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BRNO **Mobility Plan**

mobilitabrno.cz

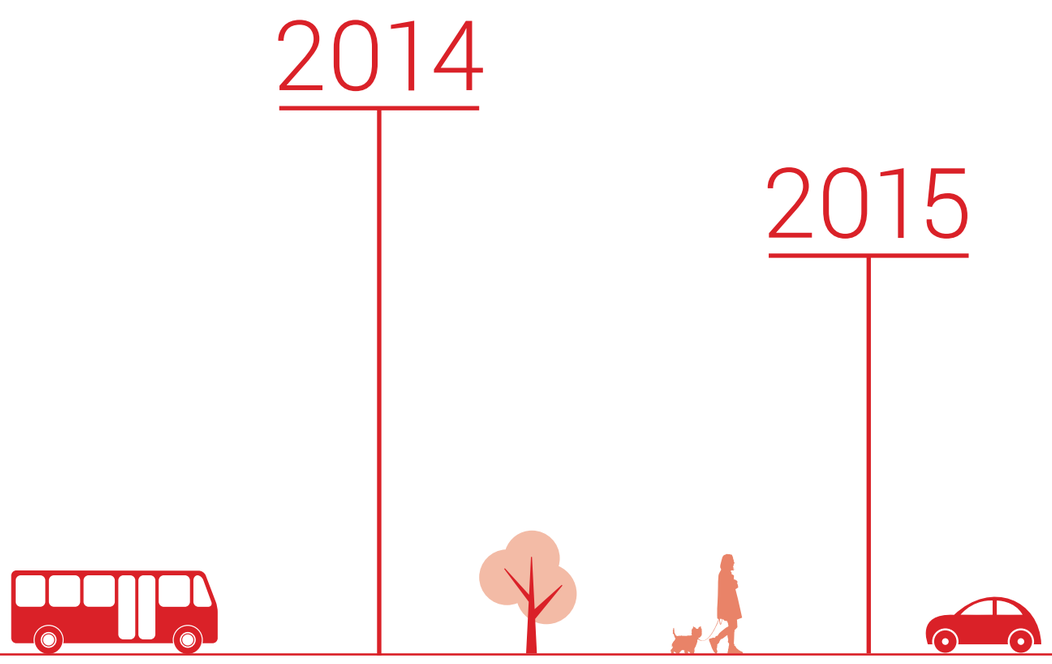
The Sustainable Urban Mobility Plan of the City of Brno (hereinafter referred to as “the Mobility Plan”) is a strategic document, whose objective is to create conditions for satisfying the mobility needs of people and businesses in the city of Brno and its surroundings and contribute to an improvement in the quality of life. The objective of this document is to seek and find the possibilities of sustainable transport services for the territory; this should be done with the help of citizens, and municipal, regional and state authorities. This document builds on already existing activities in city planning and development.

The Mobility Plan is a conceptual study of all transport systems (public, automobile, pedestrian and bicycle) in the city of Brno with recommendations for the metropolitan area. The reason for drawing this document is the need to analyse the situation and to propose an appropriate strategy for the development of transport systems in the city of Brno in detail.

The Mobility Plan consists of the following parts: an analytical part and a proposal part. The analytical part describes the current status quo of each of the respective types of transport and the mobility system as a whole, defines the weaknesses and strengths and provides a basis for the formulation of a vision of the Mobility Plan, the implementation of which is further detailed in the proposal part.

The content of this brochure consists precisely in a summary of the proposal part of the Mobility Plan. It provides a clear overview of the areas of change of the vision of the Mobility Plan. For each of the four areas of change, a table with a description of strategic and specific objectives was prepared, in addition to a proposal for measures aimed to implement the vision of mobility. All of this is complemented by a design of indicators to help determine whether the objectives set are being met.

PROGRESS IN PREPARATION OF THE SUSTAINABLE URBAN MOBILITY PLAN OF THE CITY OF BRNO (HEREINAFTER REFERRED TO AS “THE MOBILITY PLAN”):



2014

- **On 16 July 2014, in its meeting the Council of the City of Brno approved the selection of a contractor for the Sustainable Urban Mobility Plan of the City of Brno (hereinafter referred to as “the Mobility Plan”) – the company AF CITYPLAN s.r.o.**

- **In October 2014, a concept of the analytical part of the Mobility Plan was delivered,** which contained an analysis of the current status quo concerning all transport modes (individual car traffic, stationary traffic, bicycle and pedestrian traffic, public transportation, air transport and railway transport); in addition, the status of the environment in the city was described, and so were economic and demographic factors influencing the demand for mobility. A SWOT analysis was drawn for each of the above parts.

2015

- The processed concept of the analytical part of the Mobility Plan was submitted to the Commission on Transport of the Council of the City of Brno on 21 January 2015 and subsequently the Commission took note of it.

- The concept of the analytical part of the Mobility Plan was submitted to the Council of the City of Brno, which took note of it in its meeting on 3 February 2015 and appointed Mayor Petr Vokřál the political guarantor of the Mobility Plan.

- **Commencement of the consultation process concerning the concept of the analytical part of the Mobility Plan.**

- A public discussion, at which the main outputs of the concept of the analytical part of the Mobility Plan were presented, was organised on the premises of the Office of the Public Defender of Rights on 24 March 2015. The first public discussion also resulted in the setting up of working groups for the preparation of the Mobility Plan. The working groups were divided according to the thematic areas of transport. The groups were also complemented with citizens who expressed their interest in active participation in the preparation of the Mobility Plan.

- On 10 April 2015, a presentation and discussion concerning the analytical part of the Mobility Plan was held, attended by representatives of all city districts.

- The concept of the analytical part of the Mobility Plan was submitted for comments to the departments of the Brno City Municipality. Comments were subsequently raised by the following departments: Department of City Planning and Development, Department of the Environment, Office of the Strategy of the City of Brno and Department of Transport. Comments were also received from the following departments of the South Moravian Regional Office: Department of Regional Development, Department of Transport Development, Department of Regional Planning and Building Code, as well as selected companies (Dopravní podnik města Brna [Public Transportation Company of the City of Brno], KORDIS JMK [Integrated Transport System Co-ordinator of the South Moravian Region], Brněnské komunikace [Brno Road Management and Maintenance Company] and Letiště Brno [Airport Brno]).

- **The comments obtained were evaluated and integrated into the final version of the analytical part of the Mobility Plan.**

- The analytical part of the Mobility Plan with integrated comments was submitted to a meeting of the Commission on Transport of the Council of the City of Brno on 20 May 2015. The Commission on Smart City of the Council of the City of Brno took note of the analytical part of the Mobility Plan on 21 May 2015 and recommended the Council of the City of Brno become acquainted with the settlement of the comments.

- The analytical part of the Mobility Plan with the integrated comments, together with the settlement of the comments, was once again submitted to the Commission on Transport of the Council of the City of Brno in its meeting held on 17 June 2015 and to the Commission on Smart City of the Council of the City of Brno on 18 June 2015.

- **The Council of the City of Brno took note of the settlement of the comments in its meeting held on 30 June 2015, approved the analytical part of the Mobility Plan and imparted to the director of the Department of Transport the task of organising, in cooperation with the City Strategy Office, an expert workshop for the preparation of a vision of the Mobility Plan.**

2016

- **An expert workshop entitled "Mobility in Brno - Vision 2050"** took place on 3 September 2015. More than 50 experts were invited to attend, not only from the field of transport, but also other fields necessary for mobility planning (such as economics, architecture, the environment and social sciences) to work together on vision proposals, areas of change and strategic objectives of the Mobility Plan. Five vision proposals were commented on, prepared by Ing. Zbyněk Sperat, Ph.D. (Centrum dopravního výzkumu [Centre for Transport Research]), doc. Ing. Josef Kocourek, Ph.D. (Czech Technical University in Prague, Faculty of Transportation), Mgr. Daniel Seidenglanz, Ph.D. (Masaryk University in Brno, Faculty of Science), Ing. Martin Hájek (Technical University of Ostrava) and Ing. Petr Hofhansl, Ph.D. (the company AF-CITYPLAN, s.r.o.); these vision proposals were complemented and finally submitted to the Mayor of Brno, Mr. Petr Vokřál and other members of the Council of the City of Brno.

- The five visions, which were discussed during the expert workshop, were also presented on 11 September 2015 in the framework of the Brno Sounding Board.

- A discussion of the working group on the vision proposals, areas of change and strategic objectives took place on 21 September 2015.

- The suggestions obtained during these discussions and the topics that were positively evaluated in the proposals arisen from the expert workshop were summarised in a vision proposal prepared by the Department of Transport in cooperation with the City Strategy Office. These six proposals were presented at a joint meeting of the Commission on Transport of the Council of the City of Brno and the Smart City Brno Commission held on 30 September 2015. At this meeting it was decided that the six vision proposals submitted to the joint meeting of the Council of the City of Brno will be sent to the companies Brněnské komunikace (BKOM) [Brno Road Management and Maintenance Company], Dopravní podnik města Brna (DPMB) [Public Transportation Company of the City of Brno], KORDIS JMK [Integrated Transport System Co-ordinator of the South Moravian Region], and the Department of Transport of the Brno City Municipality and the City Strategy Office. These six proposals were complemented by a seventh proposal prepared by Mgr. David Bárta, which was presented at the same joint meeting of the commissions of the Council of the City of Brno.

- The evaluations, which were subsequently elaborated, were presented, together with the seven visions, to the next joint meeting of the Commission on Transport of the Council of the City of Brno and the Commission on Smart City of the Council of the City of Brno, which took place on 18 November 2015. The Commission on Transport of the Council of the City of Brno did not adopt the resolution. The Commission on Smart City of the Council of the City of Brno recommended the Council of the City of Brno the following ranking of the vision proposals evaluated:

  1st Vision Proposal – Zbyněk Sperat
  2nd Vision Proposal – Daniel Seidenglanz
  3rd Vision Proposal – Josef Kocourek
  4th Vision Proposal – Martin Hájek
  5th Vision Proposal – Petr Hofhansl

- Vision proposals prepared by the Department of Transport of the Brno City Municipality and by the City Strategy Office, as well as the vision proposals submitted by Mgr. David Bárta, were taken note of by the Commission on Smart City of the Council of the City of Brno.

- On 15 December 2015, the Council of the City of Brno took note of the opinions provided by the company Brněnské komunikace [Road Management and Maintenance Company], Dopravní podnik města Brna (DPMB) [Public Transportation Company of the City of Brno], KORDIS JMK [Integrated Transport System Co-ordinator of the South Moravian Region], and the Department of Transport of the Brno City Municipality and the City Strategy Office.

- **At its meeting held on 22 December 2015, the Council of the City of Brno chose the vision submitted by Zbyněk Sperat. This vision, complemented by the modal split proposals Brno na kole [Brno by Bike] and Dejchej Brno [Breathe Brno]; will be the basis for the processing of the proposal part of the Mobility Plan.**

2016

- At the beginning of February 2016 (11 February), a draft of the proposal part of the Mobility Plan was delivered and discussions on it commenced. There was a panel discussion with the public (25 February) as well as meetings of the working groups of the Mobility Plan (7 March).

- **The Council of the City of Brno at its meeting held on 8 March 2016 approved an amendment to the proposal for the modal split in the vision for the year 2050.**

- By the end of May 2016, which had been set as a deadline for submitting comments, almost 700 comments and suggestions from the public as well as professionals were gathered concerning the concept of the proposal part of the Mobility Plan.

- The settlement of the comments received was discussed on 15 June 2018 at a meeting of the Commission on Transport of the Council of the City of Brno.

- Discussion on the settlement of suggestions and comments on the concept of the proposal part of the Sustainable Urban Mobility Plan of the city of Brno at a meeting of the Commission on Transport of the Council of the City of Brno.

- **The Council of the City of Brno, at its meeting held on 19 July 2016, took note of the settlement of suggestions and comments on the concept of the proposal part of the Sustainable Urban Mobility Plan of the city of Brno and the finalisation of the proposal part of the Mobility Plan was commenced.**

- **The finalisation of the proposal part of the Mobility Plan was commenced.**

2017

- In January 2017, the concept of the proposal part was delivered and it started to be discussed with the public, experts and city districts.

- In March 2017, a public discussion (on 7 March) and meetings of the working groups (on 9 March) were held.

- The concept of the proposal part was also presented to city districts and municipalities of the Brno Metropolitan Area (on 14 March and 22 March).

- In March 2017, a fact-finding procedure was initiated pursuant to Act No. 100/2001 Coll., On Environmental Impact Assessment, as amended, for the conception of the Mobility Plan.

- The South Moravian Regional Authority, as the materially and locally competent administrative authority, issued a conclusion on 26 April 2017 in the sense **that the conception of the "Sustainable Urban Mobility Plan of the City of Brno" concept will**

2018

2017

be assessed in accordance with Act No. 100/2001 Coll., On Environmental Impact Assessment, as amended. Therefore, a SEA will be processed.

- The Council of the City of Brno, at its meeting held on 27 June 2017, approved the selection of the consortium of companies EKOTOXA s.r.o. and RADDIT consulting s.r.o., as the contractor for the evaluation of the conception of the "Sustainable Urban Mobility Plan of the City of Brno". The leader of this consortium is the company EKOTOXA s.r.o. The assessment of the impact of the Mobility Plan on the environment – the SEA – was commenced.

- At the same meeting (held on 27 June 2017) the Council of the City of Brno also appointed Ing. Hana Kašpaříková, member of the Assembly of the City of Brno, as political guarantor for the process of preparation and discussion of the Sustainable Urban Mobility Plan of the City of Brno.

- **On 13 December 2017, a draft of the conception of the "Sustainable Mobility Plan of the City of Brno" was published on the official notice board, including the assessment of the environmental impact of the conception, and information was also published on the venue and date of the public discussion.**

2018

- On 11 January 2018, a public discussion on the conception of the "Sustainable Mobility Plan of the City of Brno" was carried out, as well as an assessment of the environmental impact of the conception.

- Ten comments were received by the deadline of 16 January 2018, i.e. five days from the public discussion, when the deadline for submitting comments on the draft conception and environmental impact assessment of the conception was expired. These comments were evaluated.

- The evaluation of the comments received and an amended version of the conception were sent to the South Moravian Regional Authority on 4 April 2018.

- The South Moravian Regional Authority issued its **consenting opinion** on 16 April concerning the draft conception of the "Sustainable Urban Mobility Plan of the City of Brno" pursuant to Article 10g of Act No. 100/2001 Coll., on Environmental Impact Assessment and on the Amendment to Certain Related Acts (the Environmental Impact Assessment Act), as amended.

- On 19 June, discussion on the opinion of the Regional Authority of the South Moravian Region pursuant to Article 10g of Act No. 100/2001 Coll., on Environmental Impact Assessment and on the Amendment to Certain Related Acts (the Environmental Impact Assessment Act), as amended, concerning the draft conception of the "Sustainable Urban Mobility Plan of the City of Brno", took place at a meeting of the Assembly of the City of Brno.

VISION AND STRATEGIC OBJECTIVES OF THE MOBILITY PLAN

Vision and strategic objectives for the proposal and the prospective periods have been approved by the Council of the City of Brno are therefore a binding basis for the proposal of measures for the development of sustainable urban mobility.

Individual strategic objectives have been elaborated into more detail – a proposal of specific objectives.

BRNO IS A CITY EASY TO LIVE IN (EVEN WITHOUT A CAR)

In 2050, Brno ranks first in the chart rating the quality of life in cities. 480 thousand satisfied citizens live in there; they are not forced to leave the city for clean air even on their days off. Brno is a city where it is easy to live without a car. It is a city of short trips with interconnected and consistent modes of transport. Mobility is the main political issue as a foundation stone of the quality of life in the city, and for 35 years already, the city residents have been actively involved in the topic of urban mobility with creative suggestions. Being a senior or handicapped in Brno does not mean any limitation of travel habits. In the long term, the city has been making the transport system more efficient in a conceptual and coordinated manner. The ease, possibility and speed of travel are the main objectives of transport planning. At the same time, the city is capable, on the basis of a broad data basis, to respond flexibly in the area of mobility to trends not only in transport but also in demography, economy and migration of population.

