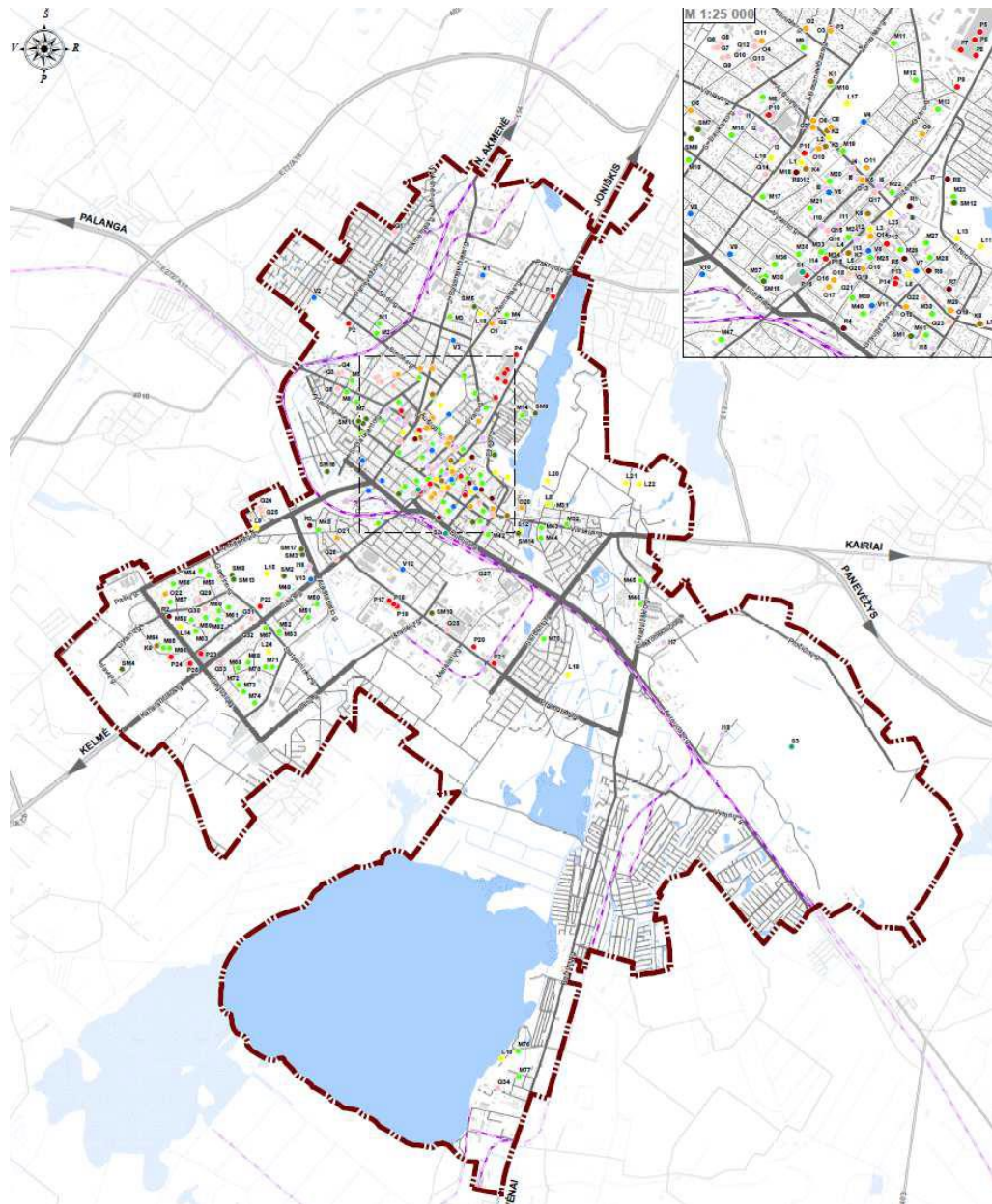
When summarizing the results it is noted that the number of inhabitants has been decreasing in both municipalities in the last decade. In addition, a downward direction of the number of vehicles owned by the public transport fleet and of the number of routes of public transport is being observed in both, Šiauliai city and Šiauliai district. Despite the decrease in the number of inhabitants, the growth of passenger cars falling on 1 thous. of inhabitants has been observed, particularly in Šiauliai district.

The main purposes for which the persons having taken part in the survey travel to Šiauliai city include work, shopping, entertainment and treatment. As a rule, the respondents travel in this direction every day or almost every day and also on business days. Most of the respondents indicated that for travelling to Šiauliai they use public transport for travelling to the city and also within the city (41%); however, a significant number of the respondents (32%) does not use public transport at all. The persons travelling by public transport indicate that they use these services every day or almost every day and every business day.

Objects of attraction

Mobility of inhabitants is encouraged thanks to some specific tourist, health promotion, educational, cultural and other objects. Distribution and accessibility of the main objects of attraction in Šiauliai city is overviewed in this chapter.

Based on the plan of sustainable mobility of Šiauliai city, the largest concentration of the objects of attraction is registered in the central and south area of the city. Thanks to convenient location of the central area of the city, most objects of attraction may be easily reached by inhabitants on foot or by public transport (see Picture below).



Picture 13. Objects of attraction in Šiauliai city

Source: Sustainable mobility plan of Šiauliai city of 2018

Having regard to the situation of the distribution of shopping centres, they are reached on foot by the largest number of Šiauliai inhabitants residing in the apartment-building blocks and the central area of the city. The largest concentration of shopping centres is registered in Tilžės street, whereas supply of shopping centres in the southeast area of the city is rather poor. The largest number of state institutions is established in Vilniaus street, thus they could be reached by the people residing in the central area of the city also on foot. Šiauliai city municipality administration is located in Vasario 16-osios street. Since state institutions and public organisations are attributed to the institutions providing periodic services, these institutions most often are reached by the inhabitant and the city guests by public transport or a car. Transport flows are increasing in Tilžės, Basanavičiaus and Vytauto streets due to such distribution of institutions.

Since the largest number of the objects of attraction are located in the central area of the city, reaching of these places by inhabitants of the suburban and rural territories is more complicated, a walking trip is

not a convenient method of mobility, therefore inhabitants of remote areas are forced to select options of private or public transport.

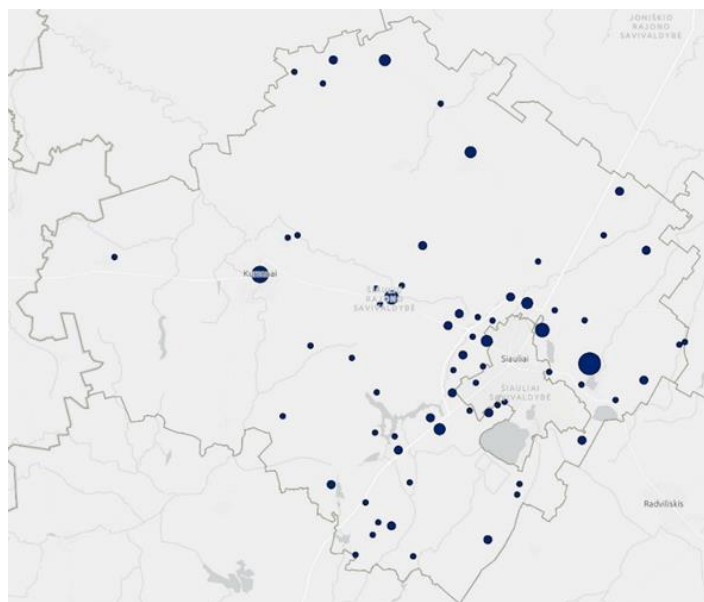
In summary, it is noted that the number of inhabitants has been decreasing in both municipalities within the last decade, whereas occupancy of inhabitants has been increasing. In addition, a downward direction of the number of vehicles owned by the public transport fleet and of the number of routes of public transport is being observed in both, Šiauliai city and Šiauliai district. Despite decrease in the number of inhabitants, the growth of passenger cars falling on 1 thous. of inhabitants has been observed, particularly in Šiauliai district.

The main purposes for which the persons having taken part in the survey travel to Šiauliai city include work, shopping, entertainment and treatment. As a rule, the respondents travel in this direction every day or almost every day and also on business days. Most of the respondents indicated that for travelling to Šiauliai they use public transport for travelling to the city and also within the city (41%); however, a significant number of the respondents (32%) does not use public transport at all. The persons travelling by public transport indicate that they use these services every day or almost every day and every business day.

The largest number of the objects of attraction are located in the central and south area of the city, thus to reach these centres by those residing close to the centre is not difficult on foot and by public transport, whereas inhabitants of further areas are forced to select a vehicle.

Suburban territories

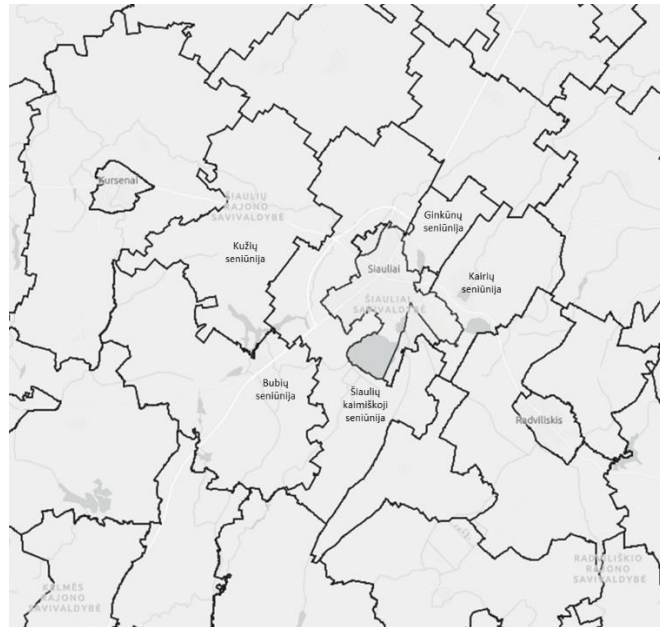
Based on the survey conducted by the Consultants, in which 2575 respondents took part within a period from 05 October 2020 to 09 November 2020, it could be noted that the residential place of 1240 respondents is in Šiauliai district municipality. The largest number of residential places is located around Šiauliai city municipality (see Picture below). Since the main educational, health, social and leisure services are provided in the city along with creation of job opportunities, Šiauliai is attributed to the centre of attraction within Šiauliai region.



Picture 14. Residential places of the respondents participated in the survey

Source: formed by Consultant based on the survey conducted

Based on the information provided by Šiauliai district municipality¹, the local authorities of Kairiai, Ginkūnai and Šiauliai rural local authority are the closest to Šiauliai city municipality (see Picture below). Taking account of the data of population and housing census of 2011, in total, 13,7 thous. of inhabitants resided in those three municipalities. By having additionally included the local authorities of Kužiai and Bubiai, in total, 20,6 thous. of inhabitants resided in those 5 local authorities back in 2011.



Picture 15. Local authorities of Šiauliai district municipality

Source: formed by Consultant, based on the data of Šiauliai district municipality

Based on the census data of 2011, the largest settlements in the analysed local authorities were Ginkūnai (2877), Kairiai (1822), Aukštėlkė (1209), Vijoliai (1018) and Vinkšnėnai (835). Even though based on the data of the Lithuanian Department of Statistics, within the period from 2011 to 2020, the number of inhabitants of Šiauliai district municipality decreased by 6,98% or by 3,1 thous. of inhabitants, as the needs of inhabitants are changing, a larger number of inhabitants change their residential place by moving to the settlements located closer to the city. This was also confirmed by the interview held with the heads of these local authorities and the chairmen of the communities. They emphasized that the settlements located at a further distance from the main municipalities lack public transport routes and therefore people move from such settlements, settle down closer to the city which predetermine depopulation of the entire settlements and increase the separation between settlements and municipalities. Therefore, the settlements located not far from Šiauliai city municipality could have increased even more since 2011.

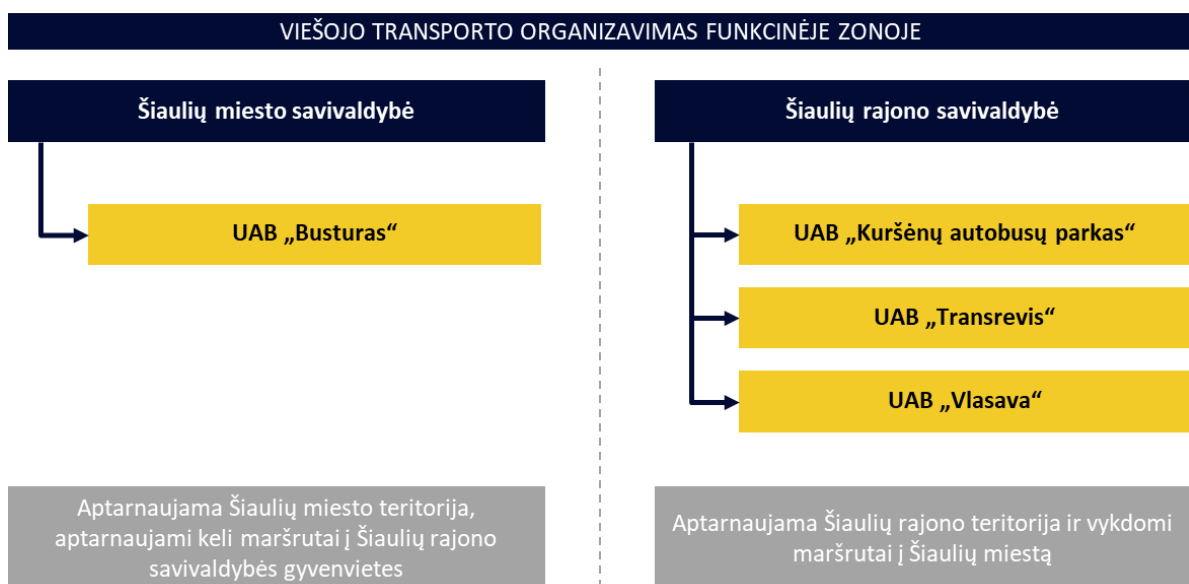
¹ Website: <https://www.siauliuraj.lt/struktura-ir-kontaktai/1056/seniunijos/d23>

2 Description of principal actors involved, their role and potential impact

This chapter analyses the subjects operating in the functional area, by distinguishing the units taking decisions and their cooperation, institutional structure, operating public transport operators and ticketing systems. Additionally, cooperation institutions of national, regional and local level and their roles are introduced along with the EU, national, regional and local funding of public transport.

2.1 Subjects operating within functional area

Based on the Law of local self-government of the Republic of Lithuania², municipalities are liable for the organisation of passenger transport on local routes as well as calculation and payment of preferential passenger transport compensations. For this reason, public transport organisation in functional area is decentralised, since Šiauliai city municipality and Šiauliai district municipality maintain the routes within the limits of their municipalities. (see Picture below).



Picture 16. Public transport organisation in functional area

Source: formed by Consultant

When analysing the process of public transport organisation in Šiauliai city municipality it was determined that the liabilities are concentrated within the operational limits of three departments, namely urban economy and environment, law and economics and investment. The department of urban economy and environment, pursuant to the department provisions, organises passenger transport by local transport routes, prepares technical solutions for public procurement objects, administers agreements with companies providing public transport services, prepares and issues permits (licences) related to passenger transport in accordance with the procedure established by legislation. The department of law, pursuant to the department provisions, organises and conducts the public procurement procedures for

² Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.5884/asr>

goods, works and services of the municipality and draws up projects of contracts, agreements and other documents to be concluded. The department of economics and investments, pursuant to the department provisions, is liable for the compensation of the costs (income foregone) of passenger transport carriers for preferential transport of passengers on regular transport routes and for the verification of legitimacy of compensations.

A city passenger transport commission was formed in Šiauliai city municipality that addresses the issues related to the development of the city public transport network, organisation of passenger road transport, implementation of strategy in Šiauliai city for the organisation of tenders related to maintenance of regular local (city) bus transport routes, entering into, extending or cancellation of agreements and cancellation of permits for maintenance of the routes.

Private limited liability company „Busturas“ is a transport services company of Šiauliai city which shares are held by Šiauliai city municipality. Besides the transport of passengers on local (city) transport routes in Šiauliai city, long-distance regular transport routes and charter trips, the company also coordinates the public transport system in Šiauliai city, namely coordinates the public transport ticketing system, carries out the control of passengers, crew and luggage, makes traffic schedules and carries out their control as well as carries out any other operations related to public transport.

The situation in Šiauliai district municipality is slightly different. Even though the organisation of public transport is also carried out by the municipality, these functions are exercised by one department, namely by the department of economics and business development. It organises tenders for selection of the carriers to serve local transport routes, prepares and modifies the agreements on passenger road transport public services, prepares legislation and other documents required for the transport of passengers on local transport routes in Šiauliai district, conducts the surveys of passenger road transport, passenger flows, conducts the analysis and assessment of any documents submitted by passenger road transport public services suppliers, carries out the monitoring of licensed vehicles in the transport control information systems as well as supervises operations of the commissions related to regular transport routes in Šiauliai district. In addition to that, the department of economics and business development hands over any calculations and assessments to the department of bookkeeping so that it compensates any losses incurred to and any income foregone of public transport companies from the municipality budget funds.

UAB „Kuršėnų autobusų parkas“ is a company carrying out its operations in Šiauliai district which shares are held by Šiauliai district municipality. Besides the main operations of the company – passenger transport on town (Kuršėnai) and suburban routes – the company also carries out taxi operations, renting of vehicles and is a manager of Kuršėnai bus terminal. Besides the municipality’s carrier, based on the data of September 2020, two more companies are providing passenger transport services, namely UAB „Vlasava“³ and UAB „Transrevis“⁴.

Public transport organisation in different municipalities makes the trips of inhabitants residing in the district and travelling to the city more difficult. First of all, inhabitants suffer inconveniences related to travel connections in the city. It was indicated by the heads and the chairmen of communities that some of the suburban route buses stop in unsuitable locations and thus it is difficult to make travel connections, people are forced to look for the bus stops where the city buses stop and they need to walk long distances to get to such bus stops. Inhabitants also indicated that the traffic schedules (city and suburban) are not adjusted one with the other and thus the general length of the trip becomes longer. Based on the information collected in the survey, it was established that more than a half - 52,4% of the

³ Agreement No. VP1-7(3.67) on passenger road transport public services supply of 18/01/2017

⁴ Agreement No. VP1-85(3.67) on passenger road transport public services supply of 03/04/2017



respondents need to change a bus at least once in order to reach their destination. 47,6% of the respondents have an opportunity to reach the destination by one bus. The largest number – 41,9% of the respondents who need to change a bus, needs to make travel connection once in the city, 29,1% needs to make travel connection once upon arrival and once before leaving the city, 24% need to make travel connections twice, once upon arrival or when leaving the city and once within the city, whereas 5% of the respondents need to make more than 2 travel connections.

Another relevant aspect causing inconveniences in the use of public transport - different public transport ticket systems and prices. With regard to the routes maintained in the city, inhabitants and passengers have a possibility to use the electronic ticketing system when purchasing one-time or fixed-term tickets. UAB „Busturas“ is the supervisor and the user of this system. In the words of the company's representatives, while maintaining any new routes which go up to the settlements located in the district, they are connected to the existing system. Operational scope of this system could be and should be expanded so that more and more settlements, particularly those located not far from Šiauliai city, could use public transport and the electronic ticket system. Electronic ticket system is not adapted in the district when analysing suburban transport routes, therefore passengers need to purchase several different public transport tickets for travelling to the city from the district and for separate trips within the city. The conducted survey revealed that inhabitants who use the electronic ticket system are satisfied since they can make travel connections without any problems in order to reach destination and this trip is cheaper for them than purchasing several different travelling tickets.

The plan is to combine and to implement the ticket sale system in accordance with the general pricing requirements. Klaipėda city selected an exemplary ticket distribution model by adapting modern technologies, optimizing and modernizing organisation, realization of public transport and collection of the public transport ticket fees. Such solutions as integration of inbound minibuses into the general public transport system of the city by combining and adjusting the schedules and routes for these vehicles into the principal unified public transport scheme of the city were implemented in public transport of Klaipėda city. Innovative solutions were adapted in public transport by selling and marking transport tickets, a function of „friend's ticket“ was introduced, the fleet of public transport was renewed, safe boarding and disembarkation of passengers ensured by avoiding previous situations when in order to entice a passenger the minibus drivers used to make dangerous manoeuvres in traffic.

It is striven that the current carriers operating within the municipalities do not compete among themselves and jointly conduct trips under the schedules made by the above mentioned intermunicipal institution on the routes planned by such institution. Upon centralization of the entire process for supply and organisation of public transport in a single institution, this could be done much easier since while agreeing on any schedules and routes both, the private carriers and the administration representatives by means of negotiations could select a public transport supply model suitable to all parties and any related aspects.

Based on the studies, public transport is the most efficient with the lowest price (per passenger km) when traffic flows of a large scope are targeted to a densely populated and used heart of the city.⁵ It means that upon optimization of the public transport services in a relevant FA, the carriers would possibly encounter the situations where transport of passengers is detrimental (this is particularly relevant when expanding the public transport network into a less populated areas where due to a lesser number of inhabitants the number of passengers would also naturally be less and their transport would possibly be detrimental). The attention should be paid to this while the new public transport charging system is developed. Based on the example of one public transport association, it is recommended to divide a

⁵ Website: <https://ralphbu.files.wordpress.com/2018/10/buehler-et-al-verkehrsverbund.pdf>



relevant FA into 2–3 servicing zones where the price for public transport services could vary depending on the distance to the FA centre, Šiauliai city in this case. It is recommended that the cheapest communication should be carried out within the zone surrounding the centre and it should be more expensive depending on the distance from the centre.

Upon introduction of the common ticketing system, any possible shadow income from passengers could be avoided and any income collected from tickets could be allocated more evenly. The unified system would permit passengers to use public transport in a more convenient way, to plan and to allocate own finances during a trip, particularly where it is necessary to change buses and to use several public transport vehicles. Upon adaptation of such system, the sale of preferential tickets could be smoother. Digitization of tickets would allow to easier monitor and collect information on passenger flows, their potential increase after optimization of the public transport network and also the fact, whether passenger travelling tendencies change with development of the cities (as for example, whether the flows due to creation of any new jobs distribute anew and whether any routes should be adjusted due to this reason, or not).

Based on the survey results, combining of the public transport network of Šiauliai city and district could have positive effect on inhabitants, carriers as well as municipalities themselves. Inhabitants would use the renewed routes and traffic schedules adapted to their needs as well as any other renewed infrastructure, such as any new bus stops, equipped bus stop roofs, new vehicles, separate bus lanes in the city, etc. The carriers would complement each other since the conditions for „healthy“ competition would be created which would implicitly encourage the companies to gear up and to improve quality of their services provided. This change would also be useful for the municipalities since today they lack a professional attitude, their main focus is on saving and not on the mobility of inhabitants. Having ensured these conditions and by actively carrying out communication and education of the public, passenger flows should change and increase; this way, a number of detrimental routes should decrease and funds could be saved by compensating them from municipal budgets.

