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# Sustainable Urban Mobility Plan for Gdansk



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# Content

<b>Introduction</b> .....	4
Idea to develop the Plan in Gdańsk .....	5
Project team .....	6
Plan development process .....	7
Strategic framework and connections with other documents.....	8
Gdańsk 2030 Plus City Development Strategy .....	10
<b>Current situation and development prospects</b> .....	12
Spatial development.....	13
Socio-economic considerations .....	14
Transport behaviour of the city residents .....	17
Road safety .....	21
Pedestrian traffic and public space .....	25
Public transport.....	29
Bicycle traffic .....	34
Movement of passenger cars .....	41
Parking .....	42
Mobility management .....	47
Transport of goods.....	50
<b>Possible scenarios of activities</b> .....	52
Consequences of on-demand and automated mobility .....	57
<b>Plan purposes</b> .....	60
<b>Activities</b> .....	62
Activities plan .....	63
Activities card.....	65
Matrix of dependencies between selected activities .....	82
Indicators.....	83
<b>Monitoring and Evaluation</b> .....	84



Grzegorz Mehring/[www.gdansk.pl](http://www.gdansk.pl)

# Introduction



Transport is often the subject of intense political debates and important conversations in the public life of cities. The European Commission underlines the importance of urban transport due to its key role in city development, employment growth and well-being of citizens. Cities need an efficient transport system to achieve its purposes. However, the transport reality of cities involves the growing inefficiency of transport systems and problems, for example the emission of greenhouse gases and fumes. In addition, the problem relates to the continuous increase in costs. It is estimated that for the European Union, the increase in the total cost of transport annually amounts to EUR 80 billion. This document was developed in response to contemporary transport challenges of Gdańsk.

## Idea to develop the Plan in Gdańsk

This Sustainable Urban Mobility Plan for Gdańsk was created as part of the CityMobilNet project from the URBACT III program, implemented in 2016-2018. The CityMobilNet project takes up the topic of urban transport, one of the biggest contemporary challenges facing European cities.

CityMobilNet attempts to combat the transport problems in the city by enabling to counteract these problems and help in developing the Sustainable Urban Mobility Plan. The network comprehensively dealt with the topic of sustainable urban mobility. The strength of the project is to appoint local teams responsible for developing the plan and to strongly participate.

Due to the support and knowledge provided by the URBACT program, CityMobilNet has helped to adapt the concept of the sustainable urban mobility plans to the needs of partner cities<sup>1</sup> of the project. Each city developed a plan adapted to its local conditions and specific transport challenges. The idea of the project was also exchange of experience and sharing of expert knowledge.

This *Sustainable Urban Mobility Plan* - establishes a strategic framework for the development of transport in Gdansk. The plan refers to the transport of people and goods, travel destinations (work, leisure time, shopping, etc.), all forms of travelling (on foot, by bike, by car, etc.) and includes all transport networks (road, rail, etc.).

Changes in transport behaviours in recent years, the emergence of new options such as car-sharing and an increase in the demand for transport of goods within the city, resulting, for example, from the popularisation of purchases via the Internet were analysed. The works also take into account social and spatial conditions, for example new housing and office facilities, flexible working hours, concentration of trade in large shopping centres, extended working hours, etc. The activities plan takes into account the use of limited financial resources of the city while focusing on activities, which will keep the city attractiveness and the high quality of life of its residents. The main purpose of the work was to develop the Activities Plan that is part of the Gdańsk development strategy (including in the context of transport, mobility and striving to improve the quality of public spaces).

<sup>1</sup> Project partners: Agii Anargyri Kamatero (Greece), Aix Marseille Provence (France), Bielefeld (Germany), Braga (Portugal), Burgos (Spain), Gdańsk, Morne-al-Eau (Guadeloupe, France), Palermo (Italy), South region of Malta, Slatina (Romania), Zadar (Croatia)



## Project team

In order to develop the document, based on *Regulation no. 1501/16 by the Mayor of the City of Gdańsk of September 29, 2016 regarding the establishment of a team for the development of the Sustainable Urban Mobility Plan for Gdańsk*, a team was formed within the CityMobilNet project, which included representatives of municipal units, the world of science, NGOs,

Police and Municipal Guards as well as experts dealing with transport, mobility and society on a daily basis. When working on this document, numerous meetings and consultations were held, in which the following people participated at various phases (in alphabetical order):<sup>2</sup>

<sup>2</sup> *Team members and co-authors of the development were marked in bold*

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## Plan development process

The works on the Sustainable Urban Mobility Plan for Gdańsk started in May 2016 and lasted until April 2018. As part of the works on the Plan, the following were implemented:

- analysis of available documents, studies, numerical data, thematic materials
- exchange of knowledge and experience with the project partners
- nearly 30 meetings of the SUMP development team
- 2 open workshop and training meetings conducted by external experts
- workshop meetings for District Councils
- 4 workshop meetings for residents, NGOs and all interested in the subject of sustainable mobility
- workshops for Councilors of the City of Gdańsk
- over 100 hours of meetings and discussions
- at least 40 topic presentations (developed and presented both by the Team members and external experts)



*Works on the Sustainable Urban Mobility Plan for Gdańsk*

## Strategic framework and connections with other documents

Prior to the development and as part of the works on the Sustainable Urban Mobility Plan for Gdańsk, a review of existing strategic, planning and other documents was carried out, which related in any way to the issue of transport and mobility. According to the guidelines of the European Commission, the developed document should be consistent with other strategies of sustainable development. It may not be contradictory to the strategy and urban policy (at any of the levels: European, national, metropolitan, regional or local).

### Documents at the European level

- Impact of transport on the environment. Community strategy for sustainable mobility.
- European Transport Policy for 2010: Time to Decide
- Keep Europe moving

- Towards a new culture of mobility in the city.
- Activities Plan for Urban Mobility.
- Sustainable Future of Transport.
- Europe 2020 Strategy
- "The plan to create a unified European transport area..."
- Urban mobility package.
- Annex "Concept for sustainable urban mobility plans" to the Notice of the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Regions Committee, entitled: "Joint effort to achieve competitive and resource-efficient urban mobility"

### Documents at the national level

- State Transport Policy for 2006-2025.
- National Strategy of Regional Development 2010-2020: Regions, Cities, Rural areas





- Long-term National Development Strategy, Poland 2030.
- Transport Development Strategy until 2020 (with prospects up to 2030).
- National Road Safety Program 2013-2020.
- National Urban Policy 2023.
- National road construction program.
- Railway development program.
- Low-emission economy plan for the Gdańsk Metropolitan Area.
- Spatial development plan for the Pomeranian Region.
- Spatial development plan for the Gdańsk-Gdynia-Sopot Metropolitan Area 2030.
- Environmental Protection Program of the Pomeranian Region for 2013-2016 with perspective until 2020.

### Documents at the regional and metropolitan level

- Development Strategy for Pomeranian Region 2020
- Regional Operational Programme for the Pomeranian Region for the years 2014-2020.
- Territorial contract for the Pomeranian Region.
- Regional Strategic Program in the field of transport - Mobile Pomerania.
- Plan for the sustainable development of public public transport for the Pomeranian Region.
- Strategy of Integrated Territorial Investments of the Gdańsk-Gdynia-Sopot Metropolitan Area until 2020.
- Strategy for Sustainable Development of the functional area. Coastal Service Area NORDA 2020 with perspective for 2050.
- Sustainable Development Strategy for the functional area of Logistic Valley 2020 with perspective for 2050.
- Strategy of the Gdańsk-Gdynia-Sopot Metropolitan Area until 2030.
- Strategy of Transport and Mobility of the Gdańsk-Gdynia-Sopot Metropolitan Area until 2030.
- Concept of Bicycle System Development of the Pomeranian Region: Green Paper



*Dominik Paszliniski/www.gdansk.pl*

### Local level documents

- Gdańsk 2030 Plus City Development Strategy.
- Study of conditions and directions of spatial development of the city of Gdańsk (applicable Study and Studium project).
- Plan for the sustainable development of public public transport for the City of Gdańsk for the years 2014-2030.
- Local Spatial Development Plans
- SR STeR - Strategy for the implementation of the Bicycle Route System for Gdańsk
- SOPP - Study of the City Public Space
- Strategic Transport Program of the South District in the city of Gdansk
- Gdańsk traffic research 2016
- Report on the Cycling Policy Audit of BAY-PAD



## Gdańsk 2030 Plus City Development Strategy

According to the city's strategy, *the vision of Gdańsk is to be a city that gathers and attracts the most valuable - people who are proud of heritage, solidarity, openness, creativity, developing and shaping the future together.*

Generally, the vision of Gdańsk expresses the highest level of purposes, presented as the expected, desired image of the city in the future.

The measurable development challenges assigned to particular areas reflect the most important directions of development of Gdańsk until 2030, and the effect of the vision implementation will involve:

- Increased quality of life
- Increased number of residents

The most important local activities and undertakings are focused around the areas of strategic development of Gdańsk:

- Education and social capital
- Economy and transport
- Public space
- Culture
- Health

The demographic, social, economic and cultural changes occurring in recent years in Gdańsk, metropolis and Europe result both from global processes and phenomena, such as: increasing residents' mobility, new technologies, changing the lifestyle and expectations of residents, as well as local conditions. All these factors significantly impact on the residents of Gdańsk, but also on the space and environment, in which they live.

The essential transport challenges include further improvement of the conditions (comfort and safety) of pedestrian and bicycle traffic as well as the improvement of

the public transport system integrated with active forms of mobility. The city road network should be further developed so that the vehicular traffic does not create a barrier effect for local mobility. Internal and external accessibility of the city may not be improved in conflict with the needs of safe and comfortable movement of the residents of Gdańsk.

### Strategic areas and purposes - significant in the context of the Sustainable Urban Mobility Plan for Gdańsk

#### Economy and transport:

- strengthening the flow of goods, services and knowledge passing through Gdańsk
- development of modern, sustainable pedestrian and bicycle passageway systems and related public transport to improve the conditions of everyday mobility
- construction and modernization of transport infrastructure and improvement of transport accessibility conditions in Gdańsk
- ensuring improvement of energy efficiency, energy security and reduction of greenhouse gas emissions of the city and metropolis

#### Public space:

- improving the quality of functional, aesthetic and natural spaces to improve the living conditions of the residents of Gdańsk
- creating open, integrated safe urban spaces accessible for the residents, providing multifunctional forms of their use, including protection against emergency events and adaptation to the effects of climate change

**Health:**

- shaping pro-health habits and attitudes of the residents, increasing their physical activity and promoting a healthy lifestyle, resulting in improved health of the residents, including limited civilization diseases

The city focused on the implementation of the vision included in the Strategy will be developed in accordance with the priorities of the strategic development, which are detailed in Operational Programs Gdańsk 2023. The bases, directions and principles of the development focus on the most important values for Gdańsk: cooperation, openness, mobility and education. However, the development entity is the most important, that is, the residents of the city. For this reason, the Operational Programs are focused on the needs indicated by the residents.

The operational purposes relevant in the context of the Sustainable Urban Mobility Plan for Gdańsk.

**I. Education**

Purpose I.5. Development of educational infrastructure, upbringing and care resources.

**II. Public Health and Sport**

Purpose II.1. Increased knowledge about the impact of lifestyle and environmental conditions on health.

Purpose II.2. Increased participation of the city residents in physical culture.

**III. Social Integration and Civic Participation**

III.2. Increased role of the residents, organizations, institutions and other entities in creating urban policies.

**VI. Investment Attractiveness**

VI.1. Higher effectiveness in attracting investors.

**VII. Infrastructure**

VII.1. Reduced greenhouse gas emissions and air pollution emissions.

VII.3. Increased availability of apartments in all segments of the housing market and increased efficiency of using available business premises.

**VIII. Economy and transport:**

VIII.1. Improved conditions for pedestrian and bicycle traffic.

VIII.2. Increased attractiveness of public transport.

VIII.3. Improved internal and external transport accessibility.

VIII.4. Promoting sustainable transport and active mobility.

**IX. Public space**

IX.1. Higher quality of public space.

Gdańsk faces the main transport challenge such as the improvement of conditions (comfort and safety) for pedestrian and bicycle traffic, as well as the improvement of the public transport system and its integration with active forms of mobility.





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# Current situation and development prospects



## Spatial development

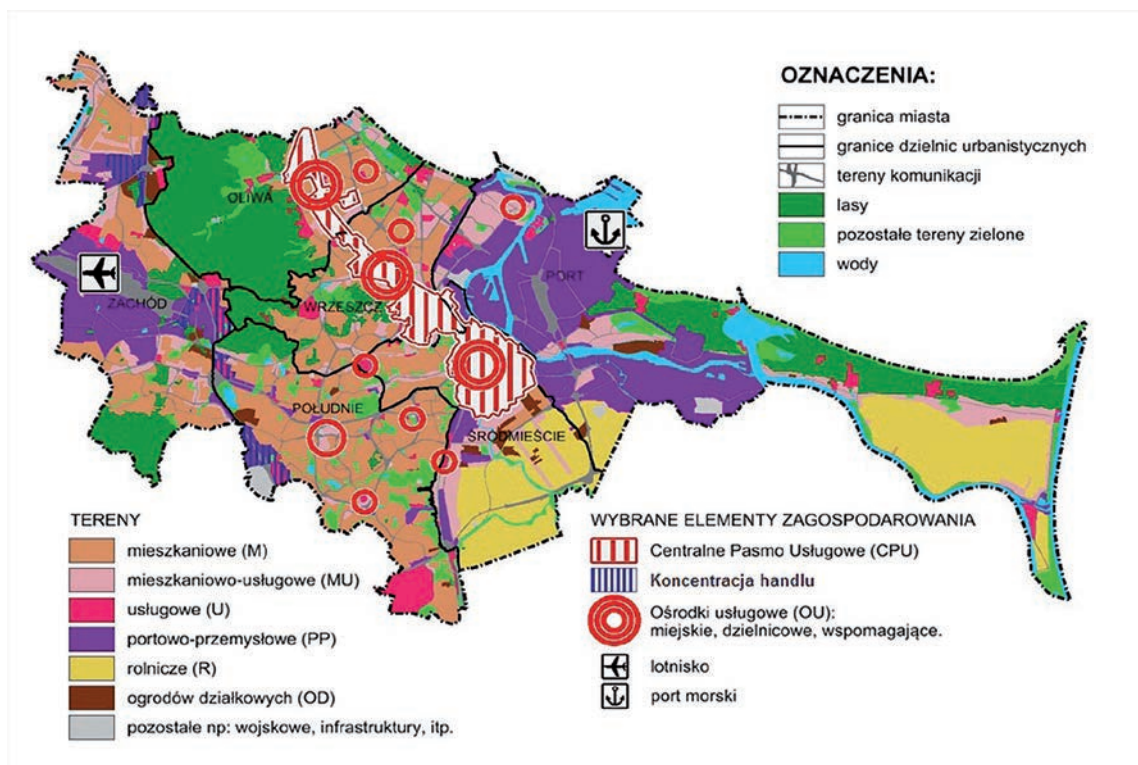
The functional and spatial structure of Gdańsk largely results from the natural terrain. Within the city limits, two geomorphologically differing areas can be identified: the so-called lower and upper terrace, which are separated by the edge of the upland, in the northern part covered with forests of the Tri-City Landscape Park. On the lower terrace, parallel to the edge of the upland, the main transportation axis of the agglomeration runs, including a street section (Grunwaldzka Alley, Zwycięstwa Alley, Podwale Grodzkie, Wały Jagiellońskie, Okopowa, Route of St. Wojciech), a long-distance railway line and the rapid urban rail (SKM) line. Along this route, the historical districts of Gdańsk are located: Downtown with historic urban layouts of the Old and Main Towns, the 19th-century Wrzeszcz and post-Cistercian Olive. The lower terrace is crossed by the waters of the Vistula River, which flows with three beds in the area of the estuary: the Martwa Vistula, along which historical shipyard and port structures are located, including the Nowy Port district in the area of its estuary, the Śmiała Vistula and the Przekop Vistula - an artificial estuary implemented at the end of the 19th century. The structures of historical districts developed over time. The most dynamic period of growth occurred in the post-war years when large housing districts were constructed: Zaspą, Przymorze and Żabianki in the north of the centres of historical districts and Stogi in Nowy Port and Brzeźno.

The upper terrace, covering the south-western part of Gdańsk, is a heavily sculpted area of the upland, crossed by valleys of streams flowing towards the Gulf of Gdansk. The areas of the upper terrace were incorporated into the city after the Second World War. During this period, numerous housing complexes were constructed, including the largest of them: Chełm and Piecki Migowo. In the 70's and 80's of the 20th century, the investments

in transport concerned the upper terrace: the western bypass of the Tri-City and the airport, which significantly contributed to the further urbanization of the area. Despite the progressive development, mainly in the form of nest housing investments, a significant part of the upper terrace remains undeveloped.

Along with the spatial development of the city, a historical, sequential street system based on the main transport axis developed in the directions of new districts in the coastal zone in the north-east and on the upper terrace - in the western and southern directions. The development of the West and South districts was enabled by the western bypass and the so-called axis of the upper terrace, which consists of the streets: Potokowa, Rakocze-go, Nowolipie and Łostowicka and Havla, as well as the intersection of the connections crossing the upland edge between the lower and upper terrace - the streets: Spacerowa, Słowacki, Armii Krajowej Alley, Małomiejska-Świętokrzyska, and Starogardzka. The development of urbanized areas on the lower terrace was possible due to the street axis of the lower terrace built in the 1970s and 1980s, consisting of the following streets: Gospody, Chłopskiej, Rzeczypospolitej Alley, Legionów Alley, Wyspiański, and in recent years, the eastern part of the so-called Green Road (Maciej Płażyński Alley) and Major Henryk Sucharski Street with a tunnel under the Martwa Vistula, called Archbishop Tadeusz Gołowski.

The study of conditions and directions of spatial development, defining the spatial policy of the city, indicates the residential and residential-service function as the main dominant direction of transformation of most development areas both on the lower and upper terrace. The dominance of the service function was specified mainly for the invested areas, functionally homogeneous and their development areas, e.g. university campuses, larger trade centres. The port-industrial functions



Source: *The study of conditions and directions of the spatial development of the city of Gdańsk*

are developed mainly in the areas along the Martwa Vistula, in the Northern Port, as well as in the vicinity of the airport and at selected western bypass: in Barniewice, Matarnia and Kokoszki Przemysłowe. The central parts of the historic districts of the lower terrace, naturally forming the places of concentration of the service functions, as they developed, formed a continuous structure indicated in the Study as the so-called Central Service Band (CPU).

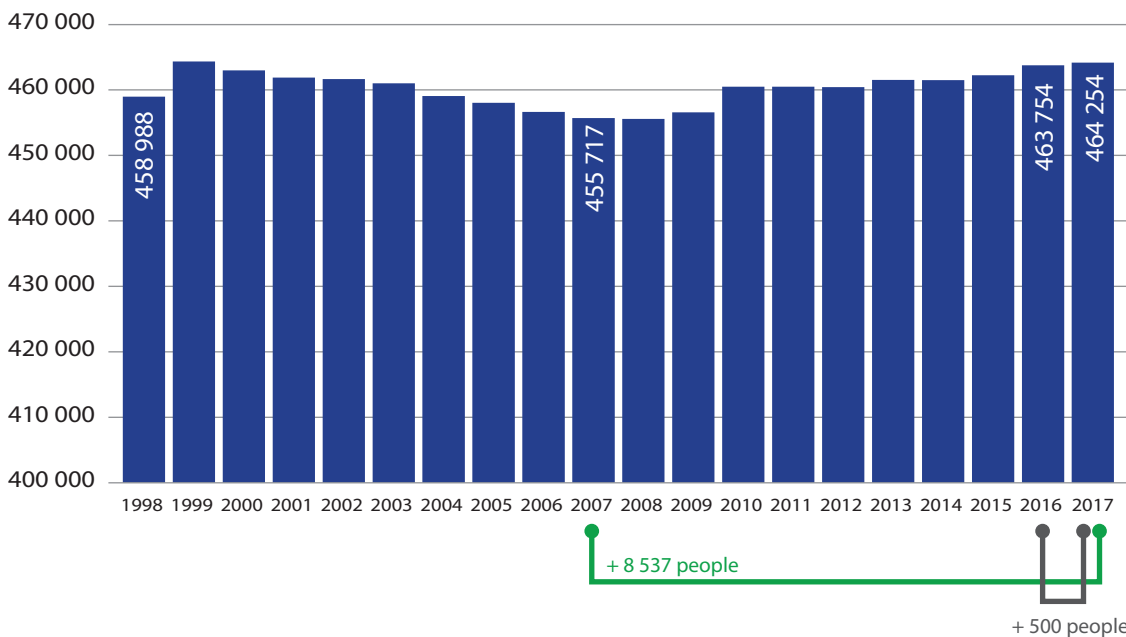
## Socio-economic considerations

Gdańsk - the capital of the Pomeranian Region is the largest city of northern Poland, and the most important economic, scientific and cultural centre of this part of the country.

According to data at the end of 2017, the number of Gdańsk residents amounted to 464,254 people, which means an increase by 0.1% compared to 2016 and by 1.9% in the last 10 years.

The most numerous group are the inhabitants of working age (60.1%), people in post-working age are 23.2%, and people in pre-working age are 16.7%. Similarly to the whole Poland, the group of people in post-working age is systematically growing (in 2000 there were 15.9% of them), so we are dealing with an ageing society with special needs in terms of moving around the city.

Students are an important group of the residents, not always included in the population statistics, the number of who is over 73,000. Despite the systematic decrease in their number since 2012, this is an important group significantly impacting on the city's life, including the transport needs.

