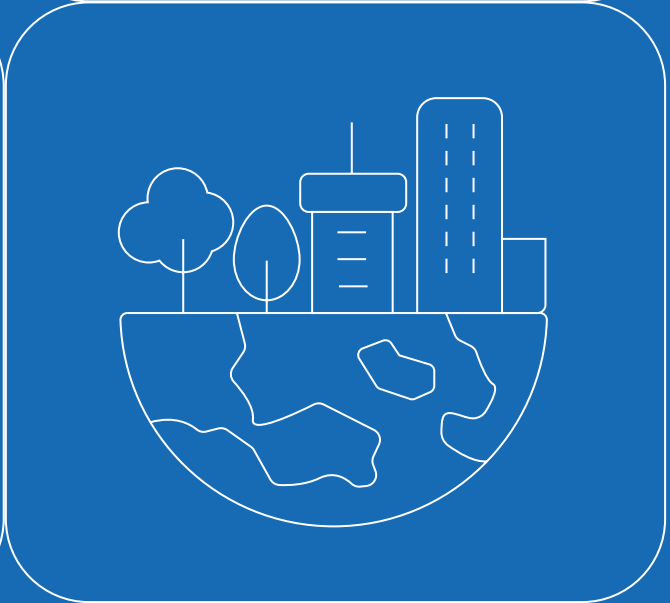
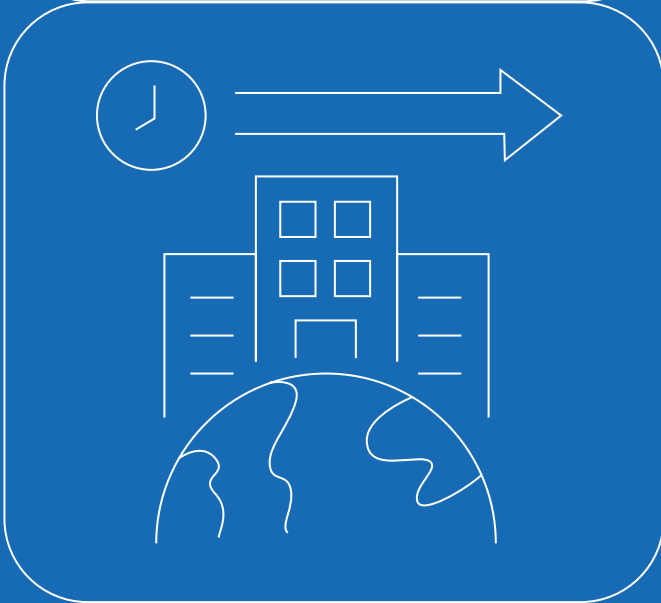
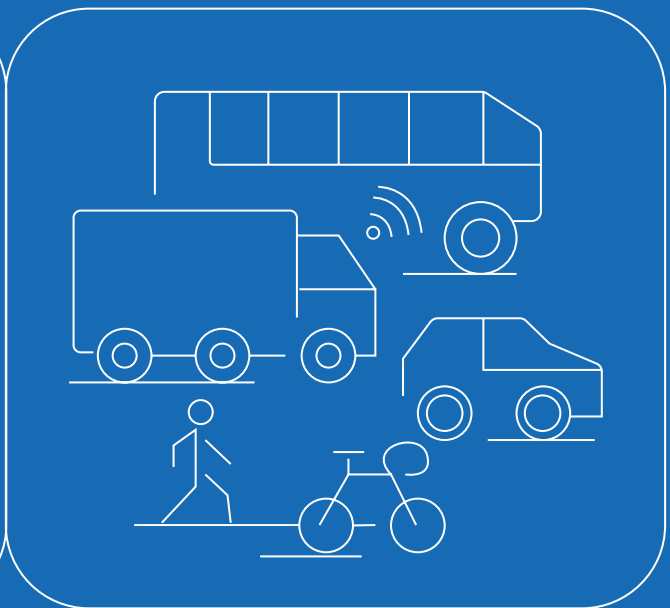
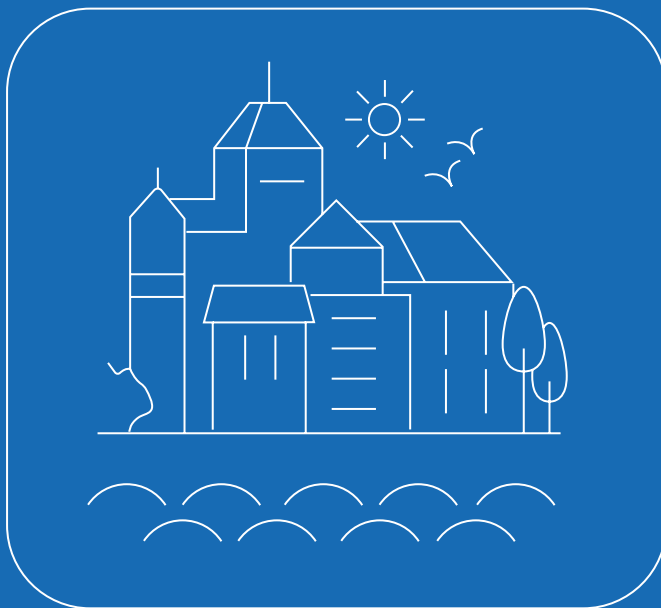


GUIDELINES FOR THE DEVELOPMENT OF SUSTAINABLE CITIES



FINAL REPORT

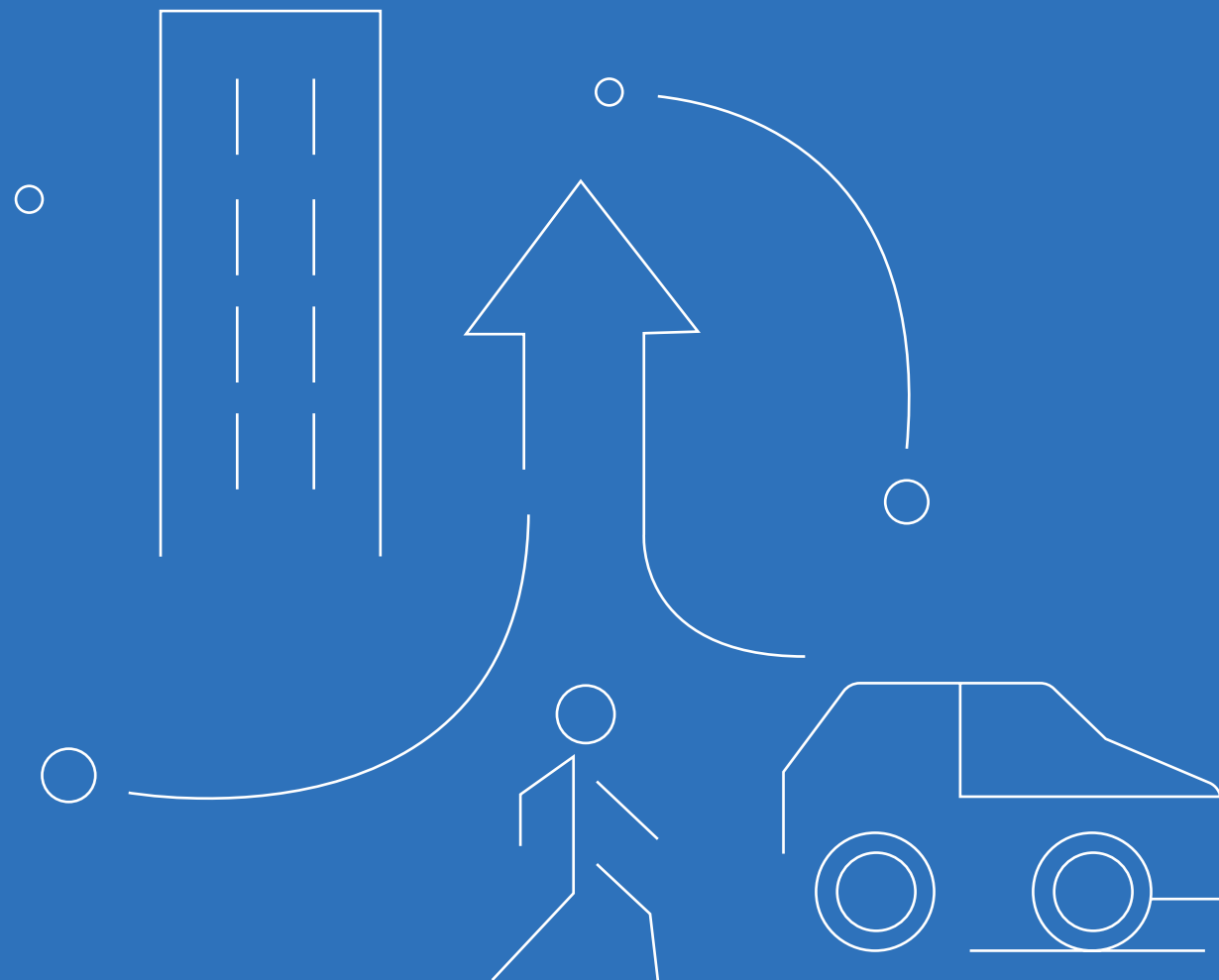
TABLE OF CONTENTS

INTRODUCTION	4
GUIDELINES FOR THE DEVELOPMENT OF SUSTAINABLE CITIES	18

GUIDELINE NO 1: Compact and Identity-Strengthening City	22
GUIDELINE NO 2: Sustainable Transport City	38
GUIDELINE NO 3: Green City (ecologically resilient and biodiverse)	50
GUIDELINE NO 4: Clean and Climate Change-Resistant City	64
GUIDELINE NO 5: Vibrant City	76
GUIDELINE NO 6: Inclusive City	90
GUIDELINE NO 7: Productive City	102
GUIDELINE NO 8: Circular Economy City	114

INTRODUCTION

“The fossil fuel economy has reached its limits. We want to leave the next generation a healthy planet as well as good jobs and growth that does not hurt our nature. The European Green Deal is our growth strategy that is moving towards a decarbonised economy. Europe was the first continent to declare to be climate neutral in 2050.”



Ursula von der Leyen, President of the European Commission



Urban challenges and problems

In Lithuania, about 67 per cent of the country's population live in cities; cities are financial, industrial, educational and cultural centres. Sustainable urban development requires safe living space for everyone — long-term residents and visitors. In cities, it is necessary to strengthen the resistance of physical (built) and natural (green) infrastructure to climate change and other natural threats and adaptations to future needs.

Lithuanian cities, like in many other countries, face various problems and challenges. Lithuanian metropolises, such as Vilnius, Kaunas and Klaipėda are facing problems such as uncontrolled suburbanisation, which drives excessive infrastructure maintenance costs and reduces the affordability of housing for an average resident. Big cities also face the problems of traffic jams, air pollution, high real estate prices and labour market competition. Furthermore, in the context of demographic decline, metropolitan areas may face population decline, which may have negative social and economic consequences.

Smaller Lithuanian cities, such as Jonava, Ukmergė or Jurbarkas, also face the problems of unemployment, economic backwardness and depopulation. The shrinking

city problem can be divided into four strategies: ignoring the shrinking problem or downplaying the problems it causes; the city's resistance to shrinking; recognition of the city shrinking; use of shrinking.

The city's cultural heritage resources (objects and locations) are protected, regardless of the significance level of the objects and the needs of local communities, and are often used for one narrow purpose (religious communities, education, etc.), although they could be used for a significantly wider and more diverse range of activities. Protected areas are poorly adapted to modern society's needs (dilapidated street infrastructure, unkempt squares and other open spaces, abandoned façades, etc.). The listed and other shortcomings harm the identification of local communities with the city or its part.

Moreover, the lack of quality infrastructure must be highlighted, especially in relation to the provision of public transport, healthcare and education services. The limitations of cultural and leisure services and the ageing society lead to an increase in the need for social services. There is an obvious lack of housing variety, both in Soviet-era districts and in newly developed areas. These challenges specific to Lithuanian cities require integrated and sustainable solutions in order to improve the living conditions of cities and towns in Lithuania. Further, the guidelines separately distinguish the principle of sustainable withdrawal as a possible solution to manage the mentioned problems.

The progress of civilisation in the last couple of centuries has proven that the sustainability of the planet is not determined solely by the laws of nature, which are the source of life and the possibilities of human creativity. The challenges of this age are not limited to the climate crisis, ecological pollution and other phenomena of the Anthropocene era — they are the result of society's thinking and behaviour, unsustainable urban planning and the unlimited depletion of land resources dictated by the market economy.



A detailed summary of urban challenges and problems is presented in Annex No 1 to the Guidelines for the Development of Sustainable Cities: "Challenges related to sustainable urban development".



Complex definitions of concepts of sustainability and sustainable city

What we call “sustainability” has also changed dramatically over time. Sustainability used to be about counting pollution levels and the amount of green spaces and parks. In the 1990s, the use of the term changed dramatically as many cities took a new approach to balancing the environmental, social and economic impact of a city.

It included such indicators as energy, water use and pollution, as well as such indicators as crime, employment, health care, etc. We now think about sustainability indicators even more broadly, and they include social cohesion, biodiversity, quality of life, social inequality, coping with cultural heritage resources and more. However, the original concept of balance in the 1990s is still acceptable because the interdependence of these three areas — environmental, economic and socio-cultural sustainability — is most widely recognised in the global context.

Sustainability (United Nations, 1987) is a multifaceted commitment to achieving a better quality of life for all people. Economic development, social development and environmental protection are interrelated and complementary components of sustainable development). The UN's Sustainable Development Goal 11 defines sustainable cities as those that aim for ecological, social and economic sustainability in a planned manner. A sustainable city reduces its negative impact on the environment and promotes sustainable consumption and development taking into account the territorial, geographical, social, economic and cultural conditions of a specific city.

A sustainable city is one that safeguards its unique natural and cultural heritage, cultivates a harmonious balance between its physical and functional structures, and provides high-quality living conditions for its present residents while preserving opportunities for future generations to continue the city's growth and development.



A sustainable city preserves its identity, signs of historical development, continues the traditions of city-building, maintains the social connections of communities with the living space and spirit (genius loci), collects and creates local intangible heritage traditions, identifies, nurtures and forms a unique cultural landscape (cityscape), uses and adapts historic buildings and spaces to the new needs of citizens and all groups of people. The city implements cultural heritage protection measures and programmes aimed at preventing and responding to emergency situations, increasing the resilience and sustainable restoration of historic sites in the fight against climate change and hazardous phenomena.

According to the European Environment Agency (EEA), the components of a sustainable city are: green, adaptive, inclusive, healthy, circular economy city with low carbon emissions. In the context of the Guidelines for the Development of Sustainable Cities, the latter components of a sustainable city are used as a basis for the development of key sustainability guidelines.

The minimum requirement for sustainable cities should be to avoid harming the environment and people, with the ultimate goal being the restoration of human and natural resources. However, focusing only on changes in the environment will not necessarily lead to the changes in human thinking and behaviour that led to the environmental crisis. The United Nations aims to implement such an approach to the European Green Deal strategy announced in 2020, which aims to ensure that the development of a modern economy helps to mitigate climate change using sustainable means and tools.

In the context of the European Green Deal, more than one strategy is being developed to achieve sustainability on the European continent. Accordingly, Lithuania also contributes to the Green Deal by forming country strategies based on sustainable development and foreseeing their implementation. Guidelines for the Development of Sustainable Cities (hereinafter “the Guidelines”) are a measure detailing and implementing the United Nations’ New Urban Agenda, the Comprehensive Plan of the Territory of the Republic of Lithuania (hereinafter “the CPRL”), and the urban policy of Lithuania. The Guidelines form complex, recommendatory principles and measures for the development of sustainable cities.