2.2 EU, national, regional and local funding for public transport

Current situation

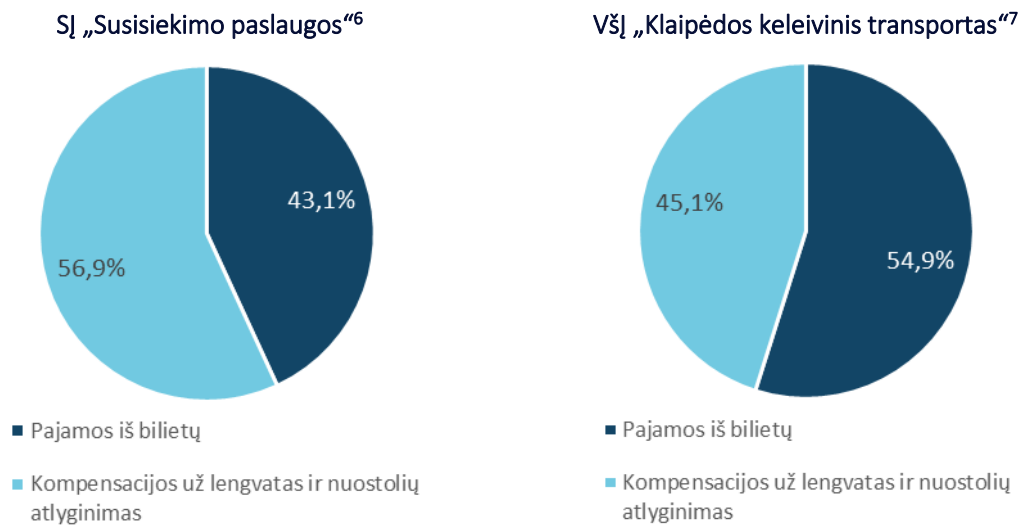
It is established in the procedure⁶ of carrier costs (income foregone) related to application, compensation of transport privileges that the costs (income foregone) of carriers due to privileges applied to passengers for regular trips by ships and ferries, local (city and suburban) regular transport buses and trolleybuses are compensated (reimbursed) from municipal budgets, whereas those applied to passengers for trips by trains, long-distance regular transport coaches compensated (reimbursed) from the state budget, and the Lithuanian transport safety administration is liable for such compensation (reimbursement).

It is established in the procedure⁶ for reimbursement of losses incurred in providing passenger road transport public services that any losses incurred to carriers are compensated from municipal budgets in accordance with the public services supply agreements. Only the losses incurred while taking passengers on local (city and suburban) regular transport bus (trolleybus) routes are reimbursed. Since it is the carrier who sets the rates for passenger transport on regular long-distance and international transport routes, this procedure is not applied for reimbursement of carriers' losses.

Application of the uniform conditions to municipalities and their authorised institutions and to the Lithuanian transport safety administration ensures a clear system of compensation and permits to avoid mistakes when compensating any income foregone and allocating compensations to carriers of different types of transport.



The main source of income which allows to reduce the amount of funds allocated by the municipalities is actually the income from the public transport tickets sold. This amount differs depending on passenger flows and distribution of passenger groups since a larger number of passengers receiving privileges for travel tickets reduce the amount of the generated income.



Source: formed by Consultant, based on the data of SJ „Susisiekimo paslaugos“ and VŠĮ „Klaipėdos kelevinis transportas“

Upon analysis of the examples of the largest cities of Lithuania – Vilnius and Klaipėda – we can see that the income from tickets comes up to 55% (43,1% in Vilnius and 54,9% in Klaipėda). This number may be less in smaller towns which predetermines a larger need of funds from municipal budgets.

Nevertheless, if the public is encouraged to more actively use public transport services, more finances would also be attracted from ticket sale and thus any losses incurred would be at least partially funded from increasing revenue from the ticket sale.

It is worth mentioning that upon renovation and extension of the FA public transport vehicles, costs and losses incurred in the result of repairs of any depreciated vehicles or other running costs would decrease which, where new and quality vehicles are used would be minimized. If new and more economic vehicles are used, fuel costs would naturally decrease; therefore, it would be cheaper to travel the same distance with a new vehicle compared to the old one.

Funding sources

Upon expiry of the old EU funding period, the opportunity to participate in any tenders organised in accordance with the priorities set for the previous period by the EU structural funds also ended. As a new EU structural funding period is approaching, the EU funds investment programme for 2021-2027 is being prepared which should be approved in June 2021⁸. This programme shall reflect the investment programme for a new period prepared by Lithuania which shall provide for the new areas to be allocated funding from the EU funds. Currently, the second project for the investment programme for the new period has been developed which already specifies the priority funding areas in Lithuania. Task 8 of priority 2 „Greener Lithuania“ is to encourage the sustainable intermodal mobility in cities. Based on the

⁶ Website: <http://www.vilniustransport.lt/uploads/docs/2019%20m.%20veiklos%20ataskaita.pdf>

⁷ Website: <https://www.klaipedatransport.lt/lt/2019-metu-veiklos-ataskaita-111>

⁸ Website:

https://www.esinvesticijos.lt/uploads/main/documents/files/Post%202020/Programos%20rengimas/0512_OP%20rengimo%20grafikas.pdf

priorities specified, we expect relevant tenders of the structural funds which could allow to fund investments occurred in the result of renovation of public transport.

In August 2020, the Ministry of Environment of the RL issued invitations to tender to receive support in accordance with the plan measure „Renovation of the city and suburban public transport vehicle fleet by inviting to use the vehicles driven by electricity, biomethane, compressed natural gas, liquified natural gas“ setting out in detail the estimate of 2020 for the use of the Climate change program funds. Any legal entities carrying out passenger transport operations within the territory of urban and suburban public transport municipalities, entitled to transport passengers by the regular transport routes approved by competent institutions with which the public services supply agreements have been signed could submit applications and receive support. The applicants could submit their applications for any projects upon implementation of which the vehicles driven by electricity, biogas, compressed natural gas, liquified natural gas, hydrogen or by combination of any above mentioned energy types (fuel types) for transport of passengers are purchased. The general amount of the funds allocated for funding of projects came to EUR 20 mln. from the Climate change programme funds; despite this, the maximum amount of a subsidy for one applicant amounted to EUR 10 mln. Similar requirements could also be expected in any public tenders organised in the forthcoming financial period, dedicated to provide support for the renovation of public transport.

Pursuant to the national legislation, renovation of the public transport vehicle fleet with the vehicles using alternative fuel and electricity has been planned. Based on the National energy and climate plan⁹, one of the measures foreseen in the transport field for the period from 2021 to 2030: renovation of the urban and suburban public transport vehicle fleet by inviting to use the vehicles driven by alternative fuel and electricity. Under this measure, 200 urban and suburban buses driven by alternative fuel and electricity have been foreseen to purchase nationally as well as to contribute to development of the public transport infrastructure. If all requirements are met, any subjects operating within the functional area and organising public transport may be expected to apply for some of such zero-emission public transport vehicles for the fulfilment of own transport development and to renovate the public transport fleet of the municipality at the same time.

Due to obviously strengthening environmental requirements, the objective has been set in the public transport sector to reduce emission of gas causing what is called the greenhouse effect, therefore it is foreseen that the financial assistance of the EU structural funds shall be used not just once in the future in order to reduce the impact on the climate as much as possible.

It is important to emphasize that many EU and national funding sources are intended for infrastructural decisions, such as purchase of new vehicles, whereas compensation of any operational costs is liability of the public transport organiser, municipalities in this case. In order to modify the structure of the funds allocated, so that a larger amount is allocated not from the municipal budget but from the income received from sale of public transport tickets, the municipalities should put more efforts in improvement of the quality of public transport services and encouragement of inhabitants to change their mobility habits and to start using public transport.

Experience of foreign countries

There may be few sources for optimization of public transport and development funding and later for support of operations.

Based on the German example, even though optimization of the public transport network was organised and implemented mostly by public transport operators, the funding when carrying out the primary public

⁹ Website: <https://am.lrv.lt/uploads/am/documents/files/KLIMATO%20KAITA/Integrucijos%20planas/Final%20NECP.pdf>



transport optimization operations was received from local municipal and national finances; these levels of government also contributed with advisory assistance to optimization operations.¹⁰ Meanwhile in Austria, local municipal and national authorities were the executors of public transport optimization, which means that the largest investments were received from such authorities. Based on the practice applied in Sweden, public transport to a large extent would be covered from the subsidies allocated by self-government.

Legislative framework in Germany is currently formed in such a way that federal and state laws obligate local authorities to assume the principal role in funding public transport and cooperating with other local jurisdictions in the development of regional public transport plans. All these changes in legislation within the last two decades encouraged to establish regional public transport associations even more in order to facilitate the coordination of regional public transport services and funding.¹¹

Two public transport funding models exist in Estonia: where public transport is organised by the municipality and where public transport is organised by the regional public transport centre.

Where regional public transport is organised by the municipality, public transport is funded from the municipal budget. Such model exists in the largest cities where public transport is organised by the city municipalities; however, this model is also used by some of the district municipalities. The municipality which requests support from the state budget, has a possibility to submit its application to the county government which upon assessment of the application submits it to the Ministry of Economic Affairs and Communication. As a rule, the largest cities fund public transport themselves since they have disposition of much larger budgets, whereas the district municipalities are often obliged to apply for grants from the state budget¹².

Where regional public transport is organised by the regional public transport centre, public transport is funded from the municipalities and the state budgets included into such centre. 50% of the regional public transport centre costs are covered from the state budget, whereas another 50% is covered by the municipalities, by paying a specific amount depending on a number of inhabitants residing in the municipality. Municipalities also covered any unplanned costs and any additional expenses¹³. The additional funding by the state covering a half of all the public transport costs is considered as the main incentive measure that motivates municipalities to cooperate and to join the regional public transport centres. This funding model is further called as the incentive funding system.

Public transport funding in Austria is diversified among the state, regional authorities and municipalities. Public transport is funded by the federal government in two ways – directly and through the public transport associations. The baseline of regional rail transport, intercity rail transport and a half of the metro costs in Vienna provided for by the law are funded directly from the federal budget. The federal government compensates any losses of carriers related to privileges applied to students and school pupils through the associations¹⁴.

¹⁰ R. Buehler, J. Pucher (2018). *Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland*

¹¹ Ibid.

¹² Regulation of the Ministry of Economic Affairs and Communication “On public transport subsidies and repayment of public transport subsidies”. Website: <https://www.riigiteataja.ee/akt/82902>

¹³ Memorandum of Häädemeeste district municipality council „On participation in establishment of Pärnu county public transport centre”. Website: <https://haademeeste.kovtp.ee/documents/381466/4363119/Seletuskiri+nr+33+%C3%9CTK+asutamisel+osalemine.pdf/a496c0de-83a1-434f-b534-2b9ca7dcae9e>

¹⁴ R. Buehler, J. Pucher (2018). *Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland*



As a rule, public transport is funded by regional authorities and municipalities through associations. They fund transport by trams, buses, metro and some part of regional rail transport that is not covered by the federal budget. Regional transport is funded by regional authorities, whereas local or urban transport by the municipalities. The main exception of this system – the six largest cities which organise their own public transport themselves, have their own transport companies, and for the most part fund local transport themselves with a partial funding from the federal government¹⁵.

Public transport in Austria is distinguished for the fact that a large share of their costs is covered by the organisers from the income received from the sale of tickets. In 2016, Association „VOR“ covered 55% of all the operational costs from the income received. The remaining share of the costs was compensated from the federal and regional authorities' and municipal budgets.

Public transport in Austria is distinguished for their highest discounts for monthly and annual tickets. The good news is that cheaper trips not only encouraged the use of public transport but also reduced the number of trips by passenger cars. Therefore, it became relatively cheaper to use public transport than to drive a car, by providing an increasing financial incentive to travel by public transport and not to drive a private car. On the other hand, in 2012, due to significantly decreased monthly and annual ticket prices and increased running costs which occurred so that additional services are provided and more passengers are served, the region in which „VOR“ organises public transport incurred the income decline from 63% in 1990 up to 55% in 2016. Therefore, a constant decrease in the average income received from the trips was observed in Austria¹⁶.

A hybrid funding model has been used in Sweden. The model is distinguished for the fact that some part of public transport is organised on the commercial grounds and receives partial subsidies intended for covering of the privileges established by the state, whereas another part organised on the grounds of regional agencies is fully funded from state, municipal and regional council budgets¹⁷.

Means of public transport funding in Sweden are developed in such a way that to reduce the need for trips and (or) to help supporting any sustainable transport types. As for example, any additional environmental taxes applied to cars and other non-sustainable or non-environment-friendly vehicles go to the regional council budget, from where they are allocated for organisation of the sustainable public transport. The following means of funding are used in Sweden:

- Metro, bus and tram transport for its largest part is funded from the income received from ticket sales. Some share of the costs which is not covered from the income received is covered in accordance with the conditions provided for in the contract (taking account of quantity and quality of the services). Swedish transport agency is also planning the investments to the metro, city buses and the tram transport system. The investment funding sources most often include the regional council budgets along with loans, leasings, shareholders' capital and state contributions accepted by the agency.
- Local and regional train transport is also funded from the income from ticket sale and train lease, whereas any additional and non-covered costs for companies' operations and services provided are compensated in accordance with the conditions provided for in the contract.

¹⁵ K. Mitterer et al. (2016). *Stadtregionaler öffentlicher Verkehr: Organisation, Steuerung und Finanzierung im stadtreionalen öffentlichen Verkehr am Beispiel der Landeshauptstadt-Stadtregionen*

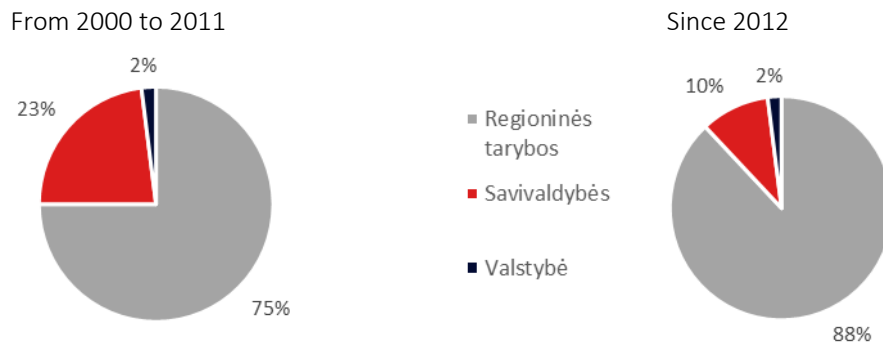
¹⁶ R. Buehler, J. Pucher (2018). *Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland*

¹⁷ D. van de Velde (2014). *Market initiative regimes in public transport in Europe: Recent developments.*



- There is also an addition cross-financing in Sweden that uses the profit of state companies for covering of the public transport deficit.

The costs for the aforementioned subsidies from state, municipal and regional council budgets are compensated by using these additional sources of subsidies: 1) local taxes or fees for real property; 2) local companies' taxes or levies; 3) fuel sale taxes; 4) car parking fees; 5) road traffic congestion fees; 6) public and private sector partnership schemes; 7) environmental taxes for vehicles¹⁸.



Picture 17. Sources of subsidies allocated in Sweden

Source: formed by Consultant, based on the data of local and regional public transport reports of governmental agency „Transport Analysis“

From 2000 to 2011, a share of the contributions of regional councils towards public transport came to approximately 70–75%, of municipalities to approximately 20–25%, whereas that of the state from 1 to 4%. Since 2012, a change in this distribution has been observed, namely a share of municipalities decreased up to 10–11%, a share of regional councils increased up to 88%, whereas the share of municipality has remained as 1–2%.

Based on the data of local and public transport of governmental agency „Transport Analysis“ of 2018¹⁹, the costs allocated to public transport have been increasing with every year; in 2018, the costs came to EUR 4,68 bln. The income has been increasing along with the growing costs received from public transport. In 2018, in total the amount of EUR 2,31 bln. was collected from public transport. Within the period in question, the transport income covered 49,4% of all the transport costs. Having regard to the fact that public transport in Sweden is detrimental, irrespective of any constantly growing income, the amount of subsidies allocated for reimbursement of public transport losses has also been increasing which in 2018 came to the amount of EUR 2,37 bln. The allocated subsidies covered more than 50,6% of all the costs incurred.

2.3 Role of institutions at national, regional and local level

National level | The Ministry of Communication of the Republic of Lithuania is liable for the national transport policy. The institution forms the national transport policy, and organises, controls and coordinates its implementation. The Ministry of Communication also sets requirements for transport operations that must be followed by self-government, state institutions, institutions, transport companies and other legal persons related to transport operations.

In accordance with the rules for issuance of the permits to transport passengers on regular road transport routes, approved by the Minister's order No. 3-62 „On approval of the rules for issuance of the permits to

¹⁸ A. Abdulhafedh (2017). *Financing Public Transit in the US, Sweden, and the UK*

¹⁹ Website: https://www.trafa.se/en/public-transport-and-publicly-financed-travel/regional_scheduled_public_transport/

transport passengers on regular road transport routes“ on 14 February 2006²⁰, public transport is divided into the urban, suburban and long-distance (intercity) routes. The Ministry of Communication is liable for organisation of long-distance (and international) transport routes, based on the legislation; however, these functions have been delegated to the Lithuanian transport safety administration (hereinafter referred to as the LTSA) by the Ministry. The LTSA issues the permits to transport passengers on long regular transport routes and establishes, modifies and revokes any long-distance and international regular transport bus routes.²¹

Carriers' and municipal associations could be distinguished at the national level. Passenger carriers are united by Lithuanian national road carriers association „Linava“ and the Lithuanian passenger transport association. Both associations strive for representation of carriers' interests, ensuring of quality services and favourable legal environment regulation for carrying out of their operations. Meanwhile, the association of Lithuanian municipalities ensures the representation of interests of municipalities as the organisers of public transport.

Local level | It is considered that organisation of public transport in Lithuania is decentralized. Public transport operators – the institutions authorised by a municipality or municipalities are liable for local (urban and suburban) transport. The institutions at local level determine the strategy for local public transport operations, plan and organise passenger transport on local transport routes, issue permits to transport passengers on local transport routes.

In Lithuania, the transport itself is carried out by private carriers or those belonging to institutions. Public transport operations in Šiauliai city are carried out by UAB „Busturas“, the company belonging to Šiauliai city, by using buses and inbound buses in the city. The carrier of Šiauliai city jointly with the municipality representatives form a commission that takes decisions on the public transport schedules and routes. Suburban transport within Šiauliai district is provided by private carriers which additionally do not take part in the organisation of public transport; despite this, they have a possibility to submit proposals and recommendations to the municipality.

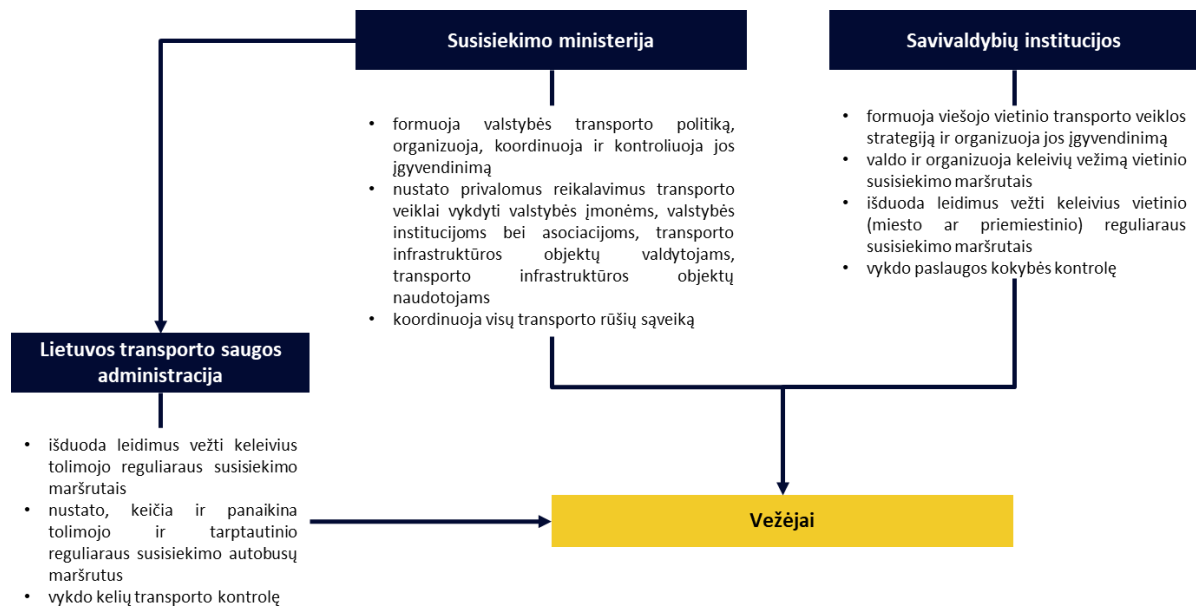
The LTSA also takes part in the organisation of local / regional transport. In exceptional cases, when the planned routes cross the limits of 2 or more municipalities, the public transport organisers – municipalities or their authorised institutions along with the LTSA must agree on the projects for such new routes.²²

²⁰ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.271060/asr>

²¹ Ibid.

²² Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.271060/asr>





Picture 18. Lithuanian public transport organisation module

Source: formed by Consultant, based on the Code of Road Transport of the RL and the Law on transport operations' framework

Regional level | There are no separate institutions in Lithuania which organise transport at regional (county) level. Transport among municipalities is organised by the municipalities themselves; in some specific cases (where the routes cross the limits of 2 or more municipalities), the route projects are agreed with the LTSA. Any long-distance transport, as it was mentioned above, is organised and monitored by the LTSA.

Up to now, there is no agreement on regional transport between Šiauliai city and district; however, an active interinstitutional cooperation has been observed among the municipalities. Working groups were organized in the city municipality during the meetings of which it was attempted to find solutions and opportunities to jointly provide public transport services. Representatives of the district municipality indicated that they lack knowledge on how a single public transport organiser could ensure transport within the municipal territories of both, the city and the district, by not having studied the needs and expectations of inhabitants since this is known only by the municipalities themselves. Despite this, both municipalities intend to talk and to seek common solutions.

The main problem related to the implementation of the common public transport system meanwhile comprises only the financial issues. Representatives of the municipalities acknowledge that it is not easy to adjust the loss-covering proportions, this is also the issue in other surrounding municipalities. Due to this reason, public transport services are being provided separately within the territory of every municipality.

3 Overview of current mobility situation within FA

Overview of any current strategies and policy is provided in this chapter by emphasizing the regulation at local, regional and national levels as well as the information of the documents prepared and the surveys conducted is analysed, by providing solutions and results related to traffic flows survey, survey of inhabitants' travel habits and opinion and Šiauliai city sustainable mobility plan. In addition to that, the territory of the current mobility system in the analysed FA is introduced by discussing any links in the region, and the differences between travel time and costs as well as the bicycle paths.

3.1 Overview of current strategies and policy

This section analyses the Lithuanian legal regulation in the field of the organisation of public transport services along with the EU and national legislation; moreover, it is specified, what general documents are referred to by the municipal institutions, and the municipalities of Šiauliai city and district providing public transport services are discussed in the specific survey.