1. MODAL SPLIT BETWEEN SUSTAINABLE MODES OF TRANSPORT (PUBLIC TRANSPORTATION, CYCLING AND PEDESTRIAN TRAFFIC)

STRATEGIC OBJECTIVES

- Increase the share of public transport, cycling and pedestrian traffic in the modal split
- Increase the integration of sustainable modes of transport (share of multimodal routes) and accelerate public transportation (travel speed on reference journeys taken by public transportation higher by 15% in 2030)
- Increase the number of households not in possession of a car (by 20% by the year 2050)

2. ROAD COMMUNICATION NETWORK OF THE CITY AND QUALITY OF PUBLIC SPACES

STRATEGIC OBJECTIVES

- Not to increase the capacity of the road communication network for individual motor car traffic in the central part inside the city after completion of the construction of the protective transport system (maintaining of the total number of parking places in the broader centre of the city on the level of the actual need)
- Increase accessibility and attractiveness of sustainable modes of transport in the city and its hinterland (for example suburban railways), (the share of suburban railways on reference journeys will grow by 20% by the year 2030 to the detriment of individual motor car traffic)
- Increase the number and quality of public spaces (increase in the percentage of inhabitants of the city satisfied with public spaces by 30% by the year 2030)

3. ORGANISATION AND CONTROL OF TRAFFIC AND OF THE DEMAND FOR TRANSPORT

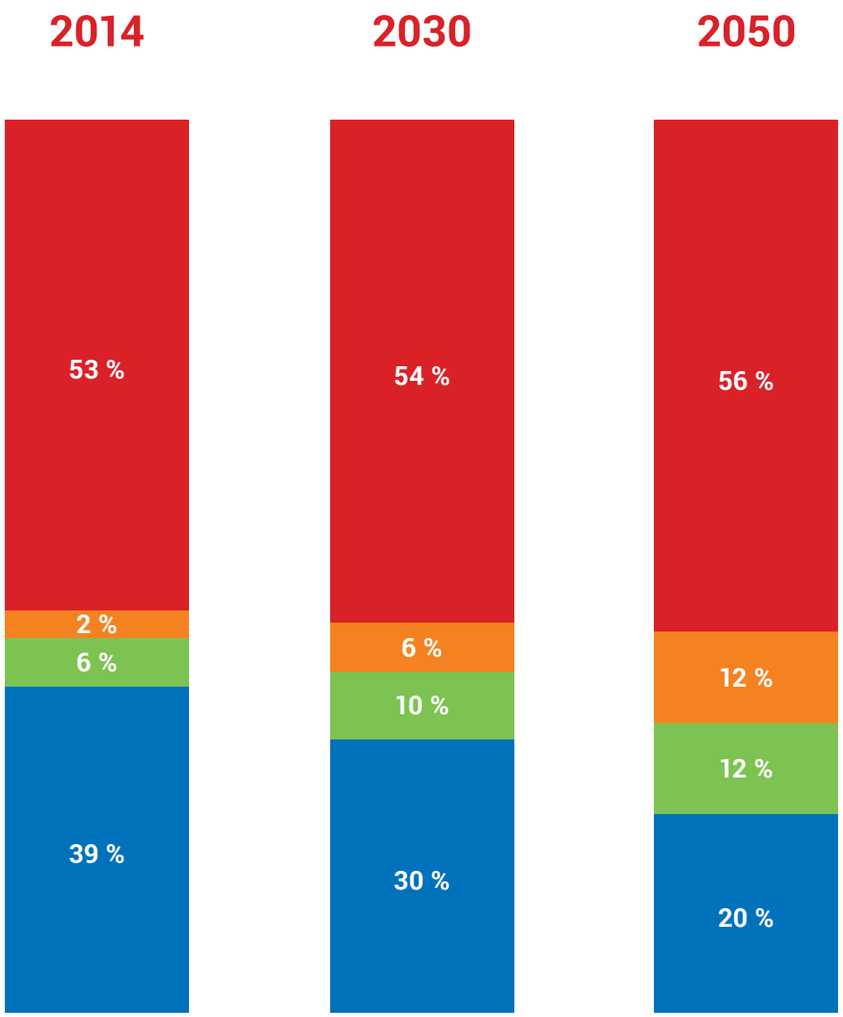
STRATEGIC OBJECTIVES

- Combine traffic and spatial planning, implement principles of integrated traffic planning including strengthening of the importance of telematic systems
- Implement comprehensive planning of the transport of employees and visitors to big enterprises and institutions, including projects generating traffic (for example plans of mobility for shopping centres, compulsory corporate plans of mobility for organisations with more than 100 employees by the year 2020, and with more than 50 employees by the year 2025)
- Implementing education, training, raising awareness in the area of urban mobility and information of traffic participants

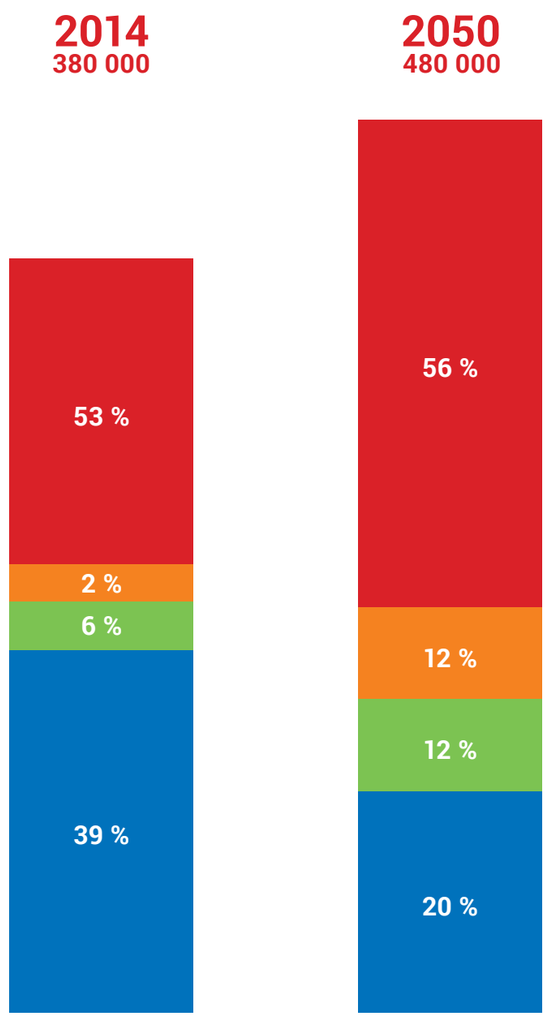
4. PROTECTION OF INHABITANTS AGAINST NEGATIVE IMPACTS OF TRAFFIC, HIGH ENERGY CONSUMPTION OF TRAFFIC

STRATEGIC OBJECTIVES

- Reduce the number of traffic accidents (fulfil national objectives, for example reduction of the number of victims of traffic accidents to one half compared to the year 2015 by the year 2025)
- Reduce the number of inhabitants suffering from above-the-limit noise from traffic (by the year 2025, less than 5% of the population of the city should suffer from above-limit noise from traffic)
- Reduce emissions of greenhouse gases and reduce the energy consumption of transport per passenger (a fourfold reduction in greenhouse gas emissions by the year 2050 compared to the year 2010, or: 1 tonne equivalent of CO_2 per person per year by the year 2050); decrease in total energy consumption in transport per passenger by 20% by the year 2050)
- Ensure reliability of the transport system in case of emergency situations
- Minimise the negative impacts of city logistics


2014
53 %
2 %
6 %
39 %
2030
54 %
6 %
10 %
30 %
2050
56 %
12 %
12 %
20 %


Public mass transportation
Cycling
Pedestrian traffic
Individual motor car traffic


2014
380 000
53 %
2 %
6 %
39 %
2050
480 000
56 %
12 %
12 %
20 %

Public mass transportation
Cycling
Pedestrian traffic
Individual motor car traffic

AREA OF CHANGE

1. THE MODAL SPLIT BETWEEN SUSTAINABLE MODES OF TRANSPORT (PUBLIC TRANSPORT, CYCLING AND PEDESTRIAN TRAFFIC)

STRATEGIC GOAL

INCREASE THE SHARE OF PUBLIC TRANSPORT, CYCLING AND PEDESTRIAN TRAFFIC IN THE MODAL SPLIT

An increase in the share of sustainable modes of transport in the modal split requires a combination of a number of measures and investments. The objective is, on the one hand, to stop the outflow of passengers from public transportation to individual motor car traffic and to increase the share of use of public transportation by 1% compared to the current state (from 53% to 54%) by the year 2030. Although at first glance this does not seem to be an unrealistic increase, a number of measures concerning the city's transport system need to be implemented in order to increase the attractiveness of public mass transportation. In the case of walking and bicycle traffic, measures are aimed at promoting their higher use. For these purposes, the following specific objectives are proposed:

1. IMPROVING THE PERCEPTION OF PUBLIC TRANSPORTATION ON THE PART OF THE PUBLIC

- cooperation of all participating authorities in marketing campaigns. The objective of these campaigns is to raise awareness and supply information about urban public transport, as well as suburban public transport. A clear and visible message that will act motivationally and convincingly on the passengers seems to an essential issue. It would be appropriate to focus the message on the advantages of urban public transport, specifically its speed, cleanliness of the environment, ecology, financial burden (lower than in the case of individual motor car traffic – prices of fuel should be compared), emphasise the benefits of new prepaid annual season tickets (even for those passengers who are already using them) and options of using the time off during the journey – reading, listening to music, etc.

- it is advisable to provide additional benefits also to passengers with single journey tickets – such as a free public transportation ticket for P+R users

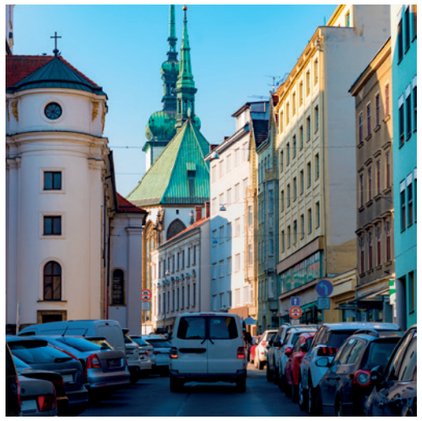
- joint projects for Brno and the region. Due to the fact that a significant portion of the urban public transportation passengers consists of inhabitants of the surrounding region who arrive in the city by means of inter-urban public mass transport, it is necessary to extend the promotional campaigns beyond the city boundaries and include in them also the IDS JMK suburban system [Integrated Transport System of the South Moravian Region]

- information campaigns on the benefits of travelling on public mass transport must be targeted at all population groups

2. ENHANCING THE QUALITY OF INFRASTRUCTURE AND ROLLING STOCK FOR PUBLIC TRANSPORT

- the quality of public transportation vehicles – in particular, this means the quality of the environment inside the vehicles, as well as services that will improve the standards of travel (such as Wi-Fi)

- technical and operational parameters – this means parameters of the vehicles that must meet the requirements for sufficient passenger comfort while at the same time they must meet the requirements for making their operation more environmentally friendly



- intelligent stops with information for passengers – this means equipping a majority of the stop signposts with displays providing up-to-date information on the time of arrival of the next vehicles as well as information on service irregularities or extraordinary measures

- increasing the frequency of services (or optimisation of the traffic) so that public transportation may provide a competitive alternative option, of course in response to transport demand

- compliance with public transportation quality standards – formulation of such standards by the authority that commissions the transport services (for example: possible requirements of the City of Brno concerning the occupancy of public transportation vehicles at peak times of the day)

3. IMPROVING THE PROVISION OF INFORMATION TO PASSENGERS ON PUBLIC TRANSPORT

- unified provision of information about all transport in Brno and the Brno Metropolitan Area – information about the events on the mass public transportation network in the area in question must be unified and up to date. Passengers need relatively accurate information to make a decision on the method of travel. Failure to receive this information means a potential loss of mass public transportation passengers

- information centres – stationary points in places with high numbers of passengers – such as interchange hubs, busy stops and the transport company's facilities. In addition, it is also possible to operate mobile information centres that can be operatively placed in locations affected by traffic irregularities.

- smart stops – traffic irregularities on the public transportation network will be displayed at stops, possibly also information about diverted routes or suspended services

- mobile application support – smartphone development makes it possible to develop applications that can transmit updated traffic information via data transmission to mobile phones (such as the IRIS system)

- development of information systems inside the vehicles – visualisation of updated information on the status of the mass public transportation network, in particular traffic incidents or scheduled service disruptions

4. COMPLETION OF BACKBONE PATHWAYS FOR CYCLISTS AND IMPROVEMENT OF THE EXISTING ROUTES FOR CYCLISTS

- development of cycling infrastructure – this means the completion of the backbone routes that are designed in a separate route along roadways with a high intensity of traffic.

- development of bicycle lanes on local roads, where existing traffic, especially mass public transportation, must be taken into account, and there are cyclopictograms (horizontal road signage) in sections where there is not enough street space. Routing of bicycle traffic through one-way streets in the opposite direction is an appropriate solution, which makes the cyclists' movement around the city easier.

- recreational routes, which are predominantly routed outside the built-up area of the city to the surrounding countryside, must also be developed.

- Quality road surfaces for cyclists – backbone routes and routes used for daily commuting, for example, to work or school, must have a quality surface that will eliminate the dirtying of the cyclist and at the same time must be comfortable and safe for riding

- Installation of the accompanying infrastructure – addition of bicycle routes especially in the central part of the city is suitable from the point of view of the installation of bicycle racks (guarded or unguarded).

5. INTERCONNECTION OF DESTINATIONS WITH SAFE AND ATTRACTIVE ROUTES FOR CYCLISTS AND PEDESTRIANS

- implementation of new cycling routes – the design of the route must respect the principle of interconnection of individual areas of the city and the surrounding areas with a safe route

- construction and support of pedestrian links in the territory – a pedestrian connection tackles especially the accessibility of a built-up area outside the continuously built-up area. In the central part of the city, mainly accessibility of the territory is tackled, which is often interrupted by large closed compounds (mostly former manufacturing plants) or by transport infrastructure

- proposals for new area development and new transport infrastructure features must respect the accessibility of the territory for pedestrian traffic

- gradual removal of barriers in the public space and on the city territory; building barrier-free routes also in the sense of increasing accessibility for people with limited mobility options

- increasing the share of safe routes for pedestrians and bicycle traffic – routes for non-motorised traffic must be safe, not only from the point of view of the design of the work itself, but also from the point of view of general crime incidence

6. ADDITION OF SUPPORTING FEATURES FOR BICYCLE TRAFFIC

- installation of new parking capacities for bicycles – installation of racks (lockable or non-lockable) should be carried out in the framework of the construction of civic amenities, administrative buildings, public buildings, transport terminals and other localities that are the source or destination of journeys

- support for the building of facilities for cyclists in public buildings – in public buildings, there should be a bicycle storage room or a bicycle lay-by area. For staff in the building, it is also advisable to set up facilities such as a shower.

7. SUPPORT FOR COMMUTING TO WORK BY BICYCLE

- motivation of employers to support cycling – employers can create facilities for cyclists at the workplace – lockable space for bicycle parking, sanitary facilities for cyclists.

- Support and cooperation of the city in the creation of corporate plans of mobility – it is mandatory to have one for companies with more than 100 employees by the year 2020 and with 50 employees by the year 2025. It may be motivating for the companies to have a document that will eventually allow them to use subsidy money for retrofitting facilities for their employees. Part of this document will be support

for using mass public transportation or organising shared travel for the employees (carpooling).

8. IMPROVEMENT IN THE ACCESSIBILITY OF SELECTED ZONES FOR NON-MOTORISED TRAFFIC

- establishing new safe crossings for pedestrians and crossings for cyclists – pedestrian crossings, bicycle crossings and crossing points are established wherever it is allowed according to technical conditions and the ČSN technical standards. Their designs must meet basic requirements for safe crossing with automobile traffic, such as adequate outlooks and barrier-free solutions also for the visually impaired. No crossings should be closed without compensation.
- grade-separated crossings – are proposed in places where it is appropriate from the point of view of terrain configuration, or where traffic intensities are high and complete separation of automobile and non-motorised traffic is a safer option.
- creating shared spaces: this is supported in those locations where conditions for this solution are appropriate. Intense car traffic should not be routed through these spaces. Suitable localities are situated in the central part of the city, local centres, and possibly in residential districts.
- Expansion of Zones 30 and Residential Zones – the extension of these zones is desirable in terms of increased traffic safety, because particularly in residential areas, spatial possibilities and viewing conditions are very limited and it is necessary to adjust the speed of travel of the vehicles accordingly.

9. ADDITION OF URBAN FURNITURE FOR PEDESTRIANS

- New benches – adding a sufficient number of them, and in adequate quality, into quiet zones of the city
- Public toilets – can be stationary or mobile. Placed according to the needs and the possibilities in the local area.
- Pedestrian rest places – these are established especially in urban green areas; the degree of their equipment depends on their attractiveness

10. INFORMATION AND AWARENESS CAMPAIGNS TO PROMOTE PEDESTRIAN AND BICYCLE TRAFFIC

- Information campaign – emphasising the importance of sustainable modes of transport around the city, in case of pedestrians on short distance journeys and a positive impact on the environment and health of the population

11. INFORMATION AND AWARENESS CAMPAIGNS TO PROMOTE PUBLIC TRANSPORT

- Information campaign – see point 1

INCREASE THE INTEGRATION OF SUSTAINABLE MODES OF TRANSPORT (SHARE OF MULTIMODAL ROUTES) AND ACCELERATE PUBLIC TRANSPORTATION (TRAVEL SPEED ON REFERENCE JOURNEYS TAKEN BY PUBLIC TRANSPORTATION HIGHER BY 15% IN 2030)

Increasing the share of sustainable modes of transport in the total volume of journeys must be supported by a number of measures that will convince IAD users of the benefits of changing their transport behaviour. Therefore, it is necessary to build up infrastructure that will allow the achieving of the above goal, in particular in the city, under more favourable financial conditions and in a shorter or similar time as with the use of individual motor car traffic. The increase in travel speed in the mass public transportation segment requires investment costs, which have to be covered for the reconstruction or new construction of the transport infrastructure and investment, while it is also necessary to carry out investment into the rolling stock. The following specific objectives are proposed:

12. INCREASING THE NUMBER OF CONNECTIONS BETWEEN INDIVIDUAL SERVICES, REDUCTION OF WAITING TIMES DURING INTERCHANGE

- increasing the number of guaranteed connections in Brno in the off-peak periods – optimising timetables, selecting interchange points around the city, where guaranteed interchange between individual lines will be guaranteed. Preference to be given to interchange relations between backbone lines.
- minimisation of interchange times (measures to be taken on the level of timetable arrangements) – conducting optimisation of timetables based on citizens' requirements and technological possibilities of the tracks.
- verification of the proposed solutions and optimisations by means of a transport model (microsimulation) – the transport model will demonstrate whether the proposed solution is effective. More complicated hubs should be examined by microsimulation, where it is possible to verify the movement of passengers outside of mass public transportation vehicles at interchange points (capacities of platforms, concurrent services, etc.).