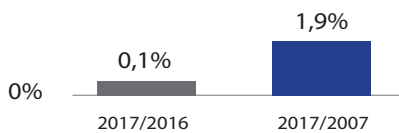


Changing the number of the residents of Gdańsk

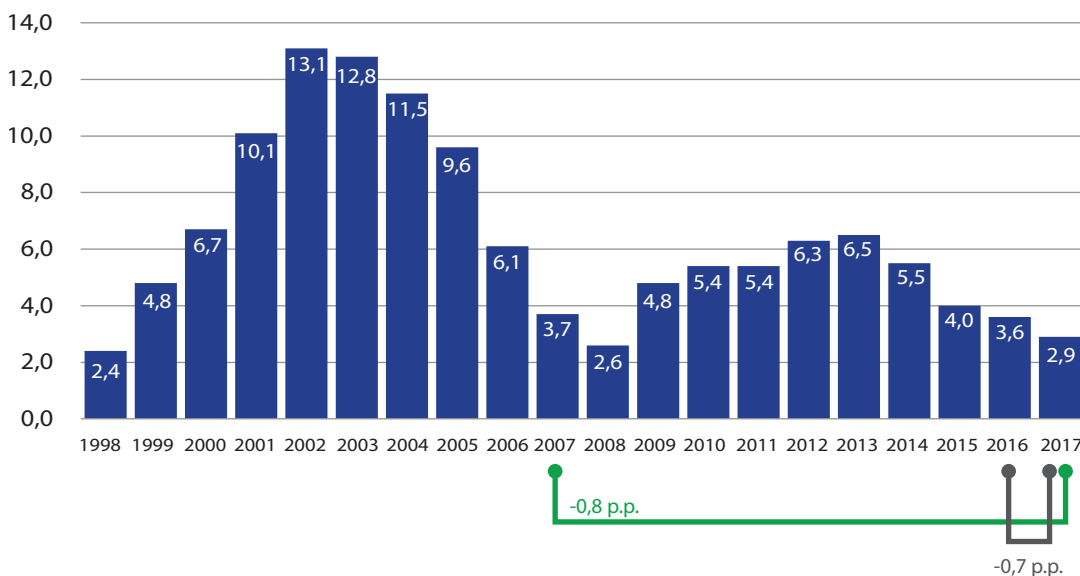
*The residents – in the years 1998-2017*  
 Source: Socio-economic trends of Gdańsk

10%

5%

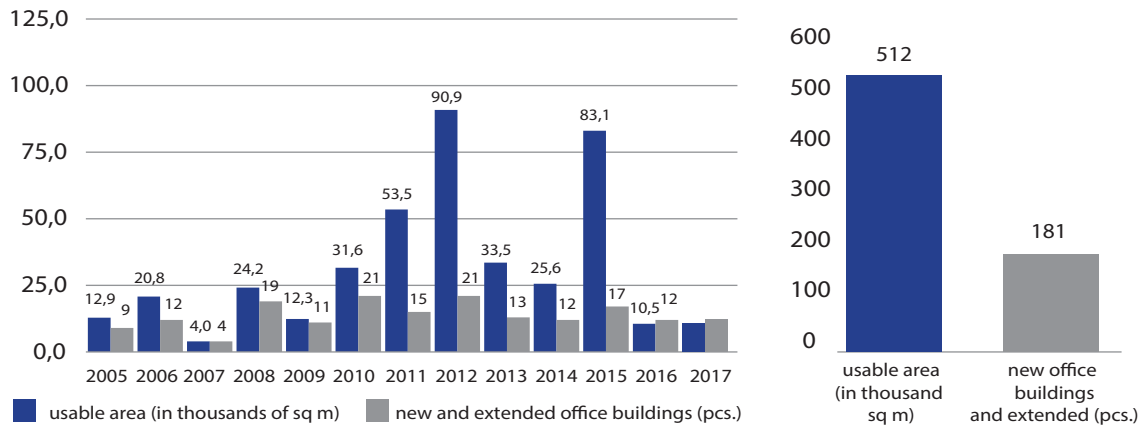


In Gdańsk, unemployment is steadily decreasing. At the end of 2017, the unemployment rate was 2.9%, and was one of the lowest in the country among the poviats cities.



*The unemployment rate registered in Gdańsk*

Source: Socio-economic trends of Gdańsk



### *New and extended office buildings and usable area*

*Source: Socio-economic trends of Gdańsk*

The maritime economy is the traditional pillar of the city's economy; the volume of transshipments in the ports is growing and dynamic development of the port areas is observed. Other important and increasingly important employment sectors involve tourism, services, as well as the financial and IT sectors, the development of which is evidenced by the dynamic growth of the office space, which are generators of increased traffic (mainly individual car traffic). Therefore, there is a need for good connection of the office buildings by means of a bicycle route system and access to an efficient public transport system, so that the need to use a private passenger car is as low as possible.

Changes in employment impact on the change of transport flows to/from work. The Tri-City is the third largest regional market when it comes to the resources of modern office space. According to the Colliers International agency report, at the end of 2017, there were nearly 698 thousand sq m of new office spaces in the Tri-City. Providing another 98 thousand sq m is planned for 2018 (this result will mainly be impacted by the use permits obtained for subsequent Olivia Business Centre buildings located in Gdańsk). In Oliwa, Alchemia also has its headquarters. The office buildings around the airport are also being expanded, where companies as-

sociated with the modern technology industry are located.

At present, nearly 45% of the service area in Gdańsk is located in the area of the CPU, the area of which is approximately 6% of the city's area. Historical service centres developed their functional characteristics. The downtown is a place of concentration of cultural and administration facilities, as well as "free time services". In Wrzeszcz, the important centres of science and commerce are located, in Oliwa, next to the university campus, the concentration of office buildings is being created. The second group of large service facilities consists of large-format commercial facilities created at the western bypass junctions. In the remaining part of the city, service facilities are more dispersed, forming sometimes local district or neighbourhood centres. The disproportion in the accessibility of services between the lower and upper terraces is observed: the usable floor space of service facilities located on the upper terrace accounts for slightly more than 15% of all service facilities in Gdańsk, a significant part of which involves shopping centres near the bypass. The above fact is significant because the upper terrace is the place of the most dynamic increase in the area of housing buildings in Gdańsk. Currently, the housing area located here is close to 31% of the en-





tire resource. It is a place of residence for approximately 28% of the residents of Gdańsk, but it is assumed that, as a result of further extension of the development areas, in 2045, this area will be a place where approximately 40% of the residents of Gdańsk will live. The aforementioned forecast already takes into account further development and supplementation of the structures of the lower terrace, the intensification of which is promoted by the city, in accordance with the policy of "development inwards". In order to increase the availability of services in the southern district, where the largest increase in the number of the residents will be observed, the city policy aims at creating a network of local service centres with attractive, well-equipped public spaces. In the western part of Ujeściska, in the area of Warszawska and Nowa Bulońska Południowa streets, a service centre with a regional rank is also planned.

The development of air connections (including the so-called low-cost airlines) brought Gdansk closer to European cities, and the modernization of the E65 railway line and the resulting reduction in travel times increased the attractiveness of the Tri-City in domestic journeys. A rapidly growing hotel base with a very wide offer for various groups of tourists is the result of the increased tourist traffic.

The existing functional and spatial structure of Gdańsk, and especially the mutual placement of housing areas, work and study, largely determine the directions of displacements in the city. At present, only 16% of work places in Gdańsk are located in the area of the upper terrace. It is assumed that due to significant field reserves, in 2045, this share will increase to less than 25%, with the main concentration of work places in the production and service areas of Barniewice, Matarnia and Kokoszek Przemysłowe and in the Industrial and Technological Park of Maszynów, and maybe also in a new district

service centre. Nevertheless, as a result of numerous residential projects on the upper terrace, the number of work places per 1000 residents will decrease on the upper terrace from the current value of approx. 540 to approx. 410 in 2045.

## Transport behaviour of the city residents<sup>3</sup>

In 2016, on the order of the City of Gdańsk, Comprehensive Traffic Research was carried out. The research involved the transport behaviour, that is information about the movement methods of the residents. In Gdańsk, it included the implementation of surveys of a representative group of the residents, traffic volume measurements and filling of the pub-



*Grzegorz Mehring/www.gdansk.pl*

lic transport vehicles to the extent necessary for the construction of a traffic model.

The scope of the research allowed to meet the residents' transport habits, evaluate the current transport system, nuisance in terms of road traffic intensity and other issues related to the movement of the residents of Gdańsk.

<sup>3</sup> Gdańsk Development Office (<http://www.brg.gda.pl/plano-wanie-przestrzenne/inne-opracowania-urbanistyczne/282-gdanskie-badania-ruchu-2016>)



According to the research results:

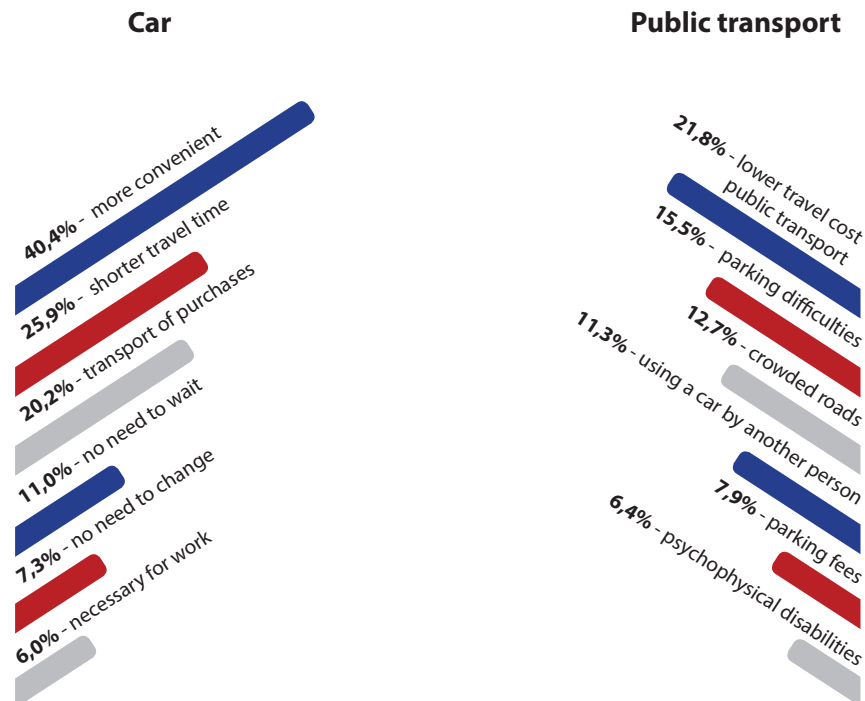
- 67.2% of households in Gdańsk have a private passenger car, including:
  - over half (51.2%) of households have 1 car
  - 14.3% of households have 2 passenger cars
  - 1.7% have 3 or more passenger cars
- 32.8% of households do not have a car

### The reasons for choosing means of transport

- The main reasons declared by the residents for choosing a car in everyday city travels are: greater convenience (40.4%), shorter travel time (25.9%) and transport of goods (20.2%).
- The main reasons for choosing public transport in everyday urban travel are: lower travel costs (21.8%), parking difficulties (15.5%) and crowded roads in Gdańsk (12.7%).



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>

\* The values in the charts do not add up to 100%, the respondent could indicate more than 1 answer. 6 most popular answers are included in the charts.

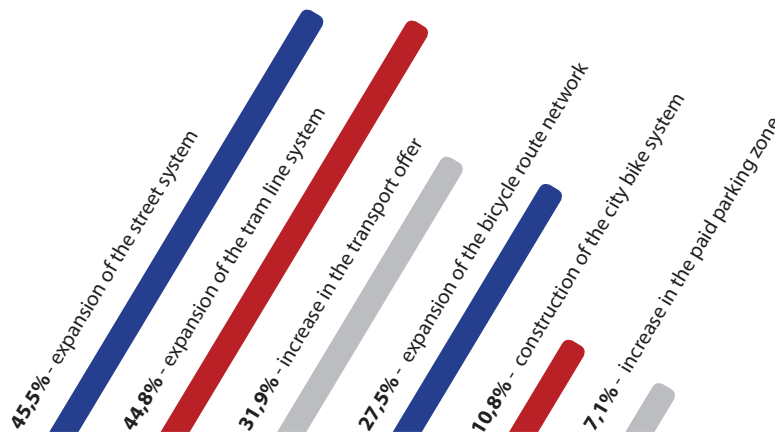


### Expectations of the residents Gdańsk in the field of transport system development

Approximately 45% of the residents of Gdańsk decided that the street layout and the tram lines layout should be developed. Nearly one third expects an increase in the transport offer, and 27.5% count on the expansion of the bicycle route network. The interest of the city residents in the city bike system shaped at the level of 10.8%, and the

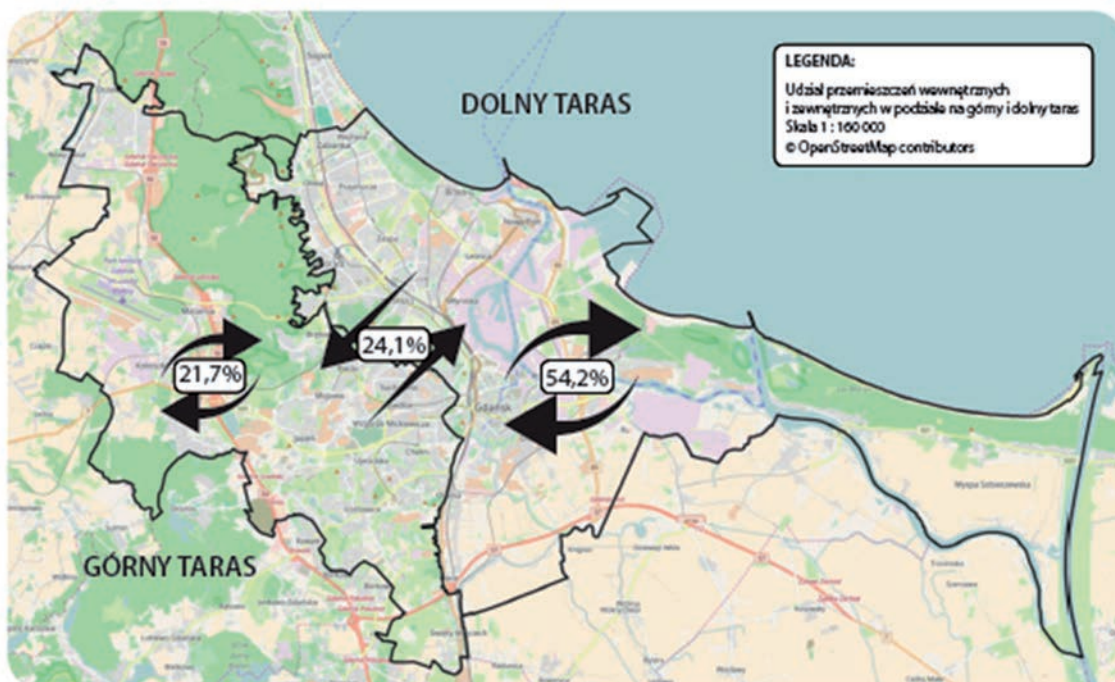
interest in increasing the paid parking zone shaped at the level of 7.1%.

On the basis of the practice of other cities, it can be noticed that the expectation of expanding the street system leads to a dead end of unsustainable development, it does not solve the transport problems of the city. Low support for the increase in the paid parking zone proves the lack of explanatory actions meaning the charging of car users with costs that generate their transport behaviour.



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>

\* The values in the charts do not add up to 100%, the respondent could indicate more than 1 answer. 6 most popular answers are included in the charts.



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>



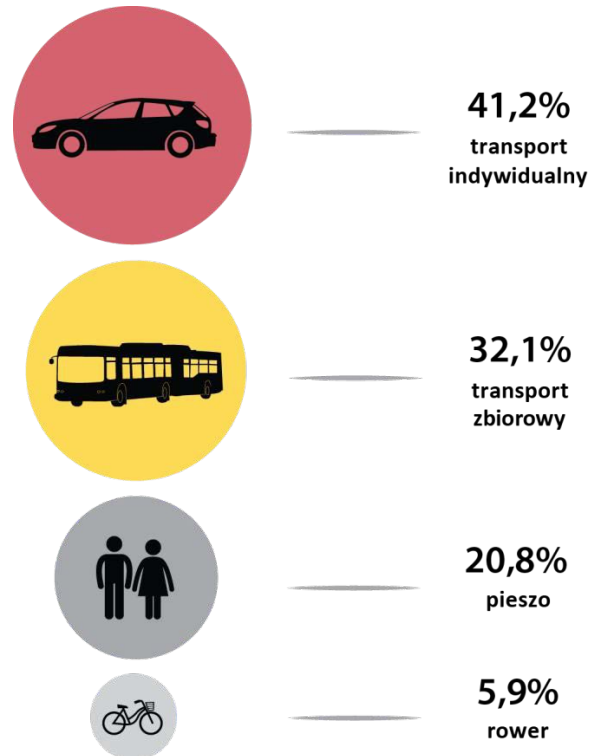
If we add up the percentages of the indications for the extension of the tram line system, the increase of the offer of the mass transport services, the development of a bicycle route network and the construction of a city bike system, we will receive a set of indications much higher than the development of the street system.

The research did not ask about the increase in the frequency of running SKM and PKM trains, which in combination with a metropolitan bicycle system would create prospects for significant development of journeys made in the mode "bicycle + SKM/PKM + city bicycle".

More than half of the residents travel within the lower terrace, 21.7% of internal journeys are carried out by the residents of the upper terrace and 24.1% of the residents travel between the lower and upper terraces.

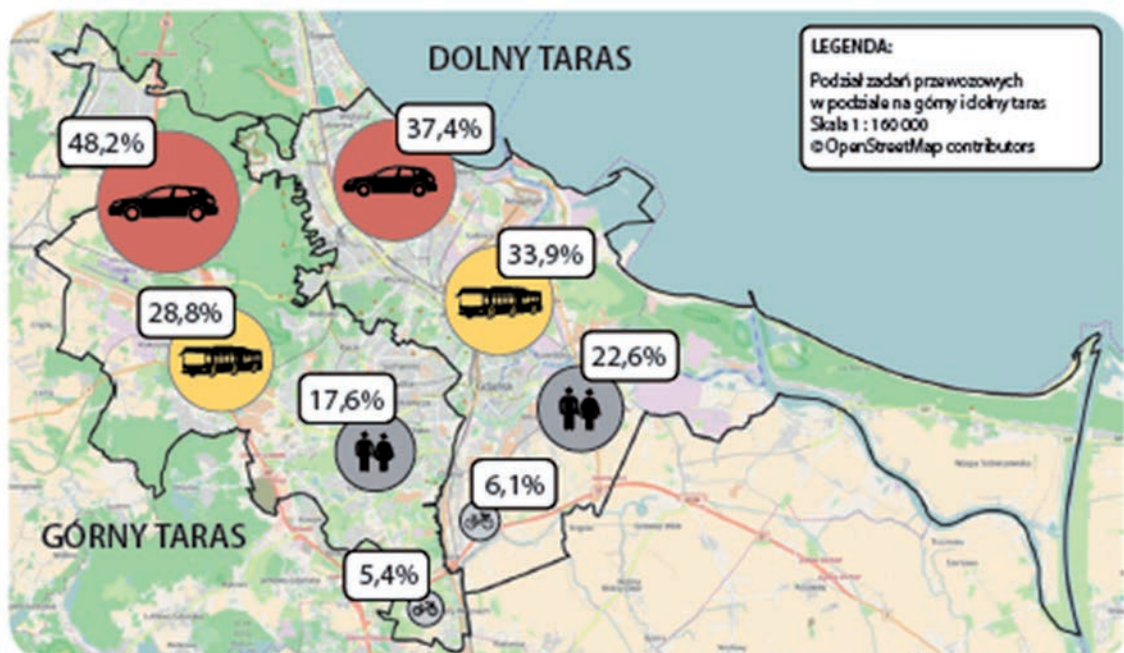
### Division of transport tasks (Comprehensive Traffic Research 2016)

Comparing the results of GBR 2016 with the research from 2009, the phenomenon of the increase in the share of individual car jour-



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>

neys can be negatively assessed (increase from 39.2% to 41.2%), inter alia at the expense of the share of travels made by public transport (decrease from 37.5% to 32.1%), note the maintenance of the share of pedestrians (it was: 21.3%, is 20.8%), or appreciate



Source: <http://www.brg.gda.pl/attachments/article/282/Raport-III.pdf>



the significant increase in the share of bicycle trips (it was 2.0%, it is 5.9%).

The residents of the upper terrace move more often by cars than the residents of the lower terrace (every third resident of the lower terrace moves by public transport). The share of pedestrian traffic on the lower terrace is 5% higher than on the upper terrace. On the upper terrace, the quality of service by public transport lines is clearly lower due to the lack of SKM lines there and longer distances to overcome in the case of obligatory travels. During longer journeys, a tram will never be more attractive than a car. However, travelling by SKM or PKM can be such an attractive alternative as long as it ensures the appropriate frequency of service throughout the Tri-City.

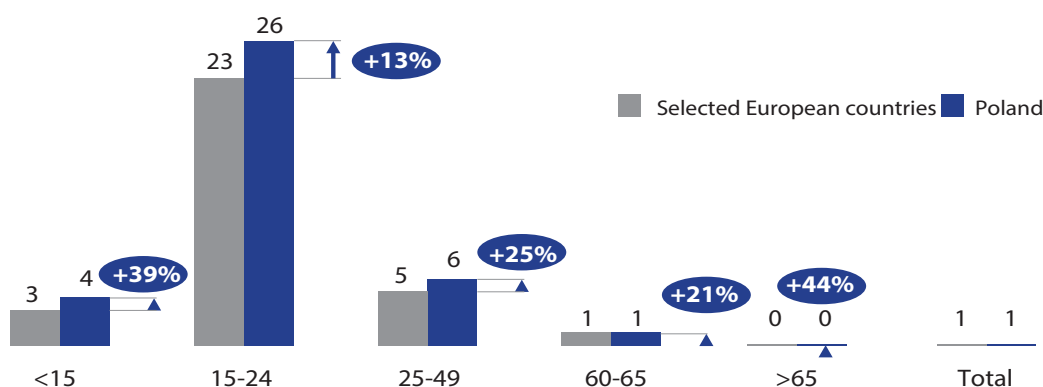
### Road traffic safety

The daily communication decisions are impacted by a number of factors: from economic, health, individual preferences to the route or type of transport, as well as, as specified by Gdańsk Comprehensive Traffic Research, the terrain and distance from the city centre.

Undoubtedly, however, the basis of the decision about choosing the everyday means of transport involves an individual risk assessment and a sense of security during the journey. This is also impacted by the assessment of the chance of finding a free parking space. The participant of the road traffic, i.e. each person moving around the road, assumes that the planned route will defeat safely.

Nevertheless, the risk of injury is a real threat and occurs on the roads. Road accidents are one of the top 10 causes of death in addition to cardiovascular disease and cancer. Cardiovascular diseases are often the result of a sedentary/inactive lifestyle, sometimes resulting from the fact of subjective or objective dependence on a car (long distance between home and destination of everyday obligatory journeys). According to the forecasts by the World Health Organization (WHO) in 2030, injuries due to traffic accidents can become the 5th most common causes of death in the world (in 2016 they were the 9th). In the age categories of 15-19 and 20-24, traffic accidents are the most common cause of Poles' deaths (over 25%), just before suicides and other accidents<sup>4</sup>.