3.1.1 Analysis of the EU legal regulation

The EU legislation having a direct or indirect impact on any legislation of the Member States is the basis of legal documents in every Member State. The documents related to the provision of public transport services are specified in the Table below:

Table 1. EU legislation

| Document | Objective and scope |
|---|---|
| Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road | The conditions are established under which any competent institutions, by determining public services obligations or entering into related agreements, reimburse any costs incurred to public services operators in the result of fulfilment of public services obligations and (or) grant any exclusive rights. |
| Regulation (EC) No 1071/2009 of the European Parliament and of the Council of 21 October 2009 establishing common rules concerning the conditions to be complied with to pursue the occupation of road transport operator | Regulation of the issue of licences and their copies, permits to engage in professional road transport operations and any conditions related to fulfilment of such operations. |
| Regulation (EC) No 1073/2009 of the European Parliament and of the Council of 21 October 2009 on common rules for access to the international market for coach and bus services | Regulation of international passenger transport by coaches and city buses within the territory of the Community, carried out by the carriers for payment or the carriers at own expense, having been incorporated in accordance with the laws of a specific Member State. |
| Regulation (EU) No 181/2011 of the European Parliament and of the Council of 16 February 2011 concerning the rights of passengers in bus and coach transport | The rules for transport by buses and coaches are established for non-discrimination of passengers; rights of passengers in cases of death or injury, or luggage loss or its damage; non-discrimination and compulsory assistance to the disabled or the persons with limited mobility, etc. |
| Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles | The requirement is established that purchasing organisations, purchasing subjects and also some specific operators, by purchasing any road vehicles, take account of the impact of the running period of such vehicle on energy and environment, including any energy consumed and emitted CO ₂ as well as the quantity of some specific pollutants, in order to promote the market of clean and energy-efficient road transport vehicles. |
| Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy | The common system of measures for promotion of efficient use of energy in the EU is established in order to ensure that in 2020 the |

| Document | Objective and scope |
|---|---|
| efficiency | energy efficiency objective is achieved by 20% as well as the conditions are created for any further increase of energy efficiency. |
| Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors | The rules are established which regulate procurement procedures carried out by procurement subjects, in order to enter into agreements and to conduct project tenders. |
| Project „Europa 2030“ ²³ | In the perspective of 2030, a particularly competitive and sustainable social market economy is emphasized, including any transport network using sustainable and renewing sources which are distinguished for efficient energy use. |
| The EU fund investment programme for 2021–2027 (second project) ²⁴ | As a new funding period is approaching, Lithuania prepared the second project for the investment program for a new period which foresees the areas that would be allocated funding from the EU funds. Investments will be divided into 4 priorities, one of which is „Greener Lithuania“ which task is to promote a sustainable diverse mobility in cities. |

Source: formed by Consultant, based on the information provided by the Ministry of Communication of the RL and the EU Registry of Legislation

Pursuant the provisions of these regulations and directives of the EU Parliament and Council, the national documents related to organisation of public transport have been prepared and approved.

3.1.2 Analysis of national legal regulation

Strategic documents at national level relevant to the period from 2021 to 2027 that are taken into account while carrying out renewal and development of urban public transport (see Table below).

Table 2. National strategic documents

| Document | Objective and scope |
|--|--|
| State progress strategy „Lithuania 2030“ ²⁵ | Lithuanian progress strategy „Lithuania 2030“ defines the national vision and the development priorities along with their implementation directions up to 2030. This strategic planning document should be followed while taking strategic decisions and preparing state plans and programs. In the current strategy, challenges posed to transport comprise introduction of technologies and articles that are innovative, resource-efficient, and reduce environmental pollution and climate change. |
| National progress plan for 2021–2030 ²⁶ | Objective of National progress plan for 2021–2030 is to enable a man to act actively and to work in a qualitative manner, to receive decent income, to live in a safe, healthy and clean environment. One of the strategic objectives specified in the plan and raised to the transport sector is to develop the territory of Lithuania and to reduce the regional separation sustainably and in a well-balanced manner. |
| Law on regional development of the Republic of Lithuania ²⁷ | Aim of the law is to set the goal of the national regional policy, related implementation tasks, implementation and funding of national regional policy, territories where national regional policy is implemented, |

²³ Project „Europa 2030“. Challenges and opportunities. Report of the discussion group to the European Council on future of „EU 2030“, 2010, website: <https://www.consilium.europa.eu/media/30774/qc3210249lhc.pdf>

²⁴ The second project of the EU funds' investment program for 2021–2027; preparation of the EU funds' investment program for 2021–2027, website: <https://www.esinvesticijos.lt/lt/pasirengimas-2021-2027/2021-2027-m-es-fondu-investiciju-programos-rengimas>

²⁵ Resolution No. XI-2015 on approval of the state progress strategy „Lithuanian progress strategy „Lithuania 2030“ passed by the Sejm of the Republic of Lithuania on 15 May 2012, website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.425517>

²⁶ Lithuanian progress – how is it achieved? Preparation of the National progress plan for 2021–2030, website: <http://lrv.lt/lt/aktuali-informacija/xvii-vyriausybe/strateginis-valdymas/lietuvos-pazanga-kaip-jos-siekiami>

²⁷ The Law on regional development of the Republic of Lithuania, website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.106367/RYifoZaAVd>



| Document | Objective and scope |
|---|--|
| | preparation and approval of regional development planning documents, also subjects implementing national regional policy and their authorities. Aim of the national regional policy is to promote an even and sustainable development in the entire territory of the state. Pursuant to the law, the project of National regional policy priorities up to 2030 was drafted that accentuates three priorities, one of which is „Availability of services and jobs to all (territorial cohesion)“. |
| The white paper on Lithuanian regional policy for balanced and sustainable development in 2017–2030 ²⁸ | The main challenges of the state are laid down in the document, such as geographically balanced and sustainable growth and creation of quality living conditions throughout all Lithuania. Four regional policy tasks are distinguished: to develop the efficient regional policy system, to ensure that economic growth is geographically balanced, to create quality living conditions throughout all Lithuania and to improve the regional image. |

Source: formed by Consultant, based on the strategic documents of the RL

With regard to the objectives set and strategic directions defined for Lithuania and its regions in the strategic documents it could be noted that the municipalities will have to put plenty of efforts and that the transport sector, public transport included, will have to implement serious changes when striving for reduction of environmental pollution and climate impact, reduction of separation among regions and municipalities and increase of life quality and regional image.

National legislation defining and forming the policy and operations of the transport sector that should be followed by every municipality in carrying out public transport service operations are provided below.

The Code of Road Transport of the Republic of Lithuania No. I-1628 of 19 November 1996

The Code regulates organisation and carrying out of transport of passengers, luggage and cargos, national management of transport, national road transport maintenance, road transport control, liability for material damage. Essential aspects related to passenger transport operations:

- Permit to engage in transportations | It is provided for in the Code that the companies may engage in local transport of passengers for payment that have a relevant licence (permit) to engage in transportation where passengers are transported by buses. In this case, municipalities must issue all necessary documents allowing to carry out such operations.
- Bus terminals and stops | Municipalities, natural and legal persons, other organisations and their subdivisions are liable for arranging and maintenance of bus terminals. Installation and maintenance of the bus stops for passengers in cities, settlements and on the roads are regulated by the rules established by the Ministry of Communication that are also relevant to municipalities.
- Travel tickets | A passenger ticket is the document confirming the passenger transport agreement. As passengers are transported on regular routes, the passenger ticket is obligatory, therefore municipalities, when organising public transport services, must set clear conditions for distribution of tickets and establishment of prices.

The Law on framework of transport operations of the Republic of Lithuania No. I-1863 of 08 October 1991

The Law establishes the general principles related to RL public transport administration, carriers' and transport infrastructure managers' operations, state assistance in the development of transport

²⁸ Website:

https://vrm.lrv.lt/uploads/vrm/documents/files/LT_versija/Naujienos/Regionines_politikos_baltoji_knyga_20171215.pdf

infrastructure and its management, legal status of the infrastructure managers, their relations with transport infrastructure managers and users, framework of obligations of public service, assurance of safe traffic and regulation of other relations related to transport operations. Relevant functions:

- Assurance of availability and functioning of the objects of public transport infrastructure – national liability, whereas the administration of public transport is exercised by the Government, Ministry of Communications and municipal institutions. State and (or) municipal institutions control operations of the manager of public transport infrastructure.
- The Government or its authorised institution and (or) municipal institutions ensure provision of the socially necessary transport services to the public. Any losses incurred to the carriers in the result of provision of such services are reimbursed by the Government or by its authorised institution and (or) municipalities.
- Owner of public transport infrastructure is the state or municipalities, whereas the manager of public transport infrastructure is assigned by the Government or its authorised institution, or municipal institution. The manager of public transport infrastructure must ensure that the object of public transport infrastructure conforms to the requirements of safe traffic, environmental protection, etc.

The Law on preferences of the Republic of Lithuania No. VIII-1605 of 30 March 2000

This law is compulsory to all carriers and establishes the categories of persons to whom passenger transport privileges are applied, types of privileges, compensation of passenger transport costs as well as procedure and sources for income foregone of carriers related to any privileges applied.

Besides the groups of persons that are applied any privileges to travel tickets established by the law, municipalities under their own procedure may allow persons of other categories to additionally acquire a discounted ticket for travelling by local (urban and suburban) regular transport buses and trolleybuses, and also purchase a discounted travel ticket for some specific weekdays or hours of a day. Any costs related to these privileges are compensated by municipalities from their own budgetary funds.

The Law on public administration of the Republic of Lithuania No. VIII-1234 of 17 June 1999

The law establishes the principles of public administration, areas of public administration, system of public administration subjects and basics for organisation of administrative procedure; general provisions for supervision of business subjects' operations; ensures the right of persons to appeal against any acts, inaction or administrative decisions of public administration subjects, and also the right to objective hearing of persons' requests and complaints substantiated by the law; provides for other rights and obligations of persons and public administration subjects in the field of public administration.

Provision of public services at territorial level which must be provided in a specific part of the national territory is administered by territorial subjects of national administration, regional administration subjects or municipal administration subjects at territorial level. They must set the requirements on how public services should be provided, to select persons who would provide the administrated public services upon completion of competitive procedure, to organise supervision of public services supplier's operations, and to assess the quality of public services.

Upon completion of the analysis of the EU and national legislation and strategic documents, it is important to also analyse any documents regulating the procedures of public transport organisation. Organisation of public transport in Lithuania (establishment of the needs, route preparation, opening of the tendering procedure, examination and assessment of the offers and issue of permits) is regulated by this legislation:



- The Law No. XIII–328 on procurements carried out by subjects of water management, energetics, transport or postal services fields of 02 May 2017²⁹;
- The rules for issuance of the permits for transport of passengers on regular road transport routes, approved by order No. 3-62 „On approval of the rules for issuance of the permits for transport of passengers on regular road transport routes“ of the Minister of Communication of the Republic of Lithuania on 14 February 2006³⁰;
- The procedure for compensation of carriers’ costs (income foregone) related to application of transport privileges, approved by resolution No. 478 „On implementation of the law on transport privileges of the Republic of Lithuania“ of the Government of the Republic of Lithuania on 28 April 2000³¹;
- The procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations, approved by order No. 3-457 „On approval of the procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations“ of the Minister of Communications of the Republic of Lithuania on 20 July 2010³²;
- The rules for licencing of road transport operations, approved by resolution No. 1434 „On approval of the rules for licencing of road transport operations“ of the Government of the Republic of Lithuania of 07 December 2011³³;
- The rules for passenger and luggage road transport, approved by order No. 3-223 „ On approval of the rules for passenger and luggage road transport“ of the Minister of Communications of the Republic of Lithuania on 13 April 2011³⁴;
- The requirements for streets and roads on which regular passenger transport traffic takes place, approved by order No. 3-747 „ On approval of the requirements for streets and roads on which regular passenger transport traffic takes place“ of the Minister of Communications on 29 November 2011³⁵;
- The Code of Road Transport No. I-1628 of the Republic of Lithuania of 19 November 1996³⁶;
- The law on transport operations’ framework No. I-1863 of the Republic of Lithuania of 08 October 1991³⁷;
- The law on privileges No. VIII-1605 of the Republic of Lithuania of 30 March 2000³⁸;
- The law on public administration No. VIII-1234 of the Republic of Lithuania of 17 June 1999³⁹.

The analysis of the aforementioned legislation is provided below.

The Law on procurements carried out by subjects of water management, energetics, transport or postal

²⁹ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/f82d89d12fcb11e79f4996496b137f39/asr>

³⁰ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.271060/asr>

³¹ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.99746/asr>

³² Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.378748/asr>

³³ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.413841/asr>

³⁴ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.396775/asr>

³⁵ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.413113?jfwid=-9dzqnu3oy>

³⁶ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.33417/asr>

³⁷ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.2971/asr>

³⁸ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.98950/asr>

³⁹ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.83679/asr>

services fields

Objective of this law is to ensure efficiency and transparency of any procurement and project tenders carried out by procurement subjects of water management, energetics, transport or postal services fields; regulated area – procedure for management and fulfilment of procurements, including execution of sale-purchase contracts, dispute settlement procedure and rights, obligations and liabilities of the procurement subjects (see Table below).

Table 3. Articles establishing procurement law activities

| Activity | Point |
|------------------------------|---|
| Setting up of commissions | 31.1 A competent institution sets up a tender commission, appoints its president, establishes relevant tasks and grants all authorisations for fulfilment of such tasks. |
| Procurement plan preparation | 38.1 A plan for procurements planned in the current calendar year is prepared and approved. |
| Preparation for procurement | 39.1 A competent institution may request provision of the consultations by independent experts, institutions or market participants, and also take advice from the public. Moreover, it may publish any projects of procurements, technical specifications in the central public procurement information system in advance. 41.1 The public procurement service forwards a procurement notice by which it invites to participate in the procurement to the EU Publications office (in the case of a simplified procurement, it is announced in CVPIS). |
| Submissions of offers | 53.1 The procurement subject must set a sufficient deadline for submission of applications and offers so that suppliers have enough time to duly prepare and submit their applications and offers. 53.9 The supplier may submit only one offer. |
| Familiarization with offers | 57.1 Initial familiarization with applications and offers takes place in the Commission session, by using the electronic means proposed by the central procurement organisation. Otherwise, the envelopes with applications and offers are opened. |
| Assessment of offers | 58.1 A competent institution, pursuant to the provisions of articles 64, 65 and 66 of this law, determines the most economically-efficient offer. 64.8 The procurement subject intending to take decision on the offer awarded must immediately assess any offers of the participants as well as to establish the queue of offers. 68.1 The procurement subject informs any candidates and participants in writing on the decision taken with regard to the awarded offer. |
| Entering into agreements | 94.1 The participant whose offer was awarded is invited to enter into the procurement contract or the preliminary contract and is informed by when such procurement contract should be signed. |

Source: formed by Consultant, based on the law on procurement

Pursuant to the procedure established by the law, any carriers for local (urban and suburban) transport routes are selected by municipalities or by their authorised institutions by means of public procurement.

Rules for issuance of the permit for transport of passengers on regular road transport routes

These rules establish the conditions related to issue of the permits for transport of passengers on regular road transport routes, requirements to carriers along with their obligations, rights and liabilities (see Table below).

Table 4. Articles establishing activities of the permit issuance rules

| Activity | Point |
|--------------------------------------|---|
| Planning and organisation of a route | 11 The routes may be established solely for the streets and roads that conform to the requirements established. 12 Any planned or changed routes must be adjusted to the current routes so that vehicle traffic intervals correspond to passenger flows. |
| Coordination | 13 Municipal institution or its authorised institution must agree beforehand with any municipal institutions or their authorised institutions and in other cases with the LTSA, through the territories of which the foreseen route would go. |
| Tender organisation | 14 A competent institution organises a tender in order to select a carrier in accordance with |



| Activity | Point |
|--------------------------|--|
| | the terms and conditions of the tender established by this institution. |
| Entering into a contract | 19 A public service contract is concluded. |
| Issuance of permits | 21 A competent institution issues a permit (-s) to the carrier to transport passengers by the route (-es) specified in the contract. |

Sources: formed by Consultant, based on the permit issuance rules

These rules are obligatory to municipalities and their authorised institutions organising local (urban and suburban) regular transport routes, and the LTSA which organises any long-distance regular transport routes. The rules must also be followed by carriers, bus crews and persons monitoring passenger road transport.

The procedure for compensation (reimbursement) of carriers' costs (income foregone) related to application of transport privileges

This document establishes the procedure for compensation (reimbursement) of carriers' costs (income foregone) related to application of transport privileges granting a right to purchase a discounted ticket (see Table below).

Table 5. Articles establishing activities of the income foregone reimbursement procedures

| Activity | Point |
|--|--|
| Submission of documents | 4, 7, 8 Upon the end of the reporting calendar month, carriers submit reports of a certain form on any discounted travel tickets sold. |
| Assessment and compensation of reports | 5, 10, 11 Municipalities or their authorised institutions and the LTSA, upon approval of the reports submitted, take the decision to compensate (reimburse) the carrier's costs (income foregone) which incurred to the carrier within the reporting calendar month. 12 Municipality or its authorised institution and the LTSA, having established that not all data was provided in the report, inform the carrier in writing on any defects established and set the deadline to eliminate such defects. 13 Municipality or its authorised institution and the LTSA, repeatedly assess the report specified by the carrier with regard to the defects established and where it is established that the defects were eliminated, take a motivated decision to compensate (reimburse) the carrier's costs (income foregone). |
| Organisation of inspections | 14 Municipality or its authorised institution and the LTSA, having reasonable doubts in fairness of the data provided in the report, are entitled to demand the carrier to submit the copies of any documents on the basis of which the reports were made and (or) in accordance with the procedure established by the municipality or the LTSA to carry out inspection of the documents on the basis of which the reports were made in the carrier's company premises. |
| Correction of any incorrect payments | 18 The carrier, having calculated that he incurred more (less) costs within the reporting calendar month, must approach for repayment or payment of (deduction) of overpayment (underpayment). 21 Municipality or its authorised institution and the LTSA, having established that the carrier was compensated more (or less) than it was due within the reporting calendar month, take a motivated decision on deduction of the overpaid or underpaid compensation amount of the carrier's costs. |

Sources: formed by Consultant, based on the income foregone reimbursement procedure

Any costs (income foregone) of carriers related to any privileges applied to transport of passengers by regular transport ships and ferries, local (urban and suburban) regular transport buses and trolleybuses are compensated (reimbursed) by municipalities or by their authorised institutions from the budgets of municipalities. Any costs (income foregone) of carriers related to any privileges applied to transport of passengers by passenger trains, long-distance regular transport coaches are compensated (reimbursed) by the LTSA from the state budget.

The procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations



This document establishes the procedure for calculation of compensation of any losses incurred in transport of passengers, calculation and payment of compensations (see Table below).

Table 6. Articles establishing activities of the loss compensation procedures

| Activity | Point |
|-----------------------------|--|
| Compensation of losses | 6 Upon the end of the reporting calendar month, carriers submit their reports on any losses incurred in the result of provision of passenger road transport public services on regular routes. Together with these reports, carriers must also submit certificates signed by the company manager or the chief accountant to competent institutions. 7, 10 The competent institution, in order to create conditions for timely renewal of vehicles (buses, trolleybuses), may make an advance payment of the loss compensation to the carrier with whom the public services supply agreement was signed. |
| Organisation of inspections | 7 Competent institutions, in order to make sure of fairness of the information specified in the reports of carriers may request carriers to submit any additional reports or documents, or may inspect any necessary documents in carriers' companies. 8 Competent institutions, having assessed the reports of carriers and any other additional documents, compensate the losses incurred to carriers within the previous month related to transport of passengers by local (urban and suburban) buses and trolleybuses on regular transport routes. |

Sources: formed by Consultant, based on the loss compensation procedure

Municipalities and their authorised institutions, in order to ensure service of passengers by local (urban and suburban) regular transport buses and trolleybuses important to the public, except for any fixed-route taxis, compensate any losses incurred to carriers. Compensations are allocated only from the funds from municipal budgets foreseen for this purpose; compensations from the state budget are not allocated.

The rules for licencing of road transport operations

These rules establish the procedure for issuance, extension or change of the licences to transport passengers by buses and (or) cargos by cargo road vehicles, terms and conditions for licenced operations, carrier's rights and obligations and supervision of observance of terms and conditions of licenced operations (see Table below).

Table 7. Articles establishing activities of the operation licence rules

| Activity | Point |
|---|---|
| Licence issuance | 5 The carrier expecting to get a licence must submit the specific documents to the Lithuanian transport safety administration or municipal implementing authority. 6 The carrier expecting to extend validity of the licence must provide an application of a specific form to the institution issuing licences. |
| Suspension and cancellation of the licence validity | 20 The institution issuing licences, having established that the carrier may not conform to the set requirements, must warn the carrier in writing on any possible suspension or cancellation of validity of the licence. 21 The institution issuing licences takes a decision to suspend validity of the licence in the event of any cases specified and (22) to suspend validity of a copy of the licence in the event of any established grounds. 23 Where the carrier eliminates any breaches due to which validity of the licence (licence copy) was suspended, the institution issuing licences takes a decision to revoke suspension of validity of the licence (licence copy) in accordance with the terms specified in article 81(17) of the Code of Road Transport, except for the cases where the carrier fails to eliminate the causes specified within the term established. 24 The institution issuing licences takes a decision to cancel validity of the licence in the event of any established grounds and (25) to cancel validity of a copy of the licence in the event of any established grounds. |

Sources: formed by Consultant, based on the operations licence rules

Municipality administrations issue licences to transport passengers by buses on local transport routes, whereas the LTSA – the Community licences to transport passengers and cargos.



The processes defined in the rules for licencing of road transport operations are not directly related to organisation of public transport, however are compulsory in order to carry out the passenger transport operations.

The rules for passenger and luggage road transport

These rules establish the procedure for organisation of passenger and luggage transport by passenger vehicles as well as for fulfilment of this transportation (see Table below).

Table 8. Articles establishing activities of the passenger and luggage transport rules

| Activity | Article |
|----------------------|--|
| Traffic organisation | <p>10 Regular trips are organised by such roads and streets which condition conforms to the requirements.</p> <p>11 A permit is issued to transport passengers on a specific route of regular trips.</p> <p>13 The carrier carrying out regular trips by transporting passengers on local (urban and suburban) or long-distance routes, must sign agreements with owners (managers) of such bus terminals.</p> <p>13¹ Municipal institutions or their authorised institutions may foresee bus stops on regular local (urban and suburban) transport routes, if required.</p> <p>14 Passengers must be informed about termination of regular traffic and any changes in all bus terminals on such route.</p> |

Sources: formed by Consultant, based on passenger and luggage transport rules

The rules are compulsory to municipalities and their authorised institutions organising any local (urban and suburban) regular transport routes to natural and legal persons. They are also followed by the LTSA in organisation of any long-distance transport routes.

The procedure for organisation and implementation of passenger transport established in the passenger and luggage transport rules may be approved separately in every municipality.

The requirements for streets and roads on which regular passenger transport takes place

Objective of the requirements for streets and roads is to ensure safe transport of passengers on any regular transport routes of buses, trolleybuses, fixed-route taxis, to pursue that any parameters and other factors of the roads and streets on which regular transport takes place or on which regular transport was foreseen conform to requirements of the legislation.