13. IMPROVEMENT IN THE RANGE OF INTERCHANGE OPTIONS, SHORTENING THE INTERCHANGE DISTANCES, INCREASING THE ACCESSIBILITY OF THE TERRITORY, CONSTRUCTION OF MULTIMODAL HUBS AND NEW TRAIN STOPS

- Building new interchange hubs and upgrading the existing ones – in addition to shortening the interchange relations, the interchange hubs must provide amenities for passengers. The aim of the modernisation is to provide a safe place for the interchange and, as the case may be, waiting for the next connection.
- Upgrading to multimodal hubs – interchange hubs must also allow for interchange within individual modes of transport. It is advisable to add P+R, B+R and K+R parking lots and bicycle storage rooms.
- Improving the quality of provision of information about connecting services.
- Removal of barriers – interchange hubs must be barrier-free in order to ensure the movement of immobile citizens and visually impaired citizens.
- Increasing the accessibility of mass public transportation by building train stops for interchange with mass urban transport – railway lines were historically routed with insufficient servicing of the territory. On the territory of the city it is possible to add stops on existing lines and to connect them to the existing mass urban transport system even at the cost of upgrading the existing routes. The establishment of new stops is conditional on suitable parameters of the railway line.
- Improving the accessibility of stops for pedestrians – support for building pedestrian interconnections with sources and destinations of journeys

14. SHORTENING THE LENGTH OF JOURNEYS FOR PEDESTRIAN AND CYCLING TRAFFIC

- Separate bicycle routes – this means in particular separate routes where cyclists are not restricted by pedestrians and by car traffic. This solution is difficult to ensure in the central part of the city and is only suitable for redevelopment areas and stretches along urban radial roads.
- Renovation of passageways in the city – in the built-up area of the city there are a number of passageways, which for various reasons are not functional – structural modifications, occupation of land plots or ownership issues. It is advisable to renew these interconnections in order to cut down walking distances. To set the accessibility of an area for pedestrian and cycling traffic as a necessary requirement in the reconstruction areas.
- Removal of barriers and increasing barrier-free access – for immobile and visually impaired citizens, modifications of public spaces and pedestrian crossings.

15. INCREASE IN TRAVEL SPEED FOR MASS PUBLIC TRANSPORTATION

- Segregation of routes for mass public transportation – in sections where this is technically and spatially possible, we consider it useful to continue the segregation in particular of the mass public transportation rail system. The segregation of bus and trolleybus routes is problematic; it is necessary to reduce the traffic in the central part of the city in order to establish a higher number of dedicated bus lanes.

- Promoting preference at junctions for mass public transportation – within the framework of the reconstruction of intersections with traffic lights, the proposed solutions will allow for preference of all means of mass public transportation; investment in public transportation rolling stock is also part of this measure.

- Structural improvements of road communications – identification of suitable sections where it will be useful to set up preferential lanes for buses and trolleybuses outside the existing lanes, adjustments of the traffic solution at intersections for the preference of all public transportation traction modes

16. MODERNISATION OF PASSENGER FARE HANDLING

- Passenger fare handling within the Brno Metropolitan Area in a single tariff – optimising the existing solution based on the experience of operators, the coordinator (KORDIS JMK) and passengers

- Use of progressive fare handling technologies – introduction of check-in by means of bank cards, acceleration of passenger clearance.

17. DEVELOPMENT OF SUBURBAN RAIL TRANSPORT MODES (S-LINES, REGIONAL BUS TRANSPORT)

- Optimisation and development of systems based on traffic surveys and requirements – the system is operational already in the current state, but it needs to be further optimised based on the requirements of the passengers and based on the experience of the organiser KORDIS JMK

- Increase in the number of services – addition of extra services on overloaded lines, line routing optimisation in order to reduce the overloading of individual services

- Marketing support for the use of regional lines – an awareness campaign will be necessary that will increase the number of mass public transportation users for journeys to Brno. Potential passengers need to be informed about the benefits of commuting to work by means of mass public transportation.

18. ATTRACTIVE OFFER OF CONNECTIONS, SEAMLESS TARIFF AND TRANSPORT CONNECTIONS BETWEEN BRNO AND ITS HINTERLAND IN THE BRNO METROPOLITAN AREA AND BROADER SURROUNDINGS (BEYOND THE EXISTING INTEGRATED TRANSPORT SYSTEM OF THE SOUTH MORAVIAN REGION)

- Fare system design – based on a survey of interest, the existing Integrated Transport System of the South Moravian Region can be extended to additional municipalities and towns outside the territory of the region.

- Enhancement of the quality of interchange terminals – the terminals must be friendly, safe for passengers and provide sufficient information and adequate comfort while waiting for a connecting service.

- Interconnection with railway and regional bus services – regional bus services should serve as a rail transport feeder in areas with high-capacity rail transport and should not enter the city. At traffic peak periods, the time necessary to reach the centre will be shorter by rail transport than by bus.

19. MARKETING AND FINANCIAL SUPPORT FOR PUBLIC, BICYCLE AND PEDESTRIAN TRANSPORT

- Information campaign aimed at public, cycling and pedestrian transport – information initiative on the advantage of using a sustainable transport mode for the environment in the city and the health of the population

20. DEVELOPMENT OF P+R MULTIMODAL TERMINALS IN BRNO AND ITS HINTERLAND

- Support for the construction of P+R type car parks in Brno – each car park must be connected to high-capacity public transport, preferably a rail mode; the car parks must be located along all the main direction routes on arrival to the city. Their construction will also become necessary with the gradual introduction of the so-called residential parking system, which will make it difficult for a visitor to park in the city centre for the whole day (reduced parking capacity, paid parking lots).

- Support for the construction of P+R facilities in the Brno Metropolitan Area in connection with high-capacity mass public transportation – the support for P+R is desirable with a view to limitation of daily commuting to Brno by passenger cars. We prefer the parking of cars outside Brno at railway stops and continuation of the journey by train, which often has shorter arrival times to the city centre than individual motor car traffic (especially in peak traffic periods).

21. DEVELOPMENT OF B+G, B+R SYSTEMS

- Establishment of new bicycle racks and storage facilities, in particular in connection with mass public transportation interchange hubs and travel destinations – establishment of capacity storage for bicycles also out of Brno in connection with railway stations and use of rail transport for the subsequent journey.

- Appropriate financial policy of guarded parking lots (automatic operation) – setting a financial policy that takes into account the parking of the bicycle for the time of the journey to the city and back. These storage facilities must not be used for long-term parking of bicycles.

22. DEVELOPMENT OF AN URBAN BICYCLE SYSTEM – BIKE-SHARING

- Introduction of a bike-sharing system and its extension to suitable localities within the city.

23. IMPROVED ACCESSIBILITY BY PUBLIC TRANSPORTATION IN ALL DISTRICTS OF THE CITY

- Construction of new mass public transportation routes (enhancement of speed and comfort) – new mass public transportation lines will be built at higher speed standards in order to achieve higher travel speeds. This can be applied especially outside the densely built-up parts of the city.

- Upgrading of existing tracks of mass public transportation – in the street area, it is possible to apply solutions aimed at increasing driving standards – comfortable ride and acceleration of traffic at junctions (rail turnouts enabling higher speed of passage). The existing tracks lying outside the intensely built-up area are in need of being upgraded in order to attain the possibility of increasing the speed of travel.

- New mass public transportation lines, optimisation of the existing line routing – optimisation based on citizens' suggestions, traffic surveys, changes in area development and commissioning of new tracks.

- Increasing the accessibility of mass public transportation through construction of new stops – it is purposeful to build the stops in places where there is insufficient service of mass public transportation, or where there are new development or redevelopment areas. Basic accessibility parameters must be ensured, as proposed by the author within this document.

- Model verification of the proposed line routing – changes in the line routing, in the number of connections, etc., should be verified by a model calculation that will reveal possible system failures before it is actually put into operation. The proposed solution will be optimised and evaluated.

INCREASE THE NUMBER OF HOUSEHOLDS NOT IN POSSESSION OF A CAR (BY 20% BY THE YEAR 2050)

Fulfilling this strategic goal may look unattainable at first glance, as at present the ownership of a passenger vehicle seems to be some form of integration of a person into society. This status quo cannot be changed by any restrictive measure, but we can try to change people's transport behaviour so that it becomes a better option to rent a vehicle for a specific purpose than be an owner of one. It is namely a matter of support for car-sharing and carpooling.

The city also has the opportunity to reduce the need to use a car by supporting the development of a city of short distances, where accessibility of services or employment is not related to the ownership of a car. The following specific objectives are hence proposed:

24. SUPPORT FOR CARPOOLING (SHARED TRAVEL)

- Support for operators of carpooling – possible lane reservation for vehicles with two or more persons is not realistic in the city environment. Support for this system is mainly in company mobility plans, where fellow workers are also becoming fellow travellers.

- Motivation of employers to support carpooling – see previous point

25. SUPPORT FOR CAR-SHARING (SHARING OF VEHICLES)

- Support for operators of car-sharing – designation of parking spaces for cars included in this system, privileged parking conditions in residential parking areas

SYNERGIC EFFECTS OF THE VISION

Within this area of change, strategic and specific objectives are set that aim to transfer part of the population's journeys from individual motor car traffic to mass public transportation, walking and cycling traffic. Reducing the share of individual motor car traffic will create these synergic effects that have a positive impact on traffic situation and life in the city:

- Reducing the share of individual motor car traffic in the overall modal split will lead to cutting down congestion at traffic peaks on the backbone roadways in the city, which will eventually reduce negative impacts on the environment.

- By decreasing the number of individual motor car traffic journeys, pressure on parking places in the city centre will be reduced.
- Reducing individual motor car traffic intensities will lead to an increase in road traffic safety.

- The reduction of congestion in traffic peak times thanks to the reduction in the intensity of individual motor car traffic will allow smooth operation of the bus and trolleybus service, which will eventually have a positive effect on the reliability of the mass public transportation system and increase thus the attractiveness for passengers.

- The increase in the number of passengers on mass public transportation will bring an increase in the volume of funds for the operator and the organiser of the mass transport, and hence greater opportunities for investment into enhancement in quality of the rolling stock and of the infrastructure.

EVALUATION INDICATORS

AREA OF CHANGE — **THE MODAL SPLIT BETWEEN SUSTAINABLE MODES OF TRANSPORT (PUBLIC TRANSPORT, CYCLING AND PEDESTRIAN TRAFFIC)**

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
INCREASE THE SHARE OF PUBLIC TRANSPORT, CYCLING AND PEDESTRIAN TRAFFIC IN THE MODAL SPLIT	**1. IMPROVING THE PERCEPTION OF PUBLIC TRANSPORTATION ON THE PART OF THE PUBLIC**	• cooperation of all participating authorities in marketing campaigns • joint projects for Brno and the region • information campaigns	• change in the perception of public transportation on the part of the public • number of users of mass public transportation (modal split) • percentage of satisfied users	• repeated sociological surveys into the perception of public transportation on the part of the public in the Brno Metropolitan Area • survey of the modal split	• improvement in the perception of mass public transportation on the part of the public > 70% • increase in the usage of mass public transportation – achieved modal split > 54% • percentage of satisfied users > 90%
	2. ENHANCING THE QUALITY OF INFRASTRUCTURE AND ROLLING STOCK FOR PUBLIC TRANSPORT	• the quality of public transportation vehicles • intelligent stops with information for passengers • frequency of services • technical and operational parameters • observance of public transportation quality standards	• mass public transportation quality standards set out in the SUMP • number of intelligent stops • travel speed	• technical parameters of the vehicles • satisfaction surveys • analysis of operational data (such as travel speed)	• attainment of mass public transportation quality standards > 95% • number of intelligent stops > 70% (rail transport > 98%) • increase in travel speed > 15%
	3. IMPROVING THE PROVISION OF INFORMATION TO PASSENGERS ON PUBLIC TRANSPORT	• unified provision of information about all transport in Brno and the Brno Metropolitan Area • information centres • smart stops • mobile applications • development of information systems inside the vehicles	• number of stops equipped with an intelligent system • satisfaction of passengers with the measures • number of users of web applications and information portals	• DPMB, KORDIS and BKOM annual reports • satisfaction surveys • statistics and analyses from managers of web applications	• number of stops equipped with an intelligent system > 70% (rail transport > 98%) • number of satisfied passengers from the point of view of information >90% • increase in the number of users of web applications and information portals > 60%
	4. COMPLETION OF BACKBONE PATHWAYS FOR CYCLISTS AND IMPROVEMENT OF THE EXISTING ROUTES FOR CYCLISTS	• development of infrastructure for bicycle traffic (cyclopictocorridors [horizontal road signage]), dedicated lanes for cyclists, paths) • good-quality surface of routes for cyclists • installation of new equipment – accompanying infrastructure	• length of routes for cyclists • modal split (percentage of bicycle traffic) • percentage of routes with good-quality surface • satisfaction with the accompanying infrastructure	• survey of the modal split • DPMB, KORDIS and BKOM annual reports	• increase in the length of routes for bicycle traffic >90% of the planned intentions • increase in the share of cyclists on the modal split – 6 % of the modal split • enhancement of the quality of cycling paths to >90 % of good-quality surfaces on total length • growing satisfaction of users >80% of satisfied users of cycling paths

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
	5. INTERCONNECTION OF DESTINATIONS WITH SAFE AND ATTRACTIVE ROUTES FOR CYCLISTS AND PEDESTRIANS	• implementation of new cycling routes • construction of pedestrian links in the territory • removal of barriers • increasing the share of safe routes for pedestrians and bicycle traffic	• length of the routes for cyclists • length of the routes for pedestrian traffic • modal split (percentage of bicycle and pedestrian traffic – non-motorised transport) • number of traffic accidents • accessibility of trip destinations for non-motorised transport	• survey of the modal split • DPMB, KORDIS and BKOM annual reports • statistics by the Police of the Czech Republic	• increase in the length of routes for bicycle traffic > 90% of the planned intentions • increase in the length of routes for pedestrian traffic > 90% of the planned intentions • increase in the share of non-motorised transport on the modal split – 15% of modal split • reduction of the number of traffic accidents in non-motorised transport o 99 % • increase in accessibility of trip destinations for non-motorised transport by 80%
	6. ADDITION OF SUPPORTING FEATURES FOR BICYCLE TRAFFIC (BIKE RACKS, SERVICE POINTS ETC.)	• installation of new bike racks • establishment of service points for cyclists • facilities for cyclists in public buildings	• number of features for cyclists to be used in public areas • modal split (percentage of bicycle traffic)	• survey of the modal split • DPMB, KORDIS and BKOM annual reports	• increase in the number of supporting features: a. number of service points – 60% coverage of the city area b. number of bike racks – all shopping centres, civic amenities c. facilities in public buildings – all buildings • increase in the share of cyclists on the modal split – 6% of the modal split
	7. SUPPORT FOR COMMUTING TO WORK BY BICYCLE	• motivation of employers to support cycling • creation of corporate plans of mobility	• number of employees commuting by bike • number of corporate plans of mobility	• employers' statistics (large enterprises) • survey of the modal split	• increase in the percentage of journeys to workplace undertaken by means of bicycle traffic > 6% (attainment of the modal split) • increase in the number of corporate plans of mobility by 100 %
	8. IMPROVEMENT IN THE ACCESSIBILITY OF SELECTED ZONES FOR NON-MOTORISED TRAFFIC	• establishing new safe crossings for pedestrians and crossings for cyclists • grade-separated crossings • creating new shared spaces • Expansion of Zones 30 and Residential Zones	• number of grade-separated crossings • number of newly established safe crossings and overpasses • number of Zones 30, Residential Zones and shared spaces • number of traffic accidents	• survey of the modal split • BKOM annual report • statistics by the Police of the Czech Republic	• implementation of grade-separated crossings >80% of the proposed number • increase in the number of safe crossings > 90% • increase in the extent of Zones 30 and Residential Zones to > 90% of suitable areas • reduction of the number of traffic accidents with cyclists and pedestrians by 100%
	9. ADDITION OF URBAN FURNITURE FOR PEDESTRIANS (BENCHES, PUBLIC TOILETS ETC.)	• new benches • public toilets • pedestrian rest places	• number of urban furniture features in the city territory • satisfaction of citizens with the equipment in public space	• statistics by the Transport Department of the Brno City Municipality • survey of satisfaction	• increase in the number of urban furniture features (number of benches, public toilets…) > 90% of suitable locations • increase in comfort of the stay of citizens in the public space > 70% of satisfied citizens
	10. INFORMATION AND AWARENESS CAMPAIGNS TO PROMOTE PEDESTRIAN AND BICYCLE TRAFFIC	• information campaign	• modal split (percentage of bicycle and pedestrian traffic)	• survey of the modal split	• survey of the modal split
	11. INFORMATION AND AWARENESS CAMPAIGNS TO PROMOTE PUBLIC TRANSPORT	• information campaign	• modal split (percentage of public transport)	• survey of the modal split	• increase in the share of public transportation on the modal split > 54%