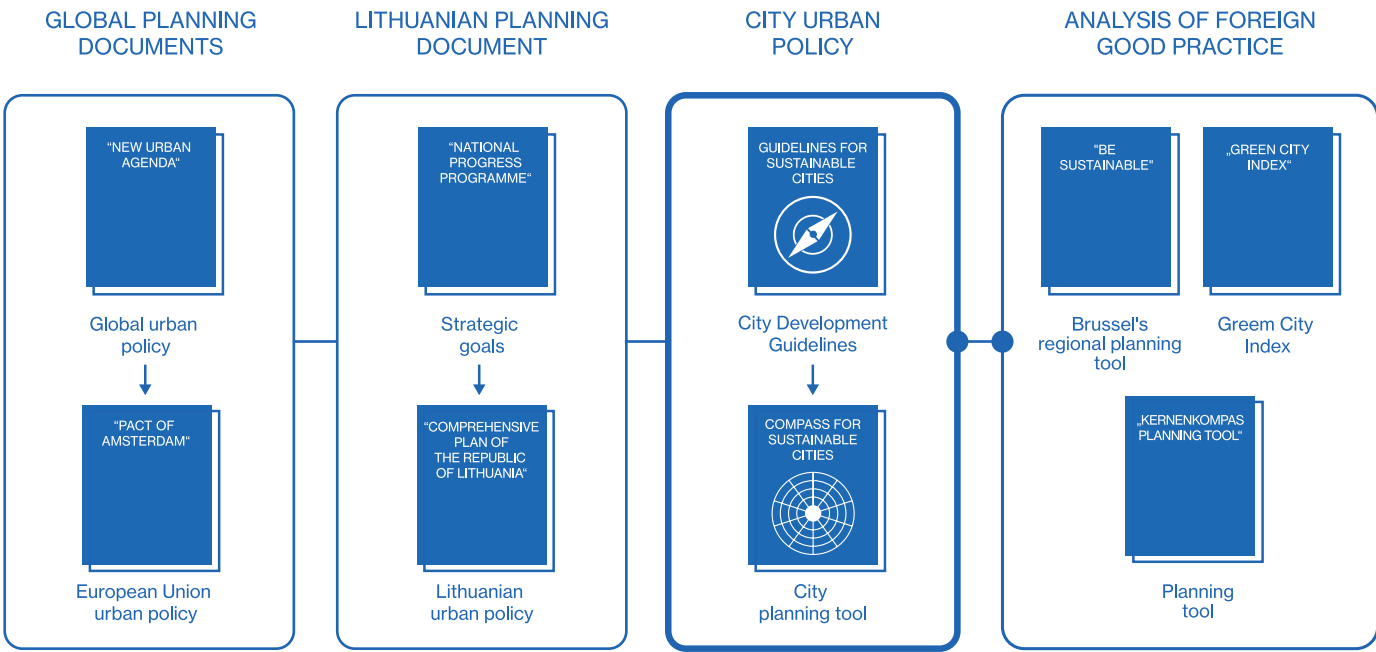


Fig. 1. Composition of Guidelines for the Development of Sustainable Cities and links with other documents

Linking the Sustainable Development Goals with the Guidelines for the Development of Sustainable

The United Nations has established 17 Sustainable Development Goals (hereinafter “the SDG”), which aim to ensure economic, social and environmental sustainability throughout the world. Many of these goals are directly related to cities and urbanisation, therefore, the tools identified in the Guidelines for the Development of Sustainable Cities can be used to achieve the SDG goals at the city level. Some of the most prominent related goals and links are:

- **No poverty (SDG 1):** The Guidelines for the Development of Sustainable Cities can contribute to poverty reduction in cities by ensuring social inclusion and good access to the labour market, and providing adequate social services to residents.
- **Good health and well-being (SDG 3):** Well-planned cities with sustainable infrastructure can help improve the health and well-being of residents. For example, this can be achieved by maintaining a healthy environment, promoting active lifestyles, and providing quality health-care.
- **Quality education (SDG 4):** It is important to ensure quality education and its accessibility for all in the cities, while sustainable urban development can contribute to the realisation of this goal.
- **Gender equality (SDG 5):** The Guidelines for the Development of Sustainable Cities can also help promote gender equality in the cities, ensuring opportunities for all citizens regardless of gender.
- **Sustainable cities and communities (SDG 11):** Sustainable Development Goal 11 is directly related to cities and urbanization. It promotes the creation of sustainable and efficient urban planning, the development of transport infrastructure, and the quality assurance of residential areas, as well as efforts to preserve the world cultural and natural heritage in Lithuania and cultural heritage resources (values registered in the Register of Cultural Heritage).
- **Quality of governance, institutional activities and partnerships (SDG 17):** Ensuring sustainable urban development requires effective governance, strengthening of institutional structures and promoting public and private partnerships, all of which are also linked to the Sustainable Development Goals.

Objectives of the Guidelines

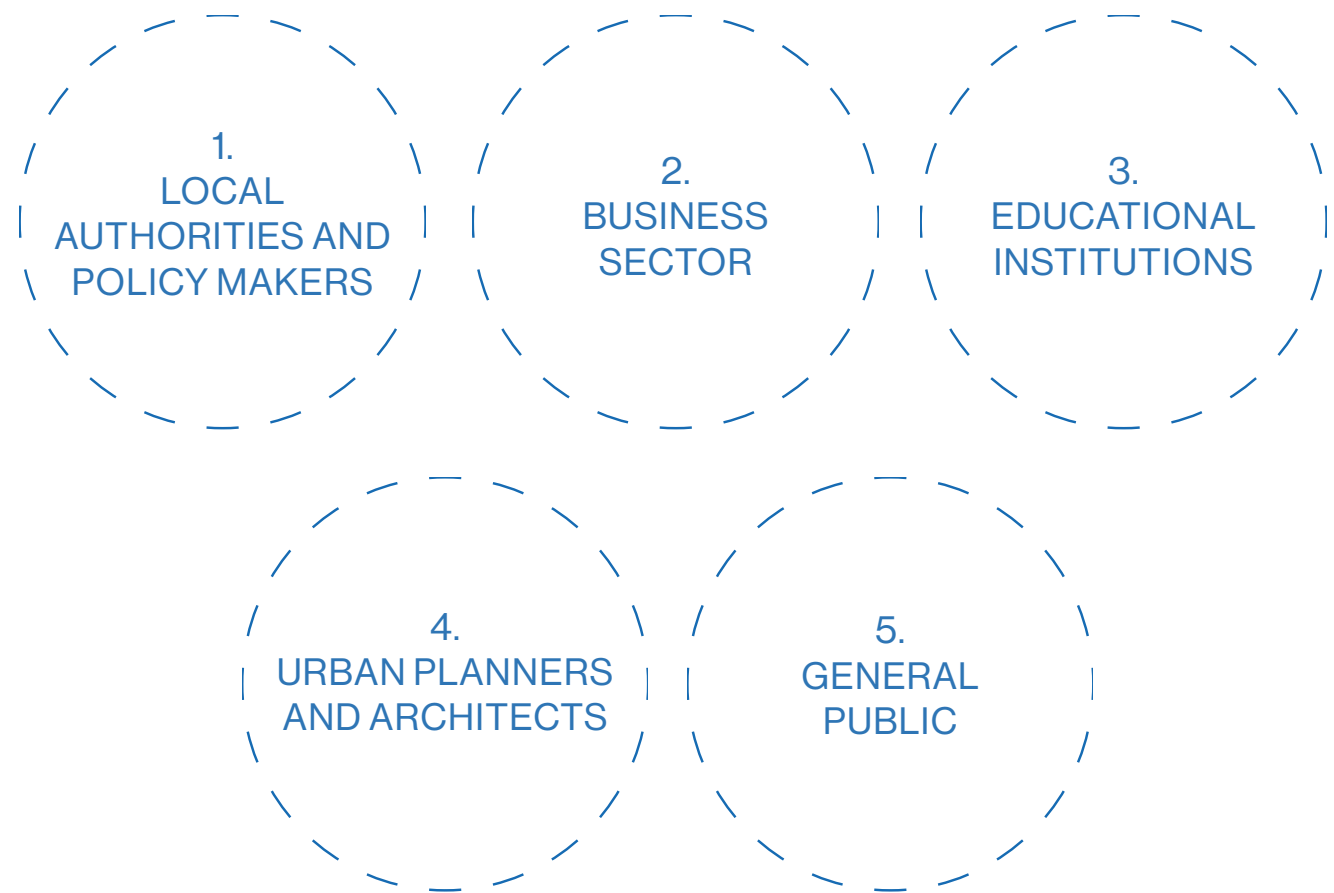
The preparation of the Guidelines for the Development of Sustainable Cities is associated with Action 6.2.12 “To prepare and approve guidelines for the development of sustainable cities for purpose of improvement of the quality of the living environment, increase of green plantations, sustainable mobility, promotion of responsible and sustainable consumption, reduction of waste, air, water, sound pollution and the impact on climate change” and Action 6.2.3 “To prepare and implement the pilot project of the transition to a zero-waste and climate-neutral city selected in cooperation with the Lithuanian Association of Municipalities” of Work 6.2 of the Plan for the Implementation of the Programme of the Government of the Republic of Lithuania.

The main goal of the Guidelines for the Development of Sustainable Cities is to identify the level of sustainability in Lithuanian cities and to encourage municipalities and other entities and individuals to organise the planning processes, projects and discussions necessary for the territories in order to increase the level of urban sustainability, based on the CPRL compact city principles aligned with the principles of sustainable development. The Guidelines respond to the balance of the anthropogenic, natural, economic and socio-cultural environment and a balanced sustainable development of these areas.

Provisions for the application of sustainable urban development guidelines and measures:

The Guidelines are indivisible for all cities, but each municipality must assess its own specifics;			The Guideline measures and implementation principles are applied both in general and according to the selected typologies of cities;			The Guidelines are prepared on the basis of the urban policies of the UN, EU and CPRL, forming complex, recommendatory principles for the development of sustainable cities (urban city policy).		
---	--	--	--	--	--	--	--	--

User groups of the Guidelines:



1. LOCAL AUTHORITIES AND POLICY MAKERS.

Access to guidelines for sustainable cities for planning, policy creation and regulation that promote sustainable urban development;
2. BUSINESS SECTOR.

Businesses can take advantage of guidelines for sustainable cities for creation of innovative and ecological products and services;
3. EDUCATIONAL INSTITUTIONS

Schools, universities and training centres can use the guidelines for sustainable cities to teach students about sustainability principles, solutions and practices;
4. URBAN PLANNERS AND ARCHITECTS

The possibility of implementing the principles of sustainability in the design of urban spaces and buildings;
5. GENERAL PUBLIC.

The opportunity to use the guidelines in order to actively participate in the process of urban development.

Link with territories and strategic documents:

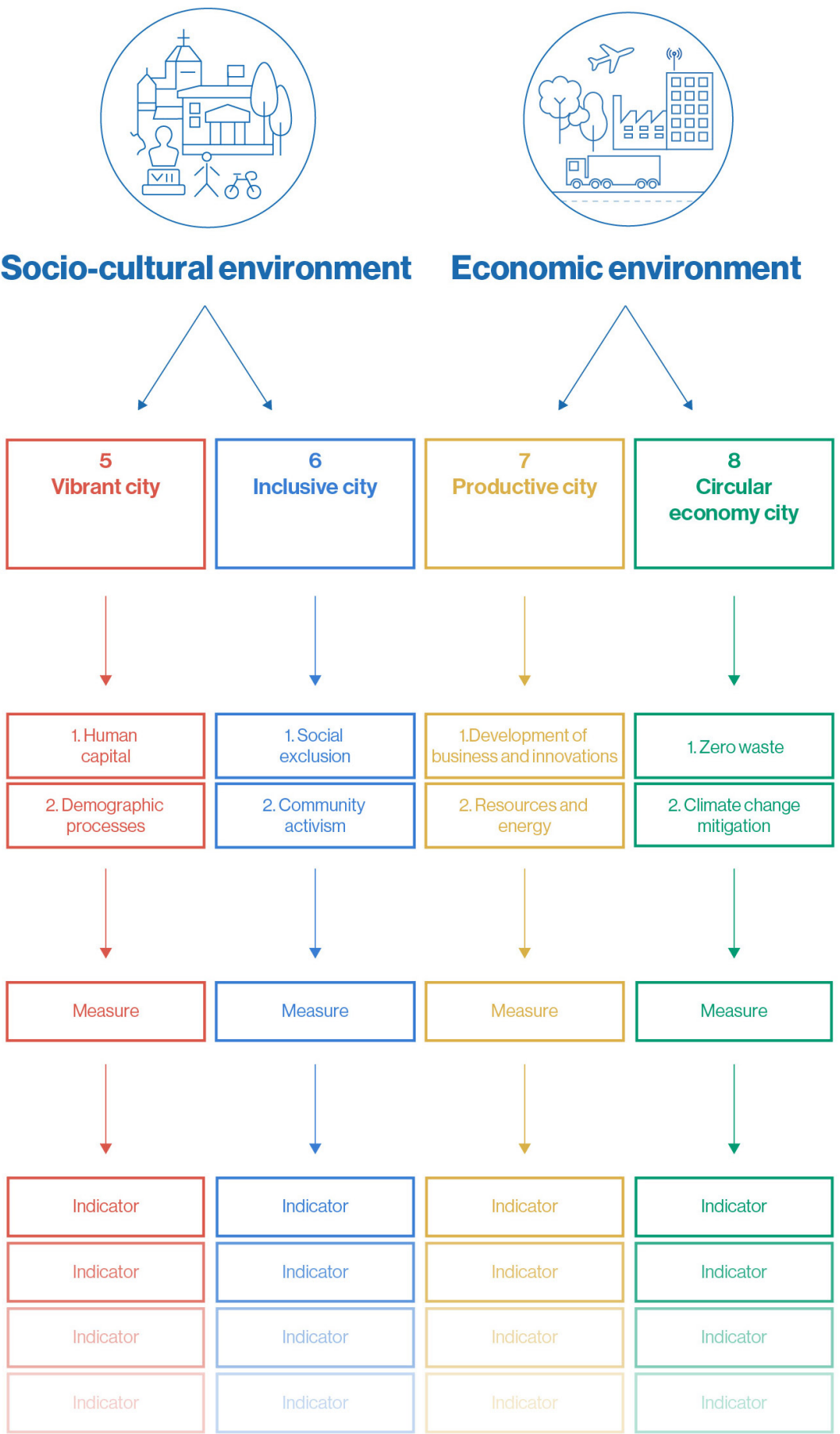
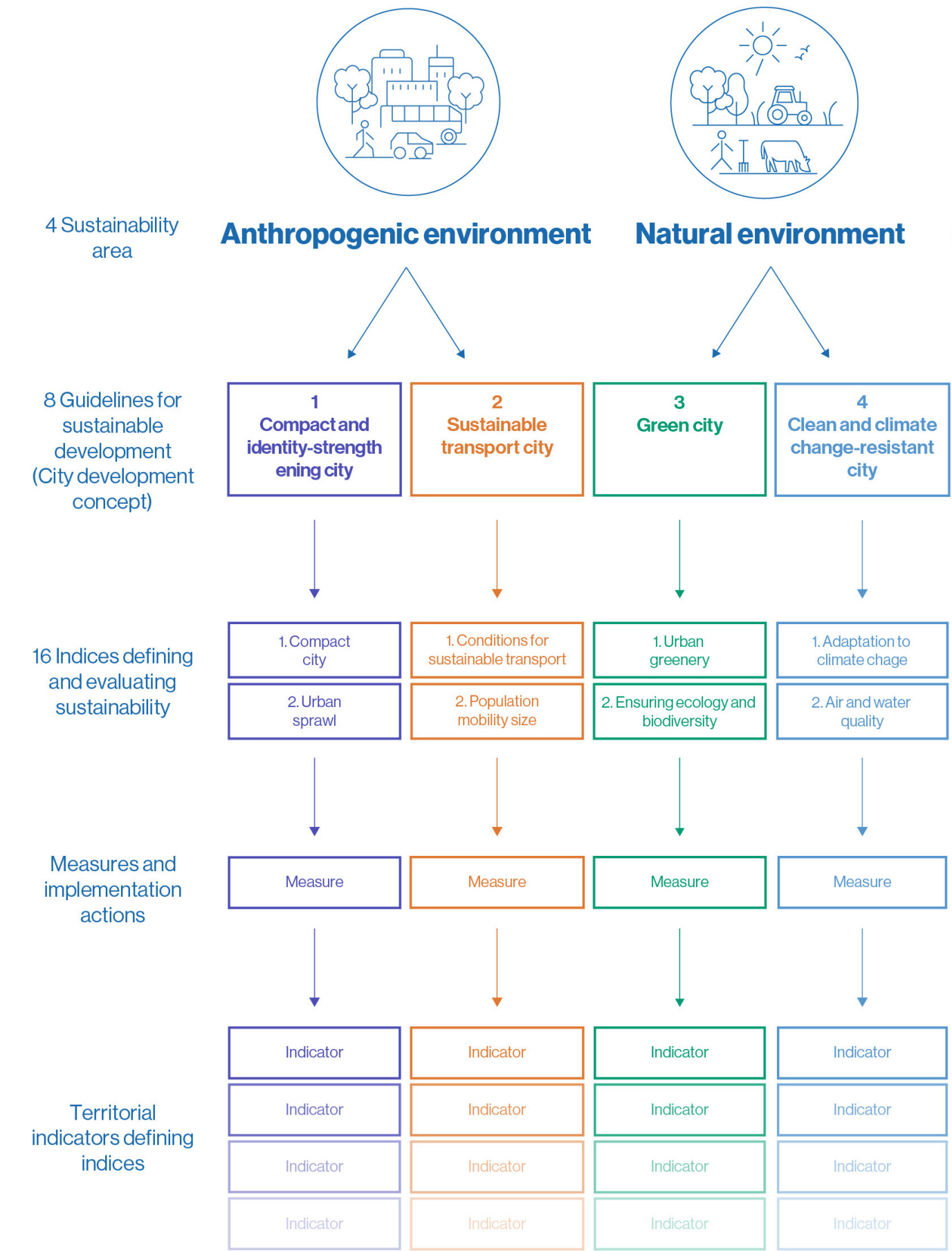
- The possibility of using the Guidelines in the preparation of different stages of comprehensive plans, urban feasibility studies and other projects;
- The possibility of linking with the prepared strategic plans of cities by predicting priority directions of development;
- The possibility of using the Guidelines in the preparation of sustainable development strategies of individual cities (linking with the description of the monitoring procedure for the preparation and implementation of sustainable city development strategies and functional zone strategies of the Ministry of the Interior of the Republic of Lithuania);
- The possibility of using the Guidelines for updating and improving territory planning standards.