Table 9. Articles establishing activities of the requirements to streets and roads

| Activity | Article |
|------------------------------------|--|
| Establishment of streets and roads | <p>6 Under the order or decree of the head of the passenger transport organiser, a commission is formed to select and assess any specific route, and whether it conforms to the technical and safe traffic requirements established.</p> <p>7 As the route is inspected, the places for stops are selected, the main road parameters are measured, road surface type is determined along with the length of any dangerous sections and those going through any settlements, dimensions and technical condition of any bridges and viaducts, condition of any current traffic regulation measures is ascertained along with any railroad crossing type, condition and other factors that may affect the safe traffic.</p> <p>8 The commission makes an inspection statement of a specific form where it provides its findings on suitability of the route for regular passenger transport traffic.</p> <p>9 Any repeated inspections of the routes are carried out in the event when any parameters of the streets or roads, or any constructions therein change along with the traffic conditions.</p> <p>10 If any parameter of the street or road does not conform to the established requirements, the commission indicates any defects in the statement due to which regular passenger transport traffic cannot be started or must be cancelled.</p> <p>12 Upon elimination of any defects specified in the inspection statement, the commission repeatedly inspects the street or road and makes the statement again along with its findings on the opportunities of regular passenger transport traffic.</p> |

Sources: formed by Consultant, based on the requirements to streets and roads

As any new public transport routes are organised, it is necessary to consider the requirements to streets and roads which must be complied with by municipalities and their authorised institutions while



organising any local regular transport routes as well as by the LTSA while organising any long-distance regular transport routes.

The processes related to organisation of local (urban and suburban) regular transport routes are defined in different legal documents, where municipalities form the principal level of their application (see Table below).

Table 10. Summary of national legislation regulating public transport organisation

| Legislation | Regulation object | Complied with by | Applied to |
|--|---|--|--|
| The law on procurement | Procedure for management and conducting of procurements Procedure for fulfilment of sale-purchase agreements Dispute settlement procedure | Municipalities and their authorised institutions | Passenger road transport (commuter) |
| The rules for issuance of permits | Planning, organisation and coordination of a route Entering into an agreement Issuance of permits | Municipalities and their authorised institutions LTSA | Passenger road transport |
| The procedure for reimbursement of income foregone | Submission and assessment of a report Compensation (reimbursement) of costs (income foregone) | Municipalities and their authorised institutions LTSA | Passenger road transport Ships and ferries Passenger railway transport |
| The procedure for reimbursement of losses | Calculation and compensation of carriers' losses | Municipalities and their authorised institutions LTSA | Passenger road transport (commuter) |
| The rules for licensing of operations | Issuance of a licence Suspension or cancellation of validity of a licence | Municipality administrations LTSA | Road transport |
| The rules for passenger and luggage transport | Traffic organisation rules | Municipalities and their authorised institutions LTSA | Passenger road transport |
| The requirements to streets and roads | Establishment of streets and roads | Municipalities and their authorised institutions LTSA | Passenger road transport |
| The Code of Road Transport | Transport of passengers, luggage and cargos | Ministry of Communication and municipalities | Passenger road transport |
| The law on transport operations' framework | Activities of carrier and transport infrastructure managing bodies | Ministry of Communication and municipalities | Passenger road transport Railways, sea, air, inland waterways transport |
| The law on privileges | Categories of persons granted privileges for taking any passenger transport, types of privileges | Municipalities | Passenger road transport Ships and ferries Passenger railway transport |
| The law on public administration | Principles and areas of public administration, system of subjects of public administration, provisions for supervision of business subjects' operations | Municipality administrations | Public services |

Source: formed by Consultant

Upon generalization, it is possible to note that different functions and liabilities are regulated and any processes related to organisation of public transport are established by more than 10 legislative documents.

3.1.3 Analysis of regulation at self-government level

Based on the current laws of the state, local self-government institutions are liable for supply and organisation of public transport services provided in cities and related suburban areas, following the



aforementioned laws that regulate this area and were adopted nationally. The self-government institutions are also entitled to adopt separate by-laws legislation used for organisation of public transport. A separate category of legislation and strategic documents followed by the municipalities of Šiauliai city and district and by the related transport companies in organisation of public transport is provided below.

General plans of the municipalities

The general plan⁴⁰ of Šiauliai city municipality is dedicated to the territorial spatial development policy of the complex planning document for territories, establishment of the territory use and protection priorities and the most important handling measures. Development of engineering, communications and other infrastructure required for meeting the public needs has been foreseen in the document. It is foreseen that while the urban development of peripheral city territory takes place, due to the increased distances, the number of any walking or bicycle trips would inevitably decrease; therefore, it is necessary to strive for the competition of the urban public transport with private cars, when creating for public transport priority traffic conditions and timely development of the network in the traffic intervals acceptable to inhabitants. Recommendations for organisation of public transport have been established in the general plan. Principal relevant aspects of the recommendations are:

- Within the area of service of urban public transport, municipalities and private carriers must work under the same market conditions;
- The municipal structures liable for efficient formation of the fixed-route network, making of traffic schedules, conformity of the number of vehicles on the routes to the actual passenger flows must carry out development of the fixed-route network and selection of carriers by means of tenders. It is proposed to pay more attention to integration of the fixed-route network of suburban buses and trains into the urban system of public transport, by adjusting the routes, common stops and traffic schedules;
- In order to ensure a high-speed services by public transport, it is recommended to distinguish separate traffic lanes for public transport in the different street sections;
- To improve the level of public transport information on the bus stops and in the vehicles.

The general plan⁴¹ of Šiauliai city municipality is dedicated to the territorial spatial development policy of the complex planning document for territories, establishment of the territory use and protection priorities and the most important handling measures. The task set in the documents is to establish the principles for development of planned and spatial structure of the municipal territory: development of settlement structure and communication system. The document provides for development of the multi-modal transport system in Šiauliai district, improvement of the quality of transport between any municipal metropolitan and local centres.

Strategic development plans of the municipalities

Strategic development plan of Šiauliai city for years 2015–2024⁴² is the plan comprising all areas of the urban life, predetermining their mutual cohesion, providing for any changes in the next nine years. The

⁴⁰ Website: <https://www.siauliai.lt/Miesto%20bendrasis%20planas328>

⁴¹ Website: <https://www.siauliuraj.lt/bendrieji-planai/siauliu-rajono-bendrasis-planas/1086>

⁴² Website:

https://www.siauliai.lt/get_file.php?file=bVpKcXA1T1NiZGhsbEdHb3k2ZVczV2VSWnB0cXFuFRsSjlsWW1yV2s1cVp4R2FteD Uxb3oySEdZcHFVWdJYVFo1RmxvR3FWYTh5VG5HS2ZaTWpFcEpXU1pxakpsMnZQWTIGaGxwZWpaNVdaeUdXY1phSnJ5Mlp rWTJabWxjaGxtcHBxWDhpaG1zcGp5MkpzbDRPWHVabXlaSU5vbFd1WVpXTmxaR2FZazVDWGxXdGh5V09abW1DVGs2R2Ns R2ZNYnAyVWJwcyUzRA==



task foreseen in the plan is to develop and to maintain a convenient, environment-friendly, accessible-to-all and safe transport system; the following measures were foreseen for implementation of this task:

- To develop a unified and safe transport network;
- To reduce a negative impact of transport to environment by developing a relevant infrastructure;
- To increase attractiveness of public transport;
- To modernize and optimize centralized utility networks.

Objective of the strategic development plan of Šiauliai district for years 2017–2023⁴³ is to ensure a sustainable planning of development of Šiauliai district by improving management of operations of Šiauliai district municipality and by elaborating public administration. The following tasks were foreseen in the plan:

- To improve and expand transport infrastructure, to modernize traffic organisation system in the district;
- To develop the system of public and environment-friendly transport.

Action plans of the municipalities

Action plan of Šiauliai city municipality for years 2019–2021⁴⁴ provides for principal directions of the period and sets out any measures in detail. It is foreseen in the document that in order to improve traffic organisation in the city streets, project „Sustainable mobility and modelling of daily trips in the Baltic region cities“ will be implemented, in the course of which monitoring of daily trip habits and modelling of changes will be carried out and the action plan will be prepared. In addition, it is specified that in order to reduce a negative impact on environment, inhabitants must be encouraged to use public transport more often.

Action plan of Šiauliai district municipality for years 2020–2022⁴⁵ provides for principal directions of the period and sets out any measures in detail. The plan provides for improvement and development of transport infrastructure in the district, modernization of traffic organisation system, and development of public and environment-friendly transport system.

⁴³ Website: <https://www.e-tar.lt/portal/lt/legalAct/60790970ad7611e6b844f0f29024f5ac>

⁴⁴ Website: <https://www.siauliai.lt/Miesto%20strateginis%20planas667>

⁴⁵ Website: <https://www.e-tar.lt/portal/lt/legalAct/de5a742053d911ea931dbf3357b5b1c0/asr>



Special plans of the municipalities

The special plan for transport organisation in Šiauliai city for 2015⁴⁶, while implementing a concept of a special plan, provides for use of the sustainable development principles for organisation of transport; to give priority not to increasing of the infrastructure permeability – development of new streets, bridges, car parking lots, but increasing of inhabitants' mobility and improvement of life quality – reduction of travelling time and price, accident rates, noise levels and air pollution. In addition, it is foreseen to optimize public transport and its infrastructure – to renovate platforms, to arrange separate lanes for public transport, to increase interaction of public transport with public transport bases (bus fleets), Šiauliai bus terminal, Šiauliai railway station, to update information systems (public transport schedules available on the internet, mobile applications, etc.), and to optimize routes.

The special plan for transport system in Šiauliai district for 2018⁴⁷ does not analyse aspects of public transport. The document specifies technical parameters of streets, roads, railway and airport and provides for their development.

Coalition programs of the municipalities

Objective of the coalition program of Šiauliai city for years 2019 – 2023⁴⁸ is to make priority areas that would be focused on in the nearest future jointly with the coalition partners. It was foreseen to take care of quality of public transport services in the coalition program.

Objective of the coalition program of Šiauliai district for years 2019 – 2023⁴⁹ is to make priority areas that would be focused on in the nearest future jointly with the coalition partners. It was foreseen to develop a convenient public transport system for the district inhabitants in the coalition plan.

Strategic action plan of UAB „Busturas“ for years 2020–2022⁵⁰

3 objectives with tasks and measures were set in the action plan (relevant objectives and tasks provided):

- Objective I – to improve the level of quality of the public transport bus services and other services provided by the company. Tasks – to ensure safe, reliable and accessible transport of passengers by inbound buses in the city and coaches as well as to provide qualitative services related to information, service, ticketing of passengers and customers, and other services of the company;
- Objective II – to optimize and to make internal processes of operations of the company more efficient. Tasks – to improve operational efficiency related to control of passengers and the crew, to optimize the processes of technical inspection, maintenance and repairs of buses and other vehicles of the company, to ensure their relevant running quality, to optimize the process of organisation of transport by buses and coaches and to make the processes of bus terminal operations more efficient.

The rules for transport of passengers and luggage on Šiauliai city bus routes ⁵¹

⁴⁶ Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/ab9ffb306e4711e5b316b7e07d98304b?positionInSearchResults=1&searchModelUUID=aa62c0e9-7086-4b28-89d5-e9f3e3122676>

⁴⁷ Website: <https://www.siauliuraj.lt/specialieji-planai/siauliu-rajono-savivaldybes-susisiekimo-sistemas-specialusis-planas/1100>

⁴⁸ Website: <https://www.siauliai.lt/index.php?2204195295>

⁴⁹ Website: <https://www.siauliuraj.lt/data/public/uploads/2019/12/20192023veiklosprograma.pdf>

⁵⁰ Website: <https://www.busturas.lt/lt/apie-mus/imones-strateginis-veiklos-planas-2>

⁵¹ Website: <https://www.e-tar.lt/portal/lt/legalActEditions/891b3d90a86311e4a82d9548fb36f682>



The rules for transport of passengers and luggage on Šiauliai city bus routes establish obligations, rights, liability and control of carriers, crews and bus passengers. The rules comprise:

- Traffic organisation;
- Bus stop locations and information provided on such stops;
- E-ticket cards, tickets, their marking and sale;
- Boarding, transport and disembarkation of passengers;
- Luggage transport;
- Rights and obligations, liability of the carrier and the crew;
- Rights, obligations and liability of passengers;
- Information on video surveillance;
- Recommendations to passengers;
- Control of carriers, crews and passengers.

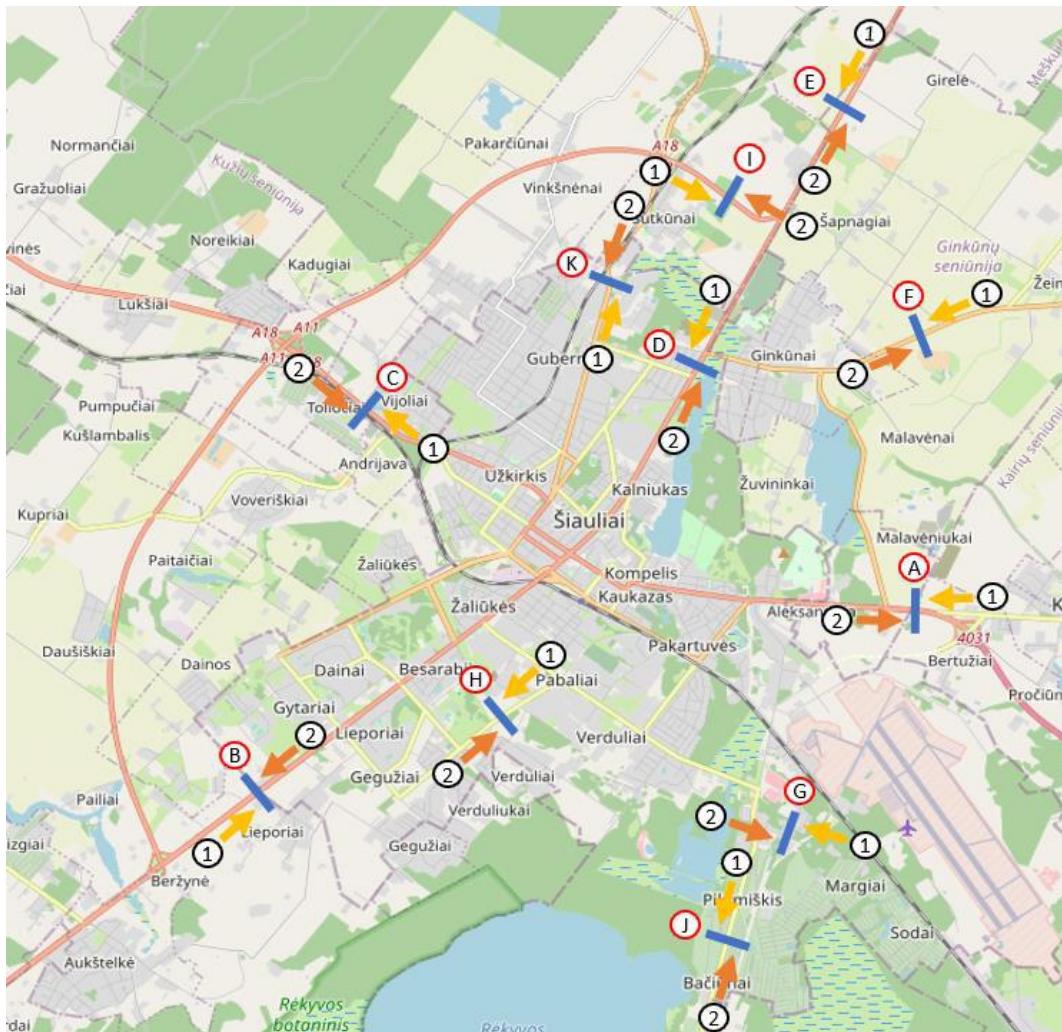
3.2 Analysis of plans and studies conducted

The principal researches and studies related to the relevant functional area, transport and mobility are discussed in this subsection: study of transport flows of Šiauliai city and sustainable mobility plan of Šiauliai city. By introducing the main insights of these documents, essential tendencies of the functional area mobility that should be taken account of while modelling any further mobility processes are discussed.

Study of transport flows of Šiauliai city

In 2020, public institution „Transporto kompetencijų agentūra“ (Agency of transport competencies) conducted studies of transport flows Šiauliai city in May, June and September along with the study on establishment of transport flow routes in the course of which traffic movement in Šiauliai city was assessed. Studies on establishment of transport flow routes were conducted in May and June. Surveys were carried out on major highways No. A9 (A), No. A11 (C), No. A12 (B, E), No. A18 (I), national roads No. 150 (F), No. 154 (K), Baltų St. (H), Bačiūnų St. (J), Vyturių St. (G) and Tilžės St. (D) (see Picture below).





Picture 19. Locations of day traffic intensity meters

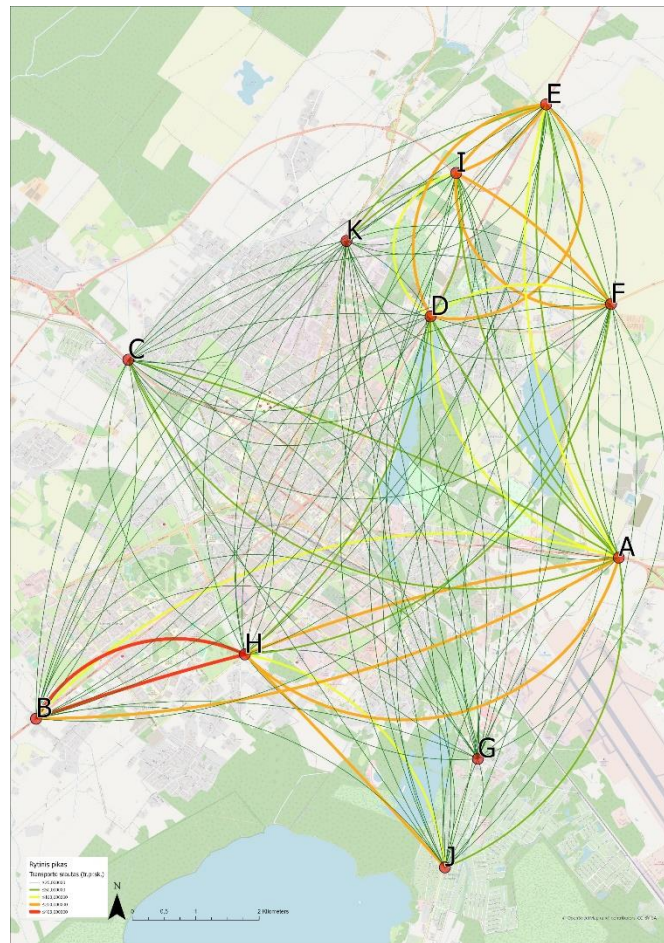
Source: Study of transport flows in Šiauliai city of 2020

Based on the repeated studies on day traffic intensity, their results were compared to the surveys conducted in May and June. It was observed that the difference in G post in different directions was the largest (19,8 – 23,7%). The results obtained in survey posts A, D, F and K are not so much different (within the limits of 10%), and difference up to 6,5% is observed in remaining B, C, E, H, I, J posts.

Based on the data of transport flows in permanent posts, day traffic intensity within the period from 2019 to 2020 was compared in the study on major highway No. A9 (B, C), No. A12 (D) and the national road

Upon comparison of changes in transport flows in 2019 and 2020 it was observed that it was -0,65%. The largest traffic intensity in June was registered (-2,85%) on national road No. 150 (A) and (-1,97%) on major highway NO. A9 (C), whereas on other major highway No. A9 point (B) traffic intensity decreased by 0,57%. Increase in traffic intensity was observed only in one point in question – major highway No. A12 (D) by 1,15%.

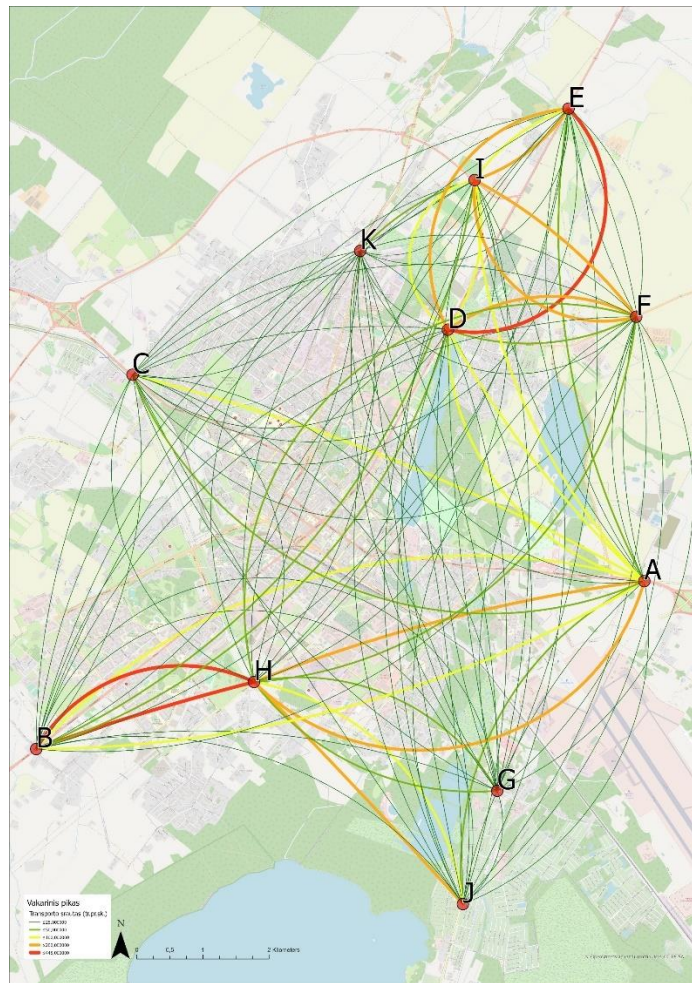
The studies conducted on distribution of transport flow routes within the territory in question revealed the distribution of day transport flows, also during the morning rush hour (07:00 – 10:00) and the evening rush hour (16:00 – 19:00). During the morning rush hour, the largest vehicle flow was registered in the direction of major highway No. A12 – Baltų St. (B – H) – 403 vehicles and Baltų St. – Baltų St. (H – H) – 313 vehicles (see Picture below).



Picture 20. Distribution of transport flows during the morning rush hour

Source: Study of transport flows in Šiauliai city of 2020

During the evening rush hour, traffic intensity was registered on routes Baltų St. – major highway No. A12 (H – B) – 48 vehicles, Baltų St. – Baltų St. (H – H) – 425 vehicles, major highway No. A12 – Baltų St. (B – H) – 421 vehicle, major highway No. A12 – major highway No. A12 (B – B) – 408 vehicles and Tilžės St. – major highway No. A12 (D – E) – 307 vehicles (see Picture below).



Picture 21. Distribution of traffic flows during the evening rush hour

Source: Study of transport flows in Šiauliai city of 2020

As the data was summarized it was observed that out of all points under survey the vehicle flow in sections C–A, D–F and D–E was larger during the evening rush hour than during the morning rush hour; however, sections I–E and B–A were more active during the morning rush hour. As the main tendency is observed, the largest transport flows are in northern and southern area of the city in the evenings and in the mornings.

Sustainable mobility plan of Šiauliai city

Based on decision No. T-253 „On approval of preparation of the sustainable mobility plan of Šiauliai city and allocation of funds“ of the council of Šiauliai city municipality administration of 24 September 2015, the sustainable mobility plan of Šiauliai city was prepared in 2018 which analysed the territory of Šiauliai city municipality and the suburban territory. The sustainable mobility plan of Šiauliai city is the principal document for strategic planning of territories in Šiauliai region, prepared on the grounds of the current planning practice, by following the principles of integration, participation and assessment. Purpose of this plan is to meet the needs of nowadays and future people by ensuring a better life quality in cities and suburbs.