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
INCREASE THE INTEGRATION OF SUSTAINABLE MODES OF TRANSPORT (SHARE OF MULTIMODAL ROUTES) AND ACCELERATE PUBLIC TRANSPORTATION (TRAVEL SPEED ON REFERENCE JOURNEYS TAKEN BY PUBLIC TRANSPORTATION HIGHER BY 15% IN 2030)	**12. INCREASING THE NUMBER OF CONNECTIONS BETWEEN INDIVIDUAL SERVICES, REDUCTION OF WAITING TIMES DURING INTERCHANGE**	• increasing the number of guaranteed connections in Brno in the off-peak periods • minimisation of interchange times (measures to be taken on the level of timetable arrangements) • verification of the proposed solutions and optimisations by means of a transport model (microsimulation)	• number of guaranteed connections • minimisation of time losses for passengers	• satisfaction surveys • analysis of operational data /timetables • modelling methods	• satisfaction of passengers with service connections > 80% • shortening of waiting times to minimum possible values
	13. IMPROVING THE POSSIBILITIES OF INTERCHANGE, SHORTENING THE INTERCHANGE DISTANCES, INCREASING THE ACCESSIBILITY OF THE TERRITORY, BUILDING MULTIMODAL HUBS AND NEW TRAIN STOPS	• building new interchange hubs and upgrading the existing ones • upgrading to multimodal hubs (including bicycle traffic) • removal of barriers • increasing the accessibility of mass public transportation by building train stops for interchange with mass urban transport	• number of new and upgraded interchange hubs • number of new train stations • modal split (percentage of public transport) • accessibility of mass public transportation stops	• DPMB, KORDIS and BKOM annual reports • survey of the modal split	• upgrading of interchange hubs > 90% of intentions • increase in the number of train stops > 95% of development fulfilment • increase in the share of mass public transportation > 54% of modal split • respecting the distances from journey source / destination to the nearest mass public transportation stop (according to the standards set out in the SUMP)
	14. SHORTENING THE LENGTH OF JOURNEYS FOR PEDESTRIAN AND CYCLING TRAFFIC	• separate routes • renovation of passageways in the city • removal of barriers	• length of the routes for cyclists • number of barriers removed from the transport infrastructure	• DPMB, KORDIS and BKOM annual reports	• increase in the length of routes for bicycle traffic > 90% of the planned intentions • removal of barriers in the city for non-motorised transport >95% of inappropriate solutions
	15. INCREASE IN TRAVEL SPEED FOR MASS PUBLIC TRANSPORTATION	• segregation of routes for mass public transportation • promoting preference at controlled junctions for mass public transportation • structural improvements of road communications, wherever possible	• number of kilometres of segregated routes for mass public transportation • modal split (percentage of public transport) • number of controlled junctions with preference for mass public transportation • average travel speed	• analysis of operational data /timetables • survey of the modal split • DPMB, KORDIS and BKOM annual reports	• length of segregated routes for mass public transportation > 95% of mass public transportation routes (wherever technically and spatially possible) • increase in the share of mass public transportation >54% of modal split • increase in preference at junctions for mass public transportation > 98% of junctions with preference • increase in travel speed by 15%
	16. MODERNISATION OF PASSENGER FARE HANDLING	• passenger fare handling within the Brno Metropolitan Area in a single tariff • use of progressive passenger handling technologies	• percentage of journeys by means of mass public transportation • satisfaction of passengers	• survey of the modal split • survey of satisfaction	• increase in the share of passengers on public transportation > 54% of modal split • increase in satisfaction of passengers to > 70 %
	17. DEVELOPMENT OF SUBURBAN RAIL TRANSPORT MODES (S-LINES, REGIONAL BUS TRANSPORT)	• optimisation and development of systems based on traffic surveys and requirements • increase in the number of services • marketing support for the use of regional lines	• number of passengers carried by rail transport around the city of Brno • number of passengers carried by regional bus transport around the city of Brno • increase in the number of passengers on mass public transportation between the Brno Metropolitan Area and Brno • satisfaction of passengers	• survey of the modal split • survey of satisfaction	• number of passengers carried around Brno by rail transport increase by 20% against the current status quo • number of passengers carried around Brno by intercity bus transport increase by 15% against the current status quo • increase in the number of passengers between the Brno Metropolitan Area and Brno carried by mass public transportation > 54% of modal split • increase in satisfaction of passengers to > 70%

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
	18. ATTRACTIVE OFFER OF CONNECTIONS, SEAMLESS TARIFF AND TRANSPORT CONNECTIONS BETWEEN BRNO AND ITS HINTERLAND IN THE BRNO METROPOLITAN AREA AND BROADER SURROUNDINGS (BEYOND THE EXISTING INTEGRATED TRANSPORT SYSTEM OF THE SOUTH MORAVIAN REGION)	• fare system design • enhancement of the quality of interchange terminals • interconnection with railway and regional bus services	• percentage of journeys undertaken by means of mass public transportation • number of municipalities/towns newly integrated into the Integrated Transport System	• survey of the modal split • DPMB, KORDIS and BKOM annual reports	• increase in the share of passengers on mass public transportation > 54% of modal split • increase in the number municipalities integrated into the Integrated Transport System >80% localities in question
	19. MARKETING AND FINANCIAL SUPPORT FOR PUBLIC, BICYCLE AND PEDESTRIAN TRANSPORT	information campaign aimed at public, cycling and pedestrian transport	• percentage of passengers on sustainable modes of transport	• survey of the modal split	• increase in the share of sustainable modes of transport to 70%
	20. DEVELOPMENT OF P+R MULTIMODAL TERMINALS IN BRNO AND ITS HINTERLAND	• construction of P+R type car parks in Brno • support for the construction of P+R facilities in the Brno Metropolitan Area in connection with high-capacity mass public transportation	• percentage of passengers on public transport • capacity use of P+R • traffic intensity (namely on city radial roads) • air quality in the city	• DPMB, KORDIS and BKOM annual reports • air monitoring • analysis of traffic load • statistical data from P+R operators • survey of the modal split	• increase in the share of passengers on mass public transportation > 54% of modal split • increase in the use of P+R to 98% of capacity (on workdays) • reduction of traffic intensities on the urban network of service roads by individual transport by 10 % • improvement of air quality – fulfilment of the relevant strategy by > 95%
	21. DEVELOPMENT OF B+G, B+R SYSTEMS	• establishment of new bicycle racks and storage facilities, in particular in connection with mass public transportation interchange hubs and travel destinations • appropriate financial policy of guarded parking lots (automatic operation)	• number of parking places and facilities • increase in the share of multimodal journeys	• survey of the modal split	• construction of facilities for B+G, B+R > 90% of planned facilities • increase in the share of multimodal journeys (combination of bicycle and mass public transportation, walking and bicycle) > 15%
	22. DEVELOPMENT OF AN URBAN BICYCLE SYSTEM – BIKE-SHARING	• introduction of a bike-sharing system and its extension	• percentage of journeys by bike • use of the bikesharing system	• survey of the modal split • statistical data from bikesharing operators	• increase in the share of cyclists on the modal split > 6% of the modal split • use of the bikesharing system > 95% of capacity
	23. IMPROVED ACCESSIBILITY BY PUBLIC TRANSPORTATION IN ALL DISTRICTS OF THE CITY	• construction of new mass public transportation routes (enhancement of speed and comfort) • upgrading of existing tracks of mass public transportation • new mass public transportation lines, optimisation of the existing line routing • increasing the accessibility of mass public transportation through construction of new stops • model verification of the proposed line routing	• length of structurally upgraded sections with increased speed and comfort • transport accessibility (time and space) • travel speed • increase in the share of journeys on mass public transportation	• survey of the modal split • DPMB, KORDIS and BKOM annual reports • analysis of travel times • outcomes of verification with a traffic model	• tracks with increased speed > 30% of total length • shortening of the distance to the nearest mass public transportation stop (according to the standards set out in the SUMP) • increase in travel speed by 15% • increase in the share of passengers on mass public transportation > 54% of modal split
INCREASE THE NUMBER OF HOUSEHOLDS NOT IN POSSESSION OF A CAR (BY 20% BY THE YEAR 2050)	**24. SUPPORT FOR CARPOOLING (SHARED TRAVEL)**	• support for operators of carpooling, • motivation of employers to support carpooling	• number of users of carpooling • number of households in possession of a car	• survey of the modal split	• increase in the number of users of carpooling o 40% • reduction of the number of households in possession of a car by 20%
	25. SUPPORT FOR CAR-SHARING (SHARING OF VEHICLES)	• support for operators of car-sharing	• number of users of car-sharing • number of households in possession of a car	• survey of the modal split • information from car-sharing operators	• increase in the number of users of car-sharing by 50% • reduction of the number of households in possession of a car by 20%

AREA OF CHANGE

2. ROAD COMMUNICATION NETWORK OF THE CITY AND QUALITY OF PUBLIC SPACES

STRATEGIC GOAL

NOT TO INCREASE THE CAPACITY OF THE ROAD COMMUNICATION NETWORK FOR INDIVIDUAL MOTOR CAR TRAFFIC IN THE CENTRAL PART INSIDE THE CITY AFTER COMPLETION OF THE CONSTRUCTION OF THE PROTECTIVE TRANSPORT SYSTEM (MAINTAINING OF THE TOTAL NUMBER OF PARKING PLACES IN THE BROADER CENTRE OF THE CITY ON THE LEVEL OF THE ACTUAL NEED)

The current status quo of the transport infrastructure of the city is only partly satisfactory, as it has not been fully completed, which has a negative impact on traffic intensities in the centre of the city. Everyday congestion means time and hence also economic losses, as well as polluting the environment. Therefore, the goal is to divert this mode of transport (having no purpose for the centre of the city) to safe and high-capacity road communications. Road communications in the centre of the city will be used only by source/destination individual motor car traffic and mass public transportation – which will lead to the elimination of vehicles waiting in traffic jams. The limitation of traffic in the centre of the city will also be supported by the introduction of a residential parking system. Visitors must be provided with adequate capacity at the P+R parking facilities with a connection to mass public transportation. The following specific goals have been proposed:

1. COMPLETION OF A NETWORK OF COLLECTING ROAD COMMUNICATIONS AND RELATIONS TO THE SUPRAREGIONAL NETWORK

- development of new backbone road communications – the fluency of unnecessary traffic can possibly be ensured especially by the completion of backbone road communications, which will ensure to the maximum possible extent fluent passage through the city, which has a positive impact on the environment and reduces the number of traffic accidents. At the same time, it will be possible to propose measures in the central part of the city for the limitation of individual motor car traffic and thereby support the use of mass public transportation, walking and bicycle traffic.

- completion of the Large City Ring Road and related radial and tangent roads – is from the point of view of traffic the most important road infrastructure construction project on the territory of the city. In spite of the proposed relative decrease in the percentage of individual motor car traffic in the modal split it is necessary to complete the construction of this system, in order that it become possible to reduce traffic intensities in the centre of the city and in residential districts and thus enable the development and support of sustainable modes of transport

2. IMPROVEMENT IN THE FLUENCY OF ROAD TRAFFIC ON THE PROTECTIVE TRAFFIC SYSTEM OF THE CITY

- streamlining of the traffic flow by means of telematic systems – a modern urban traffic system nowadays and in the future will no longer manage without adequately sophisticated telematic control of traffic. Such traffic control may respond to extraordinary situations and it may carry out regulation of traffic according to actual situation.

- elimination of capacity-wise problematic spots – the completion of the construction of the Large City Ring Road [VMO] and the radial roads will not lead to complete elimination of all problematic spots from the point of view of capacity. It is necessary to identify these spots and propose solutions, which will be satisfactory for all types of traffic (provided this will be spatially possible).

3. ELIMINATION OF UNNECESSARY TRAFFIC IN THE CENTRAL PART OF THE CITY AND OUTSIDE RESIDENTIAL AREAS

- limitation of entry for unnecessary traffic is a fundamental requirement for an improvement in the environment in the central part of the city, for the acceleration of mass public transportation, an increase in the use of pedestrian and bicycle traffic and for possible upgrading of public spaces. In order to achieve this goal it is necessary to complete the construction of the Large City Ring Road and a system of P+R catchment parking facilities outside the centre of the city.

- charging for entry – it is a possible form of regulation of traffic in a certain area of the city. However, drivers must be offered a substitute option of passage through the city without being charged.

- introduction of city logistics – it is a system of supply, especially in the central part of the city, which will decrease the number of vehicles delivering supplies for commercial activities. This system requires a background outside the centre of the city (a logistical facility), delivery vehicles and especially motivation for individual businesses to get involved in this system.

- organisation of stationary traffic – in the central part there will be an important change in the system of parking – introduction of residential zones and paid parking. The objective of this measure is preference of parking for residents and limitation of everyday journeys of visitors into the centre of the city with the use of individual motor car traffic.

4. DEVELOPMENT OF THE P+R, K+R AND P+G SYSTEMS

- development of new parking facilities and multimodal terminals in Brno – with the limitation of parking in the central part of the city there will be a decrease in parking places usable for visitors to the city. For this reason, a P+R system is proposed on the territory of the city, where visitors may leave their cars paying just a friendly charge and continue their journey into the centre by means of high-capacity mass public transportation.

- recommendation to build these facilities in the Brno Metropolitan Area – for the limitation of journeys by individual motor traffic to Brno, it is necessary, especially at railway stations and stops, to build sufficient capacity for parking vehicles and to offer a convenient, fast and financially advantageous travel option.

- model verification of the proposed solutions – we recommend to verify the introduction of the above mentioned measures by means of a traffic model, because the relation between high-capacity parking facilities and the related mass public transportation must be fully operational and have adequately high capacity, otherwise citizens may lose interest in this mode of transport into the city and they will continue to use individual motor car traffic. Model verification will help at a theoretical level to reveal possible weaknesses of the system and propose different solutions. Solutions without shortcomings and weaknesses will then be introduced into practical operation.

5. REGULATION OF PARKING PLACES FOR LONG-TERM PARKING IN SELECTED LOCALITIES, SYSTEM OF RESIDENTIAL PARKING

- signposting of parking zones for short and long-term parking – a measure suitable for the central area of the city and for residential districts. Restrictions must be compensated for by the availability of parking capacities in the vicinity of these zones.

- pricing policy of the parking – is an important instrument for making difference in parking. Its fine tuning is a relatively sensitive matter, because if parking is too cheap, it will not dissuade a number of drivers from taking the journey, and if parking is too expensive, it may have a negative impact on civic amenities in these localities and the overall attractiveness of the area with paid parking.

- offer of parking places in high-capacity multi-storey car parks – a measure suitable for the central part of the city for short-term parking, which may replace parking places in the street area. Multi-storey car parks in residential districts – especially in suburban housing estates will allow for a reduction in the deficit of parking places, thereby creating lower pressure on the street area, which is overflowing with parked vehicles even when in breach of traffic rules.

6. SUPPORT OF NAVIGATION SYSTEMS

- support of telematic navigation systems is one of the conditions for efficient control of traffic on the territory of the city. Navigation systems must provide timely and truthful information to drivers for their further decision-making, for the choice of a route. At the same time it is possible with these systems to resolve extraordinary situations on the road communication network of the city – a reduction in the forming of congestion.

- applications for mobile phones – at the present time most drivers are equipped with a smart mobile phone, which is capable of receiving traffic information on-line, thus allowing the drivers to be informed in a timely manner about the traffic situation. It is suitable to complement the visualisation of the traffic situation on the map with a text or voice commentary.

- sharing of information also with systems outside of Brno (arrivals into the city) – upon arrival into the city, the driver has a choice of journey to the destination. In the case of sufficient and timely information, the driver (or the navigation device) is able to choose an alternative route avoiding the area with a traffic incident.

- up-to-date information about the occupancy of parking facilities – a driver who has information about the situation of vacant places at the parking facilities will give preference to immediate parking rather than lengthy searching for a vacant parking place in the street area. This will lead to a saving of time and a reduction in emissions released into the environment.