Application of the Guidelines' spatial data and indicator system:

- The possibility of integrating the spatial data and indicator system of the Guidelines into the monitoring of the solutions of city comprehensive plans;
- The possibility of integrating the system of spatial indicators into other information systems;
- The possibility of using the Compass for Sustainable Cities as a tool that provides the opportunity to substantiate urban development decisions to municipal administration and politicians, and present them to the public;
- The possibility to identify problematic urban areas and localise urban challenges.

When applying the principles of the Guidelines, it is necessary to evaluate the natural environment, cultural heritage and other elements of the urban structure in each case.





GUIDELINES FOR THE DEVELOPMENT OF SUSTAIN- ABLE CITIES

The Guidelines distinguish four strategic areas of sustainable development: anthropogenic, natural, socio-cultural and economic environment. Sustainability guidelines are established for each area, characterised by sustainability indices that assess the current level of sustainability and, accordingly, estimate what should be achieved in each area. Indices include measurable territorial indicators with target values (if possible to identify). Measures and possible actions are provided for the achievement of the set guidelines.



ANTHROPOGENIC ENVIRONMENT

It is a compact city with sustainable transport. Sustainable development indices proposed for these Guidelines:

- Compactness;
- Conditions for compactness;
- Conditions for sustainable transport (infrastructure);
- Population mobility size.



NATURAL ENVIRONMENT

Clean and climate change-resistant city. Sustainable development indices proposed for these Guidelines:

- Urban greenery;
- Ensuring ecology and biodiversity;
- Adaptation to climate change;
- Water and air quality.



SOCIOCULTURAL ENVIRONMENT

It is a vibrant and inclusive city. Sustainable development indices proposed for these Guidelines:

- Human capital;
- Demographic index;
- Social inclusion;
- Community activism.

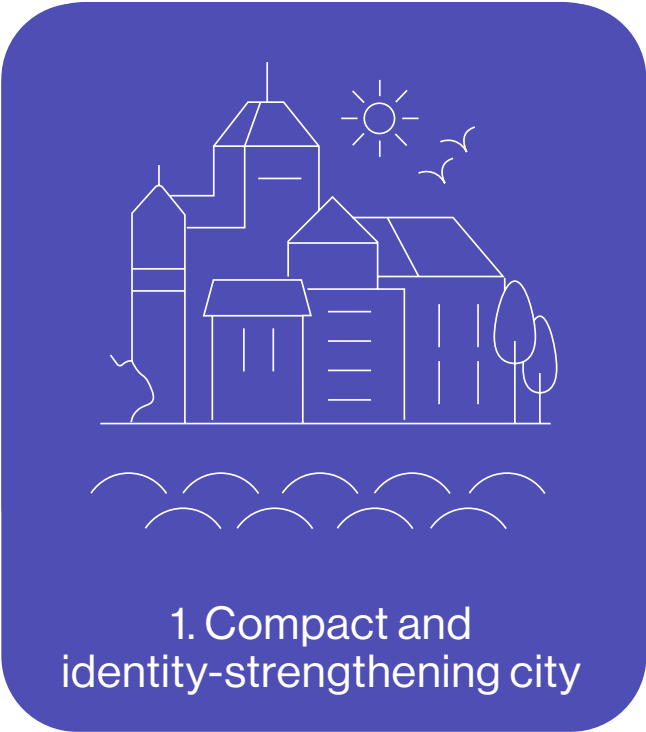


EKONIMINĖ APLINKA

Tai produktyvus ir žiedinės ekonomikos miestas. Šioms gairėms siūlomi darnaus vystymo indeksai:

- Business and investment development;
- Resources and Energy;
- Zero waste;
- Climate change mitigation.

ANTHROPOGENIC
ENVIRONMENT



NATURAL
ENVIRONMENT



SOCIOCULTURAL
ENVIRONMENT



ECONOMIC
ENVIRONMENT



Fig. 3. Eight sustainability guidelines that define the main goals and objectives for sustainable cities

GUIDELINE NO 1

COMPACT
AND IDENTITY-
STRENGTHENING
CITY





Compact and Identity-Strengthening City

It is a city that uses its territorial resources efficiently, with a typical intensive, locally distributed use of services in multifunctional urban structures.

In this city, a sustainable and economical use of resources is developed, promoting affordable, high-quality services, encouraging dense housing through regenerative development, and establishing a well-developed public transport system alongside eco-friendly modes of transportation to reduce ecological consequences. This is implemented in interaction with the strengthening of the city's identity (without violating the elements that form the city's identity). A city is also sustainable when it preserves cultural heritage resources, their uniqueness, authenticity and integrity (volumetric spatial structure of development, morphology of development, historical squares and plantations, development features, breakdown, silhouettes, panoramas, etc.), relationship of the city with natural environment, cultural landscape formed by historical development, connections of communities with the city and its separate parts.

1. Strengthening the city's identity

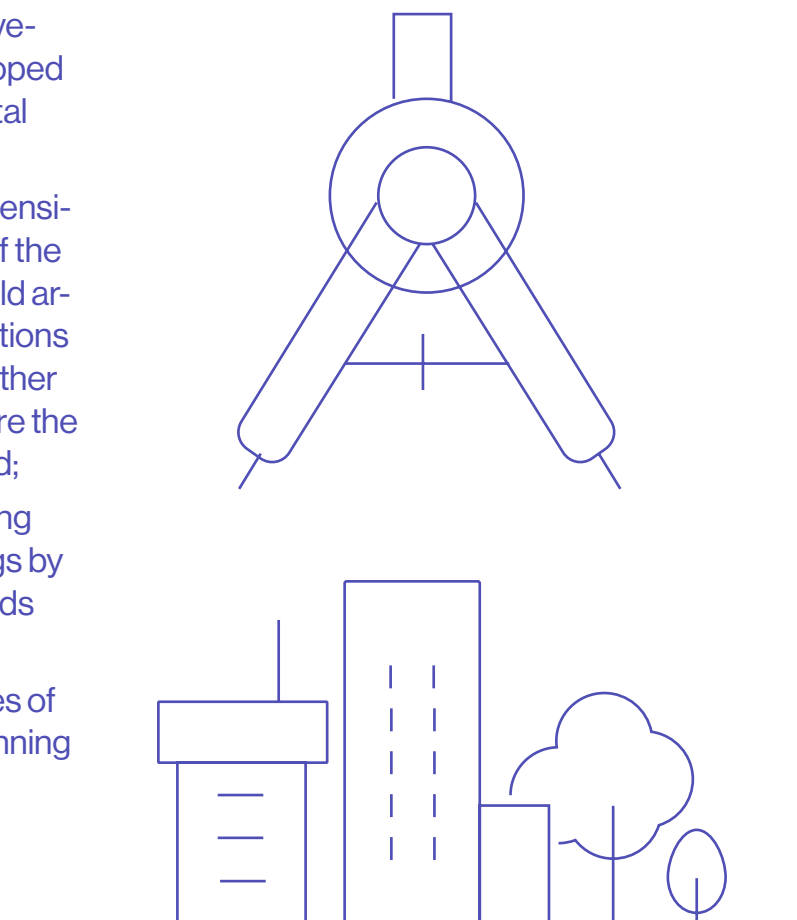
- While preserving the city's identity, to protect the uniqueness, authenticity and integrity of the cultural heritage objects and places, (volumetric spatial structure of development, morphology of development, historical squares and plantations, development features, breakdown, silhouettes, panoramas, etc. — valuable properties of the areas), the relationship of areas and the city with the natural environment, the cultural landscape formed by historical development, the connections of communities with the city and its separate parts;
- To cultivate and create a distinctive cityscape that preserves the spatial volumetric values of cultural heritage (dominants, panoramas, etc.) and create new volumetric spatial structures of exceptional resolution in places of non-valuable urban structures that do not violate the principles of authenticity and integrity of cultural heritage resources;
- To develop the city without compromising the integrity of the protected cultural landscape, monitoring the changes in the development process by integrating projects (during the project proposal stage) into the 3D model of the city, evaluating the images (panoramas, silhouettes, perspectives) generated from viewpoints specified in territorial planning documents, the directives of the Real Cultural Heritage Assessment Council, and other legal regulations, assessing their relationship with protected values, and considering their impact on the overall environment (in accordance with the provisions of the Vienna Memorandum on "World Heritage and Contemporary Architecture – Management of the Historic Urban Landscape", adopted on 10-11 October 2005 in Paris);
- To maintain and create social connections of local communities of the city with the living space and spirit (genius loci);
- The principles of the arrangement of buildings and public spaces in the territory, solutions for the arrangement of buildings on the plot and development indicators (intensity, density and height) must comply with the urban context, or changed purposefully, if the urban structure needs to be improved or transformed;
- Regardless of the environment, a new block, building or structure must be in harmony with the context in terms of its volume and façade composition, but be modern in its urban planning, architectural resolution and technological solutions (except in cases of reconstruction or restoration);
- When preparing/changing/adjusting the comprehensive plans of cities, to create conditions for the densification and intensification of built-up areas taking into account the existing urban character, if it needs to be changed;
- When preparing detailed plans for important, strategically significant areas of the city, to perform an urban analysis of the planned and adjacent areas (groups of blocks), urban solutions of the planned and adjacent areas (groups of blocks) and their spatial modelling (with possible development options), which increase the urban integrity of the planned area.

2. Sustainable use of cultural heritage resources in the city and continuous maintenance of values

- In the course of continuous maintenance of resources (repairs, emergency prevention), the city must use all cultural heritage resources continuously;
- Taking into account the needs of local communities and their members, cultural heritage objects and areas, as well as parts thereof, are to be adapted to new functions. Priority must be given to public functions;
- Contributing to fostering the sustainability of the city, to manage heritage objects and their non-valuable parts using authentic materials specific to the area, apply authentic production methods or tools and/or performance techniques and traditions. To apply circular economy principles to maintenance work;
- Without violating the established valuable features of the area and integrity of the area, to build new and reconstruct old buildings in the territories of the cultural heritage areas in the city, harmoniously complementing the unique and harmoniously formed cultural landscape (cityscape). Priority must be given to reconstruction works as those that can better foster sustainability (reducing the needs of new construction works and promoting the secondary use of materials);
- To protect (restore, conserve) cultural heritage objects in cities, using them for purposes close to their authentic nature without compromising their inherent value, adapting them to new functions, involving them in various activities, and applying architectural quality criteria and universal design principles;
- To protect the authenticity and integrity of cultural heritage areas, other distinctive features, carry out, without violating the valuable characteristics of the areas (old towns, new towns and other parts of the city), the integration of the areas into the processes of sustainable development: to adapt the public spaces of the areas (historical squares, street, yards, etc.) to modern needs of communities, development of recreational infrastructure and people with various needs.
- To engage cultural heritage objects not only for historical or museum purposes, but also for new functions that meet current needs — housing, services, offices, etc. To prioritise their adaptation to public function, public visitation and cognition;
- When managing cultural heritage objects and performing maintenance construction works, not to imitate the historical exterior of buildings and to separate historical architectural details from modern interventions (implement the provisions of the International Charter for the Conservation and Restoration of Monuments and Sites, 1964 (the Venice Charter));
- When reconstructing heritage objects or changing their environment, to preserve the valuable properties of these objects with the possibility of changing the non-valuable elements of the object and its environment.

3. Efficient use of developed areas and economical use of land

- To promote the renovation and secondary use of existing buildings and already urbanised city areas, and avoid the urbanisation of new, undeveloped (natural) areas;
- When redeveloping the existing irrationally built-up territories, taking into account the existing/being formed typology of their development, the functional and spatial structure of the city, to optimise (increase or reduce if there is a justified need) the density and intensity of their construction, ensuring the quality of the urban and architectural solutions of the territory, and the environment being formed;
- Development densification must be proportionate to the context and balanced out by the criteria of sustainable development (all components are developed simultaneously: social, environmental and economic);
- For the development of the most intensively and densely developed parts of the city (block or group of blocks), to hold architectural-urban planning competitions and/or urban studies, possibly together with detailed plans, in order to ensure the quality of the solutions being formed;
- To promote the conversion of existing unused or inefficiently used buildings by adapting them to the functional needs identified in the territory;
- To identify clear, physical boundaries of cities and adhere to them when planning development;
- To promote and create opportunities for short-term use of abandoned spaces and buildings;
- In cities where, due to population decline, there is no need to absorb the existing unused developed areas, to utilise the remaining buildings and use them for communal areas and to restore ecosystems, construction of RES, such as solar power plants, and agricultural activities that do not create a negative impact on the environment;
- In resort towns, unused, abandoned production territories should be utilised for the development of industrial tourism (when no other, more effective application option has been identified).



4. Strong, aesthetic and active city centres

- To adapt cultural heritage objects and local spaces to the changing needs of citizens and their different groups (children, youth, adults, elderly, disabled persons, etc.);
- To adapt the city, including cultural heritage sites, to the use by all groups of people. In protected areas, to install technical infrastructure that will help disabled people to access all public facilities in the area;
- To increase the opportunities of citizens to sustainably use all existing resources (including cultural heritage resources), to reduce the need for the construction and/or adaptation (reconstruction) of new spaces and structures, by managing changes to increase long-term knowledge of the city's urban structures (sense of permanence, knowledge of space promotes a long-term sense of identity with the place);
- To use the city's historic public buildings (churches, museums, etc.) as oases to survive heat waves in the city;
- To adapt the basements of churches and other historical buildings for use as temporary shelters during crises.
- To ensure a good quality of life in city centres by creating and updating quality engineering, communication and social infrastructure;
- To create a multi-layered cityscape in city centres while respecting the existing urban axes and protecting visual panoramas;
- To develop city centres using the principle of human scale proportionality. The concept of human scale includes the creation of a resident-friendly urban environment based on the harmony of human-friendly spatial proportions;
- To create and strengthen multifunctional, economically active and aesthetically attractive city centres;
- To create an architectural-urbanistic character specific to the city centre.