In total, 5 planning objectives were set in the sustainable mobility plan of Šiauliai city:

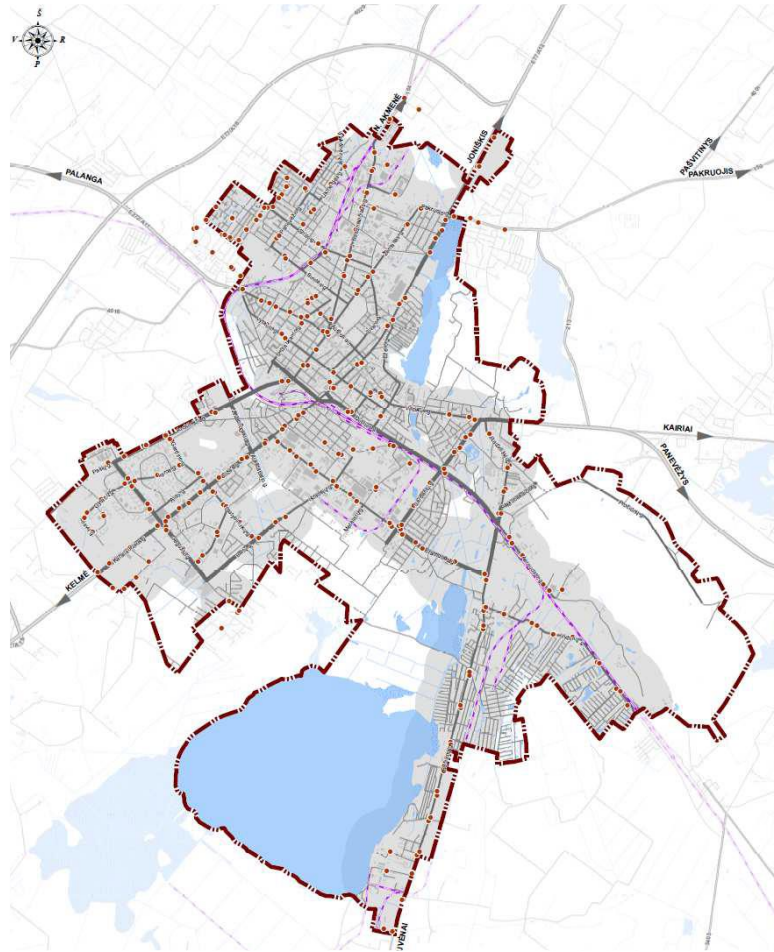
1. To ensure the transport needs of inhabitants residing in Šiauliai city and suburbs, tourists and companies, by developing an integrated system of diverse transport types;

2. To pursue that the transport system solutions conform to the quality compatibility requirements for sustainability, economic vitality, social equity, health and environment;
3. To ensure rational and efficient use of transport infrastructure and public transport routes' network, by determining the most rational and economically substantiated directions of urban development, creation of jobs near residential areas;
4. To improve traffic safety, to increase environmental attractiveness and life quality. To reduce air pollution and energy use, by decreasing passenger car traffic, and elimination of transit traffic from the central area of the city;
5. To implement recommendations of the white paper in the urban transport area, to contribute to improvement of the trans-European transport network.

Concept and problematics of the public transport operating in the city are discussed in a separate chapter of the sustainable mobility plan of Šiauliai city, with regard to any processes to be rectified, also the recommendations are provided on how to improve the current system. The main insights indicated in the plan are discussed further.

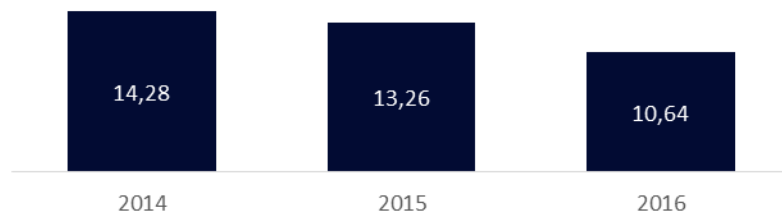
Based on the information provided in the sustainable mobility plan, in total, 35 bus routes serving the urban territory and 10 suburban bus routes, compatible with each other, operated in Šiauliai city in 2018, whereas the transportation took place from 5.00a.m. to 11.00p.m., without an opportunity to use public transport at night. The routes serving any more distant suburban territories finish their journeys in Šiauliai bus terminal located in the city centre from where there are possibilities to continue the trip by other routes. It is concluded in the sustainable mobility plan of Šiauliai city that accessibility of public transport in Šiauliai city corresponds to the needs of inhabitants since the majority of them does not encounter any problems related to accessibility of public transport (see Picture below).





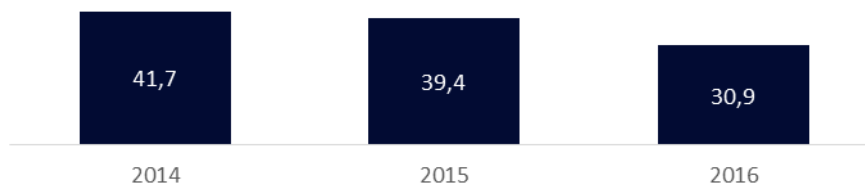
Picture 22. Public transport accessibility scheme of Šiauliai city
Source: Sustainable mobility plan of Šiauliai city of 2018

It is specified in the sustainable mobility plan that Šiauliai city as well as the whole territory of the country is characterized by the permanent increase in the number of trips carried out by cars; however, decrease in the number of inhabitants using public transport is observed at the same time. It is registered that in the territory of Šiauliai city the number of inhabitants decreased by 25% within the period from 2014 to 2016. (see Picture below).



Picture 23. Fluctuation in Šiauliai city public transport passenger flows, mln.
Source: Sustainable mobility plan of Šiauliai city of 2018

Based on the sustainable mobility plan of Šiauliai city, consistent decrease in the number of passengers was observed in Šiauliai suburbs as well as in Šiauliai city within the period from 2014 to 2016. By being relatively low anyway, mobility of inhabitants by public transport in the suburbs decreased by 10,8 thous. of passengers or by almost 26% (see Picture below).



Picture 24. Fluctuation in Šiauliai suburban public transport passenger flows, thous.

Source: Sustainable mobility plan of Šiauliai city of 2018

By keeping in mind negative tendencies of inhabitants travelling by public transport, the necessity was accentuated to take measures encouraging inhabitants of the city to use public transport, by first of all focusing on the fact that losses of public transport passengers must be reduced in the city, and by paying attention to the fact that particularly large investments will be needed in order to attract the passengers travelling by private cars back to public transport.

Based on the sustainable mobility plan, the largest flows of passengers are transported by the buses of routes 1, 4, 6, 12, 24. During the evening rush hour, almost a half (49,6%) of all the public transport passengers using public transport at that time travel by these routes. It is specified in the plan that improvement of the city infrastructure is recommended namely from these above mentioned 5 most popular routes because a large number of public transport passengers would sooner notice the changes due to the extensive use (see Picture below).



Picture 25. Public transport passenger flows in the central area of Šiauliai city during rush hour

Source: Sustainable mobility plan of Šiauliai city of 2018

The sustainable mobility plan emphasizes the average speed of public transport vehicles which is not competitive with a passenger car and too slow, namely 21,8 km/h. The routes with the slowest average speed were 2, 3, 6, 7, 14, 20, and 22. Majority of the public transport vehicles travelling by these routes go through the centre of the city, where priority to public transport is not provided by traffic which automatically has negative impact on the servicing speed. In order to resolve this problem and to create

competitive conditions for public transport to move faster, it is recommended to give it priority in traffic at least in the city centre.

Age of vehicles is recognized in the sustainable mobility plan as the most problematic aspects observed throughout Šiauliai city transport: unrepresentative appearance of the public transport vehicles, frequent number of failures, noise caused and the fact that they are not adapted to the disabled. It is emphasized that age of the public transport vehicles serving suburban routes varies from 23 to 32 years. The necessity is accentuated to renew the public transport vehicle fleet by purchasing newer vehicles adapted to the disabled (see Table below).

Table 11. Condition and age of vehicles in 2016

| Vehicle age | City | Suburb |
|---------------------------|------|--------|
| Up to 5 years old | 17 | 0 |
| From 5 up to 10 years old | 3 | 0 |
| Over 10 years old | 90 | 8 |

Source: Sustainable mobility plan of Šiauliai city of 2018

It is indicated in the sustainable mobility plan that the ticketing systems applied in public transport of Šiauliai city and Šiauliai district are different and therefore cause inconvenience among passengers. It is recommended to include the whole urban area of influence into the general system and this way to create better conditions for passengers or to realize an opportunity to passengers residing in suburbs to purchase a public transport ticket for the entire journey.

3.3 Current mobility systems within the territory analysed by CMP

Current mobility systems within the functional area by estimating compatibility between the diverse vehicles and the general transport system, the aspects of travelling by public and private transport and the feasible potential to increase the local transport possibilities are overviewed in this subsection.

„Grey“ areas of the mobility system

With regard to meeting the transport needs of the city inhabitants it is concluded in the sustainable mobility plan of Šiauliai city that the accessibility of public transport in the most of the residential territories of the city is rather good. It is stated that the majority of inhabitants do not experience any problems related to transport accessibility, whereas servicing of any less inhabited territories conforms to the procedure indicated in the regulations, therefore it is considered that accessibility of public transport in general meets the inhabitants' needs in Šiauliai city.

Nevertheless, in the words of the representatives of the public transport operator in the city, from time to time they receive responses, complaints and proposals from passengers related to operations and infrastructure of public transport. As regards the routes and the schedules of public transport, most often passengers approach them due to irrelevant bus routes (lack of transport among different settlements, too long trajectories that predetermine a long duration of the trip), trips (insufficient number), frequency (lack of trips in the morning and in the evening) or timing (irrelevant times, leaves too early or too late, too long time gaps).

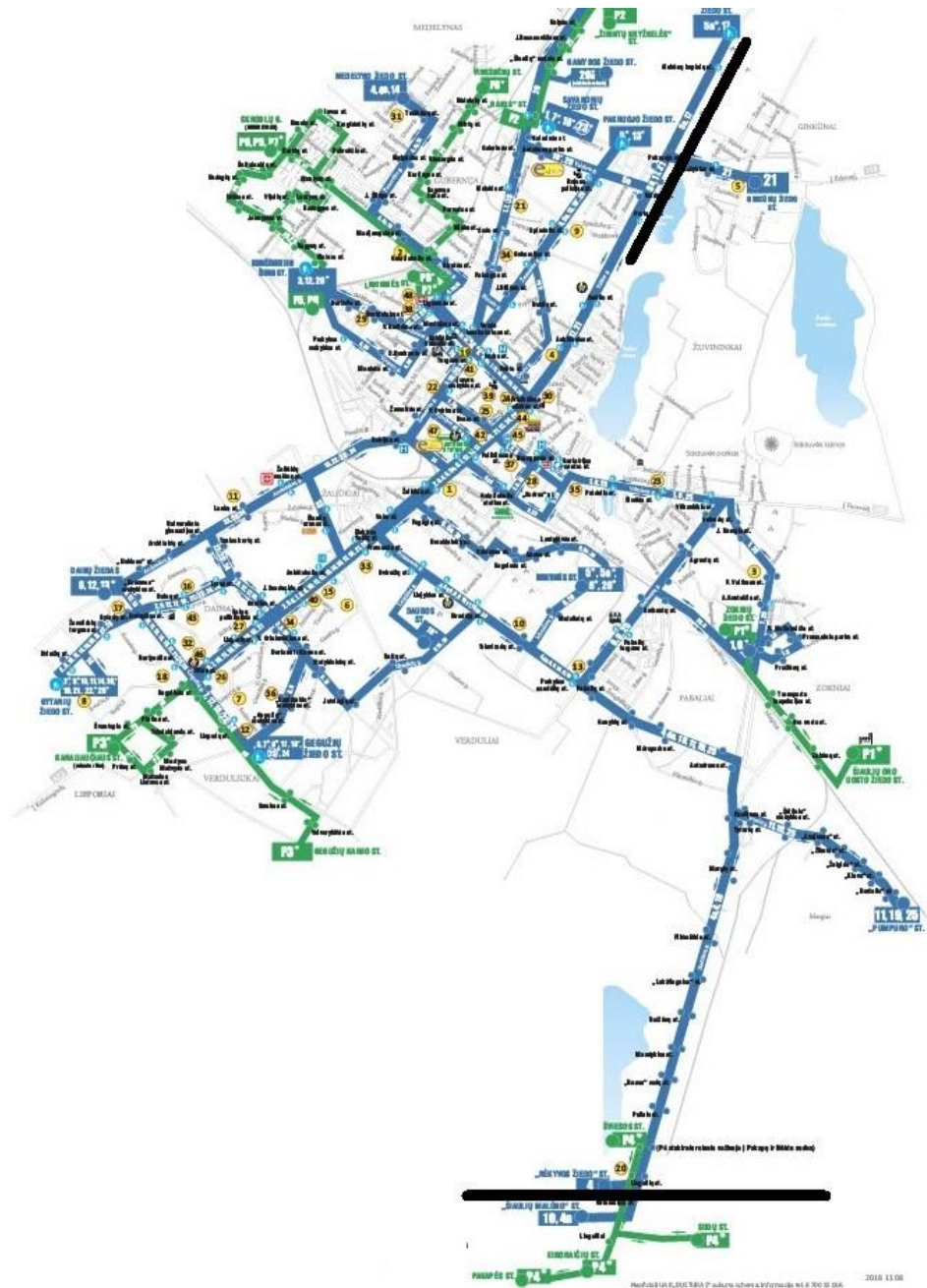
When communicating with heads and assistant heads, chairmen of the community and other active community members of Šiauliai district municipality, the same problem was ascertained: lack of trips. Majority of the persons indicated that it is complicated to travel by public transport for those residing in the district and working in the city since times are not adapted to their trips to go to work. It was also observed that some of the routes are too long which predetermines a longer travelling time. Representatives of public transport passengers also emphasized that the settlements that are further from the main cities of the municipality lack public transport routes very much or the number of routes



and trips is too small, they are not convenient, and do not meet the needs of inhabitants. The heads emphasized that often people move from such settlements, settle closer to the city and this predetermines depopulation of the entire settlements, and increase separation between settlements and municipalities. Moreover, it is stated that some of the settlements lack new bus stops. As new companies are incorporated, employees do not have convenient transport opportunities to come to work due to lack of the routes, whereas new routes are not developed due to the undeveloped network of bus stops.

When asked, whether the need for new routes and development of the network have been foreseen, representatives of the district municipality indicated that the network is assessed through the economic prism and thus the development has not been foreseen in the nearest future; moreover, the current network is being reduced due to the decreasing number of passengers and inhabitants in villages that are located in a far distance one from the other. Representatives of the city municipality indicated that development of the network of routes has been foreseen in the action plans; however, the greatest attention is first of all paid to the current network, by improving and correcting any routes, also by extending them and including any additional stops. The largest attention is paid to the current need (see Picture below).





Picture 26. Scheme of the routes of Šiauliai city buses and inbound buses

Source: UAB „Busturas“

The greatest defect of the public transport infrastructure in the functional area is experienced by district inhabitants: their travelling by public transport is hardly planned, the nearest stops are in a large inconvenient distance, trips are seldom and inconvenient in order to go to work. Despite a relatively good supply with public transport services in the urban territory, the need of inhabitants to expand the territory of public transport is also experienced there.

It is specified in the sustainable mobility plan of Šiauliai city that the schedules of all types of routes are adjusted among themselves, therefore travels from any closer suburbs are fast and convenient. Since the routes serving any further suburban territories finish their trips in the central area of Šiauliai city, .i.e. the bus terminal, it is convenient to continue the journey by the desired directions thanks to a great number of the transit routes.

Nevertheless, in the words of the persons representing the district passengers, passengers experience inconveniences during their trips when changing the buses since the traffic schedules (urban and suburban), in their words, are not adjusted among themselves and therefore duration of the trip becomes longer. Based on the assessment of satisfaction with public transport services, even though the services provided are assessed rather well, compatibility of the schedules was on the average assessed by the Šiauliai district respondents solely by 3 points out of 5.

With regard to general compatibility of public transport operating in the functional area it is observed that the schedules of the public transport operating in the city are well thought and adjusted among themselves but the bus schedule within the district area could be adjusted in a smoother manner. In addition to that, it is expedient to adjust the infrastructure of public transport operating within the city and the district, including their schedules – this would make the trips of those travelling from the district to the city much easier.

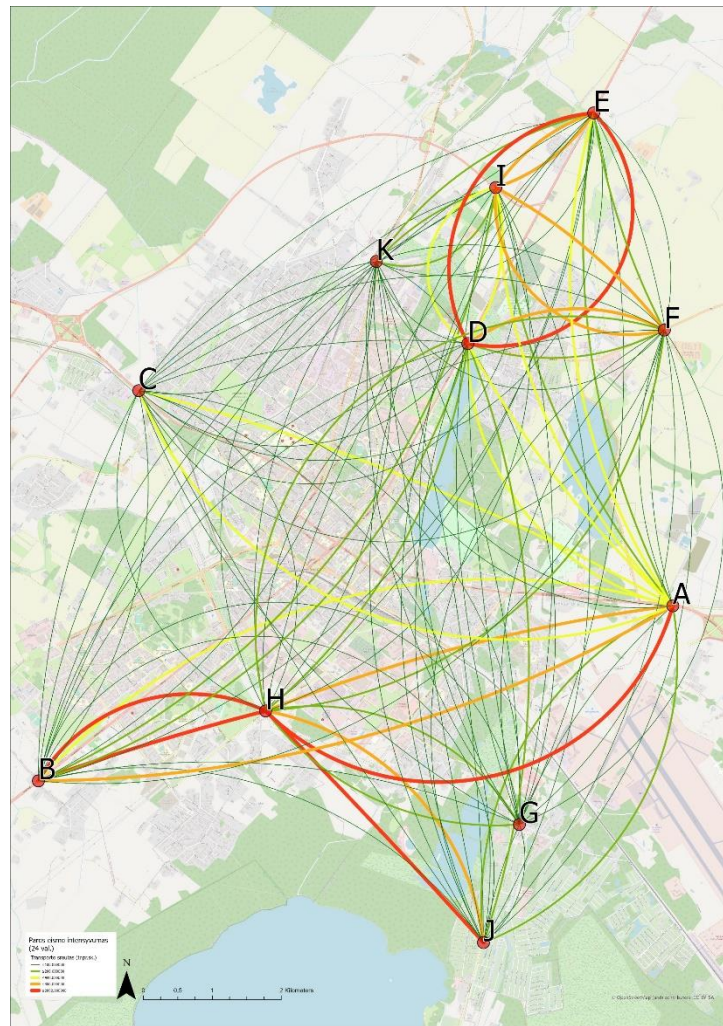
When discussing the public transport ticketing system with heads and assistant heads, chairmen of the community and other active community members of Šiauliai district municipality, the observations were received due to the current ticket system: inhabitants using the electronic ticket system are satisfied since they can change buses without any problems in order to reach the desired destination and this trip is cheaper than purchasing several different trip tickets. It is supposed that operational scope of this system could be and should be expanded so that more settlements located not far from Šiauliai city could use public transport and electronic ticket system.

Connections in the region

As it was mentioned earlier, inhabitants of Šiauliai district actively travel to the city as the centre of attraction on various aspects: based on the inhabitants' survey, the main goal of travelling from Šiauliai district to Šiauliai city is related to work (31,5% of all the responses). Inhabitants also actively travel to the functional area for shopping (21,8%), entertainment (19,6%), treatment (16,7%). Other, less popular reasons for inhabitants' mobility – to study at schools (4,1%) or higher schools (3,5%).

Based on the data of the study on traffic flows in Šiauliai city, the largest transport flows per day were registered in the northern and the southern part of the city. The most active routes were: major highway No. A12 – Baltų St. (B – H) – 2092 vehicles, Baltų St. – Baltų St. (H – H) – 1965 vehicles, Baltų St. – major highway No. A12 (H – B) – 1737 vehicles, major highway No. A12 – major highway No. A12 (B – B) – 1531 vehicles, Tilžės St. – major highway No. A12 (D – E) – 1286 vehicles, major highway No. A9 – major highway No. A9 (A – A) – 1059 vehicles and major highway No. A12 – Tilžės St. (E – D) – 1055 vehicles. The greatest potential to develop public transport or to consider possibilities for arranging the fast public transport routes and this way to attract passengers from private cars to fast and mobile vehicles was observed in these locations (see Picture below).

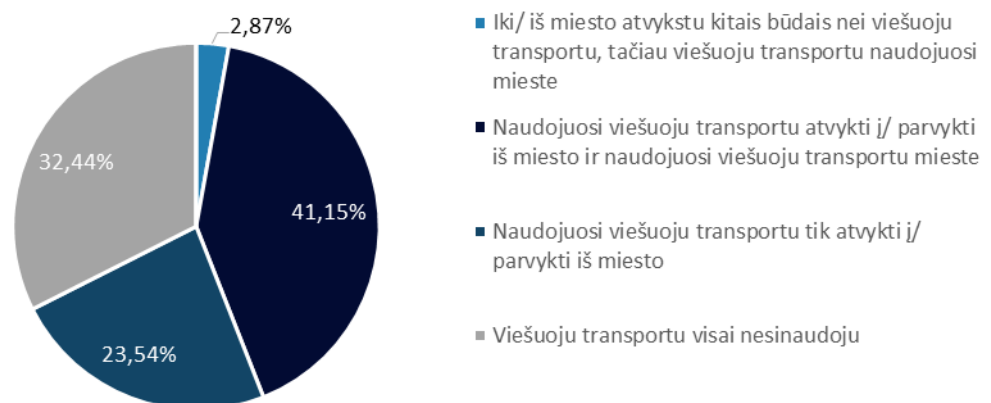




Picture 27. Distribution of daily traffic flows in Šiauliai city

Source: Study on transport traffic flows in Šiauliai city of 2020

Based on the survey of inhabitants' opinion, – 41,2% of the respondents indicated that they use public transport travelling to the city and back and also for travelling within the city, 23,5% indicated that they use public transport solely for their trips to the city and back, whereas 2,9% of the respondents indicated that they use public transport solely within the city. 32,4% of the respondents indicated that they do not use public transport at all (see Picture below).



Picture 28. Distribution according to types of public transport users

Source: formed by Consultant, based on the survey data

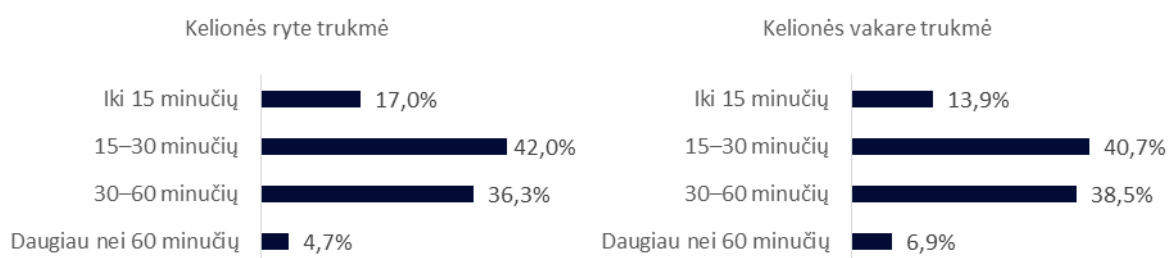
This implies that the third of the district inhabitants travelling to the city and back permanently use their private car and do not travel by public transport at all. Passengers of this category contribute to high traffic activity on the roads located in the outskirts of the city. In order to reduce traffic in these areas it is expedient to improve the urban and suburban public transport infrastructure, to better integrate it, to adjust the schedules, routes and this way attract inhabitants to use public transport.