7. PREFERENTIAL PARKING FOR ENVIRONMENTALLY FRIENDLY VEHICLES, CAR-SHARING

- signposting of parking zones for short and long-term parking of environmentally-friendly vehicles – it is a suitable incentive for the purchase of environmentally-friendly vehicles. These are especially vehicles which have increased movement around the city – supply vehicles, delivery services, etc.

- pricing policy of parking for environmentally-friendly vehicles – for the promotion of the use of environmentally-friendly vehicles, when by choosing an appropriate pricing policy of parking it is possible to give preference to the use of these vehicles for journeys around the city.

- reservation of parking places for car-sharing, preferential parking conditions in the areas with a residential parking system

INCREASE ACCESSIBILITY AND ATTRACTIVENESS OF SUSTAINABLE MODES OF TRANSPORT IN THE CITY AND ITS HINTERLAND

(FOR EXAMPLE SUBURBAN RAILWAYS), (THE SHARE OF SUBURBAN RAILWAYS ON REFERENCE JOURNEYS WILL GROW BY 20% BY THE YEAR 2030 TO THE DETRIMENT OF INDIVIDUAL MOTOR CAR TRAFFIC)

The limitation of the use of individual motor car traffic for everyday commuting to work from the Brno Metropolitan Area to the city is one of possible methods for reducing the forming of congestion the road communication network of the city. It is necessary – by means of investment into the transport infrastructure, the rolling stock of public transportation, as well as an information campaign – to convince travellers about the advantages of using mass public transportation for their travel to Brno. Additional measures are also pricing policy of the parking and the limitation of entry to the city. The following specific goals have been proposed::

8. DEVELOPMENT OF SUBURBAN RAIL TRANSPORT MODES (S-LINES, REGIONAL BUS TRANSPORT)

- Optimisation and development of systems based on traffic surveys and requirements – the system is operational already in the current state, but it needs to be further optimised based on the requirements of passengers and based on the experience of the integrated system organiser KORDIS JMK
- Increase in the number of services – addition of extra services on overloaded lines, line routing optimisation in order to reduce the overloading of individual services
- Marketing support for the use of regional lines – an awareness campaign will be necessary that will increase the number of mass public transportation users for journeys to Brno. Potential passengers need to be informed about the benefits of commuting to work by means of mass public transportation.

9. SUPPORT OF CLOCK-FACE SCHEDULED TRANSPORT/PROVISION OF AN ADEQUATE FREQUENCY OF SERVICES ON S-LINES

- clock-face schedules – these are already implemented in the timetables. This system needs to be maintained and applied further in possible optimisations and expansion of the IDS JMK system
- connectivity of services – this is a matter of optimisation of the system. Connectivity must be ensured especially at important interchange hubs. In case of delays, passengers must be provided with sufficient information about the situation.
- shortening of intervals between services – this is appropriate on busy lines, where the existing capacity of the services is already insufficient and may thus dissuade some of the passengers. Although this measure is financially demanding, it is essential in order to increase the attractiveness of mass public transportation.

10. QUALITY OF THE ROLLING STOCK OF SUBURBAN AND REGIONAL TRANSPORTATION

- enhancing the quality of rolling stock – for increase in the use of mass public transportation it is necessary to ensure also an adequate quality of the transport vehicle fleet – introduction of air-conditioning, Wi-Fi, etc.
- barrier-free access to vehicles – it is essential from the point of view of the travel of citizens with limited mobility, but also from the point of view of the acceleration of the exchange of passengers at stops. Elimination of steps and raising the grade of platform edges is a standard for the design of new stops and purchasing of new rolling stock for mass public transportation.
- sufficient capacity of services – it is an additional requirement for the transferring of a part of the passengers from individual motor car traffic to the mass public transportation.

11. BARRIER-FREE ACCESSIBILITY IN THE MASS PUBLIC TRANSPORTATION

- the purchase of low-floor vehicles for mass public transportation – it is nowadays already a standard for most of the newly purchased vehicles. Vehicles with a high floor – especially trams – will be still operated, but they will be gradually replaced by low-floor vehicles (although only partly low-floor). The replacement of vehicles is financially demanding and a possible solution is also renovation of the existing vehicles.
- barrier-free platforms and terminals – all the renovated platforms and stops are designed as accessible without barriers. Their structural upgrading, together with barrier-free vehicles, has among others also an impact on the time of entry/exit, which has a positive effect on the shortening of the permanence of the vehicles at stops and thereby also on the overall time of travel.

12. IMPROVEMENT IN THE RANGE OF INTERCHANGE OPTIONS, SHORTENING THE INTERCHANGE DISTANCES, INCREASING THE ACCESSIBILITY OF THE TERRITORY, CONSTRUCTION OF MULTIMODAL HUBS AND NEW TRAIN STOPS

- Building new interchange hubs and upgrading the existing ones – in addition to shortening the interchange relations, the interchange hubs must provide amenities for passengers. The aim of the modernisation is to provide a safe place for the interchange and, as the case may be, waiting for the next connection.
- Upgrading to multimodal hubs – interchange hubs must also allow for interchange within individual modes of transport. It is advisable to add P+R, B+R and K+R parking lots and bicycle storage rooms. Passengers must also find here sufficient information about connecting services.
- Elimination of barriers – interchange hubs must be barrier-free in order to ensure the movement of immobile citizens and visually impaired citizens.
- Support for the construction of train stops for interchange with mass urban transportation. On the territory of the city it is possible to add stops on existing lines and to connect them to the existing mass urban transport system even at the cost of upgrading the existing routes – the establishment of new stops is conditional on suitable parameters of the railway line.

INCREASE THE NUMBER AND QUALITY OF PUBLIC SPACES

(INCREASE IN THE PERCENTAGE OF INHABITANTS OF THE CITY SATISFIED WITH PUBLIC SPACES BY 30% BY THE YEAR 2030)

The quality of public spaces of the city is essential not only from the point of view of mobility (for example the promotion of walking), but also from the point of view of the overall presentation of the city in front of its inhabitants and visitors. Creating interesting and user-friendly public spaces increases the quality of life in the city, which is positively reflected in the overall image of the city and its attractiveness for living. The following specific goals have been proposed:

13. DEVELOPMENT OF BARRIER-FREE ACCESS IN THE PUBLIC SPACE AND IN PUBLIC BUILDINGS

- upgrading of public buildings for barrier-free access – ensuring access for immobile citizens in public buildings should be a matter of course. It is equally necessary for these measures to be implemented also on access routes to these buildings.
- barrier-free solutions in public spaces, mass public transportation stops, etc. – already mentioned in the previous specific goal under point 11.

14. ENHANCING SECURITY IN THE PUBLIC SPACE AND INTERCONNECTION OF PUBLIC SPACES OF THE CITY

- lighting in public spaces – it must meet standard requirements; at the same time it is appropriate to consider more intensive lighting in places exposed to crime (measures for reduction of crime). Attractiveness of the city will be elevated by an alternative way of lighting of the street space and important buildings.
- enhancing security in the public space through the elimination of inappropriate technical solutions will lead to an increase in attractiveness and thereby support pedestrian access to the area.
- elimination of barriers (physical and planning) for pedestrian traffic in the city.

15. INCREASING THE EXTENT OF QUIET ZONES

- building quiet zones in the city (parks, squares, tourist destinations in the surroundings, etc.) – quiet zones increase the quality of life in the city and increase also the attractiveness of walking.

16. SUPPORT FOR GREENERY PLANTING IN THE CITY AND ALONG ROAD COMMUNICATIONS, REVITALISATION OF THE TERRITORY

- support for greenery planting in the city enhances the quality of life and also creates a more friendly environment for pedestrian movement in the city.
- revitalisation of park areas – brings a whole new quality to the city space and positively affects the inhabitants and visitors to the city.
- revitalisation of suburban housing estates – this is a vital process, which brings new and modern features of the street level into the housing estate area and at the same time remedies the shortcomings that are anachronisms dating back to the time of construction of these residential projects. This means especially support of pedestrian interconnection and improvement of the quality of public spaces, for example, by building facilities for the stationing of vehicles.

SYNERGIC EFFECTS OF THE VISION

Completion of backbone road communication network in the area in question will allow for the limitation and reduction of the intensities of traffic especially in the central part of the city, where a completely different type and quality of traffic are required to the ones being currently in place. In relation to this change, existing street areas can be modified to favour sustainable types of traffic and increase the quality of public spaces. Increasing the quality of public transport services will support its use for daily commuting to work. On the basis of these measures, it is possible to imply the following synergic effects:

- Citizens regularly using a combined mode of commuting will mostly purchase long-term season tickets for mass public transportation – this will lead to an increase in financial income for the Brno Public Transportation Company [DPMB] and the Czech Railways [ČD]. This principle applies especially to the everyday suburban commute to the city.

- After diverting passing traffic, it will be possible to use the traffic space in the central part of the city for sustainable types of traffic (dedicated lanes for mass public transportation, extension of mass public transportation stops, bicycle lanes and broader walkways).

- Following the decrease in the intensity and increase in the fluency of traffic, there will be improvements in the environment and safety in residential districts and in the central part of the city.

- New routes for unnecessary traffic represent an increase in safety and fluency of traffic, as they meet the requirements for safe road communications.

- The increase in the quality of suburban mass public transportation and thus the increase in the number of people transported will lead to a decrease in the intensity of individual motor traffic at the entrance ways to the centre. To support this positive change, the equipment and background of railway stations and stops in the region – P+R and B+R facilities – must be provided. Support is also drawn from adequately attractive connecting bus services.

- By applying barrier-free solutions in public spaces, immobile citizens will not be dependent solely on the passenger car, which will lead to an additional reduction in the intensities of individual motor car traffic.

- Barrier-free and adequately wide public spaces will allow for a more secure movement – especially on pedestrian crossings this will reduce the risk of road traffic accidents and their consequences.

- The use of barrier-free vehicles for mass public transportation (possibly also only partially barrier-free) will lead to an increase in the attractiveness of mass public transportation, making it accessible not only for people with limited mobility, but also for mothers with a stroller. These solutions will support a reduction in the use of individual motor car traffic for everyday travel around the city.

- Maintaining and enlarging the extent of quiet and relaxation areas has a positive impact on the environment in the city, having also a positive impact on the overall satisfaction of the people and the quality of life in the city.

- The development and use of multi-storey car parks, especially in suburban housing estates for long-term vehicle stationing, has a positive effect on improving the quality of the environment and also increasing safety, because there will be elimination of a part of the vehicles parked in breach of standard arrangements and traffic rules. Removal of these vehicles has a positive impact on the safety of traffic, because these vehicles are nowadays often parked in the viewing triangles of junctions and crossings.

- The development and use of multi-storey car parks in the central part of the city – short-term parking will allow for removing the capacity of the previous ground parking facilities and upgrading them to spaces usable for pedestrians and cyclists, or, as the case may be, to relaxation zones with the addition of greenery.

- Reduction in the number of pointless journeys during when trying to find a parking place has a positive impact on the improvement of the environment – slow travel of vehicles will be removed, as well as waiting in queues while searching for a parking place.

EVALUATION INDICATORS

AREA OF CHANGE | **ROAD COMMUNICATION NETWORK OF THE CITY AND QUALITY OF PUBLIC SPACES**

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
NOT TO INCREASE THE CAPACITY OF THE ROAD COMMUNICATION NETWORK FOR INDIVIDUAL MOTOR CAR TRAFFIC IN THE CENTRAL PART INSIDE THE CITY AFTER COMPLETION OF THE CONSTRUCTION OF THE PROTECTIVE TRANSPORT SYSTEM (MAINTAINING OF THE TOTAL NUMBER OF PARKING PLACES IN THE BROADER CENTRE OF THE CITY ON THE LEVEL OF THE ACTUAL NEED)	1. COMPLETION OF A NETWORK OF COLLECTING ROAD COMMUNICATIONS AND RELATIONS TO THE SUPRAREGIONAL NETWORK	• development of new backbone road communications • completion of the Large City Ring Road and related radial and tangent roads	• fulfilment of the planned development transport infrastructure • reduction of traffic intensities in the centre of the city	• investment plan of the region/of the city • analysis of traffic intensities	• fulfilment of the investment plan according to the project storage tank to > 95% • reduction of traffic intensities in the centre of the city – 10%
	2. IMPROVEMENT IN THE FLUENCY OF ROAD TRAFFIC ON THE PROTECTIVE TRAFFIC SYSTEM OF THE CITY	• streamlining of the traffic flow by means of telematic systems • elimination of capacity-wise problematic spots	• the fluency of traffic (average speed, level of quality of traffic) • environment quality	• outcome of the traffic model/BKOM • measuring of traffic by means of stationary radars • air quality monitoring	• limitation of congestion to > 50% compared to the existing status quo • improvement in air quality – fulfilment of the relevant strategy by > 95%
	3. ELIMINATION OF UNNECESSARY TRAFFIC IN THE CENTRAL PART OF THE CITY AND OUTSIDE RESIDENTIAL AREAS	• limitation of entry for unnecessary traffic • charging for entry • introduction of city logistics • organisation of stationary traffic • verification of the proposed solutions by means of a traffic model	• the share of passing traffic in the central part of the city • the share of passing traffic in residential districts • environment quality • the number of residents affected by noise	• traffic survey • analysis of traffic intensities • air quality monitoring • measuring of noise	• reduction of passing traffic in the centre of the city by 10 % • reduction of passing traffic in residential zones by 10 % • reduction of the number of residents affected by noise and emissions to < 5%
	4. DEVELOPMENT OF THE P+R, K+R AND P+G SYSTEMS	• development of new parking facilities and multimodal terminals in Brno • recommendation to build these facilities in the Brno Metropolitan Area • model verification of the proposed solutions	• the share of passengers on public transportation • the use of P+R, K+R, P+G • intensity of individual motor car traffic in the central part of the city • air quality	• DPMB, KORDIS and BKOM annual reports • air quality monitoring • analysis of intensities of traffic individual motor car traffic • statistical data from the operators of P+R, K+R, P+G • survey of the modal split for the central part of the city	• increase in the percentage of mass public transportation > 54% of the modal split • increase in the use of P+R, P+G to 98% of capacity (on workdays) • reduction of intensities of individual motor car traffic in the centre >10% • improvement in air quality – fulfilment of the relevant strategy by > 95%
	5. REGULATION OF PARKING PLACES FOR LONG-TERM PARKING IN SELECTED LOCALITIES, RESIDENTIAL PARKING SYSTEM	• signposting of parking zones for short-term a long-term parking • price policy of the parking • offer of parking places in high-capacity multi-storey car parks	• the number of violations of parking rules • % of use of parking places • % of use of capacity in multi-storey car parks • air quality	• of the Police of the Czech Republic and Municipal Police • DPMB, KORDIS and BKOM annual reports • air quality monitoring	• respecting of the system – reduction of the number of penalties • the use of signposted parking places > 90% • occupancy of multi-storey car parks to > 95% • improvement in air quality – fulfilment of the relevant strategy by > 95%