Percentage share



*Victims of transport fatal accidents among total deaths in various age groups in Poland and selected European countries<sup>5</sup>, 2014*

Source: own development

<sup>4</sup> Strategy for improving road traffic in Poland - the Polish Chamber of Insurance, 2016

<sup>5</sup> Austria, Bulgaria, Croatia, Czech Republic, Finland, Germany, Lithuania, the Netherlands, Norway, Portugal, Romania, Slovakia, Spain - countries for which comparable data are published



Grzegorz Mehring/www.gdansk.pl

In accordance with the global guidelines of the WHO and the European Commission, Gdańsk is taking steps to reduce, and as a result to eliminate, victims of road accidents. This purpose is defined by ZERO VISION<sup>6</sup>, i.e. zero traffic accident victims. Zero Vision primarily assumes that road users make and will make mistakes when moving on the roads. However, their mistakes should not lead to death or serious injuries. The most important element is to impact on all those responsible for transport and the participants of the traffic. It is supposed to impact on their actions, which in each circumstance should be dictated by the overriding principle that everything that I do is to reduce the number of victims on the roads. After all, even if the number of victims is reduced by half, it is worth fighting to reduce their number by even one person in a while, because the only acceptable number of road accident victims is to be zero for each of us. Zero Vision is a series of activities that must be taken to achieve the above purpose. The designers of the road layout are of course responsible to the larg-

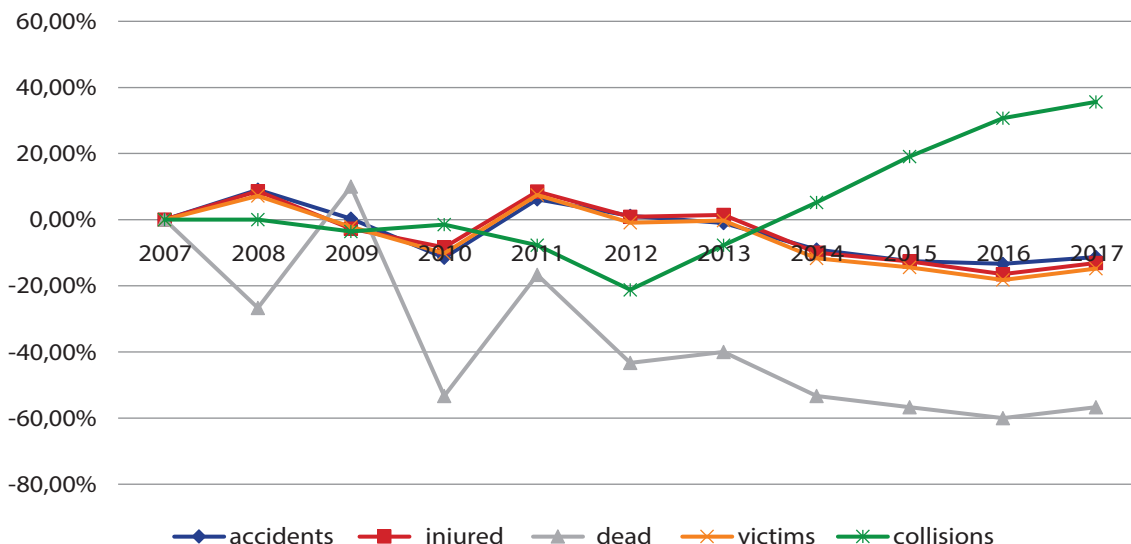
<sup>6</sup> The idea of creating the Zero Vision Policy was born in Sweden. Zero Vision was presented for the first time in the mid-1990s by Ines Usmann - Minister of Transport in the Swedish government. The success of the solutions introduced in this country encouraged other EU countries to take similar activities. Also in Poland, Zero Vision was adopted as a tool in the fight to improve traffic safety.

est extent. However, the designers should be understood as responsible persons in the investment process, i.e.: engineers, road administration, police and legislative authority.

Not so long ago, the concept of "beyond vision zero" appeared<sup>7</sup>, drawing attention to the issues of the impact of street space design principles so as not to discriminate against the possibility of developing active forms of mobility. Lack of physical activity resulting from car addiction is a more important factor in disease and mortality than road accidents.

Gdańsk has a specific safety improvement plan and has been steadily developing - the Traffic Calming Program, which began to be implemented in the city in 2010. Until then, there were on average 628 accidents per year on urban roads. An average of 27 people per year died in them, and an average of 762 people were wounded. Since then, the number of victims has decreased by 20%, the number of injured people has increased by over 21%. The Gdańsk Program assumes many interdisciplinary activities. They include, inter alia, the introduction of Pace 30 zone on city streets. Currently, the area of Pace 30 includes 62.1 percent of all public

<sup>7</sup> Beyond vision zero <https://vimeo.com/244201235>

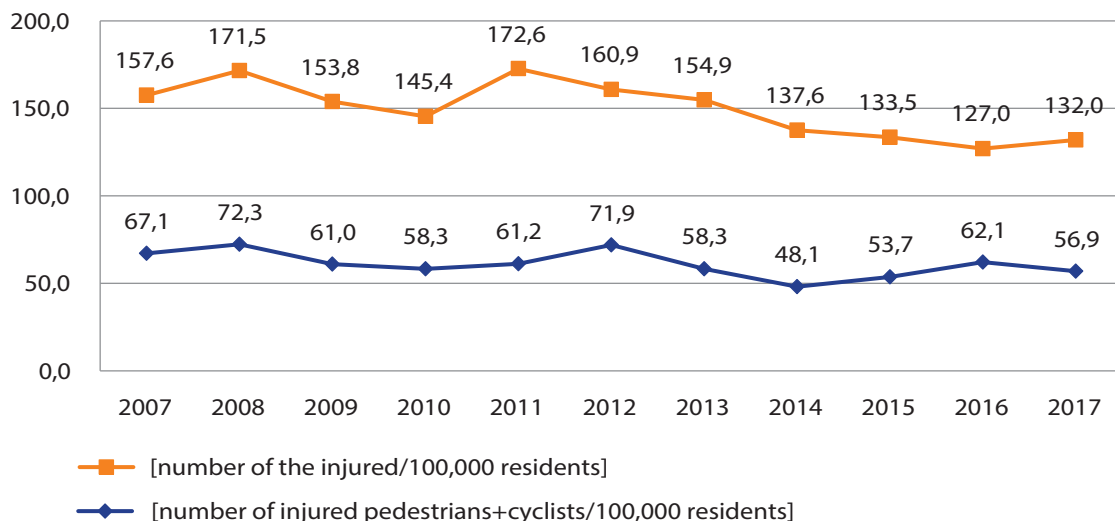


Trends in the number of accidents, victims and collisions in Gdańsk in 2007-2017  
 Source: Assessment of public transport in Gdańsk in 2017.

roads in Gdańsk. The city also invests in infrastructure that improves safety. In many places there are elements physically enforcing slower driving on motorcycles: pedestrian refugees, mini roundabouts, various types of speeding thresholds, elevated crossings or intersections, chicane forcing the change of the traffic path.

The consequence of the aforementioned reduction of undesirable events on the roads is the risk of being a victim of a traffic accident that has decreased for the last 10 years. Indicator specifying the number of injured victims in road accidents per 100,000 residents of Gdańsk in the period from 2007 to 2017 decreased by approximately 15%. A similar

### Risk indicator



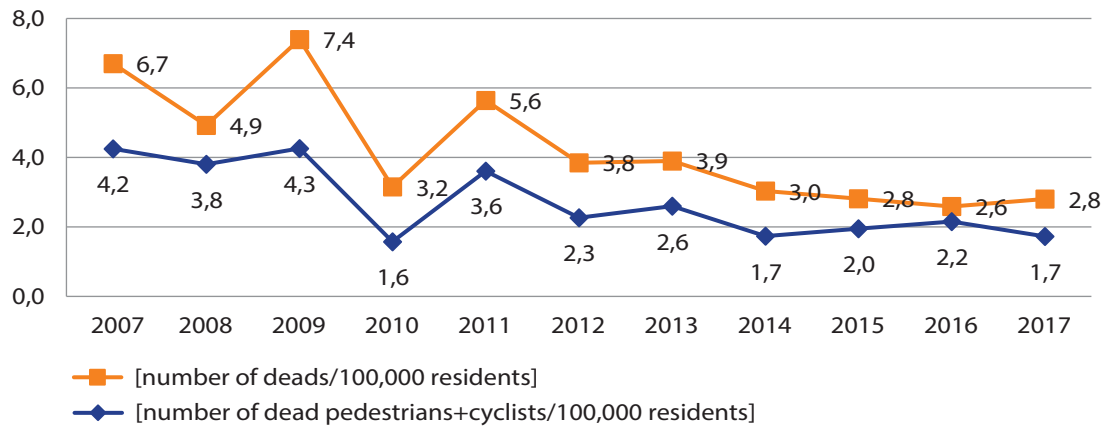
Demographic risk indicator for road accidents in Gdańsk in 2007-2017 - injured victims  
 Source: own development



## Risk indicator

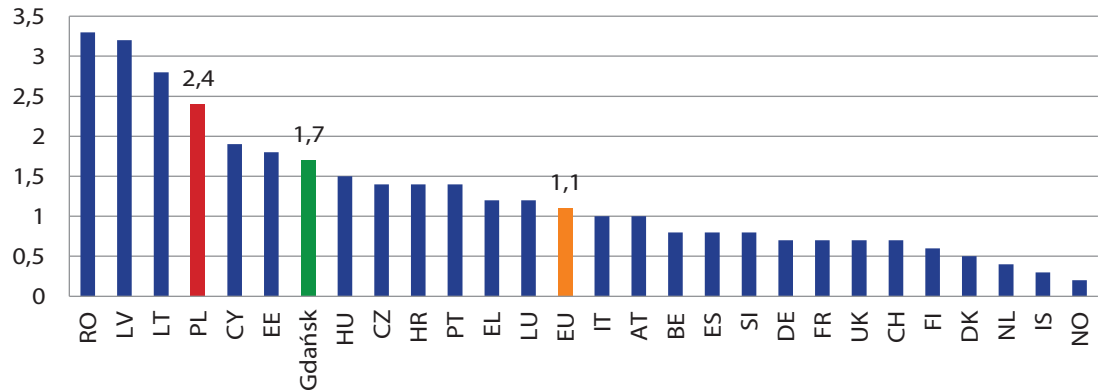
Demographic risk indicator for road accidents in Gdańsk in 2007-2017 - fatal victims

Source: own development



Number of fatal victims among pedestrians per 100,000 population by countries, 2015 (EUROSTAT)

Source: Eurostat



tendency is observed in the case of the risk of being a road accident fatal victim, which since 2007 has decreased in Gdańsk by 58%, from 6.7 to 2.8 people/100,000 residents. An analogous trend is observed in the group of unprotected road users - pedestrians and cyclists, for whom the risk of injuries in the accident was reduced by 16% and the risk of death was reduced by 59%. The challenge for cities is to lower the rate of feeling of insecurity for cyclists.

Despite the visible reduction of the threat, special attention should be paid to unprotected road users - pedestrians and cyclists who, together with the progressive transport changes, are becoming larger and larger group of road users. In Poland, the risk of injuries in pedestrian traffic, despite the progressive reduction, is one of the highest in Europe and twice exceeds the average

number of fatal victims among pedestrians per 100,000 residents of the EU countries.

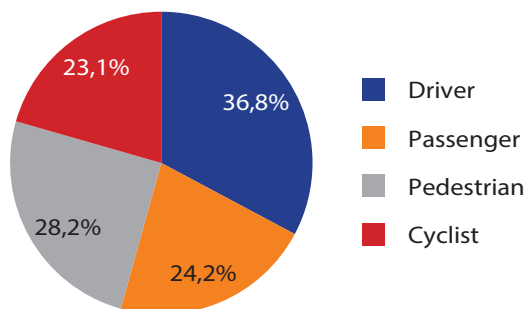
In Gdańsk, the share of pedestrians in road accidents accounts for approximately 30% of injured victims and over 60% of fatal victims. Cyclists constitute approximately 20% of the group among all injured in accidents, while the share in the group of fatal victims varies from 0% to approximately 17% depending on the year. The behaviour of drivers is the main source of overrepresentation of pedestrians and cyclists among the victims of accidents (associated with the principles of design and implementation of road investments).

Comparing the share of pedestrian and bicycle journeys to those by a car, defined in 2016 in the Gdańsk Comprehensive Traffic Research (*fig. division of transport tasks*),

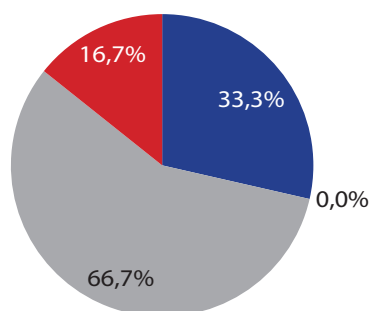




### Injured



### Fatal victims



Structure of road accident victims in Gdańsk in 2016

Source: own development

with the percentage of victims for these means of transport, it should be noted that walking and cycling involve twice as much the probability of injuries in a traffic accident than driving a car. Therefore, work on changing travelling behaviours to balance transport in Gdansk must be closely related to improving safety of unprotected road users. Favourable modal changes for pedestrians, cyclists and public transport passengers can improve safety of everyone, including drivers. It is also important to verify the principles of designing the geometry of a road lane, very often preferring the needs of people using driving and parking vehicles to an excessive extent.

## Pedestrian traffic and public space

Designing pedestrian-friendly cities is one of the most important if not the most im-

portant aspect of the new approach to urban planning and planning of mobility and transport systems. The best cities to live (based on the world rankings) are the cities with pedestrian zones that often involve the movement of bicycles (completely or partially free of parking and driving cars) and spaces adapted to the needs of pedestrians in urban areas. According to leading experts in the problems of cities (such as Jan Gehl or Gil Penalosa), the key indicators for a truly eco-friendly city are the status of pedestrians and cyclists.

Enabling free movement of pedestrians (in particular people with limited mobility) is a key activity in the field of sustainable urban mobility. Understanding the essence and needs of the pedestrian traffic and valuable public spaces turned out to be a challenge for many local governments. Public space creates life of local communities - the quality of life of residents depends on its condition. Common space provides the opportunity for integration and development of social bonds. Properly designed space is friendly to people's lives, where we move freely on foot, we are happy to stay, we can relax and meet with other residents and, above all, we feel safe. In the case of people with limited mobility, friendly space is also without architectural barriers that gives the opportunity to move safely.

„If you create a city that is good for both an 8-year-old and an 80-year-old, it will be a good city for everyone” - this is the main assumption of the „8-80 Cities” association philosophy, headed by Gilberto Penalos (a former vice-mayor of Bogota, Columbia). The aim of the association is to transform cities so that people can walk, move on bicycles, use comfortable public transport and make space-friendly (mainly publicly accessible parks) as much as possible.

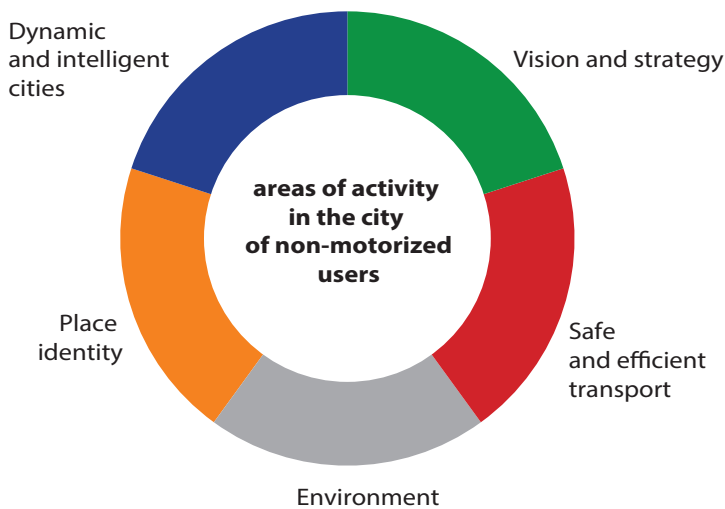


**The basic principle in the design of public spaces is to ensure accessibility, regardless of the type of disability, restrictions on mobility or perception.**

**Pedestrian traffic should have priority when shaping the city transport systems.**

**The quality of space is impacted by the method of development, the type of materials and elements used, the elements of street furniture, lighting and the method it is used.**

When designing “convenient” cities for non-motorized road users, various areas of activity should be considered.



*Activities in the area of non-motorized users of the city*

*Source: Own development*

As part of work on the Plan, on May 8, 2017, workshops on pedestrian and bicycle traffic took place, in which the residents of Gdańsk participated. Difficulties in walking were identified during the workshops. Multi-stage road crossings and long waiting for changes in traffic lights were emphasized the most often. In addition, people clearly pointed out obstacles of infrastructure such

as the lack of ground crossings (the need to use tunnels or footbridges), the lack of infrastructure continuity of bicycle paths and sidewalks and their poor technical condition. Equally often, it was pointed out that parked cars and fenced-off districts were a distinct obstacle. The residents are disturbed by street noise and exhaust fumes associated with intensive car traffic. Attention was also paid to the aggressive behaviour of other road users, car drivers as well as cyclists, who are a nuisance in pedestrian and bicycle traffic.

**Organizational, infrastructure and other solutions that encourage the residents to use walking and cycling routes more frequently every day.**

Participants in social consultations and the Team members discussed organizational, infrastructural and other solutions that, in their opinion, could encourage the residents of Gdańsk to use pedestrian traffic more frequently. The following was selected, inter alia:

### **Audit of pedestrian and bicycle spaces**

An important topic was the postulate to audit the space of pavements in key city locations as well as solutions used in places of overcoming linear elements of the transport and/or hydrotechnical infrastructure of the city (arteries of intensive vehicular traffic, railway lines, watercourses or terrain faults). Such a development would indicate the most important places where it is necessary to take corrective activities..

### **Execution of regulations protecting pedestrians and cyclists**

In the opinion of the residents, to improve and make walking and cycling more attractive, it is very important to effectively execute the regulations, including the mandates and so-called ‘towing away’, i.e.



removing vehicles parked contrary to the rules of law. Attention is drawn to the fact that the activity of the services is usually focused on traffic offenses, less often on situations in which the injured can involve pedestrians and other non-motorized people. In addition, these demands included a need to change the regulations that would allow drivers to stop when a pedestrian approaches the crossing. There were the ideas of 'decriminalization of going on a red light', especially in the case of crossings of pedestrian corridors with roadways with no more than two lanes - to facilitate the continuity of pedestrian traffic. This idea is related to postulates concerning changes in traffic lights for pedestrians and sealing the system of enforcing speed limits developed by drivers (calming of vehicular traf-

fic). The lack of enforcement of the violation of parking regulations is a problem which is extremely important in the opinion of the residents. Parking on pavements that prevent pedestrians from moving, or destroying greenery in public space is common and allowed according to many car users. Introduction of some of the proposed changes would require changes in legislation and enforcement policy.

### Traffic light oriented to pedestrians

The need to adjust traffic lights to the needs and expectations of pedestrians was indicated. The prevailing belief is that in today's situation, traffic lights are in favour of cars, while pedestrians and cyclists are forced to wait for a long time to cross the street. Usually, this applies to wide road arteries. It was proposed

*Dominik Paszlinski/www.gdansk.pl*





to extend the cycles of green light for pedestrians, including programming the buttons so as to shorten the waiting time for pedestrians to change the lighting cycle. These activities should be preceded by an audit of the functioning of the cycles of light and the sealing of the system of enforcing speed limits and increasing the area of validity of the rules of calm traffic on the main arteries of the city vehicular traffic.

### Elimination of barriers in pedestrian and bicycle traffic

The elimination of pedestrian traffic barriers was a problem strongly associated with signalling for pedestrians (often combined by the participants into one group of challenges). The most common were difficulties in passing through the main road arteries, but also difficulties in passing through railway lines (including SKM), as well as watercourses and faults of the area. The participants specified the need for decommissioning of multi-stage crossings, as well as the creation of crossings on the street horizon, eliminating unprotected tunnel passages and the need to create new/restore former pedestrian crossings through main roads (e.g. Grunwaldzka Alley). One of the ideas to improve the safe-

ty of people crossing the road was to install additional lighting that would run when a pedestrian was approaching the road. Furthermore, a postulate to limit settlement fencing and block commonly used pedestrian shortcuts was submitted. All these elements were pointed out as discouraging to walk around the city, seeing in the elimination of barriers a chance to increase the number of the residents moving on foot and by bicycle.

### Continuity of walking and cycling routes, condition and quality of the surface

The participants pointed to the necessity to maintain the continuity of existing routes of pedestrian and bicycle traffic and to eliminate gaps between the existing infrastructure. The postulates also concerned good marking of pedestrian and bicycle routes in an intuitive way for users. Attention was paid to the need to improve the quality of the existing surface (in particular in the context of pedestrian traffic), but also to use high quality materials when designing new pavements. In the context of the quality of the infrastructure for pedestrians, the participants also pointed to the need to improve the system of pedestrian and bicycle traffic, especially in winter, the installation of elements protecting against splashing of pedestrians, as well as elements hindering parking cars on pavements.

### Parking vs pedestrians

The challenge of reducing the number of cars parked on pavements is extremely important. They strongly identified themselves with the motto of , restoring pavements to pedestrians', stressing that this applies both to the execution of regulations on the part of the relevant services, but also wise design for new investments in such a way that pavements cannot be made available as parking spaces.



Jerzy Pinkas/www.gdansk.pl



## Environment in pedestrian traffic - public space/street furniture

During the meetings, a strong correlation was confirmed between the surroundings of pedestrian, walking and cycling routes and public spaces. The need to include street furniture along these routes, e.g. benches, was indicated, especially for people with reduced mobility. They emphasized the need to design and build urban streets with service points on the ground floor as a city-creating element and conducive to pedestrian and bicycle traffic. They also pointed to the lighting aspect of all strings as an element improving the sense of user safety. The aesthetics of the environment with special emphasis on the lack of advertising and the implementation of elements of landscaping from high-quality materials is also important. The participants emphasized that the submitted ideas concern not only communication routes, but also recreational spaces like parks and squares. The need to install monitoring in these spaces was also reported.

## Information and promotional campaigns

The workshop participants submitted ideas for various promotional activities aimed at providing encouragement and support for the development of pedestrian and bicycle traffic. They talked about promoting civilized parking in the form of the 'think when parking' action, or the promotion of stickers for drivers, 'I do not park on the pavement'. Soft activities should be taken in a coordinated manner supporting the activities taken to improve the quality of infrastructure.

## The initiatives (infrastructure, organizational, social) implemented so far in the city, worthy of development and reproduction. (e.g. „Pace 30” zone, additional signs for cycling roads, pedestrian refuges)

During the meetings, the initiatives implemented by the city were also analysed. The solutions applied in Wrzeszcz consisting in the transformation of some local roads into one-way streets with a separate parking zone in the roadway, and returning pavements to pedestrians, were positively assessed. The activities demonstrating the change in the philosophy of creating non-motorized infrastructure were also positively assessed: it can be continuous, while the infrastructure for cars can be discontinuous (e.g. on the suburban streets entrances). It was emphasized that for some residents, it can initially be a controversial solution, while it is effective on the long run. The calming of traffic was indicated as effective solutions; the use of various elements and solutions, e.g. „Pace 30” zones, which increased the safety of unprotected road traffic participants.

## Public transport

***The vision of public transport in the area of the city of Gdańsk assumes the functioning and development of modern and environmentally-friendly transport, meeting the expectations of passengers, in a way that creates a real alternative to travel carried out with its own passenger car.***

The most important purpose of the development of public transport of the City, which was included in the Gdańsk Development Strategy, is to strengthen its role in the lives of the residents and to limit the negative effects that motorized individual transport exerts on the environment by charging car users with the costs that they generate.



The increased share of public transport journeys in total journeys should be achieved, inter alia, by:

- increasing the quality of mass transport connections with pedestrian, bicycle and motorized transport (integration nodes)
- achieving full integration of subsystems of public mass transport throughout the metropolis (functional, technical, tariff and ticket)
- improving the comfort of travelling by public transport vehicles (modern rolling stock, more seats)
- increasing the travelling speed of trams and buses.