Load of the bus stops and the largest passenger flows in the city have been analysed in the sustainable mobility plan of Šiauliai city. In total, 4 stops may be distinguished throughout the whole network of stops where the largest flows of boarding and disembarking passengers are observed, thus the main connections take place there. These stops include the bus terminal, stop of J. Sondeckis, „Vairas“ and „Centras“. In these spots, in order to ensure a fast transport of passengers and to reduce congestions of passengers on buses as much as possible, it is possible to discuss already mentioned opportunities of fast route buses, this way distributing large passenger flows as evenly as possible and ensuring possibilities for faster trips.

In terms of the passenger flows in public transport, it is specified in the sustainable mobility plan of Šiauliai city that the largest flows are registered in the locations particularly important to transport, such as Tilžės street, Pramonės street and Vytauto street. It is stated that in these streets it is necessary to adapt the priority right to public transport and this way to make a trip shorter while travelling within the areas of active mobility.

Differences in travel times

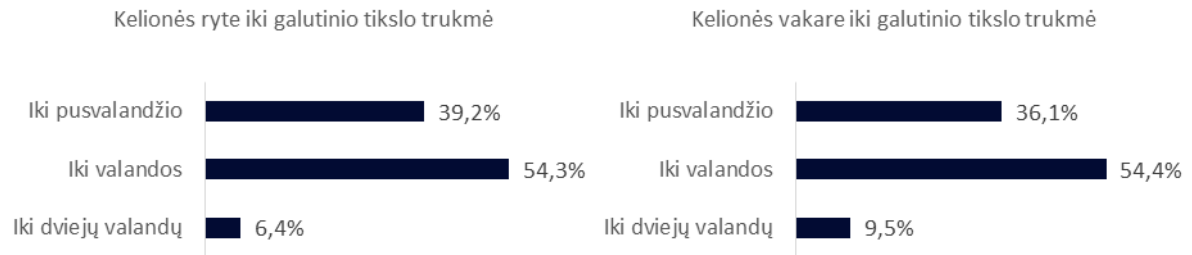
Based on the survey of district inhabitants, duration of a trip by public transport during rush hour, in the words of the majority of the respondents, usually takes 15-30 minutes (42% in the morning and 40,7% in the evening). The trip takes 30-60 minutes to 36,3% of the respondents travelling in the morning, and 38,5% of the respondents travelling in the evening. Only 17% of the respondents indicated that the trip takes less than 15 minutes in the morning and 13,9% of the respondents – in the evening. 4,7% of the respondents indicated that in the mornings their trips take more than an hour; whereas in the evenings the trips of 6,9% of the respondents take more than an hour (see Picture below).



Picture 29. Average length of trips by public transport in the morning and in the evening

Source: formed by Consultant, based on the survey data

While assessing the general length of the whole trip up to destination during rush hour, 54,3% of the respondents indicated that irrespective of the vehicle selected, it takes up to one hour to reach the destination in the morning and up to an hour in the evening to 54,4% of the respondents. 39,2% of the respondents reach their destination in less than half of an hour in the morning, and 36,1% of the respondents in the evening. It takes up to two hours to reach the destination in the morning for 6,4% of the respondents and for 9,5% of the respondents in the evening (see Picture below).



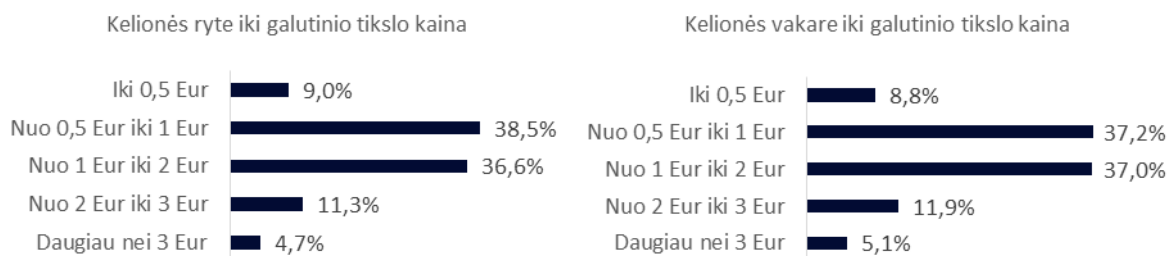
Picture 30. Average length of trips to final destination in the morning and in the evening

Source: formed by Consultant, based on the survey data

It could be seen from this data that length of the trips in the mornings is slightly less than that in the evening. This means that while planning any further organisation of public transport, it is worth paying attention to the possibility to make the trips by public transport faster, particularly in the evening rush hour and this way to make public transport more attractive to inhabitants.

Price for the trip by public transport

With regard to the results of the inhabitants' survey, the average price for the trip by public transport at different times of the day, in the words of the respondents, from the start point of their trip to the final destination comes to from EUR 0,5 to EUR 2,00. 38,5% of the respondents for their trip in the morning pay from EUR 0,5 to EUR 1,00 and 37,2% of the respondents for their trip in the evening. 36,6% of the respondents pay from EUR 1,00 to EUR 2,00 for their trip in the morning and 37% for their trip in the evening. As much as 9% of the respondents pay for their trip less than EUR 0,5 in the morning and 8,8% in the evening. 4,7% of the respondents pay for the trip over EUR 3,00 in the morning and 5,1% in the evening (see Picture below).



Picture 31. Average prices for trips to final destination in the morning and in the evening

Source: formed by Consultant, based on the survey data

Inhabitants travelling to the city by private cars encounter additional costs, namely a fee for car parking. Based on the information provided on the website of Šiauliai city administration, fees for car parking in Šiauliai city are collected during workdays, from 8.00 a.m. to 5.00p.m. (see Picture below).



Picture 32. Paid car parking area in Šiauliai city

Source: Website of Šiauliai city municipality administration

Toll rates for car parking in the Green area of Šiauliai city⁵²:

- 20 min. – EUR 0,10;
- for one day (from 8.00a.m. to 5.00p.m.) – EUR 6,00, when payment is made before 12a.m. of the next day to a payment machine, by bank or through internet bank customer service system;
- for one day (from 8.00a.m. to 5.00p.m.) – EUR 1,50, when payment is made immediately to a payment machine or by using mobile operator's services (toll privilege);
- for a month – EUR 14,00;
- for a booked car parking place outside the street territory for one month – EUR 29,00;
- for a booked car parking place within the street territory for one month – EUR 43,00;
- for a place for one month – EUR 1,20, when a builder building or reconstructing buildings (or changing the purpose of buildings or their parts) outside the limits of his current (used) land plot, on behalf of the Municipality arranges (builds at his own expense, marks by the specific road signs or by means of horizontal marking) any reserved car parking places outside the street territory or when a person having obtained an approval from the Municipality administration, arranges any reserved car parking places (builds at his own expense, marks by the specific road signs or by means of horizontal marking) for common use outside the street territory

Toll rates for car parking in the White area of Šiauliai city:

- for a booked car parking place outside the street territory for one month – EUR 23,00;
- for a booked car parking place within the street territory for one month – EUR 29,00;
- for a place for one month – EUR 1,20, when a builder building or reconstructing buildings (or changing the purpose of buildings or their parts) outside the limits of his current (used) land plot,

⁵² Website: <https://www.siauliai.lt/Gyventojams42194281>

on behalf of the Municipality arranges (builds at his own expense, marks by the specific road signs or by means of horizontal marking) any reserved car parking places outside the street territory or when a person having obtained an approval from the Municipality administration, arranges any reserved car parking places (builds at his own expense, marks by the specific road signs or by means of horizontal marking) for common use outside the street territory.

Therefore, when parking a car in the Green area in Šiauliai city and keeping it there for 8 hrs (from 8.00a.m. to 5.00p.m.), the cost of the inhabitant per day, not having a right to use any privileges, would come to EUR 6. The parking cost per month in this area would come to EUR 14. The car owner would spend EUR 23 for the parking of his vehicle outside the street territory in the White area.

In order to analyse more in detail, what costs incur to the inhabitants driving a car, a separate study should be conducted since this number is affected by many factors predetermining the diverse costs incurred to inhabitants.

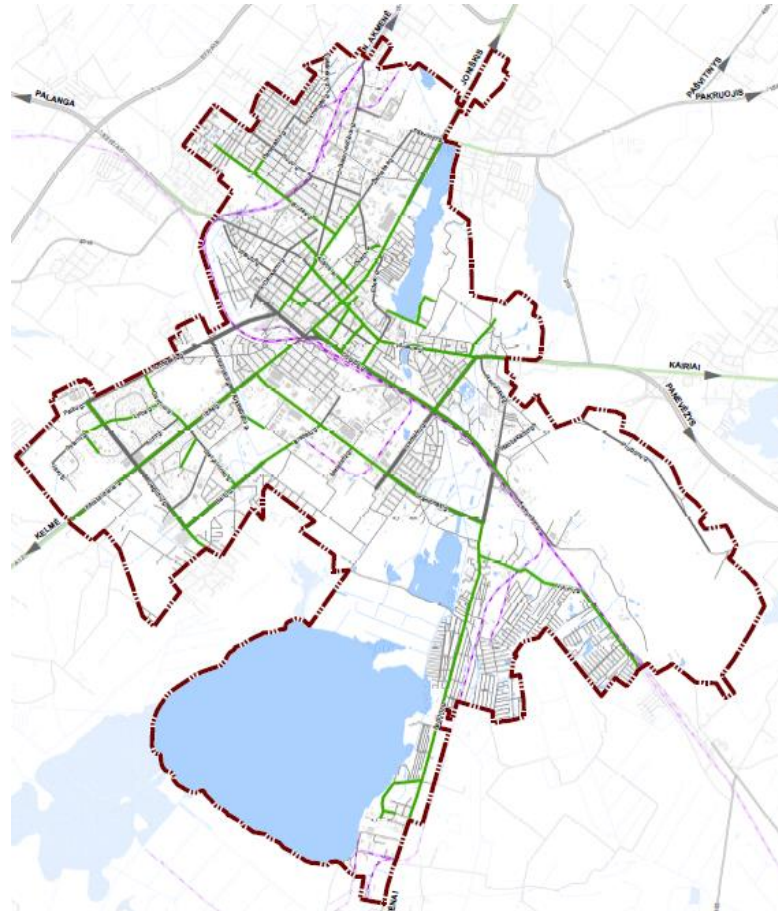
Network of bicycle paths

In order to ensure the opportunities of sustainable mobility by means of intermodal transport, a sufficiently developed infrastructure must be guaranteed. Arranging of pedestrian and bicycle paths is the measure available and popular in international practice, providing a possibility to inhabitants to select a sustainable and schedule-free vehicle (bicycle, scooter), and not to have any negative impact on traffic flows or environment.

Based on the information provided in the sustainable mobility plan of Šiauliai city, the length of pedestrian and bicycle paths at the time of making the plan was 74,4 km. It is indicated that since 2001, 23,43 km of pedestrian and bicycle paths were built in Šiauliai city which come to 40,6% of all the pedestrian and bicycle paths in Šiauliai city. In 2005, as much as 30% of all the pedestrian and bicycle paths built from 2001 were completed (see Picture below).

At the time of making the sustainable mobility plan of Šiauliai city, the network of pedestrian and bicycle paths was started to form in the city, combining peripheral areas of the city with the central area of the city and the old town; however, integrity was not properly maintained in this network. It is specified in the plan that density of the network of any current paths that allow bicycle traffic came to 0,71 km/km². As it is stated in the sustainable mobility plan, the current organisation of the network of pedestrian and bicycle paths in Šiauliai city is implemented by following a logical sequence. The most dense areas of pedestrian and bicycle paths are found in the centre of the city, in the old town and by the most important city tracks located in the transport areas.





Picture 33. Scheme of bicycle paths in Šiauliai city

Source: Sustainable mobility plan of Šiauliai city of 2018

In 2020, implementation of project „Reconstruction and development of pedestrian and bicycle paths in Šiauliai district“ took place in Šiauliai district, during which the pedestrian paths of Ventos street located in Šiauliai district were reconstructed from the funds of the European regional development fund, European Cohesion fund and the budget of Šiauliai district municipality – a pedestrian and bicycle path was arranged on one side and just a pedestrian path on another side of the street. The anticipated length of the reconstructed paths – 1,86 km.⁵³

Despite any ongoing works, it was observed during the survey of inhabitants of Šiauliai district, that the users lack a better-developed network of bicycle and pedestrian paths. This issue is particularly relevant to the settlements located not far from the city limit, since in case of absence of the convenient public transport, inhabitants could use a bicycle or a scooter; unfortunately, in their words, they lack such paths or they are not integrated into the general network. In the course of the same survey it was established that 1,9% of all the respondents go to work and (or) school by bicycle, thus it may be expected that these numbers would increase if the network of bicycle paths is properly developed.

Based on this information, the opportunities for development of the network of bicycle paths in the future are seen in the outskirts of the city or rural territories, in the old town, in the central area of the city and any transport areas distinguished by their recreational resources, by paying attention to the most attractive tracks located in the city.

⁵³ Website: <https://www.siauliuiraj.lt/projektai/astos/pesciuju-ir-dviraciu-taku-rekonstravimas-ir-pletra/1612>

3.4 Current situation SWOT analysis

Upon assessment of the current situation of public transport organisation in the municipalities of Šiauliai city and Šiauliai district, the following strengths, weaknesses, opportunities and threats with regard to public transport organisation have been recognized:

Strengths:

- Organisation of public transport is concentrated within liability of one legal entity, namely the municipalities of Šiauliai city and Šiauliai district;
- Inhabitants of Šiauliai city and Šiauliai district eagerly use public transport. Based on the sustainable mobility plan of Šiauliai city, 29,8% of all the trips in the city are done by means of public transport, whereas based on the study data, 67,56% of all the respondents use the services of public transport (within the city, when travelling to the city and back).
- The routing network of public transport in the city is wide and covers the largest part of the built up territory of the city; whereas the largest settlements within the district municipality are also connected by the public transport routes;
- Based on the traffic flow study, it is observed that there are no big traffic jams during rush hour in Šiauliai city, particularly in the central area;
- Accessibility of public transport in Šiauliai city conforms to the needs of inhabitants since the majority of them do not see any problems related to accessibility of public transport;
- Some of the vehicles used have been renewed; further renewal of the public transport fleet has been foreseen by companies and municipalities;
- Infrastructure of public transport is developed and renewed, including development and renewal of bus stops, development of bicycle and pedestrian paths.

Weaknesses:

- The number of public transport routes and run of the buses is reduced in the city and district municipalities;
- Decreasing public transport bus fleet;
- Increase in the number of passenger cars falling on 1 thous. of inhabitants, particularly in Šiauliai district;
- Some of the suburban route buses stops are in irrelevant locations, therefore it is difficult for inhabitants to change buses, they need to look for the stops where the city buses stop, however they are located in further distances;
- Traffic schedules (urban and suburban) are not adjusted between themselves, therefore the general duration of a trip becomes longer;
- Different ticketing systems and prices of public transport;
- Decentralized organisation makes agreements more difficult and causes the term of the final decision to be longer;
- The bicycle path that would ensure convenient travel between the city and any settlements located nearby has not been fully formed;



- The largest number of the vehicles used are old and do not conform to the modern tendencies and the needs of passengers;
- A large number of the public transport vehicles is not adapted to people with special needs, therefore they have not been duly integrated into society.

Opportunities:

- To increase the number of passengers, this way increasing the income received from the public transport tickets sold;
- To renew public transport by having used the national and the EU funds;
- To increase the integration of city and district municipalities by expanding bicycle paths, since inhabitants welcome any trips by bicycles and scooters;
- To develop a combined travel system in Šiauliai city, since there are different systems of transport in the city: railway, suburban buses, city buses, bicycles, pedestrians and private cars;
- To increase the number of routes and trips, by ensuring a convenient travel between the city and district municipalities.

Threats:

- The decreasing number of inhabitants and ageing society; this may also predetermine the decreasing number of passengers;
- Solutions for organisation of public transport require many financial investments; therefore, there is a risk that if additional national and the EU funding is not received, the largest share of the investment funds shall be allocated from the municipal budgets;
- If sufficient attention is not paid to increasing of the quality of the public transport services, the current number of passengers may decrease even more, by choosing trips by a private car instead which would increase the traffic flows in the city streets.



4 CMP strategic objective/ vision and underlying CMP principles

Vision of the transport system of Šiauliai city and district was formed in accordance with:

- Sustainable mobility plan of Šiauliai city;
- Strategic development plans of Šiauliai city and Šiauliai district;
- National strategic documents;
- EU strategic documents;
- Survey of inhabitants' travelling habits and opinion conducted.

With regard to the current public transport organisation carried out in Šiauliai city and district as well as the development directions for urbanisation and transport sector (including public transport) specified in international and national documents, the main vision for public transport in the Šiauliai functional area along with two priority directions have been set.

CMP optimisation vision:

Public transport of Šiauliai city and district is a sustainable, accessible and safe method of fast travelling within the territory of both, the city and the district.

Mobility vision of the Šiauliai functional area is formed as a set of two essential priority directions of the transport system: transport system of the functional area must be friendly to inhabitants and environment, competitive and efficient.

The principal method, how to achieve this vision is to carry out optimization of public transport in Šiauliai city and district, during which any separate fields of public transport operations are adapted to the vision set as well as to the priority directions and principles allowing to achieve its realization.

Priority directions and related realization principles for the CMP implementation in Šiauliai city and district are provided below.

1. Priority direction: inhabitants and environment

- *Environment-friendly transport* | In order to implement the objectives set in the European green course up to 2050 to become a continent of neutral impact on climate, it is necessary to reduce any negative impact of public transport on environment and to invest into development of the non-polluting public transport infrastructure, acquisition of new non-polluting vehicles, adaptation of innovative public transport solutions. Priority should be given to the sustainable transport types, by gradually phasing out any vehicles run by fossil fuel (diesel and petrol) and shifting towards ecological fuel - electricity and gas, and towards hydrogen powered vehicles in the future.
- *Intermodal transport and its infrastructure* | In order to encourage inhabitants to select more environment-friendly ways of travelling and to reduce the number of passenger cars on the roads, it is pursued to encourage any alternative ways of travelling. Trips by bicycles and scooters are non-polluting ways of transport, not requiring parking places, vacating roads and allowing



inhabitants to travel independently. In order to encourage these methods of mobility, it is necessary to invest into the fact that it is convenient and safe for inhabitants to use them on a daily basis. Wide and diverse range of supply with regard to public transport and alternative vehicles and well-developed infrastructure expand inhabitants' mobility opportunities and increase attractiveness of public transport.

- *Accessible, punctual and frequent public transport* | Geographically convenient public transport infrastructure, the bus stops not far from residential area and workplace create opportunities to conveniently use public transport services, this way increasing attractiveness of these services, particularly, during the colder months or in bad weather conditions. Geographic scope of public transport is particularly relevant to inhabitants living in the regions, since due to obvious scarcity of the public transport network in more distant locations which are further from the central functional area, their inhabitants more often tend to choose a private car as the principal vehicle. In order to attract inhabitants to use public transport, it is important that the mobility needs of inhabitants residing in the entire functional area are met in the best way possible. In addition, it is necessary to ensure its functioning as punctual as possible and following the schedules, this way reducing any inconveniences experienced by passengers. Moreover, sufficiently frequent number of trips of public transport allows passengers to better plan their journeys, this way becoming a more attractive method of travelling. By ensuring sufficient frequency of the trips of public transport, opportunities to attract a greater number of passengers who would select public transport as the principal mobility measure increase.
- *Safe public transport* | Safety of passengers must be ensured not only during their trip by public transport, but also in any other stages of their travelling: while waiting for transport, going to the bus stop, using another public transport infrastructure. During any trip, a passenger should feel safe not only with regard to conduct of the driver or any other passengers; it should also be pursued to reduce as much as possible the possibility for any anti-social, aggressive or criminal conduct demonstrating of practicing persons to get onto the bus.
- *Socially responsible public transport* | It is necessary to ensure mobility opportunities for the groups of the most vulnerable passengers (children, elderly people, pregnant women, disabled persons). It is striven to adapt the vehicles and the infrastructure to the needs of inhabitants with mobility, vision and other disabilities. In addition to that, while observing the tendencies of ageing society, public transport should be adapted to elderly passengers, by ensuring their comfort during any trip, stimulating a general consciousness of the public to consider their needs as well as those of any other socially vulnerable persons.
- *Attractive public transport* | Any old, polluting or noisy vehicles of public transport create a negative image in the society; therefore, because of this, some of inhabitants less often select this mode of transport. Due to this reason, it is striven to replace any old vehicles with newer, cleaner, less noisy and less polluting ones. During any colder or warmer months, passengers should be ensured a comfortable temperature inside the bus – a heated or cooled salon, appropriate level of lighting.

2. Priority direction: efficiency and competitiveness

- *Combined urban and suburban transport administration* | In order to reduce any bureaucratic burden, to facilitate the process of any separate administrative works, it is expedient to combine operations of the public transport organisers operating within the limits of the city and the district as much as possible as well as to plan better integrated public transport operations. General representation of the functional area passengers and carriers and active coordination of



operations would have positive impact on the trips of passengers migrating between the city and the district on a daily basis. Moreover, close cooperation of the municipalities on any transport issues would permit to better monitor any tendencies related to passengers' mobility, current progress and to strategically look at any reorientation of inhabitants, while selecting trips by public transport instead of a private car.

- *Coherent and integrated network of the public transport system* | In order to develop of universal public transport network within the functional area, passengers should not feel any differences, while travelling within the limits of the city or the district. Vehicles of public transport should move in a compatible manner, according to clear schedules and routes and this way facilitate any travel planning possibilities for passengers, not to make their travel more difficult due to additional bus changing or long travelling duration. Also, it is important to ensure stability of the schedule of public transport as much as possible; in the event of any changes of the schedule, the remaining network of public transport should also be properly adapted. In addition, it is important to consider efficiency of the current routes – opportunities to reorganize service of the most active transport spots by public transport, by ensuring convenient and fast service of passengers and movement of public transport in traffic.
- *Integrated ticketing system* | In order to facilitate mobility of inhabitants, and especially those residing in more distant locations and in the district, it is recommended to provide identical ticket purchase and marking conditions and to provide the price list as clear as possible. Passengers constantly moving within the city should not feel as not having sufficient information on the ticketing system applied in the district, and vice versa. Movement within the limits of the entire functional area should be less separated; this could be done by harmonized purchase and marking of travel tickets, by at the same time reducing any inconveniences experienced by passengers.
- *Competitiveness* | Transportation of passengers should be organised in such a way that these operations bring benefit not only to passengers but also to carriers. Organisation of public transport should be based on qualitative and efficient public procurement criteria. Thanks to coordination of the service of public transport in the territories of the city and the district, there would be an opportunity to attract more potential carriers and to organise larger public tenders with the possibility to strategically carry out servicing of the functional area territory.
- *Integrated passenger information system* | As passengers are encouraged to select the public transport services for their trips, it is necessary to ensure a possibility of permanent information of passengers. Since inhabitants travelling by public transport directly depend on transport schedules, information on the location of a vehicle becomes rather important, specifically in less served areas. Thanks to a clear and common passenger information system operating throughout the whole functional area, passengers would feel more confident in trusting public transport. If a public transport vehicle does not come to the bus stop in time or is late, a relevant passenger information method would allow passengers to familiarize with the current situation, to replan their time and to avoid more inconveniences.
- *Development perspectives* | While considering strategic attraction of passengers from private cars to public transport it is important to keep in mind that the centre of functional area - Šiauliai city – is the main attraction not just within a context of Šiauliai district but also for more remote surrounding territories. Inhabitants of these territories are also potentially among the persons coming to the territory of functional area; therefore, automatically some of the transport flows are generated by these inhabitants. Thus, in order to carry out development of public transport



passengers on a larger scale, it is recommended to discuss the topics of public transport optimization with representatives of the surrounding municipalities in the future.