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
	6. SUPPORT OF NAVIGATION SYSTEMS	• establishing of telematic navigation systems • applications for mobile phones • sharing of information with systems outside Brno (arrivals into the city) • up-to-date information from information systems parking facilities	• time of searching for the destination • the number of users of applications • increase in the fluency of traffic	• measuring of travel times – traffic survey • analysis of traffic intensities • checking how updated is the published information • updated status of the control of traffic	• shortening of the time of searching of a parking place by > 20% • shortening of travel times • increase in the number of users of applications by >30% • limitation of congestion to > 50% compared to the existing status quo
	7. PREFERENTIAL PARKING FOR ENVIRONMENTALLY FRIENDLY VEHICLES, CAR-SHARING	• signposting of parking zones for short-term a long-term parking of environmentally friendly vehicles • price policy of the parking for environmentally friendly vehicles	• % of use of parking places for environmentally friendly vehicles • the number of environmentally friendly vehicles	• statistics of the number of parking places • analysis of data from the register of vehicles • air quality monitoring	• increase in the number of reserved parking places for environmentally friendly vehicles by > 10% • increase in the number of environmentally friendly vehicles by > 30%
INCREASE ACCESSIBILITY AND ATTRACTIVENESS OF SUSTAINABLE MODES OF TRANSPORT IN THE CITY AND ITS HINTERLAND (FOR EXAMPLE SUBURBAN RAILWAYS), (THE SHARE OF SUBURBAN RAILWAYS ON REFERENCE JOURNEYS WILL GROW BY THE YEAR 2030 BY 20% TO THE DETRIMENT OF INDIVIDUAL MOTOR CAR TRAFFIC)	**8. DEVELOPMENT OF THE SUBURBAN RAIL TRANSPORTATION (S-LINES, REGIONAL BUS TRANSPORT)**	• optimisation and development of the system on the basis of traffic surveys and requirements • increase in the number of services • marketing support of the use of regional lines	• the number of passengers carried by railway transport around the city of Brno • the number of passengers carried by regional bus transport around the city of Brno • increase in the number of passengers travelling on mass public transportation between the Brno Metropolitan Area and Brno • satisfaction of passengers	• survey of the modal split • satisfaction survey	• the number of passengers carried around Brno by railway transport increase by 20% compared to the existing status quo • the number of passengers carried around Brno by intercity bus transport increase by 15% compared to the existing status quo • increase in the number of passengers carried between the Brno Metropolitan Area and Brno by mass public transportation > 54% of the modal split • increase in the satisfaction of passengers to > 70%
	9. SUPPORT OF CLOCK-FACE SCHEDULED TRANSPORT/PROVISION OF AN ADEQUATE FREQUENCY OF SERVICES ON S-LINES	• clock-face schedules • connectivity of services • shortening of intervals between services	• transport accessibility (time and space accessibility) • the number of passengers in railway transport	• survey of the modal split • analysis of travel times	• increase in the number of passengers in railway transport by > 20% • increase in accessibility of Brno by mass public transportation by > 15%
	10. QUALITY OF THE ROLLING STOCK OF SUBURBAN AND REGIONAL TRANSPORTATION	• enhancing the quality of rolling stock • barrier-free access to vehicles • sufficient capacity of services	• the share of barrier-free vehicles • satisfaction of passengers • the share of public transportation in the modal split	• survey of the modal split • analysis of travel times • satisfaction survey • DPMB and KORDIS annual reports	• the share of barrier-free vehicles > 90% • satisfaction of passengers > 80% • increase in the number of passengers in mass public transportation between the Brno Metropolitan Area and Brno mass public transportation > 54% of the modal split
	11. BARRIER-FREE ACCESS TO THE MASS PUBLIC TRANSPORTATION	• the purchase of low-floor vehicles for the mass public transportation • barrier-free platforms and terminals	• the share of low-floor services • the share of barrier-free platforms • the share of mass public transportation in the modal split	• analysis of the composition of the rolling stock of mass public transportation a mass public transportation stops • DPMB and KORDIS annual reports • survey of the modal split	• the number of barrier-free vehicles in mass public transportation > 85% • increase in the number of barrier-free platforms to > 97% • increase in the percentage of passengers in mass public transportation > 54% of the modal split

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
	12. IMPROVEMENT IN THE RANGE OF INTERCHANGE OPTIONS, SHORTENING THE INTERCHANGE DISTANCES, INCREASING THE ACCESSIBILITY OF THE TERRITORY, CONSTRUCTION OF MULTIMODAL HUBS AND NEW TRAIN STOPS	• building new interchange hubs and upgrading the existing ones • upgrading to multimodal hubs (incl. bicycle traffic) • elimination of barriers • increasing the accessibility of mass public transportation by construction of new train stops for interchange with mass public transportation	• the number of new and upgraded interchange hubs • the number of new train stations • modal split (the share of public transportation) • accessibility of stops of mass public transportation	• DPMB, KORDIS and BKOM annual reports • survey of the modal split	• upgrading of interchange hubs > 90% of the intentions • increase in the number of train stops > 95% fulfilment of the development • increase in the percentage of mass public transportation > 54% of the modal split • respecting of the distance from the source /destination of journeys to the nearest stop of mass public transportation (according to the standards set out in the SUMP)
INCREASE THE NUMBER AND QUALITY OF PUBLIC SPACES (INCREASE IN THE PERCENTAGE OF INHABITANTS OF THE CITY SATISFIED WITH PUBLIC SPACES BY 30% BY THE YEAR 2030)	**13. DEVELOPMENT OF THE BARRIER-FREE ACCESS IN THE PUBLIC SPACE A IN PUBLIC BUILDINGS**	• upgrading of public buildings for barrier--free access • barrier-free solutions in public spaces, mass public transportation stops, etc.	• the share of barrier-free spaces and buildings • the share of pedestrian routes with barrier-free solutions • the share of mass public transportation stops with barrier-free solutions	• passportisation of public buildings • survey of pedestrian routes • survey of barrier-free access	• barrier-free public buildings – 100% • barrier-free pedestrian routes > 95% of the length of pedestrian routes • increase in the number of barrier-free stops >97%
	14. ENHANCING SECURITY IN THE PUBLIC SPACE AND INTERCONNECTION OF PUBLIC SPACES OF THE CITY	• lighting in the public space • enhancing security in the public space • elimination of barriers for pedestrian traffic in the city	• the share of pedestrian traffic in the modal split • satisfaction of the inhabitants with the public space • safety feeling of residents in the public space • the number of criminal acts	• satisfaction survey • survey of the modal split • statistics of the Police of the Czech Republic	• increase in the percentage of pedestrian traffic in the modal split > 10% of the modal split • increase in satisfaction of inhabitants with the public space by > 30% • increase in safety feeling in the public space by >95% • reduction of the number of criminal acts by >90%
	15. INCREASING THE EXTENT OF QUIET ZONES	• building quiet zones in the city (parks, squares, tourist destinations in the surroundings etc.)	• the share of relaxation areas in the city • satisfaction of the inhabitants	• the use of these areas in the city • BKOM annual report, statistics of the Brno City Municipality Department of Environment • satisfaction survey	• increase in the percentage of relaxation areas – fulfilment of the master zoning plan to > 80% • increase in satisfaction of inhabitants with the relaxation areas by >30%
	16. SUPPORT FOR GREENERY PLANTING IN THE CITY AND ALONG ROAD COMMUNICATIONS, REVITALISATION OF THE TERRITORY	• greenery planting along road communications • revitalisation of suburban housing estates • revitalisation of park areas	• the share of greenery in the city	• statistics of the Brno City Municipality Department of Environment	• fulfilment of the plan of increase in greenery > 90%

AREA OF CHANGE

3. ORGANISATION AND CONTROL OF TRAFFIC AND OF THE DEMAND FOR TRANSPORT

STRATEGIC GOAL

COMBINE TRAFFIC AND SPATIAL PLANNING, IMPLEMENT PRINCIPLES OF INTEGRATED TRAFFIC PLANNING INCLUDING STRENGTHENING OF THE IMPORTANCE OF TELEMATIC SYSTEMS

Planning of mobility must be necessarily interconnected with spatial planning. Mobility in its own substance represents journeys between individual functions, and therefore its planning should always begin already during the designing phase of a new master zoning plan. Such a plan represents a fundamental instrument, which for example by means of polycentric structure will allow for the creation of a city of short distances.

The interconnection of spatial planning and planning of mobility also will help reduce suburbanisation, which is one of the biggest problems. Although individual housing outside of the city in surrounding settlements is popular, in the centre of interest of the city there must be a preference for a concentrated build-up with the possibility of servicing by means of mass transportation, furthermore it is also essential to prevent the depopulation of central parts of the city, which may also lead as a result to the economic decay of small businesses. The development of a city must be determined in such a manner as to induce primary support for sustainable modes of transport (mass public transportation, pedestrian and bicycle traffic). The following specific goals have been proposed:

1. EXPANSION OF DYNAMIC CONTROL AND INTELLIGENT TRAFFIC MANAGEMENT SYSTEMS

- streamlining of traffic flow by means of telematic systems – a modern urban traffic system nowadays and in the future will no longer do without adequately sophisticated telematic control of traffic. Such traffic management may respond to extraordinary situations, it may carry out regulation of traffic according to actual situation.

- elimination of capacity-wise problematic spots – the completion of the construction of the Large City Ring Road [VMO] and the radial roads will not lead to the complete elimination of all problematic spots from the point of view of capacity. It is necessary to identify these spots and propose solutions, which will be satisfactory for all types of traffic (provided this will be spatially possible).

- dynamic intersection management – it is an integral part of the intelligent control system of traffic in the city. Although dynamic control also has its capacity limits, it will allow for a certain degree to ensure the preference of vehicles for mass public transportation, reduce the length of traffic jams and loss of time passage through traffic-light intersections. Within the dynamic control it is also possible to control non-motorised traffic.

- information for drivers also on arrival to the city – upon arrival into the city the driver has a choice of journey to destination. In case of sufficient and timely information, the driver (or the navigation device) is able to choose an alternative route avoiding the area with a traffic incident.

2. SUPPORT OF NAVIGATION SYSTEMS

- support of telematic navigation systems is one of the conditions for efficient control of traffic on the territory of the city. Navigation systems must provide timely and truthful information to drivers for their further decision-making, for the choice of a route. At the same time it is possible with these systems to resolve extraordinary situations on the road communication network of the city – reduction in the forming of congestion.

- applications for mobile phones – at the present time most drivers are equipped with a smart mobile phone, which is capable of receiving traffic information on-line, thus allowing the drivers to be

informed in a timely manner about the traffic situation. It is suitable to complement the visualisation of the traffic situation on the map with a text or voice commentary.

3. SUPPORT FOR SUSTAINABLE DEVELOPMENT OF THE CITY, ESPECIALLY SUSTAINABLE NEW CONSTRUCTION

- support for construction on vacant plots in the built-up areas – it is more appropriate from the point of view of provision of transport services by means of mass public transportation, it enables also a shorter interconnection of sources and destinations of journeys and supports the use of pedestrian and bicycle traffic, reduces the pressure on road communication network of the city from the point of view of individual motor car traffic.

- relation between the master zoning plan and urban planning studies – the master zoning plan and urban planning studies should both respect the requirements on the provision of sustainable mobility in the city. These are especially the ensuring of access for pedestrian and cycling traffic, servicing of the area by means of mass public transportation and quality transport connection for individual motor car traffic while ensuring sufficient capacities for stationary traffic within the locality in question.

- interconnection of new construction of residential areas with the development of a system for public transportation, pedestrian and cycling traffic – the connection must be as short as possible, comfortable and safe. New localities must allow for pedestrian and cycling traffic without unnecessary route extension.

- increasing the accessibility of the destinations of journeys reached by sustainable modes of transport – the sources and destinations must be linked to the pedestrian and bicycle traffic routes and at the same time must be supplemented with the mass public transportation system. The objective is to make the mass public transportation and other sustainable modes of transport more attractive for everyday journeys.

4. PREFERENCE OF CONCENTRATED BUILD-UP WITH THE POSSIBILITY OF SERVICING BY MEANS OF MASS TRANSPORTATION

- interconnection of new construction of residential areas with the development of a system for public transportation, pedestrian and cycling traffic – see point 3

- increasing the accessibility and interconnection of sources and destinations of journeys made by means of sustainable modes of transport – see point 3

IMPLEMENT COMPREHENSIVE PLANNING OF THE TRANSPORT OF EMPLOYEES AND VISITORS TO BIG ENTERPRISES AND INSTITUTIONS, INCLUDING PROJECTS GENERATING TRAFFIC (FOR EXAMPLE PLANS OF MOBILITY FOR SHOPPING CENTRES, COMPULSORY CORPORATE PLANS OF MOBILITY FOR ORGANISATIONS WITH MORE THAN 100 EMPLOYEES BY THE YEAR 2020, AND WITH MORE THAN 50 EMPLOYEES BY THE YEAR 2025)

Plans of mobility for individual companies will need to be created in line with the overall strategy of the city. Business mobility should focus on specific issues and suggestions in terms of promoting sustainable modes of transport - for example carpooling support, the creation of a background for cycling, etc. Corporate plans of mobility should be developed in cooperation with the city, which may for example support the use of mass public transportation.

5. SUPPORT FOR CORPORATE PLANS OF MOBILITY (BONUSES, BACKGROUND FOR CYCLISTS, ETC.)

- motivating employers to create corporate plans of mobility – for companies with more than 100 employees by the year 2020 and with more than 50 employees by the year 2025. Additional motivation for companies may be an offer by the city to implement some new measures (for example, construction of cycling routes or implementation of motivational campaigns) or sufficient offer of capacity of mass public transportation.

- supporting the development of carpooling in companies

IMPLEMENTING EDUCATION, TRAINING, RAISING AWARENESS IN THE AREA OF URBAN MOBILITY AND OF TRAFFIC PARTICIPANTS

Support for continuing education in the field of traffic education is an important part of increasing safety in road traffic and at the same time it is a suitable platform for explaining the principles of sustainable mobility in the city. Awareness campaigns need to be focused on all population groups.

SUSTAINABLE MOBILITY FOR EVERYDAY JOURNEYS WITHIN THE BOUNDARIES OF BRNO AND THE BRNO METROPOLITAN AREA.

6. **SUPPORT FOR TRAFFIC EDUCATION OF CHILDREN – THIS IS AN IMPORTANT PART OF EDUCATION, WHICH HAS A POSITIVE IMPACT ON THE BEHAVIOUR OF CHILDREN IN TRAFFIC AND AT THE SAME TIME ON THEIR ATTITUDE TO THE SET OF ISSUES CONCERNING SUSTAINABLE MOBILITY AS A WHOLE. TRAFFIC EDUCATION WILL ALSO INFLUENCE THE CHOICE OF MEANS OF TRANSPORT AND TRANSPORT BEHAVIOUR IN ADULTHOOD.**

7. **INFORMATION SUPPORT FOR PARTICIPANTS IN TRAFFIC – IT IS ESSENTIAL FROM THE POINT OF VIEW OF NEW REGULATIONS AND LAWS, SAFE DRIVING RULES AND ALSO TO INFLUENCE THE CHOICE OF MEANS OF TRANSPORT.**

8. **PROMOTION OF URBAN MOBILITY - MUST BE CARRIED OUT CONTINUOUSLY, IT MUST NOT STOP WITH THE END OF THIS PROJECT. NOT ONLY IN BRNO BUT ALSO IN THE BRNO METROPOLITAN AREA IT IS ESSENTIAL BECAUSE IT CONTRIBUTES TO CHANGING TRANSPORT BEHAVIOUR AND WILL HELP INCREASE THE USE OF**

SYNERGIC EFFECTS OF THE VISION

Appropriate solutions proposed by the master zoning plan can help eliminate the number of everyday journeys that the citizen has to undertake. Properly designed development of the city from the point of view of sustainable mobility requires close cooperation with spatial planning as well as setting up cooperation between the city and developers. In spite of the development of the city respecting the principles of sustainable mobility it is necessary to manage traffic on the territory of the city by telematic systems, because it is in the interest of all participants to reach the destination quickly and safely regardless of the means of transport chosen. A positive impact on the choice of means of transport will be made by plans of mobility set up by employers on the territory of the city; their objective is to create conditions for sustainable types of traffic while travelling to and from work. A significant impact on the choice of means of transport and the course of the journeys themselves is determined by the education of the population of the city in the area of safe traffic and sustainable mobility, which has to be starting already in pre-school age. The proposed measures to ensure these requirements generate the following synergic effects:

- An appropriate interconnection of spatial planning and planning of mobility will lead to a reduction in the number of journeys from new development locations by individual motor car traffic, which will have a positive effect not only on the reduction of parking requirements in the central part of the city and in the administrative areas, but also on the environment and the health of the population.

- An appropriate solution for public spaces in development locations leads to an improvement in quality of life at the place of residence, while the citizen does not need to travel for relaxation outside his/her home and workplace – this it may bring about a reduction in the demand for transportation.

- For the new development areas, mass public transportation services and interconnection with non-motorised traffic routes are planned, which will contribute to an increase in the modal split for sustainable types of traffic.

- Preference on traffic light signals will allow for greater fluency of traffic and will reduce operating costs; it will also have a positive impact on the environment – noise and emissions.

- Increasing the speed and accuracy of the services during their passage through traffic-light junctions will increase attractiveness the mass public transportation, as it will not acquire delay at the intersections and hence the journey time will not be prolonged.

- The fluency of traffic at the intersections for vehicles of the mass public transportation will reduce negative impacts on the environment – noise during braking, departures, reduction of the vehicles' fuel consumption.

- Dynamic control of traffic and timely information for drivers on the traffic situation in the city will increase the fluency of the traffic flow. Reducing the length of vehicle queues and shortening delays at junctions has a positive impact on the environment, because there will be a reduction in the emissions burden of the environment (noise and emissions from stationary vehicles).

- By shortening the times of passage through the city without a difference in the means of transport used has a positive economic impact on the individual traffic participants and hence on the whole of society.

- Telematic applications for guiding vehicles to vacant capacity in parking facilities – timely information for the driver will reduce the number of unnecessary journeys while searching for parking places, and thereby less burdening of residents with emissions from motor car traffic.

- Timely information from traffic information boards or mobile applications concerning the traffic situation will allow the driver to choose an alternative route – brings economic benefits for the driver, reducing the time spent travelling, and reducing negative impacts on the environment.

- Corporate plans of mobility can, with their appropriate application in practice, reduce the number of employees commuting by individual motor car traffic and transfer them to sustainable modes of transport, which will have a positive impact on the environment. In the majority of cases, with the use of mass public transportation, employees will purchase a prepaid network season ticket and they will have the motivation to make greater use of mass public transportation also for other kinds of journey. For transport operators, this will generate additional income, which may be invested in, for example, upgrading rolling stock.

- Raising awareness among the inhabitants about a permanently sustainable mode of transport around the city (starting already from pre-school age) is not only supposed to educate the inhabitants from the point of view of the choice of means of transport, but educate them at the same from the point of view of their movement on the road communications and also lead them to environmentally-friendly behaviour.