5. Urban development combined with public transport corridors

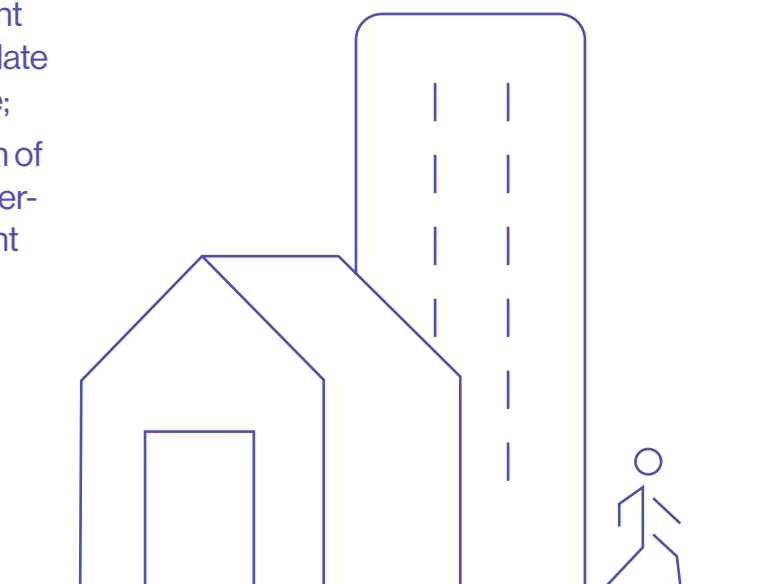
- To concentrate the development of the city on the axes of public transport and plan together with public transport, non-motorised transport and pedestrian infrastructure, and mobility services, and by applying measures that reduce the attractiveness of reaching the territory or communication with it by a private vehicle (plan according to TOD (Transit Oriented Development) principle);
- To facilitate conditions and opportunities to create residential and commercial areas near public transport stops.

6. Communication corridors of city centres as public spaces

- When preparing or updating feasibility studies or sustainable mobility plans, to provide suitable corridors for the humanisation of city centres or historic old towns. To convert them into public spaces and pedestrian zones (e.g., Karaimų street in Trakai);
- To return territories affected by the negative effects of the city's functioning to residents, to raise transit traffic flows, to install pedestrian areas, greenery and small architectural elements;
- To adapt communication corridors for efficient and fast public transport, safe and convenient pedestrian and bicycle traffic and infrastructure;
- To form rational and compact urban structures by applying the principles of humanisation (rehabilitation) to communication corridors.

7. Variety of functions, offer of services next to housing and jobs

- In monofunctional parts of cities, where there are only groups of residential blocks, using hard (new construction) and soft (temporary buildings) activities, to create conditions for provision of services, and to increase the variety and intensity of activities;
- To promote a balanced (harmonious according to activities) variety of different land uses, if necessary — to consolidate ownership of land or other real estate;
- To create conditions for the formation of a variety of functions in the complex territorial planning and land management documents of the municipality.
- To promote the diversity and intensity of activities by engaging the ground floors of buildings, and to intensify the connections between open spaces and the functions and public services provided by buildings.



8. Proximity to public services and public spaces

- To plan the municipality's social infrastructure and other service facilities (education and science, sports, wellness services) in a way that the services can be reached on foot within an average of 15 minutes;
- To plan the accessibility of public spaces on foot within an average of 15 minutes;
- To ensure the safe accessibility of public green spaces, common use areas, important public facilities (e.g., schools, libraries, etc.) or places of their concentration on foot and by non-motorised means of movement;
- To create safe, inclusive, accessible and high-quality public spaces as factors of social and economic development, to harmoniously use their potential taking into account the needs of the residents of the surrounding areas.

9. Quality housing

- To comprehensively renovate residential blocks, using physical and sensory means, new buildings and structures, greenery and elements of well-being strive to separate more clearly the spaces used by those blocks for public and private use (of a certain community) and, if possible and necessary, to supplement the existing residential blocks with missing middle housing diversity;
- When planning residential areas, to promote the development of various typologies of housing in response to the different purchasing power of different social groups. In many cities, there is a lack of residential buildings differentiated between single-family houses and five-and-more-story apartment buildings built during the Soviet era. When developing new blocks, it is recommended to provide social housing. When preparing detailed plans, creation of different typologies of housing must be considered;
- When planning and building residential areas, to avoid the concentration of one social group in the area and design apartments of various sizes and prices, including social housing;
- To ensure that middle and lower income residents and households have the opportunity to live in quality housing;
- To consider the development of co-living housing and to ease the legal circumstances for the implementation of such housing (with several co-owners).

10. Development of agglomerated territories by applying the principles of polycentric urban structure

- When developing agglomerated territories, to develop them polycentrically, in order to create an urban structure that has more than one centre or poles that attract residents, businesses and activities;
- To create an efficient transport infrastructure that would connect different parts of the polycentric urban structure and parts of the city (of this agglomeration).



It is proposed to measure the changes of the compact city in a complex manner using the following indices:

1.

COMPACTNESS.

This index uses quantitative indicators representing compactness. The index includes several different variables, such as, population density in the urban administrative area, population density in the built-up area, and the ratio of continuous built-up area to built-up area. The data derived from territorial indicators can help identify problematic urban areas and set priorities in development plans to achieve a higher level of urban sustainability. When evaluating the compactness index, it is important to take into account the characteristics of the urban structure, because different cities have different conditions and challenges related to their territory, population, cultural and historical environment, etc. Thus, the results of this index should be evaluated in more detail according to the specifics of each city.

2.

CONDITIONS FOR COMPACTNESS.

This index is aimed to measure qualitative indicators representing compactness. The index includes several different variables, such as, accessibility of greenery within 15 minutes on foot, accessibility of kindergartens and schools within 15 minutes on foot, accessibility of public transport, housing area per inhabitant, and engagement of cultural heritage public spaces. This index allows city planners and politicians to monitor and evaluate the development and sustainability of the city, promoting compliance with the principles of compactness and aiming to create a healthy, safe and sustainable living environment for residents.

Index Indicator Table of the Compact City Guideline:

INDICES	INDICATORS
1. COMPACTNESS	1.1. Population density in the administrative territory of the city (number / sq km)
	1.2. Population density in the built-up area <i>(Built-up territories shall mean territories that include land occupied by buildings, excluding objects classified as roads; squares, plazas, courtyards and environmental elements)</i>
	1.3. Ratio of the continuous built-up area to the built-up area <i>(Continuous built-up territory – the territory is considered continuously built-up, if the distance between the buildings within it is no more than 50 m and the size of the territory is not less than 5 ha)</i>

INDICATOR TYPE, DATA SOURCE	TARGET VALUES / COMMENT
Territorial indicator. Data source: • Population census 2021 data	The EU does not set specific thresholds for urban density. However, territorial planning norms of the Republic of Lithuania recommend population density thresholds for the residential block or district under development: • minimum – 30 inhabitants/ha; • maximum for large cities – 150 inhabitants/ha; • maximum for medium-sized cities – 100 inhabitants/ha; • maximum for small cities – 50 inhabitants/ha.
Relative territorial indicator. Data source: • Population census 2021 data; • Georeferenced built-up areas.	Territorial planning norms of the Republic of Lithuania recommend population density thresholds for the residential block or district under development: • minimum – 30 inhabitants/ha; • maximum for large cities – 150 inhabitants/ha; • maximum for medium-sized cities – 100 inhabitants/ha; • maximum for small cities – 50 inhabitants/ha.
Relative territorial indicator. Data source: • Georeferenced built-up areas.	The aim is to achieve a positive territorial indicator result that corresponds to the definition of a continuous built-up area.

Index Indicator Table of the Compact City Guideline:

INDICES	INDICATORS
2. CONDITIONS FOR COMPACTNESS	2.1. Availability of green areas and forest areas within 15 minutes on foot (percentage of residents who reach green areas within 15 minutes on foot of the total population). (The indicator includes the accessibility of forest areas of the 2nd group and special purpose forests.)
	2.2. Accessibility of kindergartens within 15 minutes by foot (percentage of preschool-age children able to reach a kindergarten within 15 minutes by foot of all preschool-age children)
	2.3. Accessibility of schools within 15 minutes by foot (percentage of school-age children able to reach a school within 15 minutes by foot of all school-age children)
	2.4. Availability of public transport (proportion of the population living within 500 m of a public transport stop / total population)
	2.5. Housing area per inhabitant
	2.6. Indicators of engagement of cultural heritage public spaces — counting events in the spaces.

INDICATOR TYPE, DATA SOURCE	TARGET VALUES / COMMENT
Territorial indicator. Data source: State data archive, comprehensive plan data (updated as needed)	The aim is that all city dwellers can reach individual green areas within 15 minutes by foot.
Territorial indicator. Data source: State data archive. Link	The more residents can reach kindergartens within 15 minutes on foot, the more sustainable and compact the city is.
Territorial indicator. Data source: State data archive. Link	The more residents can reach schools within 15 minutes on foot, the more sustainable and compact the city is.
Territorial indicator. Data source: www.visimarsrutai.lt. In the future, it is proposed to assess only the accessibility of stops where public transport runs at the right time, for example, at least 4 times per hour, as the data currently collected do not reflect the quality of the public transport service.	The aim is to make public transport in cities accessible to all residents.
Territorial indicator. Data source: Openly available data from the Centre of Registers. Link Area/number of residential premises in a 500x500 meter grid	It is aimed that the useful area of housing per inhabitant will increase to 28–29 square meters and would be close to the current average in EU countries (according to the National Sustainable Development Strategy).
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	It is aimed that the public spaces of the cultural heritage are adapted to the needs of people.

GUIDELINE NO 2

SUSTAINABLE
TRANSPORT
CITY





Sustainable Transport City

It is a city that responds to the transport needs of today and tomorrow, with a transport system that is balanced, accessible, efficient and safe. Different types of transportation options are available to residents of this city, such as, accessible, affordable public transport running at the right times, non-motorised transport, walking routes, electric transport, carpooling services and combined travel.

1. Convenient and accessible public transport

- To ensure the availability of public transport on convenient routes and at the appropriate times, the aim is to have public transport in metropolitan and regional urban centres, as well as throughout their territories, operate at frequent intervals, including multiple times per hour on both weekdays and weekends. To aim for public transport services in local urban centres that meet the mobility needs of the residents;
- To ensure access to public transport for all individuals, the goal is to modify public transport services, including the means of transport, passenger information infrastructure, and station and stop infrastructure, to cater to people of all ages, abilities, languages, health conditions, mobility levels, and financial means;
- To enhance the speed of public transport travel, it is crucial to assess and identify the urban communication axes where prioritizing public transport is necessary and to implement priority measures, such as dedicated public transport lanes and traffic lights at intersections;
- To carry out the modernisation and greening of the public transport fleet;
- To create or improve the e-ticket system;
- To increase the connectivity of urban and suburban transport — combine routes and schedules.

2. Ability to choose the mode of travel

- If there is a need to establish private and public transport connection points at the end points of frequently running public transport routes in metropolitan and regional centres, to ensure the frequency of public transport on those routes;
- To create more opportunities to combine trips with two or more modes of transport, and choose a travel method for the first or last kilometre of the trip by installing multimodal complex travel sites and the necessary communication infrastructure towards them;
- To increase the connectivity of non-motorised transport and ride-sharing means and services with public transport terminals, stations and stops;
- To create or improve the e-ticket system by integrating the ability to pay for various mobility services in the city or region.

3. Priority for pedestrians and users of non-motorised transport

- To establish a functional, comfortable, and secure pedestrian infrastructure that accommodates the diverse needs of individuals, irrespective of age, abilities, health, or mobility. This includes making it accessible to people with special needs and incorporating lighting, street landscaping, and small architectural elements;
- To grant priority to pedestrians and users of non-motorised transport at intersections with large flows of these traffic participants;
- To reorganise city streets according to the principles of universal design and humanising the environment, giving priority to the most vulnerable road users in auxiliary (category D) streets when creating streets for common movement, residential or pedestrian zones;
- To expand the non-motorised transport network for daily transportation and recreational purposes;
- To ensure the connectivity of different types of non-motorised transport infrastructure — bicycle paths, lanes, shared movement and bicycle streets;
- To develop bicycle parking and storage infrastructure near everyday attraction sites and homes;
- To ensure opportunities for pedestrians, cyclists and users of other micromobility devices to be equal participants in the transportation system — educate drivers about respect for other road users, remind them of road traffic rules related to pedestrian and non-motorised traffic.

4. Mobility management

- To consistently plan mobility in cities — prepare or update and implement Sustainable Mobility Plans in metropolitan and regional centres, resorts and cities located in resort areas;
- To establish and ensure the Policy of Sustainable Transport in Cities by linking it with other city planning and strategic documents, to integrate its solutions into strategic plans of cities and territorial planning documents;
- To develop transportation and engineering infrastructure together with urbanisation, preventing urban development if the infrastructure necessary for functioning is not planned and implemented;
- New planned territories and infrastructure objects should be concentrated on public transport axes and planned together with public transport, non-motorised transport and pedestrian infrastructure, and mobility services, ensuring competitive alternatives for reaching the territory or communication within it, by passenger cars;
- Free up city spaces, especially in the central part of the city, from cars by implementing parking policies, such as, limiting the number of parking spaces, charging parking fees, increasing rates or using other measures.

5. Sustainable logistics

- To optimise the movement of logistics transport in the cities – prepare and implement Sustainable Logistics Plans;
- To create opportunities for the co-modality and intermodality of logistics, to create new or expand existing services related to the communication system and the necessary infrastructure solutions in cities and in the urbanised areas near them;
- To promote logistics with non-polluting vehicles powered by electricity and alternative fuels, to provide logistics services for small parcels in cities and nearby urbanised areas by non-GHG and non-motorised vehicles;
- To reduce air and noise pollution caused by logistics by limiting cargo logistics in certain places or at certain times, for example, in the central parts of cities and in auxiliary (category D) streets, during the morning and evening rush hours.

6. Safe communication for all road users

- To strive for compliance of the city street infrastructure with the function (category) assigned to it, technical regulations and the requirements of the principles of sustainable mobility — when renovating the infrastructure, to redistribute the street space and install public transport, bicycle, pedestrian and vehicle infrastructure that meets the needs of road users;
- To implement measures to limit the speed and transit of motor vehicles on auxiliary (category D) streets, including in old towns and apartment blocks;
- To ensure compliance with the prescribed speed limits on city streets;
- To analyse black spots and the circumstances of traffic accidents, to eliminate the causes of traffic accidents.

7. Reduced pollution transport system

- To reduce the pollution caused by transport in cities by means, such as, the establishment and implementation of low pollution zones and pollution tax;
- To promote the replacement of polluting vehicles with vehicles powered by electricity or other alternative fuels;
- To expand the infrastructure of alternative fuel filling and electric vehicle charging points;
- To carry out the greening of the public transport fleet;

It is proposed to measure the changes of the sustainable transport city in a complex manner using the following indices:

1.

CONDITIONS FOR SUSTAINABLE TRANSPORT (INFRASTRUCTURE).

This index describes the existing infrastructure of sustainable modes of transport, which creates the conditions for a more balanced travel modal structure, creating opportunities to choose more sustainable modes of travel for daily trips. When evaluating the index of sustainable transportation infrastructure, it is important to take into account the characteristics of cities — differences related to the territory of cities, natural or historical environment and existing transport systems.

2.