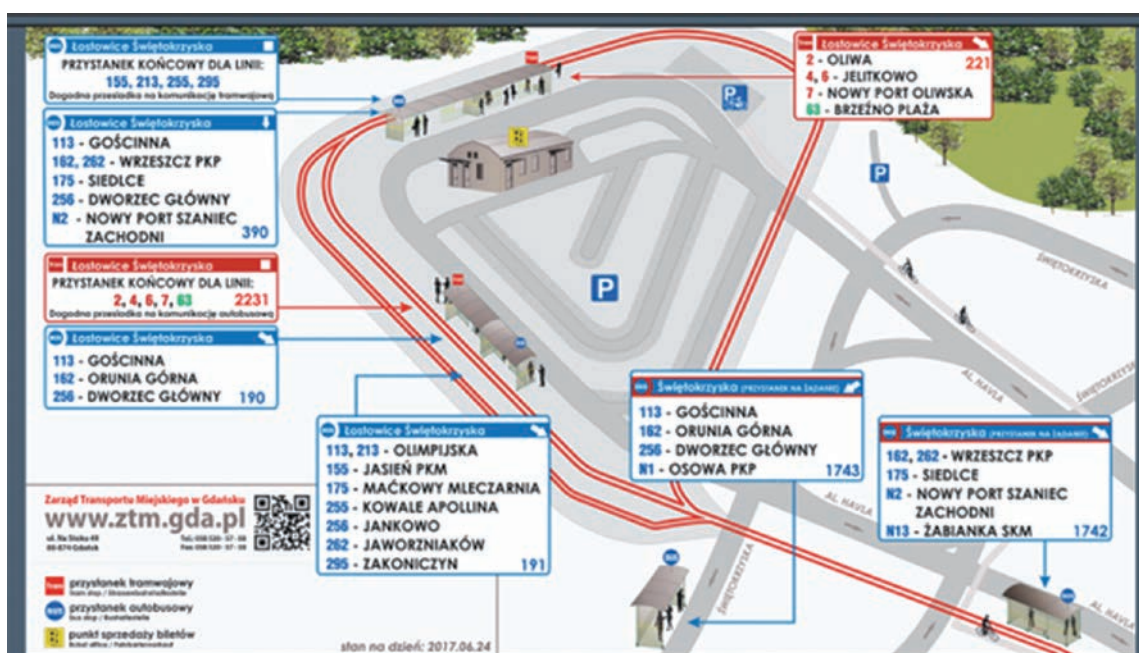
The public transport network in the area of Gdańsk includes:

- 11 tram lines
- 74 day bus lines
- 11 night bus lines
- 2 water tram lines (running seasonally)

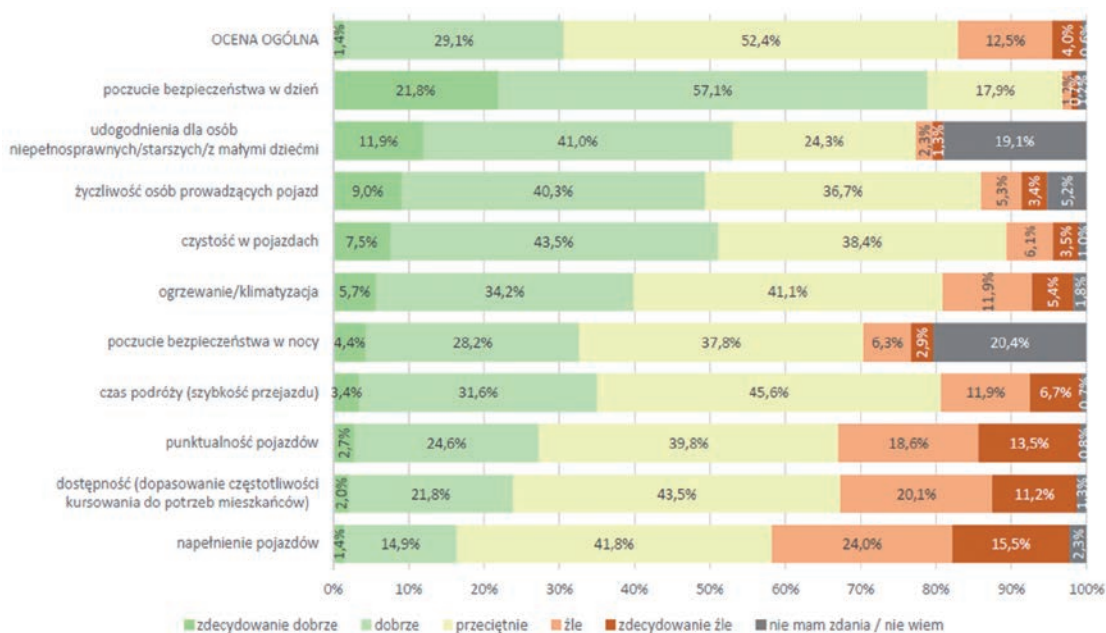
In the current activities, the solutions related to the implementation of priorities in public transport were introduced to a limited extent. In addition to the construction and operation of dedicated tram tracks, other activities were taken, mainly related to the solutions in the control of traffic lights at selected intersections of street routes with tram tracks. The priority rule for trams was achieved to a limited extent by properly setting the coordination of traffic lights on selected routes (e.g. the so-called “green wave” for trams running from the Main Railway Station towards Solidarności Square). The principle presented above is also an exponent of current activities of “TRISTAR” system<sup>8</sup> on all important strings. On selected short sections of the street layout in Gdańsk, the priority for bus transport in the form of bus lanes (e.g. in Podwale Przedmiejskie Street) was implemented<sup>9</sup>.

<sup>8</sup> Integrated traffic management system in Gdańsk, Gdynia and Sopot

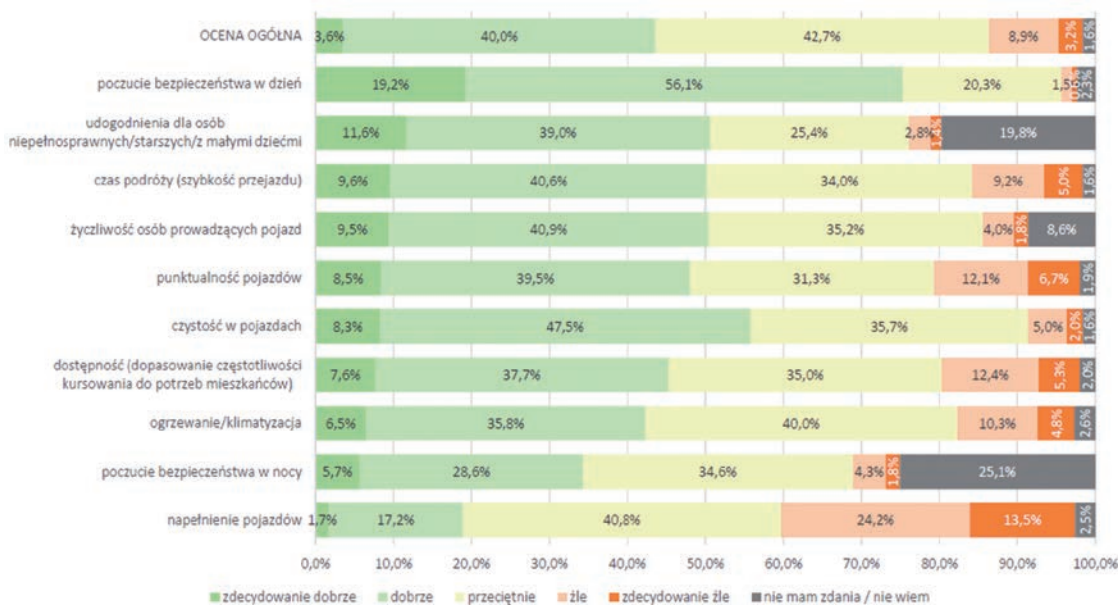
<sup>9</sup> Plan of public transport for Gdańsk



“Łostowice Świętokrzyska” transport interchange  
Source: Municipal Transport Authority in Gdańsk



Summary of assessments of selected items of the tram transport in Gdansk  
 Source: Assessment of public transport in Gdansk in 2017.



Summary of assessments of selected items of the tram transport in Gdansk  
 Source: Assessment of public transport in Gdansk in 2017.

Transport nodes are an important element of the transport system. A modern set of public transport stops was built, for example, along with the extension of the tram line on Chełm Witosa and Łostowice Świętokrzyska loop.

A detailed analysis of the functioning of public transport in the area of Gdansk is included in the document: „Plan for the sustainable development of public transport for the city of Gdansk for 2014-2030”, which was the starting material for work on this area.



In order to diagnose the greatest challenges for the public transport in Gdańsk, since 2014, the Passenger Satisfaction Survey „Assessment of public transport in Gdańsk” has been carried out every year. From November 20 to December 4, 2017, the Social and Economic Research and Analyses Department of the Economic Policy Department of the Office of the City of Gdańsk in cooperation with the Municipal Transport Authority in Gdańsk carried out a questionnaire as part of the aforementioned activities.

The respondents who use the MTA services regularly, at least once a month, specified the lack of a car as the main reason for using public transport (46% of the responses). Another reason, the proximity of stops, received twice less respondents' indications (24%).

***People who regularly use public transport in Gdańsk would be encouraged to use it more frequently by: higher frequency of running (49%) and punctuality of public transport vehicles (45%). People who did not use public transport as the main incentive factors indicated mainly: higher frequency of running (43%) and more direct connections (37%).***

In the research the respondents, regular passengers of public transport in Gdańsk, had the opportunity to assess bus and tram transport in terms of punctuality, adjusting the frequency of running to their needs, travelling time, filling, feeling of safety during a day and night, kindness of drivers, heating/air conditioning and facilities for disabled people, elderly or young children.

The respondents made the assessment on a five-point scale, where 1 - definitely bad, and 5 - definitely good.<sup>10</sup>

As part of work on the Plan, on June 12, 2017, workshops on public transport took place, in which the residents of Gdańsk participat-



*Source: Active Mobility Department of the OCG*

ed. During the workshop work, the residents shared their experiences and opinions about the public transport in the city, answering questions about infrastructural and organizational solutions that could streamline or improve this aspect of mobility in Gdańsk.

### **Travelling time and punctuality**

One of the most frequently appearing postulates of the residents and the highest rated in group work was the privilege of public transport in the city towards individual transport. The proposals for achieving this purpose were based on the idea of introducing the so-called „green wave” for buses and trams adjusting the priority of traffic lights for public transport at the expense of road transport. As part of this postulate, the idea of creating a „fast tram or bus” line was invoked.

It was suggested to move the stops or liquidate some of them on the express lines. The need to create bus lanes in the city was indicated to achieve this purpose.

The problem of punctuality and travelling time was also discussed, including: the need

<sup>10</sup> *Assessment of public transport in Gdańsk in 2017*





to increase the frequency of courses, as well as to improve the coordination of the train distribution of the Pomeranian Metropolitan Railway (PKM) with the arrivals and departures of aircraft.

### Integration of the public transport

The idea, which was highly assessed by the participants of the workshops, involved the temporary tariff integration of various modes of transport, as well as its intermodality. It was proposed that different operators should closely cooperate not only at the city and metropolitan level, but even in the wider regional context. In the opinion of the participants, intermodality would allow the residents to move quickly through various means of transport (e.g. tram, PKM, SKM, bus) under one tariff in a highly coordinated manner, thus ensuring high quality of transport and speed of travelling.

### Quality of service in the public transport

As part of the discussion on the quality of the public transport service, the residents raised many topics regarding the quality of rolling stock and accompanying infrastructure as well as detailed solutions. An important postulate in the context of activities to improve the quality of rolling stock turned out to be the introduction of electric buses in Gdańsk. The related ideas concerned replacing the old rolling stock with low-floor vehicles as well as reducing the failure rate of vehicles. It was pointed out that trams failures on the main lines paralyze the movement of all public transport during peak hours. Furthermore, the participants draw attention to detailed facilities to increase the attractiveness and accessibility of the public transport in the city. The items such as air-conditioning, the possibility of transporting bicycles, USB sockets, and effective protection of travellers against bad weather conditions at bus shelters were

mentioned. There was also a postulate to integrate tracks and bus lanes with bicycle routes.

### Ticket price

During the discussions of the workshop participants, the attention was paid to the issue of ticket prices and tariff unification. The last postulate appeared both in the aspect of ticket prices as well as the integration of various public transport means described above. However, in the context of tickets, the need was pointed not only to introduce a „joint ticket” and flexible ticket tariffs encouraging the use of this type of transport, but also modern payment methods.

### Investments in the public transport and its availability

The workshop participants also shared opinions on new investments and improved access to the public transport infrastructure. In this category, there were many proposals for solutions and improvements. Attention is paid to the accompanying infrastructure: the quality of pavements leading to stops, the need to create ground passages, adapt the traffic lights to pedestrians, regularly remove snow (in particular stairs in tunnels) and improve the lighting of stops and pavements





leading to them. Many of these postulates were identical with the ideas reported during the pedestrian workshops. Indeed, they complement the improvement of the quality of walking.

Speaking about the need for new investments, the aforementioned ideas for the construction of separate tracks and bus lanes were replicated. It was also postulated to launch direct bus lines connecting districts from the outskirts of the city with developing work centres in Oliwa and Nowy Port. In addition, the residents stressed the need to set up more stops operating based on „on-demand” mode. It was pointed out that the investments that could improve the public transport are: interchange junctions synchronizing the most popular tram lines and enabling the residents to transfer directly between trams/buses.

## Bicycle traffic

Gdańsk gained the title of the cycling capital of Poland, which results from its many-year, often difficult, cooperation with the city authorities, bicycle activists and residents, for whom in many cases the bicycle has become a natural way of moving around the city.

The first important stage in the development of bicycle traffic in Gdańsk was the implementation of the Gdańsk Bicycle Investment and Promotion Project in 2001. It was preceded by the adoption of the Project Standards for Bicycle Infrastructure and the adoption of a long-term cycling project developed on the initiative of non-governmental organizations, with the Civic Ecological League as the leader, by the City Council in Gdańsk, in the 1990s. The continuation of the infrastructure activities was the implementation of the project:

„Development of Cycling Transport of the Tri-City Agglomeration in the years 2007- 2013” under which 26 bicycle roads with a total length of 34 km were constructed or modernized in Gdańsk, 14 bicycle integration nodes and 12 bicycle parking lots were created.

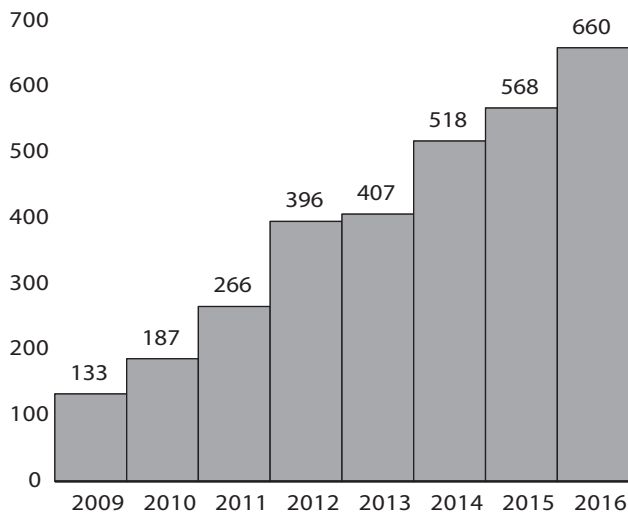
In 2010, the City of Gdańsk was audited in terms of the bicycle policy according to the BYPAD methodology based on the concept of quality management systems. During the audit, the representatives of user groups, officials and politicians assessed the previous activities and developed the priority directions of the development of the city cycling policy. The BYPAD certificate was person-

**Travels between cities, districts, communes are serviced largely by the railway subsystem (Rapid Urban Railway, Regional Transport, Pomeranian Metropolitan Railway), which transports approximately 10% of the total number of public transport passengers on a metropolitan scale (approximately 30% passenger kilometers).**

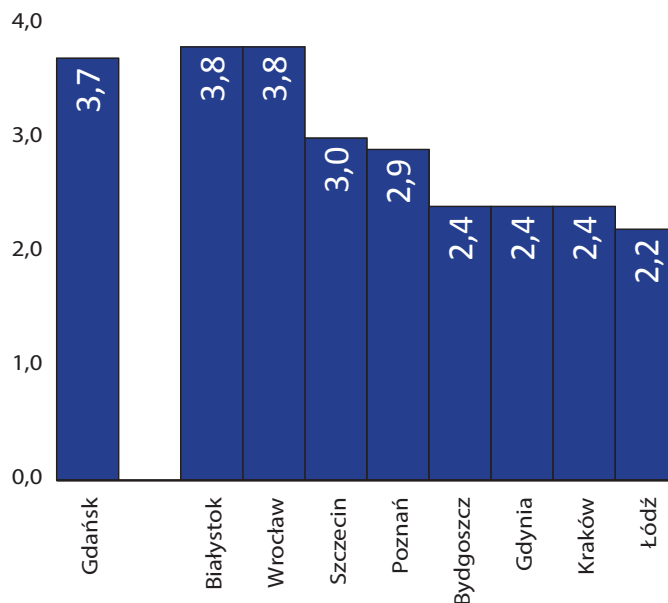
**The railway transport is an important element of the Gdańsk transport system. Due to the area of railway network operation, there is a need to identify common development purposes of railways for the metropolitan area. The Sustainable Mobility Plan for the metropolitan area will clarify the purposes and define further directions of development.**



Total length of bicycle routes (cycle paths, pedestrian and bicycle routes and streets friendly to cyclists) [in km]



Length of bicycle paths per 10,000 residents (in km) in 2016.



*BICYCLES - in the years 2009-2016*

Source: The Central Statistical Office, the Local Data Bank.

ally collected by the President of the City of Gdańsk, Paweł Adamowicz, at the Velo-City Global Congress in Copenhagen in June 2010. The audit allowed to order many formal and organizational issues concerning the bicycle traffic and its strategic place in the city development policy. The BYPAD audit was an important milestone - it introduced elements of quality management and customer orientation to the Gdańsk cycling policy. The official documents of the city included the term active mobility understood as all forms of non-motorized movement, i.e. on bicycles, rollers, pushchairs, on foot etc. and related activities aimed at adjusting the space for all traffic users. The audit findings allowed to re-adjust the bicycle infrastructure: the role of traffic calming in subsequent city streets was increased in relation to focusing attention to previous creation of dedicated bicycle roads at the expense of pavement widths.



*Mikael Colville-Andersen during the presentation at the 8th Active Mobility Congress in Gdańsk  
Mobility Department of the OCG*

The formal basis for actions for the development of bicycle traffic are strategic and operational documents developed with the participation of the residents and adopted



by resolutions of the City Council of Gdańsk or introduced by the President of the City of Gdańsk.

The Cycling Routes System for Gdańsk (STeR) is a planning document in which the development of a network of bicycle routes and parking lots, interconnections, zones of calm traffic is presented. The document includes, inter alia, legal obligation of investors to construct facilities to park bicycles at each new investment. The rules for the organization of bicycle traffic, technical standards for bicycle infrastructure and indicators and guidelines for bicycle parking were introduced by regulation of the Mayor of the City of Gdańsk regarding technical standards and principles of planning, designing and organizing bicycle traffic on public and internal roads that are in permanent management of the Gdańsk Road and Greenery Administration and the introduction of indicators and guidelines for bicycle parking lots.

### Coordination

The person responsible for coordinating the Gdańsk cycling policy is the Representative of the Mayor of the City of Gdańsk for Transport by Bicycle (since 2009 this function has been served by Remigiusz Kitliński). The rep-



Source: Active Mobility Department of the OCG

resentative of the Mayor is at the same time the head of the Active Mobility Department - an organizational unit in the structure of the Office of the City of Gdańsk responsible, inter alia, for the preparation of campaigns and workshops promoting the use of bicycles in daily travelling, issuing opinions on traffic organization projects, conducting analytical work, coordinating international cooperation and participation in projects and cooperation networks regarding active mobility.

### Bicycle linear and point infrastructure

In Gdańsk, the assumption was made that the purpose of the bicycle policy is not so much to construct roads for bicycles as to increase cycling traffic and increase the relative importance of travels by bicycles in the overall structure of travels in the city. Therefore, wherever it is justified and safe, existing road infrastructure is adapted to cycling. The official documents include the concept of a bicycle route, which includes not only separate roads for bicycles, but also lanes in the roadway, streets with calm traffic and the zone of residence, where, as a rule, there are no separate bicycle routes and where, of course, there is no need to segregate the space for various traffic participants.



Source: Active Mobility Department of the OCG



<b>Total length of the bicycle routes network in Gdansk *</b>	<b>685,6 km</b>
dedicated bicycle routes	119,5 km
pedestrian-bicycle parts with priority of pedestrians	17,2 km
pavements with bicycle traffic permitted (cyclist is not obliged to use it)	30,5 km
bicycle lanes on the road	7,3 km
bus and bicycle lanes	0,7 km
pedestrian and road routes (roads without pavement and roadside, with limited traffic of motor vehicles)	12,8 km
streets of calm traffic, with a maximum allowed speed not exceeding 30 km/h (a percentage of the total length of public roads)	497,7 km (62,1 %)

*Elements and length of the bicycle routes network in Gdańsk*

*\* As of April 2018*

The consequence of changing the transport planning paradigm was the pioneering project „Gdańsk Cycling Downtown” implemented on a national scale. As part of the project in the Main and Old Town area, on all one-way streets, bicycle traffic was allowed in both directions (one year before the amendment of the Road Traffic Act), simultaneously limiting the maximum speed of vehicles to 30 km/h on all streets of the historic downtown of Gdańsk. In addition, the right-of-way system was implemented, which requires greater vigilance of drivers and reduces „by heart”

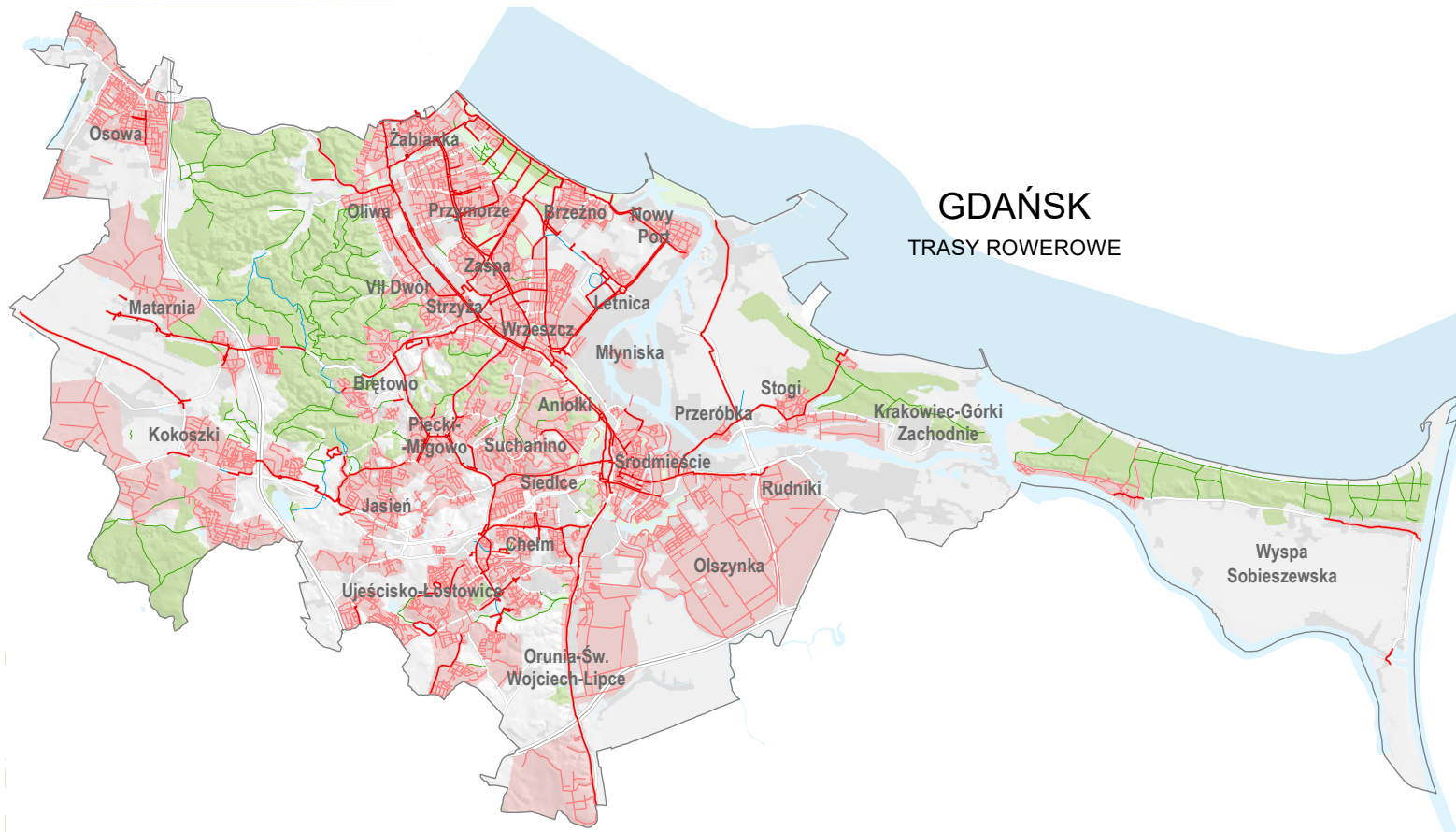
driving incidents. Initially, the project aroused extreme emotions, from delight over proven, low-cost solutions improving transport availability and safety of cyclists and pedestrians to concerns about the increase in accidents and fatal victims. However, it turned out that the implemented solutions fully meet their role. The urban services received many requests from the district councils and the residents regarding the introduction of similar solutions

in other parts of the city. Currently, 62% of the Gdańsk road system is covered by the Pace 30 zone.