EVALUATION INDICATORS

AREA OF CHANGE | **ORGANISATION AND CONTROL OF TRAFFIC AND OF THE DEMAND FOR TRANSPORT**

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
COMBINE TRAFFIC AND SPATIAL PLANNING, IMPLEMENT PRINCIPLES OF INTEGRATED TRAFFIC PLANNING INCLUDING STRENGTHENING OF THE IMPORTANCE OF TELEMATIC SYSTEMS	1. EXPANSION OF DYNAMIC CONTROL AND INTELLIGENT TRAFFIC MANAGEMENT SYSTEMS	• streamlining of the traffic flow by means of telematic systems • elimination of capacity-wise problematic spots • dynamic intersection management • information for drivers also on arrival to the city	• the fluency of traffic – reduction of delays on traffic light controlled intersections • environment quality	• outcome of the traffic model/BKOM • measuring of traffic by means of stationary radars • air quality monitoring	• limitation of congestion to > 50% compared to the existing status quo • improvement in air quality – fulfilment of the relevant strategy by > 95%
	2. SUPPORT OF NAVIGATION	• establishing of telematic navigation systems • applications for mobile phones	• time of searching for the destination • limitation of congestion in the centre • the number of users of the applications • increase in the fluency of traffic	• measuring of travel times – traffic survey • analysis of traffic intensities	• shortening of the time of searching for the destination by > 20% • shortening of travel times by >10% • increase in the number of users of the applications by > 30% • limitation of congestion to > 50% compared to the existing status quo
	3. SUPPORT FOR SUSTAINABLE DEVELOPMENT OF THE CITY, ESPECIALLY SUSTAINABLE NEW CONSTRUCTION	• support for construction on vacant plots in the built-up areas • relation between the master zoning plan and urban planning studies • interconnection of new construction of residential areas with the development of a system for public transportation, pedestrian and cycling traffic • increasing the accessibility of the destinations of journeys reached by sustainable modes of transport	• the number of inhabitants • the share of sustainable modes of transport in the modal split • accessibility of the destinations of journeys for pedestrian and cycling traffic • improvement in the quality of environment	• survey of the modal split • analysis of data from the Czech Statistical Office – the number of inhabitants • air quality monitoring	• increase in the number of inhabitants of the city by >5% • increase in the percentage of journeys made by sustainable modes of transport to 70% • increase in accessibility of the destinations of journeys for pedestrian and cycling traffic by 80% • improvement in air quality – fulfilment of the relevant strategy by > 95%
	4. PREFERENCE FOR A CONCENTRATED BUILD-UP WITH THE POSSIBILITY OF SERVICING BY MEANS OF MASS TRANSPORTATION	• interconnection of new construction of residential areas with the development of a system for public transportation, pedestrian and cycling traffic • increasing the accessibility and interconnection of sources and destinations of journeys made by means of sustainable modes of transport	• the share of sustainable modes of transport in the modal split • reduction of the percentage of journeys made by individual motor car traffic	• survey of the modal split	• increase in the number of journeys undertaken by means of sustainable modes of transport to 70% • reduction of the number of journeys undertaken by individual motor car traffic to 30%

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
IMPLEMENT COMPREHENSIVE PLANNING OF THE TRANSPORT OF EMPLOYEES AND VISITORS TO BIG ENTERPRISES AND INSTITUTIONS, INCLUDING PROJECTS GENERATING TRAFFIC (FOR EXAMPLE PLANS OF MOBILITY FOR SHOPPING CENTRES, COMPULSORY CORPORATE PLANS OF MOBILITY FOR ORGANISATIONS WITH MORE THAN 100 EMPLOYEES BY THE YEAR 2020, AND WITH MORE THAN 50 EMPLOYEES BY THE YEAR 2025)	**5. SUPPORT FOR CORPORATE PLANS OF MOBILITY (BONUSES, BACKGROUND FOR CYCLISTS, ETC.)**	• motivating employers to create corporate plans of mobility	• the number of corporate plans of mobility • modal split	• statistics of the employers (large enterprises) • survey of the modal split	• increase in the number of corporate plans of mobility by 100 % • increase in the share of journeys to workplace undertaken by means of sustainable modes of transport to 70%
IMPLEMENTING EDUCATION, TRAINING, RAISING AWARENESS IN THE AREA OF URBAN MOBILITY AND OF TRAFFIC PARTICIPANTS	**6. SUPPORT FOR TRAFFIC EDUCATION OF CHILDREN**	• traffic education in kindergartens, primary schools and high schools, lectures, courses	• the number of traffic accidents with children • the number of schools involved in the system of traffic education	• Police of the Czech Republic and Municipal Police	• reduction of the number of traffic accidents with children by 100% • increase in the number of schools involved in the system of traffic education by > 60%
	7. AWARENESS CAMPAIGN FOR ENHANCING SECURITY OF ROAD TRAFFIC	• information campaign, training, courses	• the number of traffic accidents	• Police of the Czech Republic and Municipal Police	• reduction of the number of traffic accidents by 100%
	8. PROMOTION OF URBAN MOBILITY	• information and awareness campaigns	• the share of sustainable modes of transport in the modal split • reduction of the percentage of journeys individual motor car traffic	• survey of the modal split	• increase in the number of journeys undertaken sustainable modes of transport to 70% • reduction of the number of journeys undertaken individual motor car traffic to 30%

AREA OF CHANGE

4. PROTECTION OF INHABITANTS AGAINST NEGATIVE IMPACTS OF TRAFFIC, HIGH ENERGY CONSUMPTION OF TRAFFIC

STRATEGIC GOAL

REDUCE THE NUMBER OF TRAFFIC ACCIDENTS (FULFIL NATIONAL OBJECTIVES, FOR EXAMPLE REDUCTION OF THE NUMBER OF VICTIMS OF TRAFFIC ACCIDENTS TO ONE HALF COMPARED TO THE YEAR 2015 BY THE YEAR 2025)

Fatalities or the occurrence of severe injuries as a result of traffic accidents are no longer acceptable in the today's society according to European trends (they are no longer seen as a failure of an individual but rather as a failure of society). The specified goal is in line with European objectives. Pedestrians and cyclists are the most vulnerable participants in traffic.

1. SAFE CROSSINGS FOR PEDESTRIANS

- development of safe crossings for pedestrians – it is a fundamental condition for all the new upgrades carried out on the road communications network of the city. The crossings must meet standard requirements concerning their length, lighting, outlook conditions, barrier-free solutions and the requirements for visually-impaired people.
- development of safe spots for crossing – the same principles apply as for the establishment of safe crossings
- upgrading of the existing crossings (lighting, signposting, etc.) – the existing unsuitable crossings for pedestrians must be upgraded following the principles governing the establishment of new crossings.

2. SAFE CYCLING ROUTES AND THEIR INTERSECTIONS WITH OTHER TYPES OF TRAFFIC

- development of new cycling routes – they must meet standard requirements from the point of view of design parameters and at the same time, they must also meet the conditions for safe traffic from the point of view of other participants in the traffic.
- grade-separated intersections – these are proposed in the places, where they are appropriate from the point of view of terrain, or where the intensity of traffic is high and a complete separation of motor car and non-motorised traffic seems to be a safer option.
- enhancing the security of the existing routes to parameters conforming to the standard requirements for new routes. In particular, it is necessary to identify and remove those traffic flaws, which are the source of accidents.

3. SEGREGATION OF MOTORISED AND NON-MOTORISED TRAFFIC ON BACKBONE ROAD COMMUNICATIONS

- development of parallel road communications for cycling and pedestrian traffic is suitable along road communications with a high intensity of traffic and intensive operation of mass public transportation. Pedestrians and cyclists are safely protected on these routes from the negative effects of automobile traffic, which has a positive impact on their safety.

- segregation design according to the spatial options of the street profile – street profiles in the built-up areas of the city are firmly defined by the buildings. The decision on the composition of the street profile depends on the importance of the upgraded road communications. Priority must be given to mass transportation and pedestrians, followed by other modes of transport (cycling, automobile and stationary traffic).

4. IMPROVEMENT OF INTERSECTIONS AND ROAD SECTIONS WITH THE HIGHEST ACCIDENT RATE

- performing of safety audits on intersections – a document that will evaluate the most dangerous intersections but also road sections running between intersections and reveal the causes of traffic accidents or hazardous situations that will be necessary to minimise. On the basis of the recommendations from these documents, an upgrade of the relevant intersection point or road communication section will be proposed.

- upgrading of inappropriate intersections and road sections with the objective of increasing the safety of road traffic – this may mean a higher degree of safety audits, or it may be induced by the need for upgrading. In the case of a remedy of non-compliance status from the point of view of safety, the design documentation should undergo a safety audit prior to implementation, which will confirm the elimination of the shortcomings contained in the original solutions.

5. ESTABLISHMENT OF QUIET ZONES IN RESIDENTIAL NEIGHBOURHOODS

- proposal for Zones 30 in residential neighbourhoods of the city – it is an appropriate solution in residential neighbourhoods, where it is desirable to slow down the traffic to a speed of 30 km/h. This is especially the case of suburban housing estates, large residential areas where, because of parking vehicles, all viewing conditions are limited to a minimum (or even not respected at all). In these areas there is an increased movement of children and most intersections are without distinction by traffic signposting (which means priority to the right). Zones are appropriate to include service road communications, where mass public transportation is not routed. This solution leads to an improvement in safety.

- proposal of Residential Zones in areas with appropriate build-up – these zones are appropriately designed in areas where there is not a great pressure on parking places in the public space and street space is well-arranged and safe. Most of these are areas with family houses. Also this solution increases the safety of residents.

- creating shared spaces – it is supported in those locations, where appropriate conditions exist for this solution. Busy motor car traffic should not be routed inside this space. Suitable locations are normally in the central part of the city, in local centres, and as the case may be, also in residential neighbourhoods.

REDUCE THE NUMBER OF INHABITANTS SUFFERING FROM ABOVE-THE-LIMIT NOISE FROM TRAFFIC

(BY THE YEAR 2025, LESS THAN 5% OF THE POPULATION OF THE CITY SHOULD SUFFER FROM ABOVE-LIMIT NOISE FROM TRAFFIC)

Noise is an annoying factor of traffic with a negative impact on the health of the population. In order to reduce the noise, a reduction in the intensities is needed (for example, pacification of traffic, bypasses), lowering of speed or introducing suitable technical features (silent surfaces, soundproof barriers, etc.).

6. REDUCTION OF NOISE POLLUTION FROM TRAFFIC ON GROUND ROAD COMMUNICATIONS IN THE AREA

- upgrading of the surfaces of roadways – use of “quiet” asphalt which absorb sound, replacement of pavements if the particular road communications are not part of a heritage conservation area. The design of a street surface solution with a minimum impact on noise requires technological discipline and appropriate implementation (especially sewerage inlets or poor quality surfaces).

- limitation of driving speed on road communications in residential areas - see Zones 30 and Residential Zones

- anti-noise measures – these are applied along those road communications that are intensively used and where there is sufficient space for this measure. These are especially the newly-designed backbone road communications that can be soundproof-shielded right from the moment of their construction – these solutions must be part of the design documentation.

- diversion of unnecessary traffic outside residential neighbourhoods is one of the objectives of mobility. This can be achieved by offering quality road communications outside such neighbourhoods, which will then allow for the implementation of measures restricting the thoroughfare of passing traffic outside the residential neighbourhoods – for example, the introduction of Zones 30.

7. SUPPORT FOR VEHICLES WITH REDUCED NOISE EMISSIONS

- support for the introduction and use of vehicles for mass public transportation with reduced noise emissions – this trend is already followed by the Brno Public Transportation Company [DPMB] and will be further developed. The pressure on the purchase of environmentally-friendly buses must also be targeted on suburban mass public transportation operators, because some lines are routed as far as the centre of the city.

- replacement and rendering environmentally-friendly of other vehicles that are under the administration of the city (for example, vehicles of communal services, etc.) – replacement of those vehicles that are daily on duty outside and their operation runs predominantly on the territory of the city.

8. NOISE REDUCTION IN RAIL MASS PUBLIC TRANSPORTATION AND RAILWAY TRAFFIC

- upgrading of the existing tram lines – running continuously step-by-step, the new design is considering the reduction of noise pollution in the surrounding areas, including the reduction of the impact of vibrations. Possible upgrading can also be done by way of replacement of the rail bed – a grass belt is laid between the rails, which absorbs noise (on segregated lines). Equally, the maintenance of rail tracks must not be underestimated either.

- development of new tram lines with noise-absorbing features – all new projects in the area of construction must include the application of modern features for noise reduction (sound-proof tub, isolating rubber layers, grass belts and sound-proof walls). Application of these features depends on the specific situation where the tramway line is located.

- new vehicles for mass public transportation – they are produced with regard to the reduction of engine and chassis noise. Due to the financial difficulty of the purchase of new trams, an optional solution is the upgrading of older vehicles with the application of noise-absorbing measures.

- upgrading of railway tracks, noise-absorbing measures – railway tracks are a great source of noise pollution in the city. Such upgrading reduces the level of induced noise, and also makes it possible to build sound-proofing walls.

- suburban trains with a reduced level of noise - newly purchased electric suburban units are compliant from the point of view of environmental noise pollution. Reduction of noise must be applied to fast train convoys that are a source of noise especially when brakes are engaged.

REDUCE EMISSIONS OF GREENHOUSE GASES AND REDUCE THE ENERGY CONSUMPTION OF TRANSPORT PER PASSENGER

(A FOURFOLD REDUCTION IN GREENHOUSE GAS EMISSIONS BY THE YEAR 2050 COMPARED TO THE YEAR 2010, OR: 1 TONNE EQUIVALENT OF CO_2 PER PERSON PER YEAR BY THE YEAR 2050); DECREASE IN TOTAL ENERGY CONSUMPTION IN TRANSPORT PER PASSENGER BY 20% BY THE YEAR 2050)

Making transport more environmentally-friendly means the stimulation of the deployment and use of power-saving and environmentally-friendly fuels and drives, the development of modern electric vehicles with the recuperation of energy but also, for example, the training of „environmentally--friendly driving“ for the purpose of minimising emissions. For individual transport, motivational measures may be considered (for example, lower parking charges for environmentally-friendly vehicles) as well as restrictive measures (for example, limitation of entry for selected emission categories of vehicles). An important share of air pollution is generated by dust emissions from traffic due to insufficient cleaning of road communications. Support for a higher use of sustainable modes of transport (mass public transportation, walking and bicycle transport) also contribute to the attainment of this goal.

9. INTRODUCTION AND EXTENSION OF THE USE OF ENVIRONMENTALLY-FRIENDLY FUELS AND DRIVES FOR VEHICLES OF MASS TRANSPORTATION (VEHICLES WITH RECUPERATION OF ENERGY)

- purchase of new vehicles for the mass public transportation with environmentally-friendly drive – see point 7

10. INTRODUCTION OF MOTIVATIONAL MEASURES FOR MORE ENVIRONMENTALLY-FRIENDLY VEHICLES

- reduced parking charges – for the sake of promotion of environmentally-friendly vehicles (or also car-sharing vehicles), when choosing an appropriate pricing policy of parking makes it possible to give preference to the use of these vehicles for journeys around the city.

- establishing a low-emission zone in the city – this is an appropriate measure in the central part of the city that will cut down on the entry of vehicles with engines that do not meet the environmental requirements. The condition for the establishing of such a zone is to offer an alternative route of passage through the city.

- construction of recharging stations for electric vehicles – gradually the network of recharging stations is expanding. The existing number of about 15 stations must necessarily be expanded should this system be supposed to be competitive. The establishment of charging stations is in the hands of private investors.

11. IMPROVEMENT IN THE FLUENCY OF ROAD TRAFFIC ON THE PROTECTIVE TRAFFIC SYSTEM OF THE CITY

- streamlining of the traffic flow by means of telematic systems – a modern urban traffic system nowadays and in the future will no longer do without adequately sophisticated telematic control of traffic. Such traffic management may respond to extraordinary situations - it may carry out the regulation of traffic according to the actual situation.

- elimination of capacity-wise problematic spots – the completion of the construction of the Large City Ring Road [VMO] and the radial roads will not lead to a complete elimination of all problematic spots from the point of view of capacity. It is necessary to identify these spots and propose solutions, which will be satisfactory for all types of traffic (provided this will be spatially possible).

12. ELIMINATION OF UNNECESSARY TRAFFIC IN THE CENTRAL PART OF THE CITY AND OUTSIDE RESIDENTIAL AREAS

- limitation of entry for unnecessary traffic is a fundamental requirement for an improvement in the environment in the central part of the city, for the acceleration of mass public transportation, an increase in the use of pedestrian and bicycle traffic and for possible upgrading of public spaces. In order to achieve this goal it is necessary to complete the construction of the Large City Ring Road and a system of P+R catchment parking facilities outside the centre of the city.

- charging for entry – it is a possible form of regulation of traffic in a certain area of the city. However, drivers must be offered a substitute option of passage through the city without being charged.