POPULATION MOBILITY SIZE.

This index reflects the city's transport situation and the changes created by the existing sustainable transport infrastructure. The index can measure the quality of life and the economic conditions for choosing certain means of transport, but the main variable of population mobility is the modal structure of travel. Index values can help city planners and decision makers evaluate urban transport policies and strategies, identify weaknesses and opportunities, as well as assess the effectiveness of policy measures and adjust decisions if necessary to ensure sustainable and viable urban mobility. Most of the indicators proposed and collected in this index are not territorial, but are indispensable for the comprehensive assessment of sustainability of the urban transport system.

Index Indicator Table of the Sustainable Transport City Guideline:

INDICES	INDICATORS
1. CONDITIONS FOR SUSTAINABLE TRANSPORT (INFRASTRUCTURE)	1.1. Availability of public transport (proportion of the population living within 500 m of a public transport stop / total population)
	1.2. Intensity of public transport (average number of trips per day)
	1.3. Accessibility of public transport stops (part of stops where platforms can be used by people with special needs / all stops in the grid)
	1.4. Non-motorised transport infrastructure (km/ total area of the territory)
	1.5. Availability of EV charging stations (proportion of the population living within 500 m of an EV charging station / total population)
	1.6. Vehicle traffic and storage restrictions (part of the territory where restrictions apply)

INDICATOR TYPE, DATA SOURCE	TARGET VALUES / COMMENT
Territorial indicator. Data source: • www.visimarsrutai.lt. In the future, it is proposed to assess only the accessibility of stops where public transport runs at the right time, for example, at least 4 times per hour, as the data currently collected do not reflect the quality of the public transport service.	The aim is to make public transport in cities accessible to all residents.
Territorial indicator. Data source: • GIS tool “Smart Regions”; • www.visimarsrutai.lt; • LTG Link UAB.	The aim is to make public transport in cities accessible to and meet the needs of all people.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to make the stops and their surroundings suitable for people with special needs and to make the public transport service accessible to all.
Teritorinis rodiklis. Duomenų šaltinis: • LAKD; • Openstreetmap; • Municipality administrations. An alternative to this indicator is possible in the future — the indicator “Length of streets suitable for non-motorised transport and pedestrian traffic” proposed for evaluation of the results of implementation of CPRL solutions: this indicator would include bicycle and pedestrian infrastructure, and could be measured in relation to the length of the street network.	The aim is that the infrastructure of non-motorised transport in cities should be continuous, forming a coherent network and able to become an equal part of the transport system. <i>Non-motorised transport infrastructure: bicycle paths, lanes, bicycle streets, etc.</i> <i>Streets adapted for non-motorised transport and pedestrian traffic shall mean the streets equipped with separate infrastructure for pedestrians and non-motorised transport, streets where bicycle traffic is organised together with vehicles while ensuring their safety, and spaces for shared movement, etc.</i>
Territorial indicator. Data source: • <u>LAKD (Lithuanian Road Administration)</u>	Seeking to create a well-developed network of electric vehicle charging stations in cities.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The goal is to make as few daily trips by car in cities as possible. The target values of the indicator should be determined for each city individually. <i>Examples of vehicle traffic restrictions: low pollution zones, loop traffic, other traffic restrictions</i>

Index Indicator Table of the Sustainable Transport City Guideline:

INDICES	INDICATORS
2. POPULATION MOBILITY SIZE	2.1. Level of motorisation (units/1,000 inhabitants)
	2.2. M-category vehicles powered by alternative fuels (% / all M-category vehicles)
	2.3. Traffic accidents in which pedestrians or cyclists were killed or injured (units/1,000 inhabitants)
	2.4. The share of daily trips made by sustainable means of travel (on foot, by non-motorised and public transport) (%)
	2.5. Average trip length that can be travelled in 15 minutes (km)
	2.6. Morning and evening peak duration (min)
	2.7. Time spent in traffic jams (hours per person/year)

INDICATOR TYPE, DATA SOURCE	TARGET VALUES / COMMENT
Non-territorial indicator. Data source: - Regitra State Enterprise; - State Data Agency. Data are updated annually. It is proposed to collect this indicator at the city level.	The goal is that as few residents as possible use cars for daily transportation in the city. When measuring the sustainability of transport in cities with this indicator, the aim is to achieve a decreasing value of the indicator.
Non-territorial indicator. This indicator is currently not collected, it is recommended to collect it at the city level. Data are updated annually.	The aim is to increase the share of registered alternative fuel vehicles.
Territorial indicator. Data source: Police Department under the Ministry of the Interior Duomenys atnaujinami kasmet.	The aim is to increase road safety. The exact indicators to be achieved for the years 2025 and 2030 have been established in the Transport Development Programme for 2022–2030 only for the entire country.
Non-territorial indicator. Data source: SUMP data. It is proposed to collect this indicator at the level of cities or functional areas.	The aim is that as many daily trips as possible in cities are made by sustainable means of travel: on foot, by bicycle, by rolling means and by public transport. The exact target values of the indicator should be determined for each city individually.
Non-territorial indicator. Possible data sources: - Model; - Population survey (travel blog). This indicator is currently not collected, it is recommended to be collected at the level of cities or functional areas.	A higher value of the indicator is aimed for, which means less time spent by residents on transportation.
Non-territorial indicator. Possible data sources: - Model; - Traffic flow studies. This indicator is currently not collected, it is recommended to be collected at the level of cities or functional areas.	A decreasing value of the indicator is aimed for.
Non-territorial indicator. Possible data sources: - Model; - Traffic flow studies. This indicator is currently not collected, it is recommended to be collected at the level of cities or functional areas.	A decreasing value of the indicator is aimed for.

GUIDELINE NO 3

GREEN CITY

(ecologically resilient and biodiverse)





Green City

(ecologically resilient and biodiverse)

It is a city that develops vibrant, anthropogenic and extreme hydrometeorological impact-resistant, socially safe, accessible, high-quality and inclusive green areas, nurtures historical parks, squares and other green areas formed by the development of city urbanization (e.g. gardens, etc.)

They serve as catalysts for social and economic development. Thanks to them, the vitality and resilience of the city's ecological structures are strengthened, and the ecosystem services created by them are comprehensively evaluated and used. The potential of the city's natural frame (NF) — ecosystem cores and green corridors — is supported, restored and formed. Their development is based on the preservation, restoration and integration of the remaining fragments of the natural environment into constantly changing urban structures.

1. Quality green space

- To carry out an integrated planning process, which would create opportunities to form multi-functional green spaces adapted for use in all seasons;
- In order to create a vibrant, friendly, safe and recreational digression resistant environment, their maintenance and physical protection is ensured, the adaptation and implementation of nature-based solutions, social and technological innovations are carried out;
- Green infrastructure elements, which consist of natural and integrated natural-technical solutions, have been fully implemented in urban structures, supporting their implementation in connection with priority area (central parts of cities, territories of the natural frame);
- Opportunities to realise recreational activities of various intensity and nature in different seasons that support and restore physical and mental health are encouraged;
- Safe, inclusive, accessible plantations serving as a factor of social and economic development is formed;
- To identify abandoned, unused and problematic public spaces of the city. To prepare concepts for the development of public spaces by involving the interested public in the creation of concepts. To prepare renovation projects for these spaces according to the concepts;
- Reviving, greening and increasing functionality of intensively technogenic and densely populated urban spaces by providing community and communication infrastructure and plantations;
- In cities where the number of inhabitants decreases, the priority should not be given to the creation of new green plantations or their capital reconstruction, but to their sustained management based on good examples, protecting and maintaining their vitality and well-being, thereby ensuring their longevity;
- To cultivate the uniqueness of historical gardens and green spaces, maintain their biodiversity and the principles of greening.

2. Availability of areas

- To create favourable conditions for residents to reach green spaces on foot;
- New separate green areas are being formed to ensure the maximum possible (100%) access of every city resident to the 15 min accessibility by foot zone, which is formed in relation to the perimeter of each individual green area;
- To restrict traffic flows around public spaces, giving preference to pedestrians;
- To improve the infrastructure of city parks, implementing the existing one and creating a new one that corresponds to the intended functions of green areas: recreational elements, small architecture objects and educational trails with information stands;
- The territories are managed using various measures and management regimes.

3. Integrated plantation planning

- For cities with at least 20,000 inhabitants, to prepare urban greening plans, providing proposals for the management of urban public spaces (streets, separate green areas, city forests) and providing recommendations for the management of dependent green areas; lists of woody plants recommended for planting, taking into account the full range of specific local natural conditions; management zones of different types of natural surfaces; and prioritisation of implementation of recommended actions;
- The design of already urbanised or being urbanised areas of various levels should be carried out by integrating part of plantations into the entire process of preparing technical projects;
- Taking into account the nature of the urban and natural structure of the city, green spaces should be formed in the most necessary parts of the urbanised territory;
- When preparing strategic or planning documents of various levels of urbanised territories, to provide opportunities for the implementation of nature-based solutions, and in their absence — means of implementing solutions of a natural-technical nature of green infrastructure;
- To form new green areas in densely populated parts of urbanised areas most vulnerable to climate change (near stationary personal health care facilities, pre-school and general education facilities, care facilities for the elderly) by integrating elements of green infrastructure and applying nature-based solutions;
- To plan and form green areas resistant to extreme events that are adaptive, high-quality and multifunctional;
- To improve the condition of existing green areas and plan new plantations of various sizes;
- To support, restore and strengthen the ecological structures of all urban centres (Ecological compensation systems — territories classified as a natural frame);
- To form green connections (NF) between natural complexes (forests, lakes, marshes) located on the periphery or outskirts of cities and green spaces located in the central part of the city;
- By analysing people's movement habits in the city, the places of formation of a continuous green network are identified, and the connectivity of its parts is improved;
- To form or rearrange plantations in the areas most vulnerable due to the effects of climate change (the most densely populated areas of cities and towns, as well as near stationary personal health care facilities, pre-school and general education facilities, care facilities for the elderly), integrating, as a matter of priority, the elements of green infrastructure.

4. Biodiversity in the city

- To strengthen the structures of the natural frame (ecological compensation systems) of all cities, increasing their naturalness, vitality and interconnectedness (connectivity);
- To install multi-storey (trees, shrubs, herbaceous plant strips) plantations near streets, pedestrian and bicycle paths in order to increase biodiversity, improve air quality and reduce pollution in the city;
- By preserving natural areas and reducing the areas of technogenic surface, to form ecologically efficient land cover areas, while creating conditions for the formation or artificial formation of multispecies and multiage vegetation communities;
- Individuals meeting the criteria of an old tree shall gain priority over engineering objects during design and project implementation. This means that the project decisions first take into account its significance as an extremely important component of the city's biodiversity while adapting the project to it;
- To protect and nurture the parts of the city territory that have preserved their naturalness, focusing economic measures on increasing the vitality and biological diversity of green areas;
- To carry out ecological education of the city population, emphasise the uniqueness of the city's green spaces, promoting the protection, restoration and enrichment of biological diversity;
- To ensure good growth conditions for the plants that form green plantations, which are as close as possible to or corresponding to natural conditions, to carry out timely, consistent and professional maintenance of thereof, increasing the health and vitality of each of them, and at the same time the potential of providing ecosystem services;
- The green areas are designed, equipped and reorganised in accordance with a complex approach, in such a way as to solve the issues of rainfall water management, biodiversity preservation and maintenance minimisation of the assigned and adjacent surrounding areas;
- In order to increase biological diversity, to ensure the implementation of various types of management zoning at the level of individual or dependent green areas, so that instead of one type of management, a greater number of different management types are applied to the entire area of plantations (intensive maintenance lawns, extensive maintenance lawns, scrubs, etc.);
- To identify polluted urban areas. To implement their phytoremediation, pollution reduction through plant and microorganism connections and natural ecosystem restoration measures;
- By reducing maintenance costs and at the same time increasing the ecological potential of green plantations, different maintenance regimes should be applied more widely;
- To strengthen the ecological and recreational potential of resort towns: all the listed measures are applied on a larger scale, emphasising not the technical but nature-based management solutions.

5. Less light pollution

- To form lighting devices in green areas and other natural areas of the city, the main function of which would be localised in the intended area with the intensity required for specific activities, while minimising the impact of light pollution in adjacent areas;
- In green areas, especially those that have retained more naturalness, to preserve or form dark areas that provide peace to nature;
- If possible, use sensors.

6. Integration of green infrastructure

- To apply green infrastructure solutions at various scales and levels — from a building to a part of a city;
- To increase the area of ecologically efficient surfaces in the urban structure of the city, implementing the integration of green infrastructure elements directly related to them, both in individual green areas and directly in the structures of engineering and technical objects (green roofs, rainwater collection systems, etc.; it is recommended to use the Greenness Index Evaluation Methodology);
- When forming a compact city, the application and development of a complex of green infrastructure measures must become an integral part of the development of the urban structure, especially in cases where traditional measures are not implemented due to lack of space, or are ineffective, in order to control unfavourable phenomena;
- Issues of environmental management (rainfall water management) are solved with the help of passive, more natural green infrastructure measures, and in accordance with the principle “the problem is solved at the place of its occurrence”.



It is proposed to measure the changes of the green city in a complex manner according to the following indices:

1.

URBAN GREENING INDEX.

The greening index reflects the potential of an urbanised area to form a physically and mentally favourable human living environment, to ensure its quality parameters (resistance to anthropogenic impact, high geo-ecological and biodiversity expression potential) as close as possible to the place of residence, thus, solving daily recreational needs while minimising the need for mobility.

2.

ENSURING BIODIVERSITY AND ECOLOGICAL STABILITY.

With the help of the results of this index, one can measure and evaluate the efforts of regions and cities to ensure sustainable development, taking into account the protection of ecology and biodiversity. The index is linked to an initiative of the World Economic Forum (WEF) and the United Nations Environment Program (UNEP) promoting sustainable development and sustainable green investment solutions. The index consists of several indicators related to the ecological situation, biodiversity, the natural frame of cities and the green infrastructure of cities.

Index Indicator Table of the Green City Guideline:

INDICES	INDICATORS
1. URBAN GREENING INDEX	1.1. Extensively used green areas (% of the area of forests in the city territory, and/or area per inhabitant)
	1.2. Intensively used green areas (% of the area of separate green areas (to be adjusted with the possibility of including forest parks and recreational forests), and/or area per inhabitant)
	1.3. Part of the area of the analysed territory covered by the 15 min accessibility by foot zone of the intensive use green area.

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • State Forest Service (SFS) – forest cadastre (https://kadastras.amvmt.lt/, www.geoportal.lt); • Register of Territorial Planning Documents (RTPD). This indicator is currently not collected, it is recommended to collect it	One of the main indicators, the size of which depends on the natural environment of the urbanised area and the characteristics of urban development. The larger the area, the cleaner, livelier and better the living environment.
Territorial indicator. Data source: • Register of Territorial Planning Documents (RTPD); • Municipality administrations; • State Forest Service (SFS) – forest cadastre (https://kadastras.amvmt.lt/, www.geoportal.lt); This indicator is currently not collected, it is recommended to collect it.	One of the main indicators, the size of which partially depends on the natural environment of the urbanised area or area being urbanised and the characteristics of urban development. The larger the area, the cleaner, livelier and better the living environment.
Territorial indicator. Data source: • Municipality administrations; • State Forest Service (SFS) – forest cadastre (https://kadastras.amvmt.lt/, www.geoportal.lt); This indicator is currently not collected, it is recommended to collect it.	One of the main indicators, the value size of which depends on the optimal arrangement of green plantations in the urban structure — in the analysed territorial unit. The 15 minutes accessibility zone is formed starting from the outer border of the individual green area, assessing the access possibilities and the street layout. The optimal achievable option is when 100% of the analysed area is covered by the 15 min accessibility zone.