When creating infrastructure for bicycle traffic in Gdańsk, bike parking facilities are not forgotten. In recent years, nearly 5,000 U-shaped bicycle stands have been installed at the in-



Source: Active Mobility Department of the OCG



*Gdańsk cycling map*

Source: [www.roverowygdansk.pl](http://www.roverowygdansk.pl)

tegration transport nodes, usable facilities and in all primary and secondary schools in Gdańsk. The need to create safe and functional parking spaces for bicycles was noticed by office space operators. In new office complexes, car parking lots and changing rooms for cyclists are almost a standard. It is also worth mentioning such items as landing for cyclists located at intersections with high cycling traffic and self-service bicycle repair stations.

### **Bicycle and Gdańsk public transport**

The linear, polycentric spatial and functional layout of the Tri-City agglomeration forces many users to combine cycling travels with the public transport. The transport of bicycles by the Rapid Urban Railway, the main mean of public transport in the Tri-City, has

been free of charge for many years, provided that you have a valid ticket. Bicycles can be transported in specially marked, usually extreme compartments of electric traction units. Due to the very good success among passengers and the limited number of seats, the transport of bicycles can be difficult in diesel trains running on the Pomeranian Metropolitan Railway line. The PUR electrification project and the possibility of introducing electric rolling stock better adapted to transporting bicycles on decks are hope for improvement.

On the bus and tram lines of the Municipal Transport Authority in Gdańsk, the transport of bicycles is not subject to an additional fee. The passenger transports a bicycle at his/her own risk and is obliged to secure it in a way that ensures safety of traffic and other



passengers. In 2017, the principle that the driver of a vehicle decides about the possibility of transporting a bicycle was waived. At present, when getting on, priority is given to people with limited mobility and then to passengers with bicycles. The remaining problem involves the possibility of transporting bicycles on trams and buses during peak hours. It can be solved by the solutions used in cities in the USA and Canada, i.e. assembled folding trunks to transport bicycles on the front face of city buses. However, this requires a decision of the central level (Minister of Infrastructure).

### Metropolitan Bicycle System

The public transport system will be the public bicycle system covering the Tri-City agglomeration and neighbouring municipalities. As part of the 4th generation system<sup>11</sup>, approximately 368 stations will be constructed in Gdańsk for a minimum of 2160 bicycles, at least 10% of which will be provided with electrical assistance. It is planned to fully implement the system in 2019 and it will ultimately cover the area from Tczew to Wejherowo.

### Monitoring, promotion, education

At present, in 28 locations throughout Gdańsk, the measurements of bicycle traffic are carried out - counting bicycle passages using induction loops immersed in the surface of the bicycle route. Two locations have displays with the presentation of the number of bicycles on the current day and from the beginning of the year. The data is available on the official website of the city dedicated to cycling [rowerowygdansk.pl](http://rowerowygdansk.pl). The Cycling Gdańsk profile is also run on a current basis. Getting around Gdańsk by bicycle is facilitat-

<sup>11</sup> Thanks to the advanced electronics built in the vehicle, not in the docking station, usual stands are enough; the user will follow the bike through the smartphone application, and having finished cycling, he/she will be able to leave it anywhere.

ed by the cycling map published since 2007, on which all elements of the cycling routes network in Gdańsk are visible.

The City of Gdańsk is the originator and organizer of the Bicycle May campaign - the largest campaign in Poland promoting a healthy lifestyle and sustainable mobility among pre-school children, primary school students and a group of teachers. Bicycle May, through fun combined with elements of competition, popularizes a bicycle as a mean of transport to school, teaches good and healthy habits that persist even after the end of the campaign. In addition to participating



*Bicycle counter - Gdańsk Wrzeszcz  
Source: Active Mobility Department of  
the OCG*

in the Cycling May campaign, students from primary schools in Gdańsk holding a cycling card have the opportunity to improve their knowledge and skills as part of cycling lessons in the city traffic.

Adults from Gdańsk won three times in the international cycling competition of cities - the European Cycling Challenge, which consisted of riding a bicycle in May and recording the travelled routes using the application. The number of kilometres covered by each partic-



*Jerzy Pinkas/www.gdansk.pl*

ipant was added up for individual cities and local teams. The purpose of the campaign was to popularize a bike as a mean of transport in everyday commuting.

The Active Mobility Congress has been organized in Gdańsk since 2010, which is one of the most important Central European events dedicated to active mobility. During the eight editions of the Congress, many outstanding, world-class speakers participated, including Jan Gehl or Mikael Colville Andersen. The Congress is a meeting place for representatives of local governments, business, non-governmental organizations, residents and all those interested in the subject of mobility. Many congressional speeches inspired to make decisions increasing the importance of cycling and active mobility.

As part of international cooperation, Gdańsk participates in many projects dedicated to is-

sues of active mobility, public transport and improvement of the quality of public space. Study visits, workshops and seminars, pilot investments, promotional campaigns implemented as part of projects not only promote modern innovative solutions but also contribute to increase the level of knowledge and competence of all interested people.

***In a city inhabited by over 460,000 people, it is well-known how important it is to create a resident-friendly space. That is why cycling and walking are promoted, creating a friendly infrastructure for these activities. The transport and spatial policy is integrated to create a "short distances city". The share of cycling in travelling in Gdansk increased from 1% in 1999 to nearly 6% in 2016 - however, the expectations of the residents are much higher.***





## Movement of passenger cars

In accordance with the principle of sustainable transport development, it is assumed that the role of a car in the city will be gradually reduced (mainly in the city centre and historical districts). The main purpose of the taken activities is to limit the space used for parking, reduce congestion of streets and reduce the emission of air pollution and noise, which negatively impact on the quality of life in Gdańsk.

All means of transport influence each other, however, the individual movement of passenger cars significantly impact on all other areas analysed as part of the works on the Plan - pedestrian and bicycle traffic, quality of public spaces, parking, public transport and mobility management.

The costs of the society functioning based on passenger cars are high and they are as follows:

- cars are responsible for 65% of pollution in the EU (the vast majority of pollution in cities and related health damage),
- construction costs for roads, bridges, parking lots, gas stations and garages,
- maintenance costs of traffic lights and traffic control systems,
- costs associated with covering environmental losses caused by pollution,
- renovation costs of buildings and monuments destroyed by smog,
- maintenance costs related to transport safety,
- cost of noise and fight against it - by construction of sound barriers,
- costs of cars scrapping,
- maintenance costs of emergency services,



*Grzegorz Mehring/www.gdansk.pl*

- traffic congestion (congestion costs are estimated at over 1% of the GDP),
- costs of a sedentary lifestyle caused by the phenomenon of suburbanisation: spatial sprawl of housing that is difficult to handle by public transport,
- treatment of accident victims and other economic costs (annual financial losses due to road accidents amount to approximately 7% of the GDP)

***According to the Lanckoronski Foundation data, taking into account all costs of using a car, its user covers only 25% of the actual costs.***

The activities limiting the use of cars in everyday travelling will ultimately help to reduce high costs of transport and costs of a city in which car transport plays an excessive role (costs of construction and maintaining extensive urban infrastructure networks - energy, sewage, water supply, etc.).

***According to the assumptions of this document, the transport system will be adapted to the functions and character of individual areas, taking into account the leading role of pedestrian, bicycle and public transport.***



In order to achieve the expected result, the activities will be taken to stop the growth and ultimately reduce the number of cars (reduction of the motorization index) and determine the new role of a car in the city and use it more effectively. This will reduce social costs and nuisance resulting from the use of cars.

In most Polish cities, the interest in owning a car is not diminishing and motoring rates are increasing - this also applies to Gdańsk. In recent years, the share of journeys made by car in the general structure of daily travels carried out by the residents of Gdańsk has also increased (see the data from comprehensive traffic research: KBR 1998, 2008 and GBR 2016).

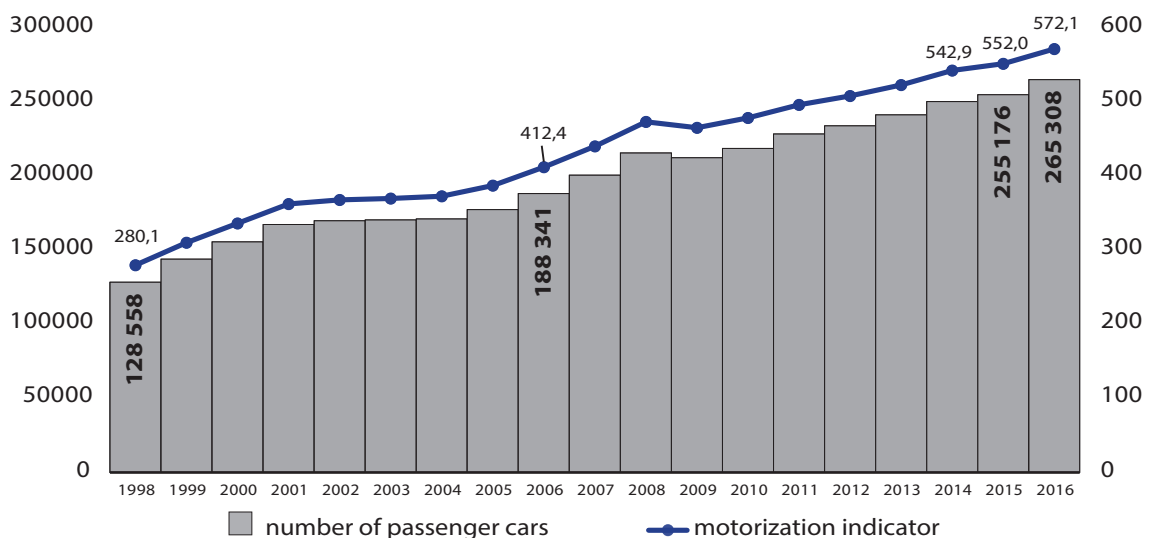
There is a need to increase the awareness of the residents about the dangers of car traffic, high costs of owning and driving a car, and possible savings by using alternative forms of travelling. Necessary activities include education, promotion, instruments encouraging to resign from individual car travels (e.g. parking fees, limited availability zones, etc.).

**Changes in traffic control at intersections are necessary. Changes to traffic lights should take into account primarily the priorities for the public transport, as well as the needs related to pedestrian and bicycle traffic.**

The Plan assumes continuation of the activities related to calm the traffic (described in the section on road safety), including street transformation taking into account changes in traffic organization and parking rules, securing the needs of non-motorized road users (by prioritizing pedestrian and bicycle traffic and public transport), temporary or permanent closing of selected areas of the city for car traffic.

## Parking

The transport policy should be focused on supporting the process of sustainable transport development. By definition, it is to minimize the number of journeys made by cars while promoting and supporting the development of collective, cycling and combined transport (e.g. bike + rail) in the local and



*Motorization indicator in Gdańsk in years 1998-2016*

*Source: Socio-economic trends of Gdańsk*



Grzegorz Mehring/www.gdansk.pl

regional sense. The parking policy should be an integral part of the transport policy of each city. The continuous growth of car traffic intensifies parking problems not only in the city centre, but also in the zone between the central and suburban part, as well as in districts composed of multi-storey residential buildings.

The effective parking policy should ensure the efficient functioning of the entities and people while minimizing the space devoted to parking and minimizing nuisance caused by parking vehicles.

Due to the scale of the parking issue, as part of the work on the Sustainable Urban Mobility Plan, a document entitled *Sustainable Urban Mobility Plan for Gdańsk - Parking was developed*. The above document contains an analysis of national and local conditions, a cause and effect analysis, a detailed diagnosis of the current situation, a thesis, vision, purposes and formulates activities in the field of parking management in Gdańsk.

The basic problems defined there are as follows:

**0.1** In Gdansk, parking is managed in paid parking zones, while the resources (developed places) are not managed outside the zone. Lack of knowledge about the number, location, method of use and rotation prevents efficient decision making.

**0.2** National law regulates parking elements that limit the management of paid parking zones. The imposed maximum amount of fees does not allow the desired regulations in places with special functions where there is a huge demand for parking with limited space.

**0.3** In the city area, ineffective supervision over compliance with traffic law in the context of parking is noticed. This results in parking in green areas, pavements, bicycle roads, in the immediate vicinity of pedestrian crossings and intersections. Such a situation reduces the level of road traffic safety, limits the free functioning of disabled people, pedestrians, cyclists, and also causes degrada-



tion of green areas and the quality of public spaces.

**O.4** People often park in spaces with the limited necessary space for pedestrians and cyclists. Very often, 1.5 m left according to the regulations is not a sufficient width for large pedestrian flows. The functioning of different users should be balanced in order to enable the functioning of all groups moving in urban space. In the event of a conflict of function in a limited space, the balance should be in favour of pedestrians and cyclists.

**O.5** As part of the TRISTAR system, variable message boards display information about free parking spaces only for selected parking lots, such as large shopping malls or stadium surroundings. The website of the TRISTAR system informs about the status of free parking spaces for nine parking lots. However, there is no information regarding the filling of paid and free public parking spaces. The lack of data in the area of important institutions generating large numbers of work places: offices, universities, hospitals, office complexes, schools, parking spaces

in the coastal zone (in the summer season), etc., is particularly important.

The vision of creating, implementing, monitoring and assessing the parking policy is inevitably combined with parking management in the city. The management can be implemented only when the size of the resources and their characteristics are known. In the case of parking, data on the number of parking spaces, their location, density, use, rotation and motivation carried out by parking people is necessary. Such knowledge and the use of the aforementioned theses allow to adapt the parking policy depending on the characteristics of the urban space, available space, number of destinations, in the vicinity, accessibility by public transport, distance from the city centre and other factors. Depending on the priorities, the number of places is limited or increased. Depending on the need to enforce rotation or to protect parking spaces for the residents, as well as in the case of the transport policy assuming a reduction in the use of cars in local journeys for other types of transport, paid parking zones are introduced.

P1	LACK OF A SINGLE PARKING POLICY IN THE ENTIRE CITY SCALE
P2	LIMITATIONS IN PARKING MANAGEMENT WITH REGARD TO NATIONAL PROVISIONS
P4	UNSUCCESSIVE SUPERVISION TO OBSERVE TRAFFIC LAW IN THE CONTEXT OF PARKING
P5	PARKING LIMITS INFRASTRUCTURE FOR PEDESTRIAN AND BICYCLES TRAFFIC AND GREEN AREAS
P6	INSUFFICIENT INFORMATION ON PARKING, AVAILABILITY AND FORM OF FEES

## Purposes

**PURPOSE 1:** CREATION OF A PARKING MANAGEMENT SYSTEM IN THE WHOLE CITY

**PURPOSE 2:** RELEASE OF PUBLIC SPACES FROM PARKED VEHICLES

**PURPOSE 3:** SECURING BASIC PARKING NEEDS OF USERS

**PURPOSE 4:** EFFICIENT USE OF PARKING AREAS



*Wojtek Jakubowski/www.gdansk.pl*

In the external areas in the vicinity of transport integration nodes, in order to eliminate long inner-city journeys by means of individual transport, large parking lots are implemented in the Park&Ride, Kiss&Ride and Bike&Ride systems. The parking policy negatively and

positively impact on various social groups. However, it must be accepted and systematically implemented. It is important not to implement the supply of parking lots at the expense of cultural, aesthetic elements or lack of space for non-motorized users.

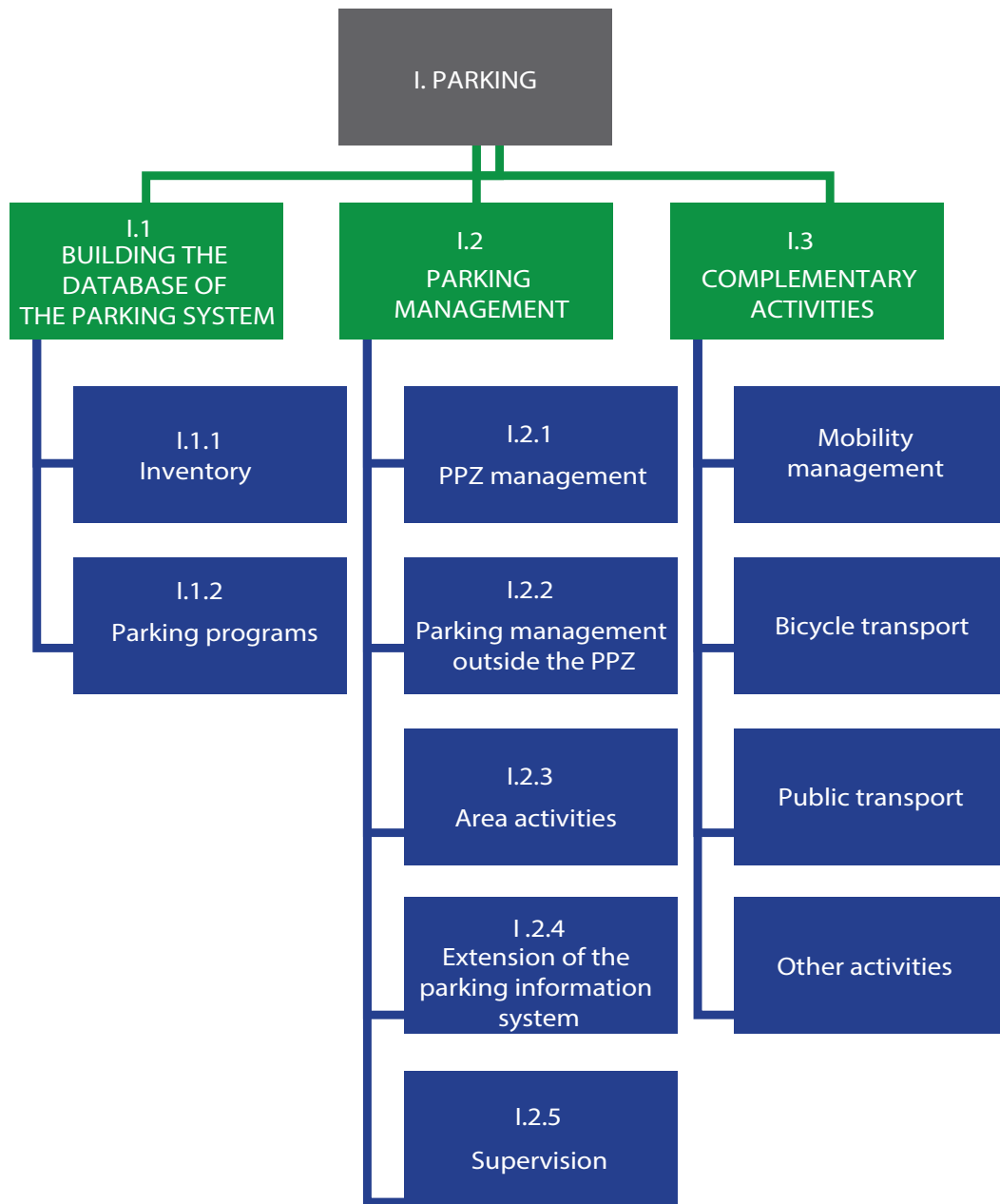


Figure: Parking – activities chart

Source: own development – K. Orcholska / T. Mackun

## Activities

In addition, during 3 consecutive years (starting from mid-2018), the city will continue work on the parking policy as part of the Park4SUMP project from the Horizon 2020 program. The main purpose of Park4SUMP is to balance transport in urban areas by strategically integrating innovative

solutions in the parking management with the transport policy set out in this Sustainable Urban Mobility Plan. The parking management frees public space, supports local companies, limits circulation to find a place, generates income, increases safety, supports urban planning and can make the city more attractive. The assumption of the project is to learn from the most experienced in



the field of Current situation and development prospects parking policy of European cities. The purpose is also to increase awareness of the residents and people managing the city and to stimulate further innovations in the field of parking solutions. The possibilities of optimizing the use of existing infrastructure will also be examined. In addition, this should result in a modal shift to more efficient means of transport, cycling and public transport.

## Mobility management

The mobility management is a concept promoting sustainable transport and aimed at limiting the individual use of passenger cars by changing attitudes and transport behaviours.

The basis for the mobility management include "soft" means such as marketing, information, communication, education, organization of services and coordination of various partners' activities.

Mostly, such means increase the effectiveness of "hard" means of transport (e.g. construction of new tram lines, bicycle routes, etc.). The mobility management means do not necessarily require large financial investments and can have a high benefit-cost ratio.

The mobility management, as a systemic approach to transport resource management, underlines the following aspects:

- movement of people instead of vehicles,
- needs of customers and travels needs of individual consumers,
- whole travel, not just part of travel performed by one mean of transport,
- improving efficiency, effectiveness and quality of provided tourist services,
- design and promotion of the development oriented towards public transport,
- improved available information about these services.





The mobility management includes, inter alia:

- real-time travel information,
- increasing awareness and promoting sustainable (environmentally friendly) means of transport,
- education and trainings,
- travel plans/mobility plans,
- telecommunications and flexible organization of time, e.g. teleworking, shift work system, reduction of business travel needs, etc.

The mobility management can also be defined as a process of managing a coordinated Community-wide network of transport services covering the operations and infrastructure of many transport service providers in cooperation with others. The process focuses on individual needs using innovations and applying changes in business practices.

The mobility management also means:

- offer of a full range of travel options for a single traveller and availability of various travel options,
- stressing partnership and cooperation,
- application of advanced technologies,
- planning of coordination covering the whole community (employees and customers of the company),
- support from the business community (corporate social responsibility),
- public transport for long-distance travel.

The transport industry uses advanced technology to facilitate transport coordination, including the mobility management. The available range of technologies and the possibility of adapting technology to individual transport projects allow, in most situations, to develop applications of the Intelligent Transport System (ITS). The technologies that

are particularly beneficial in coordinating transport include:

- information via websites, automated systems telephone, audible loudspeakers, group kiosks and public transport stops, and transport interchanges with automatic information (advanced travel information systems inform travellers in electronic form, providing, for example, information on planned travel times and real-time information)
- electronic ticket fees - this technology allows to pay with a smart card, a magnetic stripe card and the use of a mobile phone
- automatic vehicle locator (AVL) - Transport service providers can monitor and track vehicles in real time using a global positioning system (GPS) - thanks to which providers have more control over the implementation of operational changes in real time and improve customer service
- mobile data terminals (MDT) - MDT (or mobile MDC data computers) are small on-board computers that provide an interface that improves communication and data reporting (transport organizers, operators and customers)
- co-ordination and integration software - this technology includes applications coordinating or combining software and other technology between multiple agencies and/or multimodal transit agencies

The mobility management can use all of these advanced technologies to implement the city transport strategies or applications, taking into account a wide range of activities included in the scope of the mobility management<sup>12</sup>.