- introduction of city logistics – it is a system of supply, especially in the central part of the city, which will decrease the number of vehicles delivering supplies for commercial activities. This system requires a background outside the centre of the city (a logistical facility), delivery vehicles and especially motivation for individual businesses to get involved in this system.

- organisation of stationary traffic – in the central part there will be an important change in the system of parking – introduction of residential zones and paid parking. The objective of this measure is preference of parking for residents and limitation of everyday journeys of visitors into the centre of the city with the use of individual motor car traffic.

ENSURE RELIABILITY OF THE TRANSPORT SYSTEM IN CASE OF EMERGENCY SITUATIONS

Emergency situations arise in transport due to traffic accidents, natural disasters or other circumstances. Transport participants should be provided with sufficient information about the accompanying traffic measures related to these emergency situations. The transmission of information to the drivers of vehicles can be ensured by means of telematic systems, including applications in mobile phones. This system has been already described in previous specific goals. Information to passengers in mass public transportation must be transmitted via the IDS operator or organiser. The system of mass public transportation is more susceptible to emergency situations, especially as regards rail transport. This specific goal is therefore focusing more on mass public transportation.

13. PREPARATION OF FRAMEWORK CRISIS PLANS FOR EMERGENCY SITUATIONS (ESPECIALLY FOR MASS PUBLIC TRANSPORTATION)

- provision of a substitute service in an emergency situation – the organiser of mass public transportation as well as individual operators must have alternative options ready for emergency situations. A problem arises in tram and railway transport, because a single event on the track may disable the operation of a relatively long line branch. The service must be replaced by bus transport.
- speed of provision of information to passengers – passengers should be informed in advance about the procedure during an emergency situation in a timely and accurate manner. This information is crucial for further decision-making of the passenger about the way of continuing his or her journey.
- use of telematic systems and mobile applications for instant provision of information about emergency situations and accompanying measures.

MINIMISE THE NEGATIVE IMPACTS OF CITY LOGISTICS

The city logistics operation also brings about negative phenomena, however, the city logistics ensures a phenomenon positively accepted by everyone – a high level of commercial amenities in the centre of the city. All commercial activities require the operation of delivery vehicles, which often do not operate centrally, but instead several suppliers, each with their own vehicle, will arrive at one store. The arrival of vehicles is limited by the time aspect, but an effort persists to eliminate the number of vehicles entering the centre to the lowest possible level. For this reason, it is necessary to implement a system of city logistics, which will create central deliveries operated for example by environmentally-friendly vehicles, while an exactly fixed time for the delivery of goods will be set out.

14. REGULATION OF ENTRY OF DELIVERY VEHICLES INTO THE CENTRE OF THE CITY

- limitation of entry of delivery vehicles into the centre (prohibition, charging and time limitation) – this limitation in the centre is necessary in order to protect the pedestrian zone intended primarily for pedestrians, cyclists and tram traffic. Delivery vehicles must be limited in time, and observance of this limitation must be monitored.
- introduction of a system of city logistics – see point 15

15. CITY LOGISTICS PROGRAMME

- introduction of city logistics – it is a system of supply, especially in the central part of the city, which will decrease the number of vehicles delivering supplies for commercial activities. This system requires a background outside the centre of the city (a logistical facility), delivery vehicles and especially motivation for individual businesses to get involved in this system.

SYNERGIC EFFECTS OF THE VISION

Limitation of the negative impact of traffic on human health is one of the main objectives of all strategies in the field of traffic. It is not only about the consequences of traffic accidents, but also the deterioration of the environment due to emissions from traffic. A reduction of traffic accidents is only partly possible with current technology and equipment. Within the framework of the development of the territory, safe solutions are proposed that will allow for safe traffic without flaws on the road communication network. Vehicles are designed and developed to be increasingly safer, but their control still relies on humans. It can be assumed that future „smart roads“ and „smart vehicles“ with automatic driving could help decrease the number of traffic accidents to a minimum. It can be expected that the negative impact of traffic on the overall condition of the environment will be further reduced, because more environmentally-friendly vehicles are used and people choose sustainable forms of transport for their journeys. This trend must necessarily be promoted and further developed in order to achieve the goal set out in this vision. In order to reduce the negative impact of delivery traffic in city centres on the environment, it is necessary to implement a system of city logistics, which is capable of minimising the number of lorries or delivery vehicles in the centre of the city. The functionality of a traffic system is always tested during emergency situations, which are for example floods and traffic accidents. It is obvious that crisis scenarios are ready and the city is also able to partially operate even under limited regime. All of the above-mentioned measures and principles of sustainable urban mobility create the following synergic effects:

- The required reduction of vehicle speed in residential areas has a positive impact, not only from the point of view of safety but also from the point of view of the environmental quality in the proximity of road communications.

- A reduction in the vehicle accident rate will lead to lower costs of the Integrated Rescue System.

- Upgrading of intersections to meet standard parameters will reduce the number of traffic accidents often with the most serious consequences and, at the same time, liberate space for immobile people – enhancing thus the quality of public spaces.

- Reducing the number of traffic accidents and their consequences brings economic benefits to society as a whole.

- Enhancement of the quality of public spaces often addresses transport areas, not only from the point of view of architecture, but also from the point of view of transport functionality and safety of traffic. The proposed solutions leave only the most strictly necessary space for cars, and the remaining space is dedicated to other traffic participants. The proposed measures honour the principles of safe traffic (in particular reducing the speed of vehicles) and at the same time increase the quality of public spaces.

- The increasing number of cyclists requires a proposed measure for the reduction of accidents involving cyclists and an increase in safety for all road traffic participants.

- An increase in safety on the routes for cyclists will lead to an increase their number, which has a positive impact on the environment, and for example the pressure on the number of parking places for individual motor car traffic in travel destinations is reduced.

- Timely education of children concerning the principles of traffic safety has as an objective reduction of the number of traffic accidents and also to increase awareness about principles of road traffic safety.

- A properly adjusted system of city logistics is less burdensome for road communications in the centre, which has an impact not only on protecting the environment but also on increasing traffic safety. Moreover, unloading and loading on the spot should take place relatively quickly due to the sophisticated sorting of goods in the central warehouse; as a result the lorry does not create an obstacle for pedestrians for an unnecessarily long time. This system will also improve the environment and look of the city.

- Support for sustainable modes of transport such as mass public transportation, walking or bicycle traffic, sharing of cars, etc. will help reduce not only the negative impacts of traffic on the environment but may also help reduce the use of passenger cars, thereby freeing public spaces and creating space for a more friendly environment in the city.

EVALUATION INDICATORS

AREA OF CHANGE — **PROTECTION OF INHABITANTS AGAINST NEGATIVE IMPACTS OF TRAFFIC, HIGH ENERGY CONSUMPTION OF TRAFFIC**

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
REDUCE THE NUMBER OF TRAFFIC ACCIDENTS (FULFIL NATIONAL OBJECTIVES, FOR EXAMPLE REDUCTION IN THE NUMBER OF VICTIMS OF TRAFFIC ACCIDENTS BY THE YEAR 2025 TO ONE HALF COMPARED TO THE YEAR 2015)	**1. SAFE CROSSINGS FOR PEDESTRIANS**	• development of safe crossings for pedestrians • development of safe spots for crossing • upgrading of the existing (lighting, sign-posting etc.)	• relative accident rate of cyclists and pedestrians • the number of people killed or severely injured • the number of crossings and spots for crossing meeting the principles of safe movement of pedestrians	• statistics of the Police of the Czech Republic	• reduction in the number of traffic accidents with cyclists and pedestrians by 100% • reduction in the number of fatalities and severe injuries by 100% • increase in the number of safe crossings and spots for crossing to > 95%
	2. SAFE CYCLING ROUTES AND THEIR INTERSECTIONS WITH OTHER TYPES OF TRAFFIC	• development of new cycling routes • grade-separated intersections • enhancing security	• relative accident rate of cyclists • the number of fatally and severely injured	• statistics of the Police of the Czech Republic	• reduction in the number of traffic accidents with cyclists by 100% • reduction in the number of fatal and severe injuries by 100%
	3. SEGREGATION OF MOTORISED AND NON-MOTORISED TRAFFIC ON BACKBONE ROAD COMMUNICATIONS	• development of parallel road communications for non-motorised traffic • segregation design according to the spatial options of the street profile	• length of the segregated routes for non-motorised traffic • the share of pedestrian and bicycle traffic in the modal split • relative accident rate of cyclists and pedestrians • the number of fatally and severely injured	• BKOM annual report, Brno City Municipality Department of Transport • statistics of the Police of the Czech Republic • survey of the modal split	• increase in the number of the segregated routes to > 95% of the planned extent • increase in the percentage of non-motorised transport in the modal split – 15% of the modal split • reduction in the number of traffic accidents with cyclists and pedestrians by 100% • reduction in the number of fatal and severe injuries by 100%
	4. IMPROVEMENT OF JUNCTIONS AND SECTIONS WITH THE HIGHEST ACCIDENT RATE	• performing of safety audits on intersections • upgrading of inappropriate intersections and road sections with the objective of increasing the safety of road traffic	• relative accident rate on the road communication network • the number of fatally and severely injured	• statistics of the Police of the Czech Republic	• reduction in the number of traffic accidents by 100% • reduction in the number of fatal and severe injuries by 100%
	5. ESTABLISHMENT OF QUIET ZONES IN RESIDENTIAL NEIGHBOURHOODS	• proposal for Zones 30 in residential neighbourhoods of the city • proposal for Residential Zones in areas with appropriate build-up	• extent of Zones 30 • extent of Residential Zones • the number of traffic accidents in these zones	• BKOM annual report • statistics of the Police of the Czech Republic	• increase in the extent of Zones 30 to > 90% of suitable districts • increase in the extent of Residential Zones to > 90% of suitable districts • reduction in the number of fatal and severe injuries by 100% in these zones

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
REDUCTION IN NOISE POLLUTION FROM TRAFFIC ON GROUND ROAD COMMUNICATIONS IN THE AREA	**6. REDUCTION IN NOISE POLLUTION FROM TRAFFIC ON GROUND ROAD COMMUNICATIONS IN THE AREA**	• upgrading of the surfaces of roadways • limitation of driving speed on road communications in residential neighbourhoods • anti-noise measures • diversion of unnecessary traffic outside residential neighbourhoods	• the number of inhabitants suffering from above-the-limit noise from traffic • length upgraded road sections from the point of view of the elimination of noise • decrease in the intensities of traffic in residential neighbourhoods	• noise pollution study • traffic surveys • BKOM annual report, Brno City Municipality Department of Transport	• reduction in the number of residents affected by noise to less than 5% • length of upgraded sections of road communications > 95% of the planned extent • decrease in the intensities of traffic in residential neighbourhoods by > 20% – necessary traffic • decrease in the intensities of traffic in residential neighbourhoods by > 80% – unnecessary traffic
	7. SUPPORT FOR VEHICLES WITH REDUCED NOISE EMISSIONS	• support for the introduction and use of vehicles for mass public transportation with reduced noise emissions • replacement and rendering environmentally-friendly of other vehicles that are under the administration of the city (for example, vehicles of communal services, etc.)	• the number of environmentally friendly vehicles • the number of inhabitants suffering from above-the-limit noise from traffic	• analysis of data from the register of vehicles • noise pollution study	• the number of registered environmentally friendly vehicles > 10% • reduction in the number of residents affected by noise to less than 5%
	8. NOISE REDUCTION IN RAIL MASS PUBLIC TRANSPORTATION AND RAILWAY TRAFFIC	• upgrading of the existing tram lines • development of new tram lines with noise-absorbing features • new vehicles for the mass public transportation • upgrading of railway tracks, noise-absorbing measures • suburban trains with a reduced level of noise	• the number of inhabitants suffering from above-the-limit noise from traffic • tram lines with noise-absorbing measures • vehicles of mass public transportation with reduced noise emissions	• noise pollution study, measuring • BKOM annual reports, Brno City Municipality Department of Transport	• reduction in the number of residents affected by noise to less than 5% • noise-free tram lines in the proximity of residential neighbourhoods > 80% of the total length • the share of vehicles for the mass public transportation with low noise pollution for the environment > 95% of the number of vehicles
REDUCE EMISSIONS OF GREENHOUSE GASES AND REDUCE THE ENERGY CONSUMPTION OF TRANSPORT PER PASSENGER (A FOURFOLD REDUCTION IN GREENHOUSE GAS EMISSIONS BY THE YEAR 2050 COMPARED TO THE YEAR 2010, OR: 1 TONNE EQUIVALENT OF CO_2 PER PERSON PER YEAR BY THE YEAR 2050); DECREASE IN TOTAL ENERGY CONSUMPTION IN TRANSPORT PER PASSENGER BY 20% BY THE YEAR 2050)	**9. INTRODUCTION AND EXTENSION OF THE USE OF ENVIRONMENTALLY-FRIENDLY FUELS AND DRIVES FOR VEHICLES OF MASS TRANSPORTATION (VEHICLES WITH RECUPERATION OF ENERGY)**	• purchase of new vehicles for the mass public transportation environmentally friendly drive	• the share of buses in mass public transportation with an alternative drive or fuel • air quality	• DPMB and KORDIS annual reports • air quality monitoring	• increasing in the percentage of DPMB vehicles with environmentally friendly drive to >70% of the total number of vehicles • improvement in air quality – fulfilment of the relevant strategy by > 95%
	10. INTRODUCTION OF MOTIVATIONAL MEASURES FOR MORE ENVIRONMENTALLY-FRIENDLY VEHICLES	• reduced parking charges • establishing a low-emission zone in the city • construction of recharging stations for electric vehicles	• the number of environmentally friendly vehicles • the number of recharging stations • the number of LPG and CNG refuelling stations • extent of the low-emission zone	• analysis of data from the register of vehicles • published company reports (changes in the rolling stock) • statistics of BKOM, Brno City Municipality Department of Transport	• the number of registered environmentally friendly vehicles > 10% • increase in the number of recharging stations by > 50% against the existing status quo • increase in the number of refuelling facilities by > 50% against the existing status quo • extent of the low-emission zone – 100% according to the intention
	11. IMPROVEMENT IN THE FLUENCY OF ROAD TRAFFIC ON THE PROTECTIVE TRAFFIC SYSTEM OF THE CITY	• streamlining of the traffic flow by means of telematic systems • elimination of capacity-wise problematic spots	• the fluency of traffic (average speed, level of quality of traffic) • environment quality	• analysis of traffic intensities • air quality monitoring	• minimisation of time losses, reduction in the time consumption by > 5% • limitation of congestion to > 50% compared to the existing status quo • improvement in air quality – fulfilment of the relevant strategy by > 95%

STRATEGIC GOAL	SPECIFIC GOAL	MEASURES AND SUITABLE ACTIVITIES	INDICATOR	METHOD OF FINDING/SOURCE	TARGET VALUE (2030)
	12. ELIMINATION OF UNNECESSARY TRAFFIC IN THE CENTRAL PART OF THE CITY A OUTSIDE RESIDENTIAL	• limitation of entry into the centre for unnecessary traffic • charging for the entry into the centre of the city • introduction of city logistics	• the share of passing traffic in the central part of the city • environment quality • the use of the system city logistics for delivery vehicles	• traffic survey • analysis of traffic intensities • air quality monitoring	• reduction in the volume of passing traffic in the centre of the city to < 5% • improvement in air quality – fulfilment of the relevant strategy by > 95% • the system city logistics shall involve > 95% of commercial activities in the centre
ENSURE RELIABILITY OF THE TRANSPORT SYSTEM IN CASE OF EMERGENCY SITUATIONS	**13. PREPARATION OF FRAMEWORK CRISIS PLANS FOR EMERGENCY SITUATIONS (ESPECIALLY FOR MASS PUBLIC TRANSPORTATION)**	• provision of a substitute service in an emergency situation • speed of provision of information to passengers	• rate of satisfaction of passengers • speed of response of the system to a crisis situation	• survey • guidelines of the Brno City Municipality, DPMB	• satisfaction of passengers > 60% • information for passengers within 100% of the time limit according to the guidelines
MINIMISE NEGATIVE IMPACTS OF THE CITY LOGISTICS	**14. REGULATION OF ENTRY OF DELIVERY VEHICLES INTO THE CENTRE OF THE CITY**	• limitation of entry of delivery vehicles into the centre (prohibition, charging and time limitation) • introduction of a system of city logistics	• the intensity of traffic of the delivery vehicles in time • the number of commercial activities involved in the system of city logistics	• analysis of traffic intensities • the use of the system of city logistics	• reduction in traffic intensities of the delivery vehicles outside of the system of city logistics to < 20% against the existing status quo • involvement in the system city logistics > 80% of commercial activities in the centre
	15. CITY LOGISTICS PROGRAMME	• introduction of the system of city logistics	• satisfaction of the operators of commercial activities with the system • the number of the operators of commercial activities involved in the system	• satisfaction survey • analysis of data from business entities	• the operators of commercial activities are satisfied with the functioning > 90% • the number of the operators of commercial activities involved in the system > 80%

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