Index Indicator Table of the Green City Guideline:

INDICES	INDICATORS
2. ENSURING ECOLOGY AND BIODIVERSITY	2.1. Share of specially protected natural areas %
	2.2. Share of the natural frame (ecological compensation system) %
	2.3. Natural frame potential (NF part of reliable and limited geoecological potential) %
	2.4. Share of green infrastructure area (%)

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • State Service for Protected Areas (SSPA) – cadastre of protected areas (https://stvk.it)	Additional indicator. The size depends on the value of the natural and cultural environment. The bigger the better. It is calculated by evaluating the share (%) of natural territories with the status of legal protection from the area of the grid.
Territorial indicator. Data source: • Comprehensive plans of cities and towns; • National Landscape Plan. This indicator is currently not collected, it is recommended to collect it.	Additional indicator. The indicator shows the theoretical ecological optimality of the city territory or its part. The target ratio of technogenic cover and NF territories is 38% to 62%.
Territorial indicator. Data source: • Comprehensive plans of cities and towns; • National Landscape Plan. This indicator is currently not collected, it is recommended to collect it.	Additional indicator. The indicator shows the state of the natural frame system in the city territory or part of it — geoecological potential and ability to perform ecological compensation functions.
Territorial indicator. Data source: • <u>Data of the Ministry of the Interior and the Ministry of Environment</u>	This indicator measures the area occupied by green infrastructure components (the area of ecologically efficient land cover) and its share in a territorial unit. It shows the ecological compensation potential of the territorial unit, the ability to withstand adverse events related to climate change and reduce their negative effects. The higher the value the better.

GUIDELINE NO 4

CLEAN AND
CLIMATE
CHANGE-RESIS-
TANT CITY





lean and Climate Change-Resistant City

It is a city where water and air quality monitoring is carried out, the timely implementation of measures to reduce environmental impact is ensured, climate change threats are assessed in the planning and design stages, potentially vulnerable areas and/or urban structures are identified, climate change adaptation measures are integrated, prioritizing solutions based on natural processes, and adaptive and resilient urban structures are developed in relation to climate change, while also protecting cultural heritage resources affected by climate change.

1. Environmental monitoring and pollution reduction

- Environmental impact and public health impact assessment procedures are carried out when planning economic activities;
- Monitoring of the quality of discharged wastewater, the condition of surface water bodies and environmental air parameters is carried out;
- The monitoring system for the quality of discharged wastewater, the condition of surface water bodies and environmental air parameters is being improved by integrating it into geographic information systems and ensuring interaction between the systems
- When preparing climate change adaptation plans, to assess climate change risks individually and for cities;
- To apply environmental pollution reduction measures provided for in Guidelines No 2: Sustainable Transport city, No 7: Productive City and No 8: Circular Economy City.

2. Resilient communication and engineering infrastructure

- When preparing comprehensive plans of cities, engineering infrastructure development plans, other territorial planning documents, the planning task should provide that the developer must assess flood threats and risks taking into account the national flood risk map. Once the threats are identified, flood protection measures must be provided;
- To make an inventory of surface wastewater management systems;
- Along with green infrastructure planning, to strategically plan sustainable rainwater harvesting and management systems. In order to increase the ability of relatively natural (not covered with man-made coating) surfaces to retain, accumulate and keep rainfall water as long as possible, strategies for the maintenance of such surfaces and their spatial arrangement are being formed, with the greatest emphasis on the maintenance of meadows and lawns.

3. Resilient buildings

- New buildings must be built only with high energy efficiency;
- To renovate buildings belonging to the municipality. To promote the installation of passive sun protection measures and green roofs in the renovation projects;
- To promote renovation of buildings, carry out block renovation (example of the Vilnius Neighbourhood Programme);
- Buildings must be planned with passive solar radiation protection measures;
- In densely built-up areas, measures are applied to reduce the heat island effect by choosing materials that accumulate

less heat and/or reflect heat (for example, green roofs, white roofs). If there are identified places in the city that could be considered as heat islands, the requirement to apply measures to reduce the heat island effect in those areas should be established in territorial planning documents (in comprehensive plans or detailed plans);

- In densely built-up territories, additional requirements for the sustainability of buildings must be established in territo-

rial planning documents (example of the comprehensive plan of the city of Vilnius, newly constructed buildings in the established territories must have a sustainability certificate);

- To increase the responsible use and utilisation of cultural heritage objects (individual and complex) by applying measures of resistance of cultural heritage objects to the effects of climate change.

4. A functional green infrastructure and a disaster-resilient environment

- To strategically plan the green infrastructure network in the city and its elements as provided for in Guideline No 3: Green City;
- In densely built-up areas, in cases where there is a possibility of formation of a heat island, the special architectural requirements shall provide for the obligation to reduce the amount of waterproof coverings, for example, by installing car parking spaces from openwork pavement and grit stone;
- Improving and purifying water quality by applying ecological solutions and filtering water with plants, and supplementing the water fauna with the necessary species;
- To plan and install public drinking water stations;
- The total area of green infrastructure elements in the city is increased, prioritising areas where such infrastructure is most needed, i.e., where the most polluted areas of the city are located, or where the most vulnerable groups of people live/visit, etc. Species of trees

and shrubs that are more resistant to phenomena related to climate change are introduced, and with the help of green infrastructure measures, more favourable conditions for their growth are formed, in order to increase the ability of relatively natural (not covered with man-made coating) surfaces to retain, accumulate and keep rainwater as long as possible, maintenance strategies for such surfaces are being formed with the greatest emphasis on the maintenance of meadows and lawns and their spatial arrangement. Drinking water stations are planned in the public spaces of cities and streets are washed in case of particularly high dust levels;

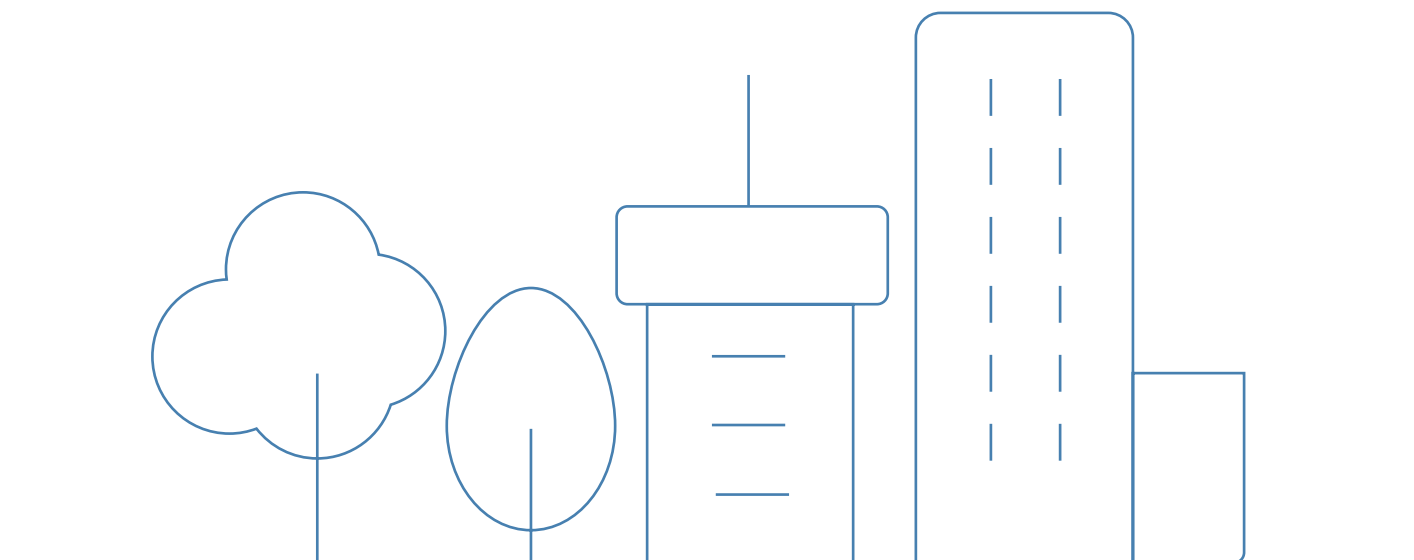
- To plan actively used zones (e.g., children's playgrounds) with protection from direct sunlight.

5. Education and community engagement

- Educating about health risks during extreme heat and safe behaviour of the public during extreme hydrometeorological events;
- Educating about the technical possibilities of private initiatives, for example, about the use of rainwater for irrigation;
- Encouraging private initiatives, for example, contributing to green infrastructure (Vilnius example with distribution of seedlings).

6. Prevention and management of emergency situations

- Cultural heritage objects and areas are affected by climate change and other natural phenomena. To increase the resilience of historical sites to the effects of climate change. Preventive measures extend the use of existing buildings and increase the sustainability of city urban structures in the context of extreme changes;
- To use cultural heritage objects (e.g., city churches, monasteries) and other historical buildings, especially their basements, as temporary shelters during extreme situations (war, radiation attacks, etc.);
- To use the infrastructure of pilgrimage roads for exit routes from damaged areas;
- To adapt the engineering infrastructure of cultural heritage areas (rainwater systems) to distribution of water of sudden heavy rains, and promote the installation of a system of water reservoirs in cultural heritage areas (old towns, new towns).



It is proposed to measure the changes of a clean and climate change-resistant city in a complex manner according to the following indices:

1.

ADAPTATION TO CLIMATE CHANGE.

represents the potential for adaptation to and mitigation of current and future climate change impacts. A significant part of climate changes are inevitable despite the efforts to stop or reduce them, however, significantly high and prospectively increasing values of the selected indicators show greater adaptation potential of the urbanised area and more favourable living conditions. The index of adaptation to climate change can show whether and to what extent a city is vulnerable to the effects of climate change and related phenomena (extreme heat, heavy rains, droughts, floods, winds, etc.). The ratio of green infrastructure and technogenic cover evaluated in the scope of this index shows the adaptation and resilience potential of the urbanised area. It is this indicator that best reflects adaptation to climate change — the larger the area of green infrastructure, the lower the risk of heat waves and other extreme events in the cities. It is also possible to additionally assess the implementation of adaptive measures, education and financial resources by assessing how many actions city self-governments take in order to adapt to climate change.

2.

WATER AND AIR QUALITY.

The water and air quality index is a tool for measuring and evaluating water and air quality, as well as identifying potential pollution sources and problem areas. Monitoring this index is important to ensure that water and ambient air are suitable for human health and the survival of ecosystems in the cities. The indicator of the part of water bodies in the category of rivers and lakes in good condition assesses the quality of surface water. Measuring water quality can help identify potential sources of water pollution and problem areas, such as, concentrations of chemicals or bacteria, some of which may be harmful. Air quality indicators can help identify potential sources of air pollution and problem areas, such as, air pollution from transport, industry or domestic heating. The air quality indicator assesses the total amount of pollutants in the air.

Index Indicator Table of the Clean and Climate Change-resistant City Guideline:

INDICES	INDICATORS
1. ADAPTATION TO CLIMATE CHANGE	1.1. Number of A++ buildings, per cent from the total number of buildings
	1.2. Number of renovated buildings, per cent from the total number of buildings to be renovated (note: in the Compass, this indicator is entered as the number of renovated buildings per unit/grid, since there are no data available on the number of buildings to be renovated. After obtaining these data, the indicator in the Compass should be adjusted)
	1.3. The ratio of green infrastructure and technogenic cover area

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • Ministry of Energy	The aim is for the construction sector to be dominated by sustainable and climate change-resistant solutions.
Territorial indicator. Data source: • EPMS, Ministry of Energy (https://renomap.apva.lt/)	It is aimed that by 2050 all public and private buildings and residential buildings in Lithuania would become completely independent of fossil fuels and their carbon footprint would be zero.
Relative territorial indicator. Data source: • Data of the Ministry of the Interior and the Ministry of Environment	Derived indicator measuring the mutual relationship between the parts of the area occupied by impervious surfaces and green infrastructure in a territorial unit. It shows the ecological compensation potential of the territorial unit, the ability to withstand adverse events related to climate change and reduce their negative effects.

Index Indicator Table of the Clean and Climate Change-resistant City Guideline:

INDEKSAI	RODIKLIAI
2. WATER AND AIR QUALITY	2.1. Amount of pollutants (CO/period)
	2.2. Amount of pollutants (solid particles (K10 and K2.5)/period)
	2.3. Part of water bodies in the category of rivers and lakes in good condition
	2.4. The number of recorded environmental violations (units/number of operating economic entities)

RODIKLIO TIPAS, DUOMENŲ ŠALTINIS	SIEKTINOS REIKŠMĖS, KOMENTARAS
Territorial indicator, currently only at the level of metropolitan centres Data source: • Other air pollution dispersion maps Environmental Protection Agency (lrv.lt) This indicator is currently collected but not sufficiently detailed at the city level. It is recommended to collect it.	The aim is to identify more problematic places in terms of air pollution and to assess whether additional measures are required to reduce pollution.
Territorial indicator, currently only at the level of metropolitan centres Data source: • Other air pollution dispersion maps Environmental Protection Agency (lrv.lt) This indicator is currently collected but not sufficiently detailed at the city level. It is recommended to collect it.	The aim is to identify more problematic places in terms of air pollution and to assess whether additional measures are required to reduce pollution.
Territorial indicator. Data source: • Environmental Protection Agency https://data.gov.lt/	The aim is for all water bodies within the city limits to be in good condition. Measuring water quality can help identify potential sources of water pollution and problem areas.
Territorial indicator. Data source: • Environmental Protection Agency, State Data Agency) This indicator is currently collected but not detailed according to the administrative boundaries of cities. It is recommended to collect it.	It is aimed to have no environmental violations. Recording of environmental violations can help to identify the most frequent problems and take appropriate measures.

GUIDELINE NO 5

VIBRANT
CITY





Vibrant City

It is a city that develops and creates urban structures oriented towards human needs. A vibrant city ensures the diversity and quality of social and cultural services, provides conditions for harmonious living for different social groups, and ensures the availability of public services for all residents. When designing such a city, the identity of the area, the Genius Loci, the needs and wishes of society are taken into account.

1. Communities – the foundation of a vibrant living environment

- To empower communities to create their own living environment. To strengthen the function of the elderships by providing the funding necessary for the viability of their activities. To allocate funding to community projects that would contribute to the creation and/or development of local services;
- To establish multifunctional community centres. It is recommended to create such centres in unused premises belonging to the municipality or on municipal land plots. To link the establishment of centres to areas with a lack of cultural services (e.g., apartment complexes built during the Soviet era);
- In the municipal statutes of the cities, to introduce the community development programme “Owner’s metre”, thanks to which local residents could, at their own discretion, utilise a space of 1 to 5 meters along the residential building using landscaping and small architecture measures. To apply the programme in the districts of Soviet apartment buildings where the land owner is the municipality;
- To involve local communities in the development of planned community objects, conduct surveys and organise creative workshops in order to find out and define the functional needs of communities. To support residents’ initiatives, projects for creation or improvement of the living environment and public infrastructure. To provide a budget for these projects;
- To form neighbourhood zones and provide spaces for communities, which they themselves could implement using greening and small architecture solutions;
- In smaller cities, where free build-up individual residential areas dominate, to create quality public spaces for community activities (with children’s playgrounds, sports areas, etc.), according to possibilities and needs.
- To install temporary or permanent pavilion-type engineering structures in existing or newly designed public spaces. Possible functional programme of the pavilions: spaces for community meetings, fairs, markets, celebrations, city gardens. To coordinate specific locations for pavilions with community representatives;
- To maintain the communities of different ethnicities and religions living in the city (their diversity), the unique urban spaces created by them, adapted to the lifestyle and religious (faith) needs of these communities;
- To enshrine traditional crafts, different (multiethnic) culinary heritage, other traditions of intangible heritage linked to certain city spaces (organising fairs, processions, developing cultural roads, carrying out infrastructure development of created roads, etc.).