<sup>12</sup> [https://assets.aarp.org/rgcenter/ppi/liv-com/roundtable\\_091013\\_mobility.pdf](https://assets.aarp.org/rgcenter/ppi/liv-com/roundtable_091013_mobility.pdf)





Grzegorz Mehring/www.gdansk.pl

## Travel plans/Mobility plans

Travel plans are one of the most effective mobility management tools. Specifying a travel plan is often replaced by the term “mobility plan” or “green travel plan”, it is a definition adopted in the United Kingdom (Green Travel Plan). By reducing the number of travels made by car, a travel plan can improve health and well-being of all road users. Each employee travel plan is different, but a well-prepared plan is characterized by further development.

It is a package of activities prepared for a company, school or other organization to organize and encourage safe, healthy and sustainable travel. It includes activities promoting walking, cycling, public transport, ride-sharing, flexible working hours and more.

A balanced travel plan consists of a package of means that, if implemented, support more sustainable travel habits among employees, customers and guests. These plans focus on

employee travels to/from work, but can also apply to business travels, fleet management and freight transport.

### Benefits resulting from the implementation of the Travel Plan include:

- reduction of costs related to parking places (due to reduced demand)
- thanks to the smaller demand for parking spaces, their availability is increased for those who really need them (including customers)
- clear improvement in health and well-being of employees who use travel forms alternative to a car (a significant reduction in the number of employees' absence due to illness)
- reduction of carbon dioxide emissions and negative impact on the environment, and thus - improvement of the company's image



A travel plan can significantly contribute to achieve the company's purposes, e.g. reducing carbon emissions in accordance with ISO 14001 in the context of environmental protection or other purposes related to corporate social responsibility.

## Transport of goods

Sustainable urban logistics is important for fast-growing cities around the world. Many cities have developed or are in the process of developing strategies for more efficient and safe movement of people in the urban environment. Much less attention was paid to the importance of delivering goods. This is a neglected issue and infrastructure is often not adapted to effective delivery. Crowded streets, no parking and poor access to buildings are permanent elements of urban life. At the same time, the cities aim at improving the quality of life, reduce air pollution and reduce the negative impact of transport on health and the environment. However, the functioning of the city is deeply connected with trade and access to goods and services. The city logistics also includes storage of goods and stock management, waste management, office and home removal, and home delivery services. In order to significantly improve the situation in the field of delivering goods, it is important to effectively manage the transport of goods using appropriate tools.

The negative effects of the transport of goods (social and environmental) are often discussed but the issues of suppliers' problems are rarely included in the public discussions, e.g.:

- problems related to traffic flow/congestion caused by traffic, insufficient road infrastructure, etc.
- problems related to transport policy, including neglecting freight transport issues in urban planning and traffic

management, and other issues such as legislation

- problems with parking and loading/unloading, including regulations, lack of space for unloading and service problems

The largest barrier for efficient and sustainable urban logistics (managing the transport of goods) involves insufficient cooperation between sectors, insufficient infrastructure and lack of transparent rules for the operation of urban logistics.

It is important to distinguish between two groups that are able to make changes in the transport of goods in the city. These are local authorities that shape the management system of the transport of goods within a given city and transport companies that implement initiatives to reduce the impact of their freight transport on lives of the residents and can derive some internal benefits resulting from this changed behaviour. These benefits can be the internal economic benefits of acting in a more environmentally friendly way or society (by improving economic efficiency or by increasing market share as a result of achieving a competitive advantage). The initiatives implemented by the companies include increasing the vehicle load factor by consolidating urban freight transport, ensuring delivery before or after regular delivery hours, implementing IT for communication or planning, improving fuel efficiency of vehicles and improving the collection and delivery system. Some of these initiatives concern technology, some deal with the reorganization of the freight transport companies, and some include changes in deliveries chain organization.<sup>13</sup>

<sup>13</sup> <https://www.itba.edu.ar/intranet/ols/wp-content/uploads/sites/4/2016/10/Green-Logistics.pdf#page=295>



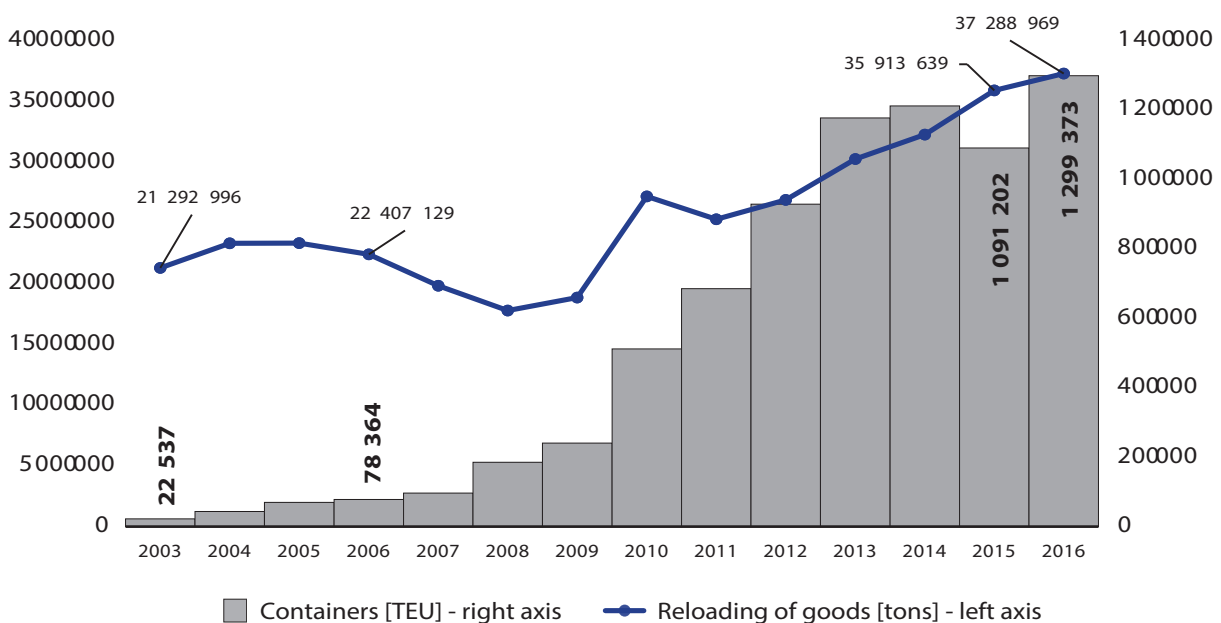
The Sustainable Mobility Plan for Gdańsk assumes that the City will initiate regular co-operation between entities involved in the functioning of the urban deliveries system and develop a general pattern of deliveries needs due to the type of activity (by identifying the characteristics of goods delivery in a given area, duration, place of delivery, type vehicle, occurrence of problems), defining areas with constraints in terms of volume and frequency of deliveries, determining the actions needed, etc.

Due to the scale of the city and the size of the goods delivery sector, the development of guidelines to manage the transport of goods as part of the work on the Sustainable Urban Mobility Plan for Gdańsk turned out to be insufficient. Therefore, **in order to significantly improve the situation in the field of deliveries in Gdańsk, the Sustainable Urban Logistics Plan for Gdańsk (SULP) is planned.**

Key activities will include, inter alia:

- establishment of the Team for the Development of the Sustainable Urban Logistics Plan (representatives of municipal units, experts and stakeholders - suppliers of goods, logistics centres, port, etc.)
- regular meetings of the Team, under which principles will be developed to manage the transport of goods in Gdańsk (the works period is approximately 2 years)
- development of the Sustainable Urban Logistics Plan constituting the basis of the transport management system in Gdańsk

The basic purpose of the Development will be to create an efficient and sustainable distribution system for goods in the city and to reduce the negative impact of goods transport on lives of the residents of Gdańsk.



Transshipment of goods and containers at the seaport  
 Source: Socio-economic trends of Gdańsk



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# Possible scenarios of activities



The Urban Transport Roadmaps project made available a simplified on-line tool that allowed the development of general scenarios for sustainable urban mobility.

Three variants of possible actions were assumed:

### VARIANT 0 (pessimistic)

A pessimistic scenario of the city, extending the road network, withdraws from the means to balance the mobility forms or implements them to a minimum extent. **As a result, the share of individual car traffic in total traffic increases at the expense of the share of other forms of travel.**

### VARIANT 1 (neutral)

A neutral scenario describes the state when, along with the development of the transport system, means for the sustainable mobility are implemented at least to the extent that it can stop the unfavourable tendency of the decrease in the use of public transport for the increase of individual use of a passenger car. At the same time, the carried out activities should result in increased use of a bicycle as a mean of transport. In line with the Urban Transport Roadmaps project tool to prepare scenarios for the Sustainable Urban Mobility projects, the necessary scope for action for Scenario 1 should include:

#### Demand management:

- Information on the sustainable transport (promotional and information campaigns on the sustainable transport aimed at changing the behaviour of travellers and persuading them towards new sustainable mobility)
- Bike rental (public bicycle service provides short-term rental of bikes at self-service stations: everyone can rent a bike in one place and give it to another)



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- Car-sharing (the system provides access to a car without having to be the owner: it is a car rental model for short periods of time)

#### Investments in infrastructure:

- Bus/tram network (expansion of services - new lines and/or higher frequency of services, as well as infrastructure improvement, etc.)
- Walking paths/cycling networks (improving the quality and/or comfort of pedestrians and cyclists by improving the infrastructure, e.g. extending the cycle route network)



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- “Park&Ride” and “Bike&Ride” (parking lots located in strategic nodes of the public transport network allowing the residents, visitors and commuters to park their vehicles and further travel to the city centre by the public transport)

#### Financial and price incentives:

- Parking regulations/prices (the parking fees policy means that motorized customers pay directly for the use of a parking lot; it takes into account low-emission parking zones, where the parking fee is discounted/abolished for innovative vehicles).

#### Control and traffic management

- Remedies making the traffic flow (remedies to calm traffic consist of various elements and strategies to reduce speed

**Taking the aforementioned activities should result in at least halting the unfavourable tendency of the decrease in the use of public transport or increase in the individual use of a passenger car and the increase in the use of a bicycle as a mean of transport. As shown in the chapter describing the current situation, some of the activities indicated above are implemented in Gdańsk today - as part of projects that have been in existence for many years or are in the early stages.**

#### VARIANT 2 (optimistic)

According to the Urban Transport Roadmaps project tool, the optimistic scenario can be implemented if the development of the transport system, numerous and wide-ranging activities are carried out in the area of:

#### Demand management:

- Spatial development (defines the requirements and possibilities for new housing districts, which should ensure a mix of functions and good accessibility, in order to avoid uncontrolled development and reduce the need of the residents to overcome long distances to reach workplaces, shops, services, etc.)
- Information on the sustainable transport (promotional and information campaigns on the sustainable transport aimed at changing the behaviour of travellers and persuading them towards new sustainable mobility)
- Bike rental (public bicycle service provides short-term rental of bikes at self-service stations: everyone can rent a bike in one place and give it to another)
- Car-sharing (the system provides access to a car without having to be the owner: it is a car rental model for short periods of time)
- Plans for deliveries and services (these are detailed plans to unify and reduce the



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and number of vehicles, thereby improving road safety, traffic calming projects can take many forms, ranging from minor changes of individual streets, or a comprehensive redevelopment of the road network in specific areas, i.e. “Zone 30”, to the concept of “common space”).



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number of deliveries and the movement of vehicles transporting goods to the customer premises)

**Ecological fleet:**

- Green energy refuelling - electromobility and alternative fuels (infrastructure supplying green energy consists in providing or promoting refuelling stations, e.g. recharging batteries for electric vehicles, to promote the use of environmentally friendly vehicles and fuels)
- Public ecological fleet [ecological fleet of public transport consists in the gradual exchange of public transport vehicles (mainly bus fleets) for ecological vehicles and used fuels, such as natural gas or electricity]

**Investments in infrastructure:**

- Bus/tram network (expansion of services - new lines and/or higher frequency of services, as well as infrastructure improvement, etc.)
- Walking paths/cycling networks (improving the quality and/or comfort of pedestrians and cyclists by improving the infrastructure, e.g. extending the cycle route network)

- “Park&Ride” and “Bike&Ride” (parking lots located in strategic nodes of the public transport network allowing the residents, visitors and commuters to park their vehicles and further travel to the city centre by the public transport)
- Urban logistics centres (urban deliveries and logistics consolidation centres aim at increasing the efficiency of logistics in the city, by consolidating freight i.e. by increasing the vehicle fill rate, shortening shipment delivery routes and using environmentally friendly vehicles and reducing costs)

**Financial and price incentives:**

- Congestion and emission fees [this option implements a fee for private motor vehicles that must be paid for using an urban area (or part of it) in two ways: the congestion charge applies the “user pays” principle - users pay for the use of limited resources such as roads, the payment is generally not varied among users and the pollutant fee applies the “polluter pays” principle - the more polluting the vehicle is, the higher the toll/entry into the privileged zone of the city is]



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- Parking regulations/prices (the parking fees policy means that motorized customers pay directly for the use of a parking lot; it takes into account low-emission parking zones,
- An integrated ticketing system (integrated ticketing system means that users can travel by multiple means of public transport without having to purchase multiple tickets)

### Control and traffic management

- Regulations for urban trucking (this remedy concerns the determination of rules and regulations regarding time limits for deliveries or restrictions on vehicle weight, size or class of exhaust emissions within the city)
- Priority treatment of the public transport (increasing the commercial speed of public transport vehicles, thus improving the reliability of services and the attractiveness of the public transport for the general society, and above all: separate lanes only for the public transport and priority systems installed at traffic lights to detect a bus or a tram approaching an intersection that ensures green light for vehicles, if possible, when approaching an intersection)



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- Regulations regarding access to important areas of the city (providing access to the current road space available for vehicular traffic or parking users to other means of transport, such as pavements and bicycle routes, this remedy takes into account low emission zones for which regulations define emission standards for vehicles that can operate in a given area)
- Remedies making the traffic flow (remedies to calm traffic consist of various elements and strategies to reduce speed and number of vehicles, thereby improving road safety, traffic calming projects can take many forms, ranging from minor changes of individual streets, or a comprehensive redevelopment of the road network in specific areas, i.e. "Zone 30", to the concept of "common space").

**The use of such a wide range of activities will ultimately result in a change in the trend of the increased car use and the change of this form of travelling to travel using alternative means (bicycle, bus or mixed transport).**

**The city's activities should focus on the implementation of the optimistic variant, namely VARIANT 2.**



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## Consequences of on-demand and automated mobility<sup>14</sup>

The so-called new mobility consists of several interpenetrating elements:

- electromobility and the use of alternative fuels,
- mobility as a service (MaaS), i.e. booking of vehicles or on-demand journeys made available through mobile applications, and
- connected and automated mobility (CAD) with the use of vehicles exchanging information on road safety (BRD) with other vehicles and infrastructure as well as self-steering and without a driver.

Mobility as a service offers, inter alia:

- operators of network transport services (ride-hailing),
- operators of short-term car-sharing services network and
- organizers accompanying the leader of shared travels TNC, car-pooling or ride-sharing)

which thanks to modern technologies became a significant competition for traditionally operating taxi services, public transport as well as an alternative to own car.

Today, average car use amounts to 1.2-1.4 people travelling with one owned car (approximately 25% of the capacity of a 5-passenger car), which is used by 4-5% per day, i.e. approximately 1 hour a day. It means that during 95% per day, a car does not use the roadway intended for it, but it uses one-function (not used for better purposes) and expensive parking space during the time. The one-hour travel mentioned per day is due to the nature of a human, and faster means of transport only increase the daily distance

covered, which had significant spatial effects throughout history.

In the case of on-demand network operators, the number of passengers, i.e. the number of real passengers per car, falls even below one person (e.g. up to 0.6 per vehicle, excluding a driver) and at the same time, a car is used 4-20 times more often, depending on the conditions, compared to an owned car. This means that with fewer cars there will be more kilometres travelled, which can cause



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greater or at least similar clogging of city bottlenecks. The increase in the share of the TNC service vehicles in traffic reduces the traffic capacity and reduces the efficiency of the public transport, which reduces passenger numbers and increases interest in on-demand transport.

On the other hand, exceeding the critical mass of the universal availability of on-demand transport services causes a decrease in interest in having a personal car. It is believed that million private cars from the European metropolis can be replaced by approx. 100,000 on-demand vehicles and by 2030, there will have been 15-30% reduction in the number of private cars. A decrease in the number of personal cars (but not in passenger cars) will cause a decrease in the

<sup>14</sup> this chapter is part of Piotr Smolnicki's PhD thesis on the relationship between modern technologies in mobility and spatial structures of the metropolis



demand for private parking spaces. On the other hand, the increase in the importance of on-demand mobility services will result in the need to designate public parking spaces to ensure the efficiency of these services, and prioritizing their treatment (e.g. discounts at designated places) will result in a decrease in the personal use of parking spaces and further reduction of personal car ownership.

In the case of automated self-steering vehicles, the number of passengers on the move can fall even lower, in comparison with traditional on-demand services. The cost of driver maintenance will cease to be calculated and the cost of maintaining an electric vehicle in motion can decrease, which will contribute to a larger share in empty mileage traffic. The influence of autonomous vehicles depends on, inter alia, the participation of three different solutions in the movement: individual mobility with personal owned cars with the auto-pilot function (evolution of the traditional car), on-demand service vehicles (self-steering robot-taxis) and public transport of the first and last mile (unmanned minibuses). Individual cars with autonomous driving technology will be used by the richer part of the society mainly in the suburbs with no traffic restrictions.

The largest increase in the travelled vehicle kilometres will be observed in densely populated metropolitan areas as a result of the spread of door-in-door mobility services based on autonomous vehicles. Self-steering vehicles can exceed 40% share in selected cities and unmanned on-demand mobility services can offer the users approximately 90% savings compared to owning a car, so people will travel up to 30% more kilometres scattered over more transport means. Public transport based on unmanned minibuses can be seen in poorer densely populated metropolitan areas and as a complement to public transport (the so-called first and last

mile) and to support commuting to important institutions (for children to schools) or on larger campuses (university, business).

In addition, unlike passengers, neither a driver of a traditional on-demand service, let alone a computer, are "travellers". Meanwhile, in the near future autonomous empty mileage (the so-called zombie-cars) can even turn out to be more profitable in the context of parking fees if appropriate legal and organizational solutions do not counteract this. Already today, an important traffic generator in the city (up to 30-40% of traffic) involve cars driven by those looking for a parking space.

However, there can also be threats to shaping and using the space, which are revealed with the spread of on-demand micro-transport services and their operation time. Maintenance-free vehicles extend the distance that users can travel on a daily basis (more and more users can spend more than the "traditional" hour a day on a daily basis), which impacts on the decision to relocate their place of residence - 2% relocation in the short-term scenario and 14% relocation in the long-term scenario are expected. The growing interest in on-demand mobility services increases the interest in housing districts outside pedestrian reach from/to public transport, which in turn means further sprawl (suburbanization, rurbanization or urbanization of the village) and escape from the centre of native residents who can afford it or displaced (deurbanization, gentrification) if the regulations allow it.

On the other hand, thanks to modern on-demand mobility services, the popularity of intermodal transport can increase, e.g. by: (1) offering a bicycle or a car on demand, (2) synchronization and ticket integration with the public transport, as well as (3) discounts supporting intermodal travel (access by train from Pruszcz Gdański takes only 9 minutes to



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Gdańsk Główny and 15 minutes to Wrzeszcz). Such a solution shows also positive spatial effects impacting on the local space administration, e.g. around the station, supporting, through an increased number of users in a given place, the creation of new local services.

On-demand mobility services are also more efficient in the case of sustainable space management, which can then contribute to reducing construction costs by reducing the need for expensive garage halls (in Wrzeszcz, a flat meter in a new four-storey building is more expensive by as much as forty percent as a result of infrastructure two-storey garage hall, not including the cost of purchasing a parking space) and the use of space for more useful functions (e.g. residential, service, recreational) and more efficiently (for a larger number of users, also, but not necessarily on a larger number of storeys). Therefore, the sound management of modern on-demand mobility services is important for sustainable spatial development, including the reduction of investment costs and, consequently,

increased price availability of premises and supporting investments in a part of the city well served by the local and regional rail system.

The provided examples show only a part of a complex problem, which is the impact of the emerging technical and organizational solutions on mobility on the development of spatial structures of the city and its functional background (metropolis). The worst scenario that can be imagined would be the further dominance of private cars equipped with automated driving technologies because drivers could spend in them more time travelling long distances, probably to and from their homes on the outskirts of the city. However, the best solution would be to obtain a transport system and the shape of a city requiring the lowest possible number of vehicles in traffic serving the largest number of travellers necessary to be transported, offering them high quality on-demand connections and high travel comfort.



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# Plan purposes



One of the first steps of the process was to set purposes for the Sustainable Urban Mobility Plan for Gdańsk, which will be effectively and permanently achieved thanks to the activities set out in this document. The objectives of the Plan were developed in cooperation with the residents, representatives of non-governmen-

tal organizations, political and administration bodies and constitute a set of main guidelines that set the framework for the entire process. A number of consultations regarding the future of transport and mobility in the city were carried out. The time horizon for the set purposes is 2030.

## 6 main purposes were specified

### Purpose 1

#### Improved conditions for pedestrian and bicycle traffic

as a result it should translate into a greater number of going on foot and riding by bike

### Purpose 2

#### Increased safety of all road users

as a result, it should translate, inter alia, into reducing the number of road accidents and collisions or increasing the sense of safety of unprotected road users

### Purpose 3

#### Improvement of accessibility to means of transport alternative to a car used individually, for all travellers in all areas of the city

As a result, it should translate into investing in the modernization and development of infrastructure for non-motorized users (in particular people with limited mobility)

### Purpose 4

#### Increased share of public transport travel in total travels

As a result, it should translate into increasing the quality of the public transport connections with pedestrian and bicycle transport, improving the quality and accessibility of services and work places.

### Purpose 5

#### Reduction of negative impact of transport on people, health and the environment

As a result, it should translate into reduction of gas emissions, noise, use of space for transport, appropriation of public space by parking vehicles, etc.