Pursuant to the aforementioned priority directions and with regard to the principles provided, the list of priority implementation areas and implementation measures of the CMP has been prepared.



5 List of CMP priority implementation areas, including core objectives related to these priority areas

Upon completion of the analysis of current national, regional, Šiauliai city and Šiauliai district legislation and other documents and taking account of the operations carried out in the Project and of the CMP main formulated principles of CMP, the priority implementation areas of CMP and measures provided for these areas are laid down below.

With regard to the sustainable mobility plan of Šiauliai city, this plan offers the additional measures that do not duplicate any measures specified in the sustainable mobility plan. Therefore, the measures provided are relevant to the municipalities of Šiauliai city and Šiauliai district and particularly to the functional area in question.

Renewal and development of public transport infrastructure | In order to ensure fast, convenient and reliable public transport, there is a need to renew some of the current public transport infrastructure and to expand the infrastructure where it is necessary. Implementation measures:

1. Arrangement of public transport traffic „A“ lanes. Besides the proposed arrangement of 26,5 km of „A“ lanes in the city that would ensure faster and more reliable public transport, additionally it is suggested to arrange 6 km of „A“ lanes in Šiauliai district municipality near Šiauliai city, by ensuring transport from „park and ride“ spots.
2. Arrangement of the infrastructure of final stops (wc, roofs, asphaltting of the areas of turnaround). With regard to calculations done, investments should be allocated to arrangement of 9 final bus stops.

Renewal of public transport fleet | In order to ensure implementation of the EU and national legislation and convenient and high-quality public transport, it is proposed to renew the urban and suburban public transport fleet with new and environment-friendly vehicles. Implementation measures:

3. Renewal of the public transport fleet with the vehicles powered by alternative fuel and electricity. Electric vehicles should come to 55% of all the public transport fleet.
4. Arrangement of the charging infrastructure for the vehicles powered by alternative fuel and electricity. In total, 4 fast electrical charging stations and 3 gas filling stations are proposed to arrange in the functional area.

Improvement of public transport accessibility | In order to ensure that public transport is accessible to all and particularly to the disabled, it is proposed to ensure that the public transport measures and the remaining transport infrastructure are adapted to persons with vision or movement disabilities. Implementation measures:

5. Adaptation of public transport vehicles and infrastructure to the persons with limited mobility. Vehicles would have 100%.

Renewal and development of alternative transport infrastructure | In order to ensure the possibilities of alternative transport in the functional area, it is necessary to renew and to expand the network of the



infrastructure dedicated to alternative transport and to arrange the additional infrastructure that would improve the quality of alternative transport. Implementation measures:

6. Building and lighting of pedestrian paths. With regard to the comments provided by public transport users during the study it is estimated that in total 4 km of pedestrian paths should be arranged and fixed.
7. Building and lighting of bicycle paths. With regard to the comments provided by public transport users during the study it is estimated that in total 7 km of pedestrian paths should be arranged and fixed.

Ensuring of intermodal transport | In order to ensure intermodality and sustainable mobility in the functional area, development of the infrastructure necessary for adjustment and combination of different ways of mobility is proposed. Implementation measures:

8. Arrangement of „Park and Ride“ lots. Based on the study on the European flows, arrangement of 5 „Park and Ride“ lots in the city outskirts is proposed.
9. Arrangement of bikesharing sites. In order to increase the use of bicycles and taking account of the current situation, arrangement of 5 bikesharing sites is proposed with the aim to increase the number of these sites and expand the covering territory in the future.

Optimization and reorganization of public transport routes within FA | In order to ensure the quality and integrity of services, preparation of the plan for optimization of public transport routes in Šiauliai city and Šiauliai district is proposed, which would allow to reorganise public transport routes not according to the municipality limits but to the largest passenger flows, new settlements and objects of attraction. In addition, ensuring of regular polling of inhabitants is proposed.

10. Preparation of the plan for optimization of public transport routes in Šiauliai city and Šiauliai district, taking account of the construction of any new built-up areas and objects of attraction.
11. Regular polling of inhabitants in order to ascertain their needs for public transport.

Prior to preparation of the plan for optimization of public transport routes, the analysis of the current situation should be conducted. Breakdown of the analysis into several sections is proposed:

- Analysis of the public transport fleet, including the current number of carriers, indicators of current number, age, type, fuel, average consumption, emission, seats/ standing places of vehicles and other indicators.
- Analysis of the public transport routes, including current local (urban and suburban) network of routes, number of routes and their servicing according to different carriers, the number of vehicles used, the number of passengers transported, filling of vehicles with passengers in the different time of a day, average run of the route, average distance made by a passenger and other indicators.
- Analysis of operational indicators of the public transport system, including required funding allocated to carriers, variation in funds based on historical data, distribution of funds under different categories (income from tickets sold, compensations to cover any losses and reimburse any income foregone), profitability/ loss-making of routes if to compare with any other operational and social criteria as well as other relevant indicators.

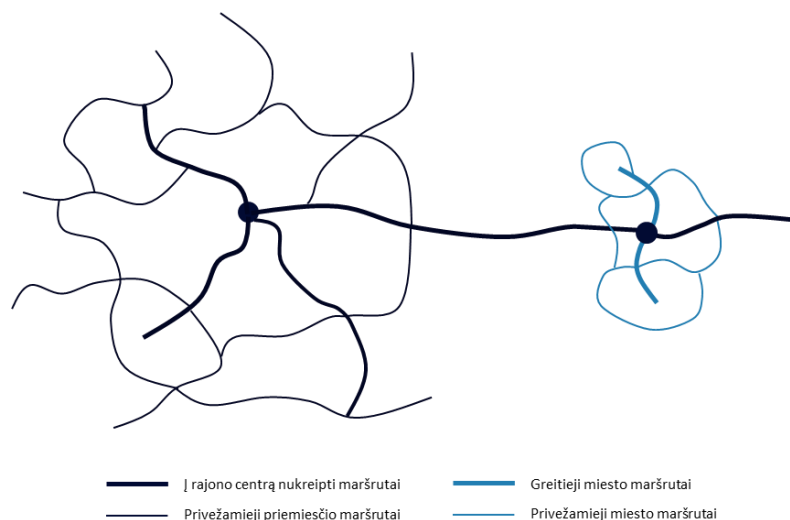
Upon completion of the analysis of the public transport fleet and the network used, it is relevant to also analyse any other aspects having a great impact on the public transport services. First of all, the development plans of settlements in the districts of Šiauliai city municipality and in Šiauliai district



municipality should be reviewed, any current and planned tendencies should be assessed, assessment of the number of inhabitants should be carried out along with the forecasts for any variations in this number. At the same time, the public transport infrastructure, particularly the network of bus stops should be assessed in order to determine, whether the current number of the bus stops is sufficient, to assess technical condition of any current bus stops, to plan location for installation of any new bus stops, installation of information signs, rubbish bins, roofs and benches as well as the required funding. In addition to that, accessibility of the bus stops should be assessed, taking account of the current network of pedestrian paths and having foreseen building and lighting of any new pedestrian paths.

The completed analysis would allow to move to another, a rather relevant issue – the need for public transport and its modelling, taking account of any conducted and regular pollings of inhabitants on the issues of public transport services. While the needs of inhabitants are met and transport opportunities are increased, it is recommended to apply four types of the public transport routes in these municipalities:

- fast urban routes, serving the largest passenger flows and dedicated to the trips of a longer distance;
- inbound urban routes ensuring service to the districts located on the outskirts of Šiauliai city and having connections with the fast urban routes;
- the routes focused on the district centre that would ensure convenient service among any settlements situated in the district and with the district centre, where connections could be carried out from any „arterial“ routes;
- inbound suburban routes connecting smaller settlements and having connections with the main district suburban routes (see Picture below).



Picture 34. Public transport routes served in functional area

Source: formed by Conculant

Upon establishment of any specific opportunities for the combination of current public transport routes in the city and district, having completed various calculations, forecasts and modelling, general agreements, objectives and indicators set could be indicated in the special plan for optimization of routes that would be implemented by the municipalities or a separate public transport organisation institution.

Introduction and integration of smart IT systems and solutions | In order to ensure convenient and efficient public transport, introduction of a new e-ticket information system is proposed into which public transport of Šiauliai district and Šiauliai city would be integrated. Implementation measures:

12. Introduction of the integrated e-ticket information system.

Development of regional mobility system | It is pursued that public transport is organised, irrespective of the municipality and its limits; moreover, organisation would be carried out by experts in this field having knowledge and expertise and by applying the most up-to-date methods and tools.

13. Development of the common city and district system.

In summary, development of the common city and district system shall mean the general implementation of strategic documents, organisation of routes and improvement of the quality of public transport services. In order to implement this measure, the following operations should be completed and realized:

- *To optimize the network of public transport routes* | As it was mentioned above, the municipalities should draw up the plan for optimization of public transport routes in which, upon analysis of the current situation with regard to routes, vehicle fleet, necessary financial funds, the new directions of routes, preliminary courses, stages and implementation periods would be determined. The new network of public transport routes would increase service opportunities and sustainable mobility of inhabitants, and would reduce regional separation and air pollution.
- *To develop convenient opportunities for intermodal service* | The types of four different routes used in the functional area first of all should be adjusted among themselves, so that changing of any routes is easy and convenient and the time of any connections is not too long which currently extends the general duration of a trip. Moreover, the bike- and scooter-sharing stops along with the areas for their parking and charging should be organised at the bus terminals, the city bus stops generating larger flows or at the stops where urban and suburban buses stop as well as the integral network of bicycles of the city and the settlements situated not far from the city should be developed. Implementation of this condition would encourage inhabitants having declared their residence in Šiauliai district municipality to come to Šiauliai by using public transport services and not by a private car.
- *To introduce the public transport e-ticket system in all functional area* | With regard to the results of the survey of inhabitants' opinion, it was established that the opportunity to use one single e-ticket in the district and the city municipality provides more convenience and flexibility to inhabitants, while making connections or changing transport types and the trips become cheaper, therefore these aspects could attract more passengers to use public transport services. Since the e-ticket system in the city is coordinated by UAB „Busturas“, first of all it would be necessary to decide who would be responsible for coordination of the e-ticket system in all the functional area. In addition, the municipalities directly or through the public transport centre should agree on general funding of this system, by creating additional possibilities to maintain and use this system that would allow to efficiently distribute the funds and to determine the need for funding according to carriers. This activity would be implemented when inhabitants have an opportunity to use the common e-ticket system, irrespective of a municipality.
- *To reduce administrative burden* | Upon development of the general public transport organisation system, administrative burden of the municipalities of Šiauliai city and Šiauliai district would be reduced since the time for decision-taking would become shorter, load and costs with regard to preparation of documents and correspondence among the municipality employees would decrease. The greatest impact is expected from a separate public transport



organisation institution which would take over all functions related to provision of public transport services since decisions would be taken by experts and thus separate coordination among the municipalities would not be necessary. The groups of representatives would be specifically formed for settlement of any strategic issues which together with public transport specialists would take joint decisions. Otherwise, the process of organisation and coordination would remain lengthy and complex, demanding large resources of time and finances.

- *To increase the quality of public transport services* | The new vehicles adapted to diverse social groups and having heating and cooling system, free wi-fi and possibility to charge electric devices correspond to passengers' and inhabitants' expectations while travelling by public transport vehicles. Common organisation of services would permit to create the standard of public transport services that would be applied to carriers operating independently in the municipalities of Šiauliai city and district. If this issue is settled, the number of passengers would most likely increase thanks to more comfort trips and this would assist in increasing a share of the income received from the travel tickets sold. It should be noted that common organisation of services would allow to develop an open market attracting a larger number of carriers willing to provide services within this functional area. Healthy competition of passengers would also encourage the carriers to gear up and to look for opportunities to improve attractiveness of public transport services.
- *To coordinate any other functions related to public transport services* | With regard to the fact that public transport services comprise many different types of transport and other solutions, such operations as traffic regulation or car parking services could be transferred to the public transport centre proposed. Provision of these services would give an opportunity to organise public transport services in a more flexible manner, to increase their supply, by appropriately setting stricter requirements for private car owners. Since reduction of air pollution and impact on climate have been foreseen by the EU and national strategic documents, concentration of these functions in one hands would permit to implement all this in an easier and more efficient manner.

While striving for efficient organisation and provision of public transport services within the functional area, transfer of the functions related to public transport services to an independent legal entity was proposed.

A legal entity would belong to the municipalities of Šiauliai city and Šiauliai district; however, a legal status would be selected by a common agreement of the municipalities themselves – a stock company, private limited liability company, public institution, etc. The shares of the public transport centre to which all the functions of public transport organisation transferred would be held by the municipalities which could be distributed in 3 cases: (1) equally, i.e. 50% each, (2) according to the number of inhabitants or the number of passengers transported, and (3) according to the number of routes and the run of public transport vehicles. Since the number of routes and run has recently been decreasing in the municipalities of Šiauliai city and Šiauliai district, this option has not been proposed, since it is pursued to expand the network of routes and to increase the run of public transport by this plan accordingly. The second option would be the most appropriate since a larger number of inhabitants is concentrated in Šiauliai city municipality where the mobility of passengers and the number of routes are among the largest. The number of inhabitants in Šiauliai district municipality is less; however, many of them travel to Šiauliai city on various purposes; therefore, they would rather largely contribute to management and funding of the centre.

The centre would have the operational autonomy and would organise public transport based on the current data on passenger flows, inhabitants' surveys and any insights provided by the municipalities.



Employees would work in this institution not according to employment agreements, whereas any persons applying for any higher positions should take part in public tenders. The following functions could be exercised by the centre:

- to organise local and regional service by public road transport;
- to form the network of public transport routes within the limits of the municipalities of Šiauliai city and Šiauliai district;
- to manage and coordinate the network of public transport within the limits of the municipalities;
- to organise surveys locally, intended to ascertain the needs of inhabitants for service, public or alternative transport;
- to approve the schedules for public transport routes;
- to organise tenders in order to select qualified carriers, to sign contracts with successful tenderers;
- to issue licences to carriers to transport passengers by relevant routes and to approve the route schedules;
- to carry out quality control of carriers;
- to submit data to information system;
- to supervise the e-ticket system, to update information;
- to carry out communication related to public transport services, to inform passengers and inhabitants on any changes and to supply with any other information.

The services funding model in general would remain the same since there would be two basic components – income from the travel tickets sold and municipal budget funds allocated for reimbursement of the income foregone and compensation of any operational costs incurred to carriers. If the routes are planned efficiently, traffic schedules are reviewed and active communication is carried out, there is a possibility to cover a larger share of the losses incurred from the income collected from the tickets sold and therefore the subsidy allocated by the municipalities could be less.

Since both, the urban and the suburban routes would be implemented in the functional area, different solutions should be applied in order to determine the passengers' trips by relevant routes so that finances among the municipalities are correctly distributed. The same procedure would remain in the urban routes, since Šiauliai city municipality would be responsible for compensation of any losses and reimbursement of any income foregone. Šiauliai district municipality would be responsible for all the routes located within the district municipality; nevertheless, both municipalities should be liable for the routes connecting Šiauliai city with the nearby situated settlements of the district municipality. The need for funds should be distributed according to the run and the fact, what section the specific route takes in the territory of the district and what in the territory of the city as well as there would be an additional pricing with regard to the bus stops and the distance between them which would permit to assess the trips by the suburban routes.

By application of the integrated e-ticket system, modern solutions should be adapted in the public transport system, facilitating the use of services by passengers as well as maintenance and control of the public transport centre. The system of check in and check out is proposed to apply for any suburban trips. This system would operate in the following manner: as soon as a passenger boards the bus, he/ she applies the e-ticket card to an electronic validator; this way, a relevant amount of money is reserved and



the starting time of the trip is established. When exiting the bus, the passengers should apply the e-ticket card to an electronic validator, so that the final stop and the time of the trip are registered as well as the travel price is calculated. This method would mostly answer its purpose in the suburban routes located within the district municipality and also in the routes connecting Šiauliai city with the settlements situated in the district. As the services are adapted to broader public, besides the e-ticket cards, smart applications could be used allowing to supplement the ticket and to scan QR codes in the vehicles which would be dedicated for the trips by suburban routes.

In the course of the study, when communicating with the representatives of UAB „Busturas“, it was admitted that even though this system is used by a single company, integration of other companies would be possible. First of all, a political decision would be necessary for this implementation that would define, how this system would be corrected and adapted for smooth operation, as well as the funds so that the system is renewed and allows to distinguish between the urban and suburban routes, when distributing the resources with regard to reimbursement of losses and payment of privileges. The company emphasized that there could be a conflict of interests if UAB „Busturas“ remains responsible for maintenance of the e-ticket system since the company would carry out the services of control and transport; despite this, the decision could be taken to separate these functions. In this case, striving for efficient organisation of public transport and reduction of the conflict of interests, maintenance and coordination of the e-ticket system could be handed over to the public transport centre.

Upon assessment of the proposal on establishment of the public transport centre it was observed that first of all this reorganisation would have the least impact possible to the legislative framework and the least contraposition of the municipalities when striving for achievement of the common goals. This shift would be more beneficial economically as well as planning and organisation of public transport would be more convenient due to minor fragmentation of the organising institutions. Since all the functions are transferred to the public transport centre, the principal institution would be clear that could be approached by passengers; the principle of one counter would be applied and settlement of any complaints or inquiries would be faster. Taking account of transfer of the functions, political influence on decision-taking would decrease since the public transport centre would not represent interests of a single specific municipality but would strive for achievement of the common goals of Šiauliai city and Šiauliai district municipalities. Since implementation of this reorganisation depends on common agreement between the municipalities, establishment of the public transport centre has some certain risks, as for example, the municipalities may not come to an agreement, may not find a solution or to withdraw from establishment of the public transport centre. If the centre is established there may be a risk for this process to be slow and inefficient. Upon assessment of interest and cooperation between Šiauliai city and Šiauliai district municipalities in preparation of this plan, it is possible to assume that there should be no major difficulties while the proposals are realized. As it was mentioned above, other municipalities could join the newly established public transport centre in the future, striving for the joint organisation of public transport in Šiauliai region.





ŠIAULIŲ MIESTO
SAVIVALDYBĖ



6 CMP implementation plan

6.1 Measure implementation plan

CMP implementation plan was prepared taking account of the analysis conducted in the study, the CMP vision, strategic directions, priority areas and objectives. Priority areas, their objectives and measures foreseen for achievement of the objectives have been specified in the plan. In addition, the indicators foreseen for measure implementation that indicate values of the indicators to be achieved, periods for measure implementation and institutions liable for implementation of different measures have been provided for in the plan. The plan for CMP measure implementation is provided in the Table below.





ŠIAULIŲ MIESTO
SAVIVALDYBĖ



Table 12. Measure implementation plan

| No. | Areas and measures | Indicators | Implementation period | Responsible institution |
|-----|---|---|-----------------------|---|
| 1. | Renewal and development of the public transport infrastructure | | | |
| 1.1 | Arrangement of public transport traffic „A“ lanes | 32,5 km | 2023–2026 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 1.2 | Arrangement of the final stops' infrastructure (wc, roofs, asphaltting of the areas of turnaround) | 9 stops | 2021–2023 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 2. | Renovation of the public transport fleet | | | |
| 2.1 | Renewal of the public transport fleet with vehicles powered by alternative fuel and electricity | 55% of electric vehicles, 45% of vehicles powered by alternative fuel | 2021–2029 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 2.2 | Arrangement of the infrastructure for charging the vehicles powered by alternative fuel and electricity | 4 fast electric charging stations and 3 fast gas filling stations | 2022–2024 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 3. | Improvement of the public transport accessibility | | | |
| 3.1 | Adaptation of the public transport vehicles and the infrastructure to persons with limited mobility | 100% of vehicles | 2021–2029 | Public transport centre Šiauliai city municipality administration Šiauliai district municipality administration |
| 4. | Renovation and development of the alternative transport infrastructure | | | |
| 4.1 | Building and lighting of pedestrian paths | 4 km | 2021–2023 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 4.2 | Building and lighting of bicycle paths | 7 km | 2022–2024 | Šiauliai city municipality administration Šiauliai district municipality administration |



| No. | Areas and measures | Indicators | Implementation period | Responsible institution |
|-----|---|-----------------------------|---------------------------|---|
| 5. | Ensuring of intermodal transport | | | |
| 5.1 | Arrangement of „Park and Ride“ sites | 5 sites | 2024–2025 | Public transport centre Šiauliai city municipality administration Šiauliai district municipality administration |
| 5.2 | Arrangement of bikesharing sites | 5 bikesharing sites | 2021–2022 | Šiauliai city municipality administration |
| 6. | Introduction and integration of smart IT systems and solutions | | | |
| 6.1 | Introduction of the integrated e-ticket information system | E-ticket system introduced | 2022–2025 | Šiauliai city municipality administration Šiauliai district municipality administration |
| 7. | Optimization and reorganization of public transport routes, including the FA | | | |
| 7.1 | Preparation of the plan for optimization of public transport routes in Šiauliai city and Šiauliai district, taking account of construction of the newly built-up areas and objects of attraction. | The plan prepared | 2025 | Public transport centre |
| 7.2 | Regular surveys of inhabitants in order to ascertain their needs for public transport | 4 surveys conducted | 2023, 2025, 2027 and 2029 | Public transport centre Šiauliai city municipality administration Šiauliai district municipality administration |
| 8. | Development of the regional mobility system | | | |
| 8.1 | Development of the common system for the city and district | The common system developed | 2021–2024 | Šiauliai city municipality administration Šiauliai district municipality administration |

Source: formed by Consultant



6.2 Implementation, monitoring and updating

Strategic management organisational structure

As it was mentioned above, establishment of the public transport centre, a separate institution responsible for organisation and planning of public transport in Šiauliai functional area has been foreseen in order to create opportunities for optimization and successful implementation of public transport CMP of Šiauliai city and Šiauliai district. It is planned that a separate group of specialists carrying out planning, realization, monitoring and correction of public transport operations in the functional area should work in the centre.

According to the plan, the public transport operating within FA should be carried out and regulated by a separate intermunicipal institution the members to which would be delegated by the city and district municipality administrations. Any decisions on equivalent appointment of representatives in this institution would be mutually represented, whereas any interests of inhabitants and administrations of these municipalities would be appropriately represented in operations of this institution. Operations of this institution should also be carried out together with (private) carriers.