2. Sustainable urban shrinkage

- According to the specifics of a certain city that is experiencing demographic decline, a sustainable urban retreat strategy for the city must be selected. Possible sustainable withdrawal strategies are presented in the paragraphs below;
- Resistance to shrinkage. In case of this strategy, the government must take political measures aimed at increasing urban growth: building new residential zones, promoting the area, aiming to attract creative and educated youth;

- Acknowledgement of the city shrinkage. The aim of this strategy is to maintain the existing population. The goal of the city government is to improve the quality of life, update the infrastructure for the needs of the residents, renew houses and streets, and facilitate access to buildings;
- Utilisation of shrinkage. This strategy is based on an optimistic approach. In the case of utilisation of shrinkage, an ageing population helps to develop services in

- the areas of lifestyle and leisure. Application of this strategy helps to develop urban entrepreneurship;
- It is important for every city to notice the shrinkage processes and take the necessary decisions in time in order to implement the principles of sustainable development of the city. It is important to assess in which direction the city should develop, and what are the weak points of the city.

3. Revitalisation of degraded parts of the city

- To revive (revitalise) and restore vitality to the degrading structural parts of the city;
- Abandoned or unused buildings managed under municipal law should be transferred to non-governmental organisations, communities, etc., for short-term development through a public tender. (E.g., Sodas 2123 Project in Vilnius);
- For the temporary engagement of abandoned and degraded urban spaces, to regenerate them with the help of artistic installations;
- To prepare studies and projects on the possibilities of promoting the quality of the physical environment, economic activity and social integration.

4. Engaging cultural, historical and natural heritage

- To protect and nurture the cultural and historical heritage of the city in order to maintain the identity of the residents and the memories associated with specific spaces. To promote the multipurpose use of cultural objects;
- To develop cultural tourism as a tool for learning about the identity of sustainable cities and a means of increasing the activity of local communities;
- To use the cultural heritage, its objects and places as a valuable resource in the fields of tourism, education, employment and sustainable development;
- The development of sustainable cultural tourism is an essential part of regional and macro-regional economic development strategies. In this regard, culture is both a factor in sustainable development and an enabler. By developing cultural tourism, the city not only stimulates the local economy, but also increases the cognitive skills of local communities to recognise cultural heritage objects, to be proud of them and to identify with them. At the same time, the need to change and renew

- everything is reduced, a sustainable approach to cultural heritage values and the awareness that they are non-renewable resources are developed;
- To promote knowledge of the city's history and community. To create circular pedestrian and bicycle routes around the cities by integrating the territories of the natural frames of the cities, existing paths and attraction sites;

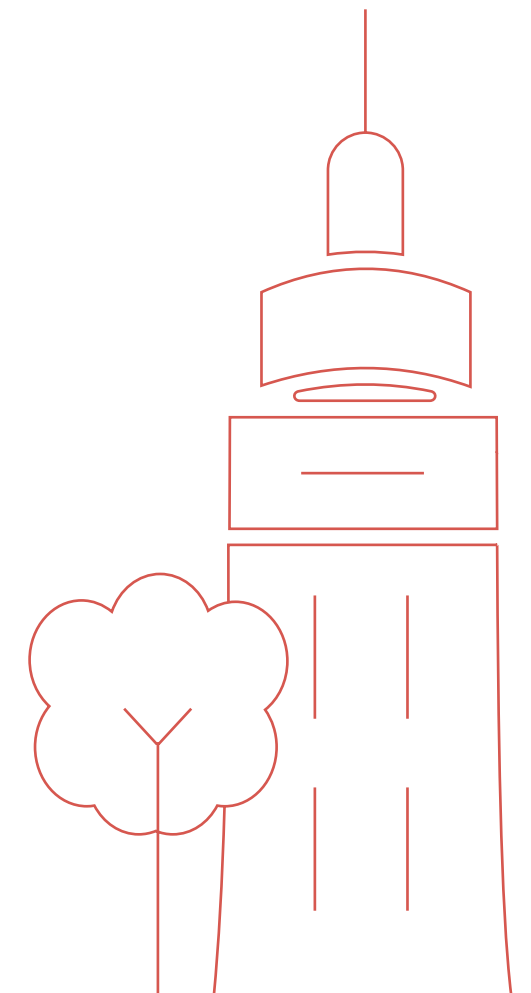
- To create informational route systems of objects of interest;
- To prepare studies, strategies, projects for revitalisation and humanisation of historical parts of cities and accesses. When renovating squares, yards and other public spaces, to prioritise the creation of pedestrian and green infrastructures, transform parking lots into public spaces for city residents.

5. Development of cultural services and cultural initiatives

- To expand the offer of cultural services in cities through social and cultural initiatives (professionals, amateurs, various age groups, businesses, etc.);
- It is recommended to create conditions for cultural initiatives to use existing buildings or city territories, promoting the secondary use of territories.

6. Strong visual identity of the city

- Cultural heritage areas and objects (churches, monastery palaces, etc.) have created cityscapes with high visual resolution (panoramas, silhouettes, layouts, perspectives and points of interest), their nurturing and harmonious development (addition) creates a strong visual identity of the place.
- To create a strong visual identity of the city related to the geographical, morphological, urban and economic context of the city;
- To create strategies for the visual identity of cities in order to highlight the existing or developing identity of cities. To use works of art, sculptures, objects and markings that reveal the city's identity and history;
- To create and equip tourism gate infrastructure with the necessary markings for resort towns.



7. Versatility and multifunctional use of public spaces

- To make inventory of public spaces of densely populated areas and analyse their functional viability by conducting surveys. To prepare projects for the implementation and revitalisation of these spaces;
- In cities where the demographic growth of the population is identified, to expand the possibilities of functional use of public spaces, to apply multifunctional uses (extensive, intensive recreational, leisure, commercial, sports, etc.). Physical activity and a peaceful environment in parks
- contribute to improving the psychological health of urban residents;
- The diversity of urban spaces should be expressed not only by the offer of functional zones, but also by different landscaping concepts, ways of applying sustainable design and displaying culture;
- To create public spaces of the city according to the principles of universal design;
- In smaller cities, to develop public spaces according to the functional specifics of the city and the needs of local residents.

8. Strengthening interdisciplinary cooperation and population skills

- To promote interdisciplinary cooperation in urban planning processes. Specialists from different fields are able to assess the multi-layered specifics of the planned territory;
- To create conditions for the development and use of the skills and abilities of the population, to integrate interdisciplinary education, to apply various forms of learning, such as interdisciplinary learning programmes, non-formal learning and lifelong learning.

9. Maintaining social connections of local communities of the city with the living space

- After preserving the city's identity, local communities can be created in it, which identify themselves with certain urban spaces, carry out and develop various activities in them. At the same time, social connections are created both with the local heritage and the cultural landscape, and within the communities. City buildings, structures and public spaces become permanent places visited by city communities, where they grow, play sports, have fun, shop and work;
- To sustainably (economically) use all resources of the city's cultural heritage, to carry out cooperation on the basis of partnerships, promoting the involvement of communities in the use of resources, participating in the processes of adapting city spaces to new uses.

10. Healthy living environment

- Components of a healthy living environment: quality urban green spaces, safe public transport, compactness of cities, access to health services, protection from air pollution and noise, vibrant communities, social inclusion, etc. When planning a healthy living environment, it is necessary to take into account all the above-mentioned components;
- Creating a healthy living environment is a long-term process that requires cooperation between the public, urban planners, architects and other interested parties.

11. Diversity and availability of social and cultural services

- To expand the offer of dynamic and openly accessible social and cultural services that meet the needs of a modern society;
- To ensure that the variety of these services would be provided not only in the city centres, but also in monofunctional districts and new blocks;
- To improve the availability of cultural services for the most socially vulnerable groups of society.

12. Use of the city's intangible heritage values

- A sustainable city is inseparable from its intangible heritage values — verbal tradition (town names, etc.), local crafts (craft houses, craft fairs, craft schools, etc.), local communities (religious and other social groups, such as national minorities, etc.) — gathering places, city celebrations, culinary heritage production and tasting events, etc. It is necessary to identify gathering places and traditional events held by communities, to improve their physical infrastructure, to maintain access to them, to ensure the convenience and safety of their use for the needs of various groups of people, etc. Continuity of traditions in communities is what creates the identity of a sustainable city;
- To create and develop cultural paths connecting historical buildings, event venues and cultural events into a unique whole.

It is proposed to measure the changes of the vibrant city in a complex manner according to the following indices:

1.

HUMAN CAPITAL.

The successful development of cities and the country as a whole depends to a large extent on the quality of human capital and how the skills and knowledge of individuals are used in the labour market. The situation in the labour market signals to both the country's population and policy makers about problematic aspects of human capital, for example, what skills and abilities are lacking in order for the labour market to function successfully; what should be invested in, in order to improve the skills and abilities of individuals, and at the same time, to make the best use of them.

2.

DEMOGRAPHIC INDEX.

The demographic index is an index designed to measure and evaluate population migration and demographic processes, such as, birth rates, death rates, migration and age structure. These processes affect the sustainability, economy and vitality of the city. The change in the number of residents indicates a change in the demographic situation, and in many cases it also reflects the trends of the urban area. In central parts of the city, a positive population change can indicate growth and sustainability potential, and can also indicate a better social and economic situation. A negative change in the population, when the death rate is higher than the birth rate or there are intensive internal migration processes, poses serious challenges for the sustainable development of cities.

Index Indicator Table of the Vibrant City Guideline:

INDICES	INDICATORS
1. HUMAN CAPITAL	1.1. Population density (number / sq km)
	1.2. Male to female ratio (% / total population)
	1.3 Population of working age 15 – 64 years. (% / total number)
	1.4. Number of seniors 64+ (% / total number)
	1.5. Population with higher education (number / per thousand inhabitants)
	1.6. Birth rate (% / total number)
	1.7. Death rate (% / total number)
	1.8. Suicide rate (% / total number)
	1.9. Average life expectancy (years)

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • Population and housing census data (2021).	The aim is to make the living environment in cities comfortable, pleasant and easily accessible for everyone.
Territorial indicator. Data source: • Population and housing census data (2021).	The aim is to make the social and cultural environment of cities the same for everyone.
Territorial indicator. Data source: • Population and housing census data (2021).	The aim is to make all city district socially and culturally strong.
Territorial indicator. Data source: • Population and housing census data (2021).	The aim is to make the social and cultural environment of cities accessible and convenient for everyone.
Territorial indicator. Data source: • Population and housing census data (2021).	The aim is to promote the skills and abilities of residents and interdisciplinary education.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to make cities comfortable and affordable for families to live in.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to have a sustainable, healthy and vibrant city.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to make the society emotionally strong.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to apply the concept of vibrant urban development in districts.

Index Indicator Table of the Vibrant City Guideline:

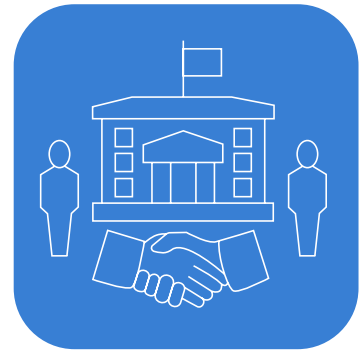
INDICES	INDICATORS
2. DEMOGRAPHIC INDEX	2.1. Change in average age (2011-2021)
	2.2. Change in the number of residents (2011–2021, %)
	2.3. Death rate (% / total number);
	2.4. Birth rate (% / total number);

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • AM indicators This indicator is currently not collected, it is recommended to collect it.	A higher value of the indicator is sought.
Data source: • AM indicators	The aim is to identify internal migration trends and residential areas with decreasing population.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to have a sustainable, healthy and vibrant city.
Territorial indicator. This indicator is currently not collected, it is recommended to collect it.	The aim is to make cities comfortable and affordable for families to live in.

GUIDELINE NO 6

INCLUSIVE
CITY





Inclusive City

An inclusive city ensures that all its residents are equal and have equal opportunities to participate in public life and use the services provided by the city. Good accessibility of social services, creation of connections between spaces, functions and people's activities is ensured. The aim is for all residents to have a representative voice in the management and planning processes. The aim is to improve the general quality of life of the citizens.

1. Inclusive urban planning

- To ensure participation of residents in the projects of city infrastructure (public spaces, parks, special buildings, etc.), to create an environment that meets the needs of the residents and is attractive to everyone;
- To involve the public in the planning and construction processes, provide the necessary information and access for the submission of comments. To evaluate the comments of the public objectively and provide argued opinion;
- To cooperate and promote dialogue between various cultural groups, specialists in different fields, business and state institutions in order to solve urban planning and design problems (mobility, accessibility of services, public spaces, neighbourhood regeneration, renovation, etc.);
- To prepare a package of communication tools to inform citizens about ongoing urban planning processes, promote a closer dialogue with the general public and interested parties;
- To initiate cooperation memoranda between city and district municipalities on projects of regional importance that have a direct or indirect impact on both municipalities;
- When preparing strategies for the sustainable development of specific cities, to include representatives of interested parties and the general public in the strategy development process, and conduct public surveys in order to find out the public's expectations for the development of the city;
- To involve local communities in the planning processes for the protection of cultural heritage resources.

2. Active participation in the social and cultural life of the city

- In all cities, but especially in cities experiencing the challenges of depopulation, to seek youth involvement in the socio-cultural life of the city. To involve city residents in the earliest stages of planning;
- To promote the involvement of citizens in city management processes. To create convenient online access to city council meetings, discussions on specific city planning projects, environmental issues and other public matters. Active civic participation promotes democracy and allows residents to defend their interests.

3. Inclusive and complex revitalisation of apartment block residential areas

- To ensure that all residents have the opportunity to participate in the revitalisation process. This includes communicating with residents based on their needs and preferences;
- To manage the environment of apartment block residential areas, ensuring that the development of new infrastructure and services is accessible to all;
- To review city plans and urban solutions to create an efficient, sustainable and viable structure of apartment block districts. This may mean the creation of new green areas, public spaces, children's playgrounds and sports facilities;
- To encourage the use of public transport, pedestrian and bicycle paths, which reduce vehicle traffic and air pollution in the area. In addition, to take care of parking problems;
- To create or renovate district parks, gardens and green plantations that would improve the quality of life of residents and contribute to environmental sustainability;
- To promote cultural activities and entertainment in the area, such as art galleries, theatres, cafés and markets. It contributes to the district's quality of life and community cohesion;
- To support social projects that would help the residents of the district, especially vulnerable groups, for example by reducing social exclusion and promoting employment;
- To consult with urban planners, architects, social workers and other professionals who could help develop complex revitalisation plans or strategies. It is recommended to prepare revitalisation projects, feasibility studies or general plans for parts of the city.

4. Environment dedicated to all

- To apply the principles of universal design in the entire spatial environment of the city (from urban public spaces to buildings, communal environment and cultural heritage areas);
- To ensure that the urban environment can be used by all people on the widest possible scale without special adaptation and without distinguishing groups of people with disabilities, elderly persons or parents raising children. To renovate difficult-to-access existing buildings and urban public spaces;
- To aim for simplicity and clarity when planning the physical environment of the city — use signs in public spaces that are understandable to everyone, provide lighting that meets safety requirements, and use coverings suitable for local climatic conditions. To plan easy and safe walking connections in the city.

5. Open data

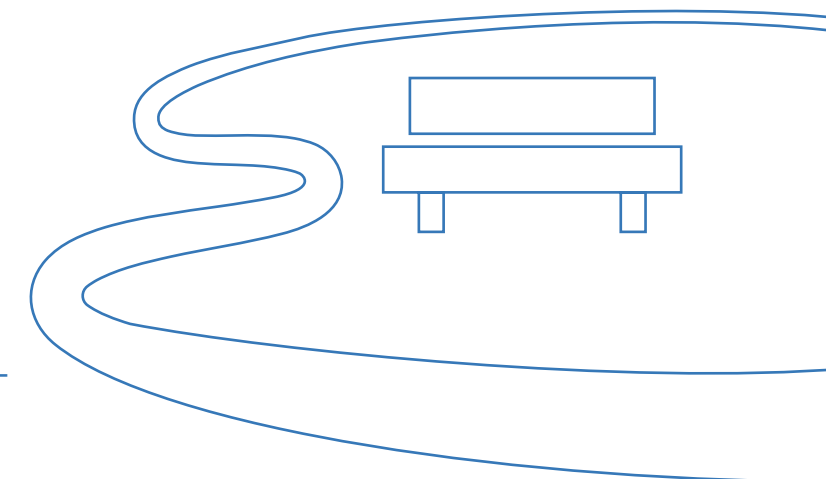
- To constantly update the open databases of all cities. To collect all data related to city planning and development (GIS, spatial planning, construction, building administration, etc.). To open databases to all citizens (e.g., Vilnius city interactive maps);
- To ensure transparency of all city planning processes, i.e., clarity of the planning process and access to all planning data and information;
- To promote the accessibility of digital information for people with disabilities.