### Purpose 6

#### Increase in the quality and accessibility of public spaces for all users and in all areas of the city

as a result, it should translate into increasing quality and comfort of living in the city



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# Activities



## Activities plan



### I. Pedestrian and bicycle traffic, public space

**Carried out purposes**

<b>I.1.</b>	Development and implementation of standards for street furniture in public spaces	Purpose 1, purpose 6
<b>I.2.</b>	Replacement of pedestrian crossings in the form of footbridges and tunnels with ground passages + determination of missing pedestrian crossings on the main traffic routes and close to interchanging nodes	Purpose 1, purpose 2, purpose 6
<b>I.3.</b>	Safety improvement program at pedestrian and bicycles crossings	Purpose 1, Purpose 2
<b>I.4.</b>	Audit and certification of conditions for pedestrian and bicycle traffic in primary/ secondary schools	Purpose 1, purpose 2, purpose 4, purpose 5
<b>I.5.</b>	Audit and certification of employees friendly to active mobility	Purpose 1, purpose 2, purpose 4, purpose 5
<b>I.6.</b>	Improved conditions for pedestrian and bicycle traffic in Gdańsk	Purpose 1, purpose 2
<b>I.7.</b>	Development of the Barriers Map	Purpose 1, purpose 2, purpose 6
<b>I.8.</b>	Development of the Barriers Map	Purpose 1, purpose 2, purpose 6
<b>I.9.</b>	Program of urban micro-changes in the street space	Purpose 1, purpose 2
<b>I.10</b>	Protecting the rights of all users of space through effective enforcement of applicable law	Purpose 1, Purpose 2, Purpose 5, Purpose 6



### II. Parking

**Carried out purposes**

<b>II.1.</b>	Protection of pedestrian space and improvement of the quality of pedestrian traffic by protecting pavements from undesirable parking of vehicles	Purpose 1, purpose 2, purpose 6
<b>II.2.</b>	Preparation and publication of a standard (design guidelines) of clear pedestrian and parking spaces	Purpose 1, purpose 6
<b>II.3.</b>	Actions to increase parking rotation in the key areas of the city (city, traffic generators and CPU)	
<b>II.4.</b>	Effective parking management in the recreational areas (e.g. coastal belt)	








### III. Public transport

**Carried out purposes**

<b>III.1.</b>	Priority of traffic for the public transport	Purpose 3, purpose 4
<b>III.2.</b>	Improvement of passenger information about the public transport events	Purpose 3, purpose 4
<b>III.3.</b>	Reduction of emissions in the public transport	Purpose 5
<b>III.4.</b>	Elimination of barriers to access to tram, bus, SKM and interchanging nodes	Purpose 1, purpose 3



 <p><b>IV. Mobility management</b></p>		<b>Carried out purposes</b>
<b>IV.1.</b>	Implementation of mobility plans/travel plans	Purpose 2, purpose 5
<b>IV.2.</b>	Co-operation platform for project coordinators on mobility	
<b>IV.3.</b>	Construction of a new management system for the Limited Availability Zone	
 <p><b>V. Management of goods transport</b></p>		<b>Carried out purposesL</b>
<b>V.1.</b>	Sustainable Urban Logistics Plan for Gdańsk (a plan for transporting goods)	Purpose 2, purpose 5
 <p><b>VI. Education/information campaigns</b></p>		<b>Carried out purposes</b>
<b>VI.1.</b>	Information and education campaign on behaviour in the context of parking	Purpose 2
 <p><b>VII. Mobility as a service (MaaS)</b></p>		<b>Carried out purposes</b>
<b>VII.1.</b>	Integrated system management of ON-DEMAND MICRO-TRANSPORTATION: car-sharing, ride-sharing and network transport services (TNCs - transit network companies, taxi, ride-hailing/-sourcing), in the spirit of mobility as service (MaaS)	Purpose 2, purpose 3
<b>VII.2.</b>	Development and implementation of the first and last mile automated public transport management plan: testing and application of driverless shuttles	Purpose 2
 <p><b>VIII. Tests and analyses</b></p>		<b>Carried out purposes</b>
<b>VIII.1.</b>	Development of guidelines for carrying out the necessary research and analyses as part of infrastructure projects in Gdańsk	Purpose 2
<b>VIII.2.</b>	Continuation of the research: "Assessment of public transport in Gdańsk"	
<b>VIII.3.</b>	Continuation of the research: "Quality of life in Gdańsk"	





## Activities cards

<b>I.1. DEVELOPMENT AND IMPLEMENTATION OF STANDARDS FOR STREET FURNITURE IN PUBLIC SPACES</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Districts Councils, Active Mobility Department	Start in 2019	Own budget
<b>Short description of activities:</b>	Development and introduction of standards covering: <ul style="list-style-type: none"> <li>• models of street furniture with a detailed qualitative description</li> <li>• location rules for the above elements</li> </ul>		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Development of standards</li> <li>• Introducing the standard by means of the Mayor's order</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Providing elements of street furniture of high quality in terms of ergonomics and aesthetics,</li> <li>• Satisfying the needs of pedestrians, especially people with limited mobility by implementing the standard of distance between the benches</li> <li>• Improving the quality and prestige of public space</li> </ul>		

<b>I.2. REPLACEMENT OF PEDESTRIAN CROSSINGS IN THE FORM OF FOOTBRIDGES AND TUNNELS WITH GROUND PASSAGES + DETERMINATION OF MISSING PEDESTRIAN CROSSINGS ON THE MAIN TRAFFIC ROUTES AND CLOSE TO INTERCHANGING NODES</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources</b>
Gdańsk Road and Green Areas Administration	Active Mobility Department, Directorate of the Development of the City of Gdańsk, Urban Management Department (Traffic Management Team), District Councils, Gdańsk University of Technology, NGOs	Start in 2019	City budget (current activities and the implementation of large infrastructure investments)
<b>Short description of activities:</b>	Replacement of pedestrian crossings in the form of footbridges and tunnels with ground passages + defining missing pedestrian crossings on THE main traffic routes as part of ongoing operations and for new infrastructural investments; activities in close cooperation with the city organizations and district councils		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• selecting and analysing places where existing solutions can be replaced with ground passages or modernize existing crossings (e.g. by widening due to high levels of pedestrian traffic)</li> <li>• specifying of ground places on the main routes, in which there are no designated pedestrian crossings</li> </ul>		
<b>Expected results:</b>	Improving the conditions (comfort and safety) of walking and cycling traffic		



<b>I.3. SAFETY IMPROVEMENT PROGRAM AT PEDESTRIANS AND BICYCLES CROSSINGS</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Municipal Management Department (Traffic Management Team, Active Mobility Department, Traffic Department of Municipal Police Headquarters, Municipal Guards, Directorate of the Development of the City of Gdańsk	Start in 2018	Sources of financing: city budget, external financing (e.g. from the EU) No budget forecast
<b>Short description of activities:</b>	<ul style="list-style-type: none"> <li>• Development of an audit system for pedestrian crossings and bicycle crossings in terms of road safety, lighting, and determination of hazards for pedestrians and cyclists.</li> <li>• Training for a team of people delegated to work on conducting an audit and developing solutions to improve safety at pedestrian crossings, bicycle routes and in their surroundings.</li> <li>• Conducting 500 audits a year based on which projects for changes in infrastructure, marking, surroundings to improve safety of pedestrians and cyclists will be developed.</li> <li>• Implementation of BRD improvement projects at pedestrian crossings and bicycle crossings in accordance with the adopted schedule - no less than 50% per year of passages and crossings qualified for improvement.</li> </ul>		
<b>Key activities:</b>	<ol style="list-style-type: none"> <li>1. Training for the team consisting of employees of the GRGAA, MWMD TMT, MWMD AMD, Police and MG</li> <li>2. Development of rules and schedule of conducting the audit</li> <li>3. Development of projects improving safety of pedestrians and cyclists based on the conducted audit</li> <li>4. Implementation of recommendations from the audit and developed projects of changes in infrastructure, development, etc.</li> <li>5. Implementation of developed solutions for min. 50% of passages and bicycle crossings to be improved</li> </ol>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Development of a quality control system for existing and planned road infrastructure in terms of pedestrian and bicycle safety.</li> <li>• Establishing a team of trained employees.</li> <li>• Reducing the risk of injury from road events by unprotected road users.</li> <li>• Improved conditions for pedestrian and bicycle traffic</li> </ul>		



**I.4. AUDIT AND CERTIFICATION OF CONDITIONS FOR PEDESTRIAN AND BICYCLE TRAFFIC IN PRIMARY/SECONDARY SCHOOLS**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Active Mobility Department	Gdańsk Road and Green Areas Administration, Social Development Department, Directors and staff of educational institutions, Parents' Councils	Continuous activities in the school year	City budget, External financing (domestic and foreign)
<b>Short description of activities:</b>	Development of audit of educational institutions taking into account: <ul style="list-style-type: none"> <li>• possibility of safe bicycle access and reaching to school on foot by students and staff</li> <li>• secure parking/ storage of bicycles/ other devices (scooters, skateboards, rollers and accessories;</li> <li>• possibility of limiting general access directly to the school by car;</li> <li>• activities aiming at popularizing the active mobility of students and staff.</li> </ul>		
<b>Key activities:</b>	1. Preparation of audit assumptions 2. Agreement of the scope 3. Conducting test audits - verification and correction 4. Development of the audit procedure 5. Preparation of PMG order on the audit 6. Implementation of the audit procedure		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Diagnosis of the safety level of students/school staff - bicycle and pedestrian users</li> <li>• Diagnosis of activities aiming at popularizing active mobility among students and staff</li> <li>• Identification of problem areas, development of an action plan</li> </ul>		

**I.5. AUDIT AND CERTIFICATION OF EMPLOYEES FRIENDLY TO ACTIVE MOBILITY**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Active Mobility Department	Gdańsk Road and Green Areas Administration, Employers, Employers' organizations	Continuous operations on an annual basis	City budget, External financing (domestic and foreign) Approx. 20 thousand PLN
<b>Short description of activities:</b>	Implementation of the audit and certification procedure for friendly active mobility employers in the area of Gdańsk according to the methodology of the European Cyclists Federation (ECF)		
<b>Key activities:</b>	1. Preparation of an application in accordance with the requirements of the ECF 2. Obtaining the ECF accreditation 3. Conducting the test audits 4. Promotion of the audit and certification procedures 5. Implementation of the audit and certification procedure in the area of Gdańsk		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Dissemination of knowledge among employers on the benefits of commuting to work using active mobility.</li> <li>• Dissemination of knowledge among employers on the needs of people using active mobility in commuting.</li> <li>• Increase in the number of employers rewarding active mobility in commuting.</li> <li>• Increase in the share of active mobility in the daily travels of employees.</li> <li>• Extending the season of commuting to work using active mobility.</li> </ul>		



<b>I.6. IMPROVED CONDITIONS FOR PEDESTRIAN AND BICYCLE TRAFFIC IN GDAŃSK</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Active Mobility Department	Gdańsk Road and Green Areas Administration, Social Development Department, Directorate of the Development of the City of Gdańsk	Continuous operations on an annual basis (start in 2020 at the latest)	City budget, External financing (domestic and foreign) Forecasted budget: 15 mln PLN
<b>Short description of activities:</b>	Development and implementation of a program to improve the pedestrian and bicycle traffic conditions in Gdańsk through the following activities: <ul style="list-style-type: none"> <li>• development of a comprehensive action plan;</li> <li>• improving the continuity of bicycle routes and pedestrian routes;</li> <li>• modernization of bicycle routes and pedestrian routes;</li> <li>• physical and legal restriction of traffic and parking of cars in selected areas;</li> <li>• liquidation/overcoming of barriers to pedestrian and bicycle traffic;</li> <li>• investments that discourage the use of a car for local travels;</li> <li>• real prioritization of traffic (in accordance with the program's assumptions).</li> </ul>		
<b>Key activities:</b>	<ol style="list-style-type: none"> <li>1. Preparation of an action plan;</li> <li>2. Investment activities;</li> <li>3. Institutional activities;</li> <li>4. Monitoring of effects.</li> </ol>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Higher level of safety and comfort of walking and cycling;</li> <li>• Higher share of non-motorized traffic in the modal transport structure in Gdańsk;</li> <li>• Stopping the growth trend of the share of private cars in the modal transport structure in Gdańsk.</li> </ul>		

<b>I.7. DEVELOPMENT OF THE BARRIERS MAP</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Management Department and Gdańsk Contact Centre	Representative of the Mayor of the City of Gdańsk for persons with disabilities Gdańsk Road and Green Areas Administration, Directorate for the Development of the City of Gdańsk, Gdańsk Municipal Property Management, SDD, MFHC, people with special mobility needs	Continuous operations (start in 2018)	City own budget
<b>Short description of activities:</b>	Creation of a map of barriers (e.g. as overlays on the Order Map or completely from the beginning) allowing to report barriers in the movement of people with limited mobility, promoting the tool and effective (if possible - available tools and means) removing the reported barriers.		



<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Writing and mapping (architectural mapping) architectural barriers in the public space of the city of Gdańsk</li> <li>• Ultimately, creating an application to move in the city, omitting the identified barriers</li> <li>• Verification of applications</li> <li>• Elimination of identified barriers (as part of the current operations of municipal units and investments)</li> </ul>
<b>Expected results:</b>	Creation and implementation of a barriers map and improvement of pedestrian traffic conditions in the city, housing districts and quarter of streets

**I.8. PROGRAM OF URBAN MICRO-CHANGES IN THE STREET SPACE**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	NGOs, district councils	Start in 2019	Own budget + budgets of district councils
<b>Short description of activities:</b>	The purpose is to create a program that develops and implements micro-variations in the street space, improving the comfort of their use, especially for pedestrians and cyclists. The program aims at constantly searching for places that can be improved in this respect by simple means (paint, greenery, city furniture) that do not require large finances.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Creation of a system/tool gathering information on potential sites for reorganization/transformation and selection and prioritization (prototyping, temporary solutions)</li> <li>• Creation of a team developing sketches/change projects</li> <li>• Implementation of changes</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Constant improvement of the quality of public space</li> <li>• Involvement of residents, non-governmental organizations and district councils in shaping space</li> </ul>		

**I.9. PROTECTING THE RIGHTS OF ALL USERS OF SPACE THROUGH EFFECTIVE ENFORCEMENT OF APPLICABLE LAW**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Guards in Gdańsk	Gdańsk Road and Green Areas Administration, Police	Continuous operations (start in 2018)	City own budget
<b>Short description of activities:</b>	Activities consist in significantly increasing the effectiveness of enforcing existing law in order to facilitate both everyday mobility and the use of public space, in particular through the implementation of a coherent and consistent policy of intervention by the Municipal Guard taking into account the priority in the area of public space (pavements, greenery), increasing the transparency of interventions, increasing the frequency of reporting by individual papers and increasing the productivity of this unit.		



<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• policy of intervention by the Municipal Guard (clear rules regarding warnings and imposing fines);</li> <li>• increasing the number of Municipal Guardians, increasing the authority of formation, increasing the educational and upbringing function;</li> <li>• significant increase in the enforcement of current laws in the city;</li> <li>• improving the cooperation of the Municipal Guard with the GRGAA and the Police through mixed patrols</li> <li>• equipping officers with devices recording interventions</li> <li>• for training and improving the legal service of the Municipal Guard in order to increase certainty in the case of interventions in the so-called disputable situations.</li> <li>• Creating a public network micro-transport service.</li> </ul>
<b>Expected results:</b>	<ol style="list-style-type: none"> <li>1. Restoring public space to all users; <ul style="list-style-type: none"> <li>• reduction of incorrectly parked vehicles;</li> <li>• restoring pavements and public spaces to pedestrians;</li> </ul> </li> <li>2. Shaping the awareness of the residents;</li> <li>3. Increasing the authority of law;</li> <li>4. Increasing the effectiveness of law enforcement;</li> <li>5. Increasing the professionalism and authority of the Municipal Guard:</li> </ol>

### **II.1. PROTECTION OF PEDESTRIAN SPACE AND IMPROVEMENT OF THE QUALITY OF PEDESTRIAN TRAFFIC BY PROTECTING PAVEMENTS FROM UNDESIRABLE PARKING OF VEHICLES**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	District councils, Municipal Management Department (Active Mobility Department, Traffic Management Team)	Start in 2018	Own budget, civic budget
<b>Short description of activities:</b>	Implementation of the pedestrian protection policy with the use of physical forms of fencing: posts and blocking blocks, elements of street furniture, including: flower pots, bicycle stands, benches.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• designation of sensitive spaces in a special way exposed to undesirable parking</li> <li>• securing spaces reported by district councils or other units</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• improving the quality and accessibility of walking routes,</li> <li>• limiting the degradation of pavements by parking vehicles,</li> <li>• improving safety by ensuring proper visibility for both car drivers and pedestrians.</li> </ul>		

### **II.2. PREPARATION AND PUBLICATION OF A STANDARD (DESIGN GUIDELINES) OF CLEAR PEDESTRIAN AND PARKING SPACES**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Municipal Management Department (Active Mobility Department, Traffic Management Team), Directorate of the Development of the City of Gdańsk	Start in 2019	No need to specify funding sources.



<b>Short description of activities:</b>	Preparing and publishing a standard imposing an obligation to clearly designate and separate spaces for parking vehicles from spaces intended for pedestrian traffic - in response to the lack of appropriate legal regulations regarding the possibility of parking on pavements.
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Diagnosis of the existing parking situation in a given area,</li> <li>• assessment of the possibility and legitimacy of separating parking spaces,</li> <li>• Introduction of appropriate design standards at the stage of preparing:             <ul style="list-style-type: none"> <li>- guidelines for road construction and renovation projects, including the ToR,</li> <li>- opinions for projects agreed by the GRGAA and other units,</li> </ul> </li> <li>• Enforcing the correct distribution of pedestrian and parking spaces at the project agreement stage.</li> </ul>
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• creating a pedestrian free space from parking vehicles,</li> <li>• ordering public space by clearly defining the boundaries for parking vehicles,</li> <li>• shaping the correct drivers' attitudes</li> </ul>

**II.3. ACTIONS TO INCREASE PARKING ROTATION IN THE KEY AREAS OF THE CITY (CITY, TRAFFIC GENERATORS AND CPU)**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	District councils, Municipal Management Department (Traffic Management Team)	Continuous operations	Own budget
<b>Short description of activities:</b>	Systematic management of city space resources to provide furnished and efficiently used parking spaces without detriment to cultural, aesthetic values and in particular to ensure high standards of infrastructure for unprotected traffic users.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Optimization of parking spaces depending on local conditions</li> <li>• Gradual, consistent expansion of pedestrian zones and Paid Parking Zones (according to a well-designed, long-term plan)</li> <li>• Introduction of paid parking zones with time restrictions in areas of public facilities</li> <li>• Differentiation in the amount of parking fees depending on the "attractiveness" of the location and space requirements (dynamic parking fees depending on occupancy)</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• The effective parking policy should ensure the efficient functioning of the entities and people while minimizing the space devoted to parking and minimizing nuisance caused by parking vehicles.</li> <li>• effective use of available parking spaces without making damages to unprotected traffic users and public spaces</li> <li>• limiting the degradation of pavements by parking vehicles</li> <li>• improving security</li> </ul>		

**II.4. EFFECTIVE PARKING MANAGEMENT IN THE RECREATIONAL AREAS (E.G. COASTAL BELT)**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	District councils, Municipal Management Department (Traffic Management Team)	Continuous operations	Own budget, civic budget
<b>Short description of activities:</b>	The system parking management in recreational areas (above all in the coastal belt) in order to effectively use existing resources without		



<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• dedicated collective communication with a special tariff offer</li> <li>• using of existing buffer car parks</li> <li>• paid parking zones in the areas of districts directly affected by the problem of seasonal parking</li> <li>• protection of pavements and green areas in front of parking vehicles</li> <li>• development of a system of information on available parking spaces in recreational areas</li> </ul>
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• The effective parking policy should ensure the efficient functioning of the entities and people while minimizing the space devoted to parking and minimizing nuisance caused by parking vehicles.</li> <li>• effective use of available parking spaces without making damages to unprotected traffic users and public spaces</li> </ul>

<b>III.1. PRIORITY OF TRAFFIC FOR THE PUBLIC TRANSPORT</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Municipal Transport Authority in Gdańsk Gdańsk Buses and Trams, Directorate of the Development of the City of Gdańsk, Municipal Management Department	Continuous operations (start in 2018)	city budget, aid measures
<b>Short description of activities:</b>	Introduction of priority for trams and buses at intersections through changes in traffic lights and elimination of other difficulties (e.g. lights at pedestrian crossings), the designation of bus lanes and the introduction of locks.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Activation of the priority for trams at intersections and at pedestrian crossings, in traffic lights in advance so that the tram does not have to wait to run.</li> <li>• Starting the priority for buses at intersections in traffic lights in advance so that the bus takes the right of way.</li> <li>• Introduction of locks for buses when leaving the stops.</li> <li>• Designation of bus lanes: permanent, periodic (e.g. for the school year) and temporary busses (e.g. during peak hours).</li> </ul>		
<b>Expected results:</b>	Carrying out of purpose 4 and 5 <ul style="list-style-type: none"> <li>• Improving punctuality of trams and buses (shorter delays in passenger transport)</li> <li>• Increasing the attractiveness of the public transport in relation to passenger cars</li> <li>• Facilitation of connections between trams, buses, SKM and PKM</li> <li>• Reduction of noise and exhaust emissions with a greater flow of traffic</li> <li>• Improving the commercial speed of trams and buses</li> </ul>		





**III.2. IMPROVEMENT OF PASSENGER INFORMATION ABOUT THE PUBLIC TRANSPORT EVENTS**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Transport Authority	Gdańsk Buses and Trams	Start in 2019	
<b>Short description of activities:</b>	<p>One of the main criteria for assessing urban transport involves the reliability level. An important issue is to analyse the reasons for the divergence of real exchange rates with the timetable, assess the possibility of their elimination and assess the effectiveness of the response procedures used. These issues are regulated by contracts between the organizer and the operator. An equally important issue includes the system of quickly and efficiently informing the passenger about the changes in the schedule and planned activities. While road traffic conditions are a reason for departures from the timetable, information on delays, based on GPS data provided by urban transport vehicles, is transferred to passengers in real time by means of variable message boards arranged at some stops or mobile applications. Not all stops are equipped with such boards. Random events create a different situation (vehicle failure, accident, traction failure), which requires the use of substitute transport. Information about the situation and about the taken actions often does not reach or reaches to passengers very late.</p> <p>Lack of information about the real possibilities of continuing travel by urban transport in situations of deviations from the timetable reduces trust in this mode of transport.</p>		
<b>Key activities:</b>	<ol style="list-style-type: none"> <li>1. Equipment of all public transport stops in the variable message board (in the first place all nodes stops);</li> <li>2. Integration of the urban system with mobile applications;</li> <li>3. Development of a procedure for the circulation of information between the operator, carrier and passenger.</li> </ol>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• A higher level of trust in urban transport as a reliable mean of transport.</li> </ul>		

**III.3. REDUCTION OF EMISSIONS IN THE PUBLIC TRANSPORT**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Buses and Trams	Development Programs Department, Municipal Transport Authority in Gdańsk, Municipal Management Department, Gdańsk Road and Green Areas Administration, private partners	Continuous operations	Own budget (GBT), own budget of the city, external financing (e.g. EU funds)
<b>Short description of activities:</b>	<p>The introduction of technology that will allow the replacement of diesel buses</p>		
<b>Key activities:</b>	<p>Actions promoting innovation in the public transport:</p> <ul style="list-style-type: none"> <li>• Purchase and testing of ecological buses (using hydrogen/electric fuel)</li> <li>• Installation of the refuelling/charging station</li> <li>• Conducting air quality tests</li> <li>• Noise monitoring</li> <li>• Promotion of ecological public transport</li> </ul>		
<b>Expected results:</b>	<p>Testing a new emission-free mode of transport, reducing air pollution and noise emission caused by public transport</p>		