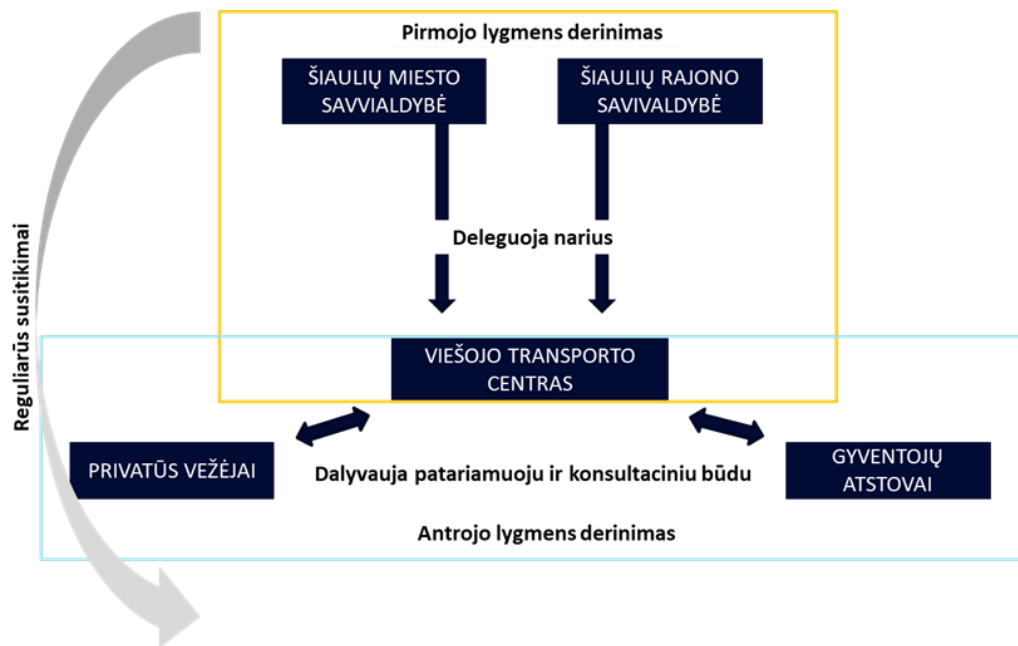
This institution would act independently, but cooperating with Šiauliai city and district municipality administrations, private carriers and persons representing inhabitants (head, deputy heads, representatives of associations). This institution should be managed by a separately appointed manager who would be responsible for organisation of public transport operations, striving for achievement of CMP objectives, and would ensure communication with any interested parties.

Where necessary to carry out any changes in the current public transport network or its operations, development of the infrastructure or any other actions related to the above mentioned topics, this institution would examine the legislative framework on any relevant issues, would initiate proposals on any changes and would inform other interested parties and would coordinate actions accordingly.

Coordination of implementation would be carried out in 2 levels:

- Among the public transport centre and municipality administrations;
- Among public transport centre, carriers, inhabitants' representatives, Šiauliai Chamber of Trade, Industry and Crafts and representatives of Šiauliai industry association.





Picture 35. Strategy implementation levels

Source: formed by Consultant

At the first level, organisational, financial and strategic CMP implementation issues would be discussed, by assessing any impact of the solutions proposed in the entire public transport network. At the second level, the issues discussed would include any insights and requirements from the groups of interest, accessing them from the supplier – customer’s perspective.

Taking account of the comments of the aforementioned parties according to their needs, this institution would independently take any necessary decisions; whereas if any important strategic issues are discussed, representatives of the municipalities would have a greater say.

In order to ensure a permanent discussion on any relevant topics and implementation of any changes, the aforementioned representatives of public and private sector would discuss implementation of the optimization plan during regular meetings, the need for any new changes, would consider the need for correction of strategy or any action measures. It is recommended that the regular meetings among the public transport centre, representatives of municipality administrations and inhabitants’ representatives take place once every six months, unless it would be necessary to organise such meetings more often.

The public transport centre would appoint a president whose principal functions would include:

- Organisation of regular meetings with all members of the group: to chair the meetings, to supply the members with the detailed information;
- Organisation of annual meetings on review of the results of strategic tasks and measure indicators, renewal or correction of any measures.

Operations of public transport should be focused on the fact that the reflected CMP strategy, priority directions, principles and measures are implemented and represented as smoothly as possible.

Strategy monitoring procedure

In order to ensure permanent implementation of CMP and improvement of public transport operations in the functional area, monitoring of these fields should be conducted. A special work group comprising representatives of the public transport centre and the municipalities would be engaged in these operations including collection of any data on the transport infrastructure, study, inspections, monitoring,

etc. of qualitative indicators. It is foreseen that the newly established public transport centre should carry out planning of monitoring agenda for the plan implementation. It is recommended that representatives of the municipality administrations in the functional area participate in the monitoring operations. Principal objective of the CMP implementation monitoring is to permanently monitor and compare the results related to implementation of the CMP measures plan, taking account of the intended values of the indicators as well as to correct any measures, taking account of any proposals by the interested parties.

It is recommended that the employees performing the following or similar duties represent the municipality administrations (formed according to the list of the members of Šiauliai passenger transport commission and the list of the commission coordinating Šiauliai district municipality bus routes):

- Director of Šiauliai city municipality administration;
- Director of Šiauliai city Urban development and economy department;
- Chief specialist of Šiauliai city Urban development and economy department, City economy and environment unit;
- Chief specialist of Šiauliai city Civil safety, public order and sanitary unit;
- Chief specialist of Šiauliai city Strategic development and economy department, Economy and investment unit;
- Deputy director of Šiauliai district municipality administration;
- Head of Šiauliai district municipality administration Economic and business development unit;
- Chief specialist of Šiauliai district municipality administration Economic and business development unit;
- Chief specialist of Šiauliai district municipality administration Property management unit.

These representatives having a relevant information base in the field of public transport and city planning could assess the current situation in a professional and competent manner and provide important arguments and insights for implementation of any further processes.

In the course of the monitoring process it will be striven for:

- Monitoring of the results related to the CMP measure implementation
- Comparison of the results of measure plan, taking account of the intended values of the results
- Correction of the measures, taking account of any proposals of the interested parties
- Initiation of settlement of any challenges

The monitoring process includes the regular meetings of the public transport centre and the aforementioned work group, review and correction of the indicator results and inclusion of any new proposals with regard to correction and renewal of any measures:

- Regular meetings of the public transport centre and the work group will be organised on a quarterly basis. During such meetings, members of the group will review the public transport operations of the former season, will review, consider and take decisions on any processes of the CMP implementation and, if necessary, will analyse any issues of funding and costs, etc.;
- Any proposals of the interested parties which are not included into the work group should be also discussed during the CMP monitoring, by providing feedback to the relevant parties. These proposals should be selected and discussed every six months, during regular meetings.



In order to efficiently organise public transport, it is necessary to consider the passengers' mobility habits and their variations. It is proposed that this international institution, in the time determined (every 2 years), regularly reviews the relevant FA statistics being able to demonstrate any specific shift in mobility tendencies and, if necessary, adapts organisation of public transport to the changes occurred.



List of references

1. Law on the basics of transport activity of the Republic of Lithuania No. I-1863 of 08 October 1991. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.2971/asr>
2. Law on local self-government of the Republic of Lithuania of 07 July 1994. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.5884/asr>
3. The Code of Road Transport of the Republic of Lithuania No. I-1628 of 19 November 1996. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.33417>
4. Law on public administration of the Republic of Lithuania No. VIII-1234 of 17 June 1999. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.83679/asr>
5. Law on privileges of the Republic of Lithuania No. VIII-1605 of 30 March 2000. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.98950/asr>
6. Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road
7. Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles
8. Regulation (EC) No 1071/2009 of the European Parliament and of the Council of 21 October 2009 establishing common rules concerning the conditions to be complied with to pursue the occupation of road transport operator
9. Regulation (EC) No 1073/2009 of the European Parliament and of the Council of 21 October 2009 on common rules for access to the international market for coach and bus services
10. Regulation (EU) No 181/2011 of the European Parliament and of the Council of 16 February 2011 concerning the rights of passengers in bus and coach transport
11. Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency
12. Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors
13. Law on procurement by entities operating in the water, energy, transport and postal services sectors No. XIII-328 of 02 May 2017. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/f82d89d12fcb11e79f4996496b137f39/asr>
14. Sustainable mobility plan of Šiauliai city of 2018
15. Survey of traffic flows in Šiauliai city conducted by public institution „Transporto kompetencijų agentūra“ in 2020
16. The EU funds investment programme for 2021–2027. Website: https://www.esinvesticijos.lt/uploads/main/documents/files/Post%202020/Programos%20rengimas/0512_OP%20rengimo%20grafikas.pdf
17. National progress plan for 2021–2030. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/c1259440f7dd11eab72ddb4a109da1b5?jfwid=rivwzvpvg>



18. A. Abdulhafedh (2017). Financing Public Transit in the US, Sweden, and the UK
19. The second project of the EU funds investment programme for 2021–2027; Preparation of the EU funds investment programme for 2021–2027. Website: <https://www.esinvesticijos.lt/lt/pasirengimas-2021-2027/2021-2027-m-es-fondu-investiciju-programos-rengimas>
20. D. van de Velde (2014). Market initiative regimes in public transport in Europe: Recent developments.
21. Regulation of the Ministry of Economic Affairs and Communication „On subsidies of public transport and repayment of subsidies of public transport”. Website: <https://www.riigiteataja.ee/akt/82902>
22. Survey of inhabitants’ travelling habits and opinion
23. Memorandum of Häädemeeste district municipality council „On participation in establishment of the public transport centre of Pärnu county”. Website: https://haademeeste.kovtp.ee/documents/381466/4363119/Seletuskiri+nr+33_+P%C3%9CTK+a+sutamisel+osalemine.pdf/a496c0de-83a1-434f-b534-2b9ca7dcae9e
24. K. Mitterer et al. (2016). Stadtreionaler öffentlicher Verkehr: Organisation, Steuerung und Finanzierung im stadtreionalen öffentlichen Verkehr am Beispiel der Landeshauptstadt-Stadtreionen
25. The rules for passenger and luggage road transport, approved by order No. 3-223 „ On approval of the rules for passenger and luggage road transport“ of the Minister of Communications of the Republic of Lithuania on 13 April 2011. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.396775/asr>
26. The rules for passenger and luggage transport by bus routes in Šiauliai city. Website: <https://www.e-tar.lt/portal/lt/legalActEditions/891b3d90a86311e4a82d9548fb36f682>
27. The rules for licencing of road transport operations, approved by resolution No. 1434 „On approval of the rules for licencing of road transport operations“ of the Government of the Republic of Lithuania of 07 December 2011. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.413841/asr>
28. The rules for issuance of the permits for transport of passengers on regular road transport routes, approved by order No. 3-62 „On approval of the rules for issuance of the permits for transport of passengers on regular road transport routes“ of the Minister of Communication of the Republic of Lithuania on 14 February 2006. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.271060/asr>
29. Lithuanian progress – how is it achieved? Preparation of the National progress plan for 2021–2030. Website: <http://lr.lt/lt/aktuali-informacija/xvii-vyriausybe/strateginis-valdymas/lietuvos-pazanga-kaip-jos-siekiame>
30. The white paper on Lithuanian regional policy for balanced and sustainable development in 2017–2030. Website: https://vrm.lrv.lt/uploads/vrm/documents/files/LT_versija/Naujienos/Regionines_politikos_balto_ji_knyga_20171215.pdf



31. National energy and climate plan of the Republic of Lithuania. Website: <https://am.lrv.lt/uploads/am/documents/files/KLIMATO%20KAITA/Integruotas%20planas/Final%20NECP.pdf>
32. Law on regional development of the Republic of Lithuania. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.106367/RyifoZaAvd>
33. Resolution No. XI-2015 on approval of the state progress strategy „Lithuanian progress strategy „Lithuania 2030“ passed by the Sejm of the Republic of Lithuania on 15 May 2012. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.425517>
34. Publicly available data of the Lithuanian Department of Statistics
35. The procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations, approved by order No. 3-457 „On approval of the procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations“ of the Minister of Communications of the Republic of Lithuania on 20 July 2010. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.378748/asr>
36. The procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations, approved by order No. 3-457 „On approval of the procedure for calculation of compensation of any losses incurred in fulfilment of the passenger road transport public services obligations“ of the Minister of Communications of the Republic of Lithuania on 20 July 2010. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.378748/asr>
37. Project „Europe 2030“. Challenges and opportunities. Report of the reflection group to the European Council on future of the „EU 2030“. Website: <https://www.consilium.europa.eu/media/30774/qc3210249lrc.pdf>
38. R. Buehler, J. Pucher (2018). Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland
39. The requirements for streets and roads on which regular passenger transport traffic takes place, approved by order No. 3-747 „ On approval of the requirements for streets and roads on which regular passenger transport traffic takes place“ of the Minister of Communications on 29 November 2011. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.413113?jfwid=-9dzqnu3oy>
40. Activity report of SJ „Susisiekimo paslaugos“ of 2019. Website: <http://www.vilniustransport.lt/uploads/docs/2019%20m.%20veiklos%20ataskaita.pdf>
41. Coalition programmes of Šiauliai city for 2019 – 2023.
42. General plan of Šiauliai city municipality. Website: <https://www.siauliai.lt/Miesto%20bendrasis%20planas328>
43. Action plan of Šiauliai city municipality for 2019–2021. Website: <https://www.siauliai.lt/Miesto%20strateginis%20planas667>
44. Publicly available information of Šiauliai city municipality. Website: <https://www.siauliai.lt/Gyventojams42194281>
45. Strategic development plan of Šiauliai city for 2015–2024. Website: https://www.siauliai.lt/get_file.php?file=bVpKcXA1T1NiZGhsbEdHb3k2ZVczV2VSWnB0cXFuRFRsS



jlsWW1yV2s1cVp4R2FteDUxb3oySEdZcHFWWDJYVfo1RmxvR3FWYTh5VG5HS2ZaTWpFcEpXU1p
xakpsMnZQWTIGaGxwZWpaNVdaeUdXY1phSnJ5MlprWTJabWxjaGxtcHBxWDhpaG1zcGp5Mkpbz
DRPWHVabXlaSU5vbFd1WVpXTmxaR2FZazVDWGxXdGh5V09abW1DVGs2R2NsR2ZNYnAyVWJwc
yUzRA==

46. Coalition programmes of Šiauliai district for 2019 – 2023.
47. General plan of Šiauliai district municipality. Website: <https://www.siauliuraj.lt/bendrieji-planai/siauliu-rajono-bendrasis-planas/1086>
48. Local authorities of Šiauliai district municipalities. Website: <https://www.siauliuraj.lt/struktura-ir-kontaktai/1056/seniunijos/d23>
49. Special plan of transport system of Šiauliai district municipality of 2018. Website: <https://www.siauliuraj.lt/specialieji-planai/siauliu-rajono-savivaldybes-susisiekimo-sistemas-specialusis-planas/1100>
50. Action plan of Šiauliai district municipality for 2020–2022. Website: <https://www.e-tar.lt/portal/lt/legalAct/de5a742053d911ea931dbf3357b5b1c0/asr>
51. Publicly available information of Šiauliai district municipality. Website: <https://www.siauliuraj.lt/projektai/astospesciuju-ir-dviraciutaku-rekonstravimas-ir-pletra/1612>
52. Strategic development plan of Šiauliai district for 2017–2023. Website: <https://www.e-tar.lt/portal/lt/legalAct/60790970ad7611e6b844f0f29024f5ac>
53. Special plan for transport organisation in Šiauliai city in 2015. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/ab9ffb306e4711e5b316b7e07d98304b?positionInSearchResults=1&searchModelUUID=aa62c0e9-7086-4b28-89d5-e9f3e3122676>
54. Strategic action plan of UAB „Busturas“ for 2020–2022. Website: <https://www.siauliuraj.lt/data/public/uploads/2019/12/20192023veiklosprograma.pdf>
55. Publicly available information of UAB „Busturas“.
56. National progress strategy „Lithuania 2030“. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.425517>
57. The procedure for compensation of carriers' costs (income foregone) related to application of transport privileges, approved by resolution No. 478 „On implementation of the law on transport privileges of the Republic of Lithuania“ of the Government of the Republic of Lithuania on 28 April 2000. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.99746/asr>
58. The procedure for compensation of carriers' costs (income foregone) related to application of transport privileges, approved by resolution No. 478 „On implementation of the law on transport privileges of the Republic of Lithuania“ of the Government of the Republic of Lithuania on 28 April 2000. Website: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.99746/asr>
59. Publicly available information of public institution „Klaipėdos keleivinis transportas“. Website: <https://www.klaipedatransport.lt/lt/2019-metu-veiklos-ataskaita-111>
60. Information of government agency „Transport Analysis“. Website: https://www.trafa.se/en/public-transport-and-publicly-financed-travel/regional_scheduled_public_transport/



Annexes

Annex 1. Distribution of traffic flows

| Road | Marking | Intensity |
|--|---------|---------------|
| The most intensive routes during morning rush hour | | |
| Major highway No. A12 – Major highway No. A12 | B – B | 201 vehicles |
| Major highway No. A12 – Baltų St. | B – H | 403 vehicles |
| Baltų St. – Major highway No. A12 | H – B | 236 vehicles |
| Baltų St. – Baltų St. | H – H | 313 vehicles |
| The most intensive routes during evening rush hour | | |
| Major highway No. A9 – Major highway No. A9 | A – A | 250 vehicles |
| Major highway No. A12 – Major highway No. A12 | B – B | 408 vehicles |
| Major highway No. A12 – Baltų St. | B – H | 421 vehicles |
| Tilžės St. – Major highway No. A12 | D – E | 307 vehicles |
| Baltų St. – Major highway No. A12 | H – B | 448 vehicles |
| Baltų St. – Baltų St. | H – H | 425 vehicles |
| Bačiūnų St. – Bačiūnų St. | J – J | 227 vehicles |
| The most intensive routes all day (00:00 – 24:00) | | |
| Major highway No. A9 – Major highway No. A9 | A – A | 1059 vehicles |
| Major highway No. A9 – Baltų St. | A – H | 691 vehicles |
| Major highway No. A12 – Major highway No. A12 | B – B | 1531 vehicles |
| Major highway No. A12 – Baltų St. | B – H | 2092 vehicles |
| Tilžės St. – Major highway No. A12 | D – E | 1286 vehicles |
| Major highway No. A12 – Tilžės St. | E – D | 1055 vehicles |
| National road No. 150 – Tilžės St. | F – D | 629 vehicles |
| National road No. 150 – National road No. 150 | F – F | 705 vehicles |
| National road No. 150 – Major highway No. A18 | F – I | 580 vehicles |
| Vyturių St. – Vyturių St. | G – G | 551 vehicles |
| Baltų St. – Major highway No. A9 | H – A | 940 vehicles |
| Baltų St. – Major highway No. A12 | H – B | 1737 vehicles |
| Baltų St. – Baltų St. | H – H | 1965 vehicles |
| Baltų St. – Bačiūnų St. | H – J | 836 vehicles |
| Major highway No. A18 – National road No. 150 | I – F | 593 vehicles |
| Bačiūnų St. – Bačiūnų St. | J – J | 939 vehicles |

Sources: formed by Consultant, based on the survey on Šiauliai city public transport flows

Annex 2. Information on traffic intensity during the morning, evening rush hour and 24 hours per day

Morning rush hour

| From | | A | B | C | D | E | F | G | H | I | J | K |
|------|---|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|
| | A | 185 | 65 | 34 | 60 | 30 | 11 | 6 | 105 | 21 | 24 | 10 |
| | B | 104 | 201 | 16 | 16 | 16 | 20 | 4 | 403 | 14 | 8 | 9 |
| | C | 50 | 22 | 11 | 19 | 7 | 12 | 7 | 21 | 13 | 18 | 7 |
| | D | 27 | 13 | 3 | 42 | 172 | 15 | 2 | 16 | 27 | 16 | 7 |
| | E | 53 | 9 | 11 | 173 | 93 | 7 | 0 | 12 | 121 | 12 | 34 |
| | F | 17 | 16 | 3 | 71 | 33 | 152 | 5 | 15 | 119 | 0 | 7 |
| | G | 13 | 23 | 5 | 7 | 5 | 3 | 181 | 22 | 2 | 19 | 1 |
| | H | 189 | 236 | 12 | 30 | 12 | 34 | 18 | 313 | 10 | 127 | 10 |
| | I | 42 | 12 | 7 | 73 | 107 | 110 | 0 | 15 | 57 | 3 | 30 |
| | J | 35 | 14 | 12 | 23 | 10 | 8 | 10 | 85 | 1 | 143 | 2 |
| K | 9 | 5 | 6 | 13 | 11 | 5 | 1 | 10 | 23 | 6 | 63 | |

Sources: formed by Consultant, based on the survey on Šiauliai city public transport flows

Evening rush hour

| From | | A | B | C | D | E | F | G | H | I | J | K |
|------|----|-----|-----|----|-----|-----|-----|----|-----|-----|-----|----|
| | A | 250 | 63 | 58 | 62 | 44 | 4 | 5 | 182 | 24 | 26 | 3 |
| | B | 55 | 408 | 23 | 30 | 14 | 16 | 6 | 421 | 28 | 13 | 11 |
| | C | 37 | 23 | 89 | 12 | 2 | 5 | 4 | 19 | 14 | 12 | 3 |
| | D | 64 | 23 | 17 | 164 | 307 | 47 | 3 | 15 | 65 | 17 | 11 |
| | E | 25 | 11 | 12 | 199 | 118 | 5 | 0 | 14 | 114 | 6 | 23 |
| | F | 10 | 14 | 7 | 164 | 17 | 119 | 6 | 34 | 107 | 7 | 0 |
| | G | 13 | 20 | 12 | 8 | 0 | 4 | 53 | 42 | 2 | 23 | 1 |
| | H | 175 | 448 | 11 | 25 | 15 | 29 | 40 | 425 | 9 | 180 | 11 |
| | I | 52 | 22 | 14 | 68 | 89 | 109 | 0 | 10 | 37 | 0 | 39 |
| | J | 15 | 13 | 24 | 18 | 7 | 4 | 15 | 98 | 1 | 227 | 3 |
| K | 10 | 18 | 11 | 15 | 11 | 4 | 0 | 8 | 21 | 5 | 77 | |

Sources: formed by Consultant, based on the survey on Šiauliai city public transport flows

24 hours per day

| From | | A | B | C | D | E | F | G | H | I | J | K |
|------|----|------|------|-----|------|------|-----|-----|------|-----|-----|-----|
| | A | 1059 | 359 | 224 | 308 | 186 | 30 | 42 | 691 | 115 | 125 | 33 |
| | B | 457 | 1531 | 97 | 116 | 67 | 85 | 30 | 2092 | 101 | 56 | 42 |
| | C | 212 | 97 | 241 | 75 | 21 | 42 | 31 | 81 | 62 | 75 | 27 |
| | D | 214 | 90 | 50 | 537 | 1286 | 154 | 21 | 74 | 231 | 80 | 47 |
| | E | 211 | 44 | 60 | 1005 | 528 | 32 | 2 | 56 | 535 | 48 | 121 |
| | F | 50 | 77 | 26 | 629 | 121 | 705 | 29 | 127 | 580 | 19 | 19 |
| | G | 61 | 98 | 37 | 36 | 11 | 15 | 551 | 147 | 13 | 95 | 11 |
| | H | 940 | 1737 | 40 | 126 | 59 | 164 | 127 | 1965 | 47 | 836 | 50 |
| | I | 248 | 85 | 49 | 333 | 489 | 593 | 7 | 65 | 253 | 8 | 162 |
| | J | 125 | 70 | 89 | 108 | 43 | 30 | 56 | 438 | 12 | 939 | 14 |
| K | 47 | 54 | 39 | 66 | 58 | 32 | 13 | 44 | 111 | 29 | 346 | |

Sources: formed by Consultant, based on the survey on Šiauliai city public transport flows