6. Network of continuous public spaces

- When designing the urban environment, to plan convenient and safe connections on foot and by bicycle between different public spaces;
- When creating connections between public spaces, the necessary communication corridors should be adapted for unhindered and comfortable movement of pedestrians and cyclists. To humanise these communication corridors, and to introduce the principles of green infrastructure in them;
- To include cultural heritage sites, their public and open spaces and green plantations in the network of continuous public spaces.

7. Economic inclusion

- To promote the entrepreneurship of local communities, small businesses by applying the principles of the circular economy;
- To promote and provide information about urban gardening, bee-keeping and similar initiatives (e.g., bees being kept in hives on the roof of the Bitutė nursery school in Vilnius, etc.);
- To prioritise local goods and services using local resources;
- To promote mixed partnerships through public investments, providing services between private businesses, public service providers and local communities;
- In monofunctional residential areas, to encourage businesses to move to the ground floors of apartment buildings, next to public spaces.



It is proposed to measure the changes of the inclusive city in a complex manner according to the following indices:

1.

SOCIAL INCLUSION.

The Social Inclusion Index is a tool for measuring and evaluating the level and processes of social inclusion in the cities. This index helps assess whether citizens have equal opportunities to participate in society, access resources and services, and whether they are included in decision-making processes. In order to ensure equal opportunities for citizens to use city services for determining the sustainability of cities, it is aimed at measuring the reach of bus stops and educational institutions within 15 minutes. Economic inclusion is best characterised by household income and minimum wage levels, and average house prices.

2.

COMMUNITY ACTIVISM.

The aim is public participation and political inclusion: this category includes indicators related to opportunities for civic participation and political inclusion. This can include participation in elections, and the number of NGOs operating in the city can also indicate whether the society in the city is active.

Index Indicator Table of the Inclusive City Guideline:

INDICES	INDICATORS
1. SOCIAL INCLUSION	1.1. Household income inequality (Average net wage (EUR))
	1.2. Territories within 15 minutes walking and driving distance to educational institutions
	1.3. Accessibility of bus stops within 15 minutes (on foot)
	1.4. Share of the population receiving the minimum wage
	1.5. Average housing prices

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • Geospatial data of operating economic entities	The goal of an inclusive city is to ensure socio-economic equality.
Territorial indicator. Data source: State data archive • State data archive. Link	The aim is to ensure equal opportunities for citizens to use city services. Good access to social services is ensured.
Territorial indicator. Data source: • SDA data	An inclusive city must have an easily accessible public transport infrastructure that ensures that all city residents can access city services and work, even if they do not have their own vehicle.
This indicator is currently not collected, it is recommended to collect it.	The aim is to make the social and cultural environment of cities accessible to all through planned inclusive urban spaces.
This indicator is currently not collected, it is recommended to collect it.	It is sought to offer affordable and quality housing for all.

Index Indicator Table of the Inclusive City Guideline:

INDICES	INDICATORS
2. COMMUNITY ACTIVISM	2.1. Participation in elections (% / total number)
	2.2. Number of NGOs (units)
	2.3. Youth employment (% of total)
	2.4. Population employment (% of total)

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source:: • Central Electoral Commission of the Republic of Lithuania	The aim is for society to be active and participate in political processes at all levels.
This indicator is currently not collected, it is recommended to collect it.	The involvement of NGOs and communities in urban planning processes is sought. It is also aimed to increase public activity indicators.
This indicator is currently not collected, it is recommended to collect it.	The aim is to involve young people in the socio-cultural life of the city, as well as to increase the diversity and availability of socio-cultural services to promote youth employment.
This indicator is currently not collected, it is recommended to collect it.	The aim is to have an active society that participates in the city planning decisions, as well as to increase the diversity and availability of socio-cultural services to promote the employment of the population.

GUIDELINE NO 7

PRODUCTIVE
CITY





Productive City

A productive city promotes economic growth and competitiveness, while ensuring efficient production and optimal consumption of raw materials, resources and energy. This city has a favourable environment for business, innovation, investment and job creation. A productive city includes the development of infrastructure required for business, introduction of technology and innovation and improvement of resource and energy efficiency.

1. Active urban industrial parks and efficient industrial areas

- To improve the efficiency of industrial parks and industrial areas located in urban areas. To prepare planning and other documents necessary for the establishment and development of new industrial areas;
- To prepare plots of newly developed industrial park territories for investment, develop all necessary engineering and communication infrastructure to industrial territories. To perform the necessary physical works (demolition of structures, cleaning of the territory in order to prepare the territory for attracting investment);
- To shorten the time from the investment idea to its implementation (including territorial planning, environmental impact assessment and design work) by properly preparing territorial plots for development;
- To regenerate or renovate lesser-used buildings and territories in city centres in order to adapt these spaces to new economic activities, creative, cultural, social and other functions. That could be abandoned factories, warehouses or even old shopping centres (e.g., Smoke Factory regeneration). As needed, to prepare investment projects and/or territorial feasibility studies for these territories;
- If the establishment of industrial parks or FEZs provides added value to several cities located in different municipalities, to initiate cooperation memoranda and joint projects for the development of industrial areas;
- To develop new urban industrial parks or FEZ territories near planned or existing transport corridors;
- In smaller cities, to give priority to the development of economic activities taking into account their accumulated potential and capacities;
- To include objects of industrial, technical and engineering heritage in the infrastructure of active urban industrial parks, adapting them for new purposes without violating the established valuable properties.

2. Strong innovation centres, science parks and technological activity clusters

- To develop existing or planned innovation centres and science parks. To create special complexes where business enterprises, research institutions and universities could gather in order to promote exchange of knowledge, innovation and development of new technologies;
- To provide technological innovation cooperation spaces where representatives of technological companies, research centres and start-ups could gather and cooperate (e.g., Linkmenų Factory (LinkArts Factory));
- In big cities, public investments related to the promotion of high added value economic activities should be primarily concentrated in the cores of economic activity, where they would bring the city the greatest economic benefits;

- To increase the capacity of companies to implement innovations, create competence centres and programmes focused on the development of innovations and training of specialists;
- To ensure the cooperation of local scientific institutions with local companies in order to develop innovative production technologies;
- To create competence centres of local importance in smaller cities and provide training and training opportunities for local specialists so that they can implement modern and sustainable manufacturing practices.

3. Economic development of city's public spaces

- To envisage public spaces in cities that could be used for trade and artistic activities;
- To organise exhibitions, concerts, theatre performances and other events in the public spaces of the cities by economically utilising the central public spaces of the cities;
- To allocate places for urban gardening (e.g., Vilnius horticulture project);
- To create economically viable city centres. To apply modernisation and rehabilitation measures when creating small business places on the ground floors of buildings.

4. Efficient energy consumption

- To create conditions for increasing energy efficiency in all sectors, including industry, buildings and transport;
- To promote integration of zero-emission industry enterprises (enterprises creating high added value, small enterprises, social enterprises) in the central parts of cities, in order to achieve an optimal ratio between living and working places and reducing travel distance.

5. Efficient production of electricity, heat and cooling from renewable energy sources

- To promote the development of prosumers, as well as the development of RES power plants as small architectural elements and elements integrated into the building;
- To encourage centralised heat supply companies to start supplying coolness as well;
- In cities, regional planning documents should provide not only the zones for centralised provision of heat, but also the zones for centralised provision of coolness.

6. Increasing the efficiency of groundwater use

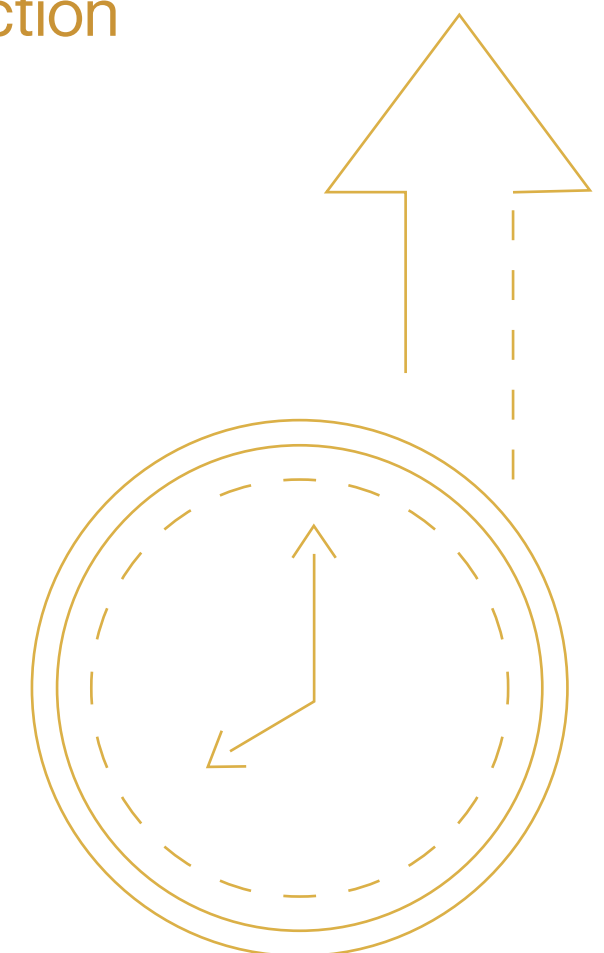
- To continuously invest in water supply efficiency through self-managed water supply companies;
- To encourage industrial companies to use water more efficiently. Where appropriate, encourage residents and businesses to collect and use rainwater for irrigation.

7. Creation of clean economic activities in monofunctional districts

- In the territories of residential districts, to increase the zones of commercial activities by providing zones for mixed or commercial activities. To prepare or update cities' comprehensive plans accordingly;
- To develop an even distribution of jobs in the city. In districts built during the Soviet era, to expand the territories of commercial activities, provide for mixed functional use of new buildings and limit monofunctional residential development.

8. Promotion of local economic activities and production

- To reduce dependence on imports, promote local economic development and reduce the ecological footprint;
- To aim for reduction of product transportation distances and related emissions;
- To encourage local companies to manufacture products that meet sustainability criteria (e.g., by reducing the amount of waste or using sustainable sources of raw materials);
- By promoting economic resilience of resort areas to seasonality, to create and promote winter activities;
- To encourage economic activities not only during the season (e.g., through differentiation of local fees and business license benefits);
- To create favourable conditions for small business development.



It is proposed to measure the changes of the productive city in a complex manner according to the following indices:

1.

RESOURCES AND ENERGY.

The resource use, energy production and consumption index is a tool that measures and evaluates the efficiency of water consumption, energy production and consumption, as well as reveals energy consumption patterns and trends. Some of the possible indicators of the index: energy efficiency indicators (efficiency of energy production and use of energy resources), types of renewable energy resources (solar, wind, biomass, etc.) and other indicators.

2.

BUSINESS AND INVESTMENT DEVELOPMENT.

Business and investment development is important in order to attract international and local investment and to ensure that the business sector is competitive and sustainable. This helps to create an economy that is strong, sustainably growing and able to adapt to changing conditions while contributing to social well-being and improving the quality of life. In order to determine the extent to which business and investment development is sustainable, it is possible to measure and compare the average wages of cities, operating economic entities, their change and labour productivity indicators.

Index Indicator Table of the Productive City Guideline:

INDICES	INDICATORS
1. RESOURCES AND ENERGY	1.1. Water supply losses, %
	1.2. Number of prosumers, units/number of inhabitants
	1.3. Thermal energy demand in buildings, kWh/m²
	1.4. Thermal energy demand in residential buildings, kWh/m²
	1.5. Electricity demand in total, kWh/m², kWh/ number of operating economic entities
	1.6. Electricity demand in residential buildings, kWh/m²
	1.7. Installed capacity of equipment of prosumers, kW

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator only for public water supply companies. Data source: • Open data	The goal is to ensure that the quantities of water supply and consumption are efficient and non-excessive.
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase the number of prosumers
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase efficiency of thermal energy consumption
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase efficiency of thermal energy consumption
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase efficiency of electricity consumption
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase efficiency of electricity consumption
Territorial indicator. Data source: • EnMin duomenys The indicator is collected, but EnMin did not share these data during the preparation of the report.	To increase the number of prosumers

Index Indicator Table of the Productive City Guideline:

INDICES	INDICATORS
2. VERSLOIR INVESTICIJŲ VYSTYMAS	2.1. Operating economic entities (2022)
	1.2. Jobs (units)
	2.3. GDP per capita
	2.4. Labour productivity
	2.5. Monthly net average wage (EUR)

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMENT
Territorial indicator. Data source: • SDA; • SDA.	An increasing value of the indicator is aimed for. However, the value of the indicator may vary depending on the specific situation and circumstances of the city or region.
Territorial indicator. Data source: • SDA	An increasing value of the indicator is aimed for
This indicator is currently not collected, it is recommended to collect it.	An increasing value of the indicator is aimed for
This indicator is currently not collected, it is recommended to collect it.	An increasing value of the indicator is aimed for
Territorial indicator. Data source: • Sodra This indicator is currently not collected, it is recommended to collect it.	An increasing value of the indicator is aimed for

GUIDELINE NO 8

CIRCULAR
ECONOMY
CITY





Circular Economy City

It is a city that is based on reducing the climate change impact, creating a zero-waste city, promoting social entrepreneurship of local communities, secondary use of locally generated waste and applying circular economy principles. This city develops advanced technologies and optimises city functions by promoting the growth of green economy while improving the quality of life of the citizens.

1. Responsible consumption and education

- To promote the reuse, repair, renewal and recycling of obsolete or unusable products and their components;
- To promote public awareness and cooperation in the areas of waste prevention and management.
- To inform people about proper waste sorting, provide information about new technologies and programmes aimed at promoting sustainable waste management;
- To expand the network of sharing stations;
- To organise and promote civic garbage collection initiatives;
- To carry out publicity campaigns promoting the separate collection of waste (especially food, textile, construction waste, furniture, packaging, tires and hazardous waste). To educate the population about the advantages of circular economy by promoting conscious consumption and conduct;
- To review food programmes in school and kindergarten canteens, promoting meals based on the “buffet” principle;
- When conducting public procurement, to apply sustainability criteria and accumulate good green procurement practices, look for opportunities to reduce environmental impact of the purchased goods, services or works.

2. Reducing fossil fuel consumption

- To reduce excess consumption;
- To increase efficiency of electricity consumption;
- To switch to low-carbon technologies by changing the type of fuel and energy.

3. Efficient waste collection and stream separation

- To promote sustainable waste sorting by separating waste streams (for example, paper and cardboard, plastic, metal, glass, bio-waste, mixed waste);
- To expand the infrastructure for the sorting of food (kitchen) waste, providing residents with separate sorting containers or other means, or ensure on-site composting;
- To expand the infrastructure for the sorting of household textile waste;
- To expand the infrastructure for the sorting of household hazardous waste;
- To expand the network of reception points (stations) of waste suitable for preparation for reuse, to finance the activities of preparation for reuse carried out in them;
- To expand the number of lacking bulky waste collection sites and ensure their availability;

- To expand the network of secondary raw materials sorting collection facilities in public places (parks, squares, sightseeing points, main streets), and ensure their collection and arrangement;
- More sustainable solutions (with less carbon dioxide and solid particles emissions and quieter