<b>III.4. ELIMINATION OF BARRIERS TO ACCESS TO TRAM, BUS, SKM AND INTERCHANGING NODES</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Municipal Transport Authority in Gdańsk Gdańsk Buses and Trams, Directorate of the Development of the City of Gdansk	Continuous operations (start in 2018)	City budget; possible EU funds (GMTP and others)
<b>Short description of activities:</b>	Improving the accessibility of the public transport stops for people with limited mobility and improving the comfort of use of stops for all passengers - this applies both to the platforms themselves and to reaching them.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Adaptation of 100% of stops and reaching them to the needs of disabled people - elimination of architectural barriers, introduction of invoice markings;</li> <li>• replacement of all bus stops with the Viennese type stops (Mickiewicza, Nowy Port streets)</li> <li>• Performing the analysis of the ratio of the platform width to the passenger traffic, determining the platforms to be widened and implementing them</li> <li>• Performing the analysis for the possible introduction of anti-collisions in selected locations and implementing them</li> <li>• Selection of stops for implementation according to the hierarchy of needs</li> <li>• Removal of collisions with bicycle routes</li> <li>• Extending the cycle of lights with the priority of reaching the island stop</li> <li>• Connecting tram and bus stops in the door-to-door system</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Increasing the safety and comfort of passengers</li> <li>• Increasing the availability of stops for people with limited mobility</li> <li>• Calming traffic around stops</li> <li>• Increased interest in public transport</li> </ul>		

<b>IV.1. IMPLEMENTATION OF MOBILITY PLANS/TRAVEL PLANS</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Management Department in cooperation with Gdańsk Road and Green Areas Administration	municipal units, educational units, office centres, hospitals and health care facilities, NGOs, shopping centres	Start in 2019	Own budget and possibly European funds
<b>Short description of activities:</b>	Consulting and providing tools needed for effective mobility management in the context of travelling (to/from school, university, workplace, etc.). Development and implementation of travel plans in all municipal units.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Development of tools for travel plans and communication channels</li> <li>• Development of methods to promote and disseminate the idea of mobility/travel plans</li> <li>• Development and implementation of travel plans for individual municipal units</li> <li>• Starting cooperation with educational units, hospitals and health care facilities, office centres, shopping centres, etc.</li> <li>• Starting cooperation between the city and business representatives</li> </ul>		



<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Launching effective cooperation channels in the field of urban mobility management through the development of travel plans</li> <li>• Changes in communication behaviour in the context of travelling to work, school, university (reducing the use of private passenger cars in total)</li> <li>• Ultimately, the development of travel plans for facilities generating high traffic in the city should be obligatory</li> </ul>
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#### IV.2. CO-OPERATION PLATFORM FOR PROJECT COORDINATORS ON MOBILITY

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration (SUMP coordinator unit)	Development Programs Department, Municipal Management Department, Social Development Department, Economic Policy Department, OMGGG, Gdańsk Development Office	Continuous and cyclical operations (start in 2019)	Own budget
<b>Short description of activities:</b>	The project coordinators' platform for mobility aims at achieving synergy from ongoing projects, capitalize knowledge and coordinate the scope of activities. Its aim is to improve the flow of information on the carried out activities and mutual support for obtaining further financing from external funds for the purposes of the implementation of tasks and purposes SUMP in Gdańsk.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Appointment of the platform coordinator</li> <li>• Conducting regular meetings on presenting progress in the implementation of individual projects (at least once every six months)</li> <li>• Identification of all implemented projects in the field of mobility in Gdańsk, also by extra-urban units (OMGGG, UG, PG, etc.)</li> </ul>		
<b>Expected results:</b>	<ol style="list-style-type: none"> <li>1. Launching an effective tool for the exchange of information and practical knowledge between project coordinators on mobility</li> <li>2. More efficient use of external resources through better coordination of tasks and project ranges</li> <li>3. Initiating and identifying needs for future projects on sustainable mobility in Gdańsk</li> </ol>		

#### IV.3. CONSTRUCTION OF A NEW MANAGEMENT SYSTEM FOR THE LIMITED AVAILABILITY ZONE

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Management Department	Gdańsk Road and Green Areas Administration, Municipal Guard in Gdańsk, Police, Downtown District Council, Development Program Department	Start in 2018	City budget, Solez project
<b>Short description of activities:</b>	The aim of the activity is to create a new system for managing the Limited Availability Zone, currently located in the part of the Main Town. The new system of managing the Limited Availability Zone should eliminate the excessive number of unauthorized entries into the historic zone of the strict centre of Gdańsk, including regulating the principles of conducting deliveries.		



<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Creation of a database of issued entrance passes (process digitization)</li> <li>• Order and development of the functional and technological concept of closing the zone using automatic bars and ICT solutions</li> <li>• The extension of the Limited Availability Zone to the area of the entire Main Town, in the first stage during the holiday season</li> <li>• Conducting the investment stage</li> </ul>
<b>Expected results:</b>	<ol style="list-style-type: none"> <li>1. Introduction of one system of controlling incoming vehicles to the Limited Availability Zone</li> <li>2. Reduction in the number of cars, traffic in the centre, minimization of emissions</li> <li>3. Improving the quality of public space by eliminating excessive parking in the Main Town zone</li> </ol>

### VI.1. SUSTAINABLE URBAN LOGISTICS PLAN FOR GDAŃSK (A PLAN FOR TRANSPORTING GOODS)

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration and Municipal Management Department	Gdańsk Development Office, Environmental Department, Gdańsk University of Technology, Gdansk Economic Development Agency	Minimum 2 years (start in 2020 at the latest)	City budget and as part of the project SOLEZ (the 1st stage of works on the Plan)
<b>Short description of activities:</b>	Initiation by the city of regular cooperation between entities involved in the operation of the urban deliveries system and development of a general pattern of supply needs due to the type of activity (by identifying the characteristics of goods delivery in a given area - daily number of deliveries, duration, place of delivery, type of vehicle, occurrence of problems), defining areas with limitations in terms of volume and frequency of deliveries, identification of necessary actions, etc.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• establishment of the Team for the Development of the Sustainable Urban Logistics Plan (representatives of municipal units, experts and stakeholders - suppliers of goods, logistics centres, Gdańsk port, etc.)</li> <li>• regular meetings of the Team, under which principles will be developed to manage the transport of goods in Gdańsk</li> <li>• preparation of the Sustainable Urban Logistics Plan which is the basis for managing the transport of goods in Gdańsk</li> <li>• implementation of the Plan</li> </ul>		
<b>Expected results:</b>	The creation of an efficient and sustainable distribution system for goods in the city and to reduce the negative impact of goods transport on lives of the residents of Gdańsk.		

### VI.1. INFORMATION AND EDUCATION CAMPAIGN ON BEHAVIOUR IN THE CONTEXT OF PARKING

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Municipal Management Department, Promotion Department, Municipal Guard, gdansk.pl, council districts, local media	Pilot campaign in 2019	City own budget



<b>Short description of activities:</b>	<ul style="list-style-type: none"> <li>• The information and educational campaign would aim at indicating inappropriate behaviours, appropriation of space by cars and a decrease in the safety of unprotected road users resulting from irresponsible behaviour of drivers.</li> <li>• Promoting appropriate behaviours in the context of ordering parking.</li> <li>• Promoting the value of public space.</li> </ul>
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Developing a campaign</li> <li>• Implementation of the pilot campaign</li> <li>• Monitoring the effects</li> </ul>
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Changes in behaviour in the context of transport behaviours, including parking vehicles and adapting to the applicable regulations (e.g. speed limits, residential zones, "pace 30" zones, etc.)</li> <li>• Changing the way of thinking about the right to public space</li> <li>• Cyclical campaigns</li> </ul>

**VII.1. INTEGRATED SYSTEM MANAGEMENT OF ON-DEMAND MICRO-TRANSPORTATION: CAR-SHARING, RIDE-SHARING AND NETWORK TRANSPORT SERVICES (TNCs - TRANSIT NETWORK COMPANIES, TAXI. RIDE-HAILING/-SOURCING), IN THE SPIRIT OF MOBILITY AS SERVICE (MaaS)**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Management Department	Municipal Transport Authority in Gdańsk Gdańsk Buses and Trams, Gdańsk Roads and Green Areas Administration, Directorate of the Development of the City of Gdansk	Continuous operations (start in 2019)	City own budget
<b>Short description of activities:</b>	The activities involve the use of new technical and organizational solutions facilitating everyday mobility in traffic and public transport management (a mobile application enabling universal access to multimodal vehicles and intermodal on-demand travels) by implementing a network of on-demand micro-transport service based on predetermined principles and conditions of its operation based on the paradigm of new mobility as a service (new mobility and MaaS - mobility as a service), in particular in a manner integrated with the public transport (supplementing it and not competing with it), taking into account the local traffic management policy (priorities and administrative restrictions, e.g. facilitations and difficulties in using dedicated parking spaces or lanes), managing and shaping space (e.g. creating and separation of dedicated parking spaces) and managing spatial development (e.g. integrated planning and based on current demographic changes).		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Defining the rules and conditions for the operation and financing of on-demand micro-transport network services (in the context of traffic management, public transport, spatial development and public space management and spatial order formation);</li> <li>• Introduction of the offer of combined on-demand micro-transport with public transport (e.g. joint ticket, co-financing of a combined travel, offering and promotion of accessibility in the scope of the so-called first and last mile of travel);</li> <li>• Creating a public network micro-transport service.</li> </ul>		



<p><b>Expected results:</b></p>	<p>1. Decrease in the share in the movement of personal cars;</p> <p>2. Decrease in the number of personal owned cars;</p> <p>3. Reducing the demand for parking and parking spaces;</p> <p>4. Increase in the number of users of public transport by:</p> <ul style="list-style-type: none"> <li>• reduction of the number of individual travels, in particular on routes that duplicate the public transport (in particular in the area of CPU),</li> <li>• promotion of combined travels by the public transport through: - offering of combined travels from hard-to-reach places (in which it is not profitable to involve the public transport) competitive to individual transport possibilities,</li> <li>• discouraging people from entering the city with personal cars, including through parking policy and sealing public space to prevent illegal or undesirable parking;</li> <li>• Decrease in the cost of construction of residential and office real estate through:             <ul style="list-style-type: none"> <li>- reduction of the demand for parking spaces (reduction of the number of owned cars, decrease in the share of owned cars);</li> </ul> </li> <li>• Planning for transit-oriented development (TOD);</li> <li>• Decrease in public investment costs by:             <ul style="list-style-type: none"> <li>- co-financing of public investments in the 3P formula, including as a result of planning for TOD;</li> <li>- reducing the demand for infrastructure that mainly serves personal cars.</li> </ul> </li> </ul>
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\***Risks** (which should be effectively prevented):

1. **Increased efficiency of car use** (from approx. 5% a day to approx. 30% a day +); → **Increased share in the traffic of motor vehicles intended for handling on-demand micro-transport;**
2. **Duplication of public transport** (assuming that the cost of travel by alternative means of transport is comparable and the time, frequency, availability, comfort of travel are significantly different); → **Decrease in the use of the public transport;**
3. **Increase in the range of daily travel;** → **Release of the deurbanisation potential** (decrease in the number of residents of the central part of the city, especially among the poorer half of the population), **gentrification** (escape the poorer sections of society from the central part of the city and its dependence on commuting, à replacing the use of housing for service in the centre, e.g. studies, offices, → change of urban-forming services for residents for B2B services (Business-to-business) → further displacement of the native inhabitants, and in particular the poorer parts), **urban dispersement** (dispersed habitation causing dependence of transport - transport-absorbent - the effect of which is e.g. the need to travel to the gym to jog), **rurbanisation** (easier for neighbouring municipalities to carry out the processes that convert agricultural land and forest land for construction), **suburbanisation** (extension of the surrounding urban areas on rural and urban-rural); **Empty runs** (for network transport services, in which the driver without a passenger does not travel) → **increase in traffic.**



<b>VII.2. DEVELOPMENT AND IMPLEMENTATION OF THE FIRST AND LAST MILE AUTOMATED PUBLIC TRANSPORT MANAGEMENT PLAN: TESTING AND APPLICATION OF DRIVERLESS SHUTTLES</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Active Mobility Department	GRGAA, MIR, Public Transport Authority in Gdańsk, GBT, MRBRD, PSSTM, PG	Start in 2020	Sohjoa Baltic project
<b>Short description of activities:</b>	The transition to ecological and autonomous transport of the last mile in the Baltic Sea region		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Research, testing and promotion of electric minibuses moving without a driver, as a means of public transport, in particular at the first or last stage of travel (the so-called first and last mile);</li> <li>• Building knowledge and gaining experience on the organization of intelligent and environmentally friendly public transport supported by autonomous vehicles;</li> <li>• Implementation of workshops on legal and ethical aspects related to autonomous mobility for local government officials from Poland and preparation of the Polish part of the report on the state of knowledge;</li> <li>• Determining the rules and conditions (legal and organizational) necessary for the effective provision of autonomous first/last mile mobility services;</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Improving the accessibility to public transport of selected districts located more than 10 minutes from the public transport by offering the first/last mile transport service, in particular to:               <ul style="list-style-type: none"> <li>- people who do not have or cannot use alternative methods of movement (on foot, by bicycle, by car), e.g. for children, seniors, people with physical disabilities,</li> <li>- drivers who would be willing to make a combined travel if it offered the convenience of reaching it and the competitive price and travel time (e.g. combined ticket);</li> </ul> </li> <li>• Improving the efficiency of public transport by increasing its popularity thanks to the provision of the first and last mile transport service based on autonomous minibuses and supplementing the service of the metropolitan bicycle;</li> <li>• Improving accessibility to important public facilities, i.e. accessibility to e.g.:               <ul style="list-style-type: none"> <li>- schools for children,</li> <li>- edges of the city centre for residents,</li> <li>- cultural institutions for tourists.</li> </ul> </li> <li>• In the longer term, the reduction of CO2 emissions and reduction of operational costs of public transport and the departure of residents from individual motorisation.</li> </ul> <p>Encouraging entrepreneurship and local innovation in the field of automation of public transport.</p>		



<b>VIII.1. DEVELOPMENT OF GUIDELINES FOR CARRYING OUT THE NECESSARY RESEARCH AND ANALYSES AS PART OF INFRASTRUCTURE IN GDAŃSK</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Gdańsk Road and Green Areas Administration	Universities, Municipal Transport Authority in Gdańsk, Directorate of the Development of the City of Gdańsk, Gdańsk Development Office, JASPERS	Start in 2019	Sources of financing: city budget, external financing (e.g. from the EU) No budget forecast
<b>Short description of activities:</b>	The action aims at developing guidelines defining the scope of research and analyses that will be an essential element in the design of transport infrastructure in Gdańsk. The main premise to create such guidelines is the need to adapt transport infrastructure for all its users on the basis of knowledge about behaviour and transport needs, and environmental impact analysis, so that decisions about accepted solutions are made on the basis of reliable information.		
<b>Key activities:</b>	Preparation of research and analysis guidelines, e.g. <ul style="list-style-type: none"> <li>• Accessibility to TZ stops</li> <li>• Location of pedestrian crossings</li> <li>• Solutions for geometric intersections and cross-sections</li> <li>• TZ crossings</li> <li>• Legitimacy of solutions for bicycle infrastructure</li> </ul>		
<b>Expected results:</b>	The designed infrastructure will meet the expectations of the city's policy and the residents themselves. Research and analysis provide basis for the substantive defense of the adopted solutions.		

<b>VIII.2. CONTINUATION OF THE RESEARCH: "ASSESSMENT OF PUBLIC TRANSPORT IN GDAŃSK"</b>			
<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Transport Authority	Economic Policy Department (CES, RBiASG) Additionally: Gdańsk Buses and Trams	Continuous, cyclical operations (annually if possible and funds are available)	None (own resources UMG, WPG, RBiASG)
<b>Short description of activities:</b>	The main purpose of the research is to monitor the opinions of people using public transport in Gdańsk. The respondents can indicate the main reasons for using public transport; information on interdistricts connections and missing connections is collected; Synthetic assessment of buses and trams include assessment of: punctuality, availability, travel time, cleanliness, filling of vehicles, sense of security or facilities for disabled people, the elderly and small children.		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Preparation of a questionnaire.</li> <li>• Promotion of the link to the questionnaire research.</li> <li>• Conducting the questionnaire research using the CAWI method (anonymous on-line questionnaire).</li> <li>• Preparation of a report including an assessment of public transport in Gdańsk along with a comparison and results from research from previous years.</li> </ul>		





<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Monitoring will allow to present the current situation - residents' opinions.</li> <li>• Indication of areas requiring intervention/reinforcement.</li> <li>• Monitoring of the impact of new investments: both on infrastructure (new tram connections) and on rolling stock.</li> </ul>
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**VIII.3. CONTINUATION OF THE RESEARCH: "QUALITY OF LIFE IN GDAŃSK"**

<b>Responsible unit/organization:</b>	<b>Main partners:</b>	<b>Implementation process:</b>	<b>Financing sources:</b>
Municipal Office of Gdańsk, Economic Policy Department	Departments and OU of the City of Gdansk	Cyclically, every two years	City budget
<b>Short description of activities:</b>	<p>The main purpose of the research project is to monitor changes in the quality of life indicators of the residents of Gdańsk, both in the territorial (12 functional areas) and socio-demographic (gender, age, education). In the previous edition (2016), the research included 100 partial (detailed) indicators of quality of life. Based on them, 16 synthetic indicators were identified: retail and service network, tramway communication, bus transport, SKM communication, transport connections, road infrastructure, health care, financial situation, housing conditions assessment, sense of security, nature and the natural environment, recreation and sports infrastructure, beach infrastructure, cultural offer, professional satisfaction, public space in the place of residence.</p>		
<b>Key activities:</b>	<ul style="list-style-type: none"> <li>• Selection of a representative sample of the test.</li> <li>• Preparation of questionnaire researches.</li> <li>• Conducting a questionnaire research using the direct interview method.</li> <li>• Preparation of a report including analysis of the research results and comparison of the results with the results from previous years.</li> </ul>		
<b>Expected results:</b>	<ul style="list-style-type: none"> <li>• Monitoring will allow to present the current situation - citizens' opinions on: communication connections, bus and tram transport, PKM and SKM, road infrastructure, possibilities of reaching other districts, etc.</li> <li>• Indication of areas requiring intervention/reinforcement.</li> <li>• Monitoring of the impact of new investments on the quality of life of Gdańsk residents.</li> </ul>		



### Matrix of dependencies between selected activities

	I.1	I.2	I.3	I.4	I.5	I.6	I.7	I.8	I.9	II.1	II.2	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	V.1	VI.1	VII.1	VII.2	VIII.1	VIII.2	VIII.3
I.1		-	-	-	-	+	+	+	+	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
I.2			+	-	-	+	+	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
I.3				-	-	+	+	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
I.4					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I.5						-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
I.6							+	+	+	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
I.7								+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I.8									+	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
I.9										+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
II.1											+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
II.2												+	-	-	+	-	-	-	-	-	-	-	-	-	-
III.1													+	-	-	-	-	-	-	-	-	+	+	-	-
III.2														+	-	-	-	-	-	-	-	-	-	-	-
III.3															+	-	-	-	-	-	-	-	-	-	-
III.4																+	-	-	-	-	-	-	-	-	-
IV.1																	+	-	-	-	-	-	-	-	-
IV.2																		+	-	-	-	-	-	-	-
IV.3																			+	-	-	-	-	-	-
V.1																				+	-	-	-	-	-
VI.1																					+	-	-	-	-
VII.1																						+	-	-	-
VII.2																							+	-	-
VIII.1																								+	-
VIII.2																									+
VIII.3																									+

+ relationship between activities  
 - no relationship between activities



## Indicators

Indicators	Unit	Current value (data from 2016)	Required trend (↑ or ↓)
<b>People working in Gdańsk</b> <i>(* presents the number of employed in business entities over 9 persons employed, individual farming, clergy, foundations of associations and other organizations and farmers to the number of population able to work (women aged 15-59, men aged 15 - 64)</i>	number	163 549	
<b>Students of universities in Gdańsk</b>	number	73 264	
Emissions of dust pollution <i>(*Own development by RBiASG, WPG, UMG based on the Local Data Bank, GUS)</i>	t	260	↓
% of the residents of Gdańsk exposed to: • Road noise • Traffic noise • Railway noise <i>(* data from the Gdańsk noise monitoring system)</i>	%	• 1,9 • 0,02 • 0,2	↓
The risk of being a victim of a traffic accident as an unprotected traffic user	number of victims/100 thousand residents	56,9	↓
Number of accidents	number	519	↓
Actual average speed of passenger cars (peak hours) <i>(* average speed from the beginning of June to mid-July in 2015 and 2016)</i>	km/h	45	↓ No more than 40 km/h
Actual average speed of buses (peak hours) <i>(* Data from the MTM)</i>	km/h	20,98	↑
Actual average speed of trams (peak hours) <i>(* Data from the MTM)</i>	km/h	18,09	↑
Modal split - bicycle traffic <i>(* Comprehensive Traffic Research for Gdańsk 2016)</i>	%	5,9	↑
Modal split - pedestrian traffic <i>(* Comprehensive Traffic Research for Gdańsk 2016)</i>	%	20,8	↑
Modal split - cars <i>(* Comprehensive Traffic Research for Gdańsk 2016)</i>	%	41,2	↓
Modal split - public transport <i>(* Comprehensive Traffic Research for Gdańsk 2016)</i>	%	32,8	↑
Number of users of the public transport (buses and trams)* <i>(* data from the Development Programs Department of the OCG)</i>	number	175 610 000	↑
Number of users of the public transport (SKM)* <i>(* data from the Development Programs Department of the OCG)</i>	number	42 302 044	↑
Number of users of the public transport (PKM)* <i>(* data from the Development Programs Department of the OCG)</i>	number	3 073 200	↑
Total number of parking spaces in Park&Ride facilities	number	498	↑
Zones of "Pace 30"	% of the city area	62,1	↑



*Jerzy Pinkas/www.gdansk.pl*

# Monitoring and Evaluation



In order to monitor the implementation of activities and achieve the purposes set in the Sustainable Mobility Plan for Gdańsk, it is planned to prepare an evaluation plan. If necessary, changes in the means of implementation are allowed (if it turns out that the actions taken do not provide the expected results). The essence of work on the Plan was to determine the purposes and relevant indicators.

When assessing the Plan, attention should be paid on regularly assessing the implementation progress and evaluating the effectiveness of the adopted means to achieve these purposes (activities plan). The global progress and the effects of the implemented activities should be specifically recorded and the indicators describing them should be measurable. Assessment of the success of the implementation of a specific activity will be possible after testing the effects of this activity. The achievement of the purposes should be assessed on the basis of objective and quantitative (measurable) data.

### Regular reports/reports on the implementation of the Plan's assumptions

The report on the progress of the implementation of the activities described in the Sustainable Urban Mobility Plan for Gdańsk should be prepared every 4 years (counting from 2018). Reports prepared in 2022, 2026 and 2030 are expected. Reports should be structured uniformly and contain, inter alia:

- Description of general conditions and trends, as long as they impact on the development of mobility (economic development, fuel prices, etc.) and interpretation of their impact on the situation in Gdańsk.
- Presentation of indicators for global assessment and interpretation of their changes.
- Presentation of individual activities and projects that were completed or are in pro-

gress along with relevant data to be assessed.

On the basis of the collected information, it is necessary to specify and describe in detail:

- What implementation steps were taken
- When and why changes or delays arose
- What effects can be observed
- Were there any discrepancies in relation to the desired and expected effects and if (in which area of operations) there is a need to change the assumed means or update the provisions of the Plan



*Dominik Paszinski/www.gdansk.pl*

In addition, monitoring should be made on a regular basis and partial reports should be prepared on an ongoing basis and after completion of individual activities.

***In order to achieve the desired effects, i.e. the implementation of the purposes set out in the works on this Plan, it is necessary to act on many levels, but it is worth remembering that the change in transport behaviour is a long-standing process. The effects of implementing specific actions can be seen many years after their application. There is no doubt, however, that cities should act towards sustainable mobility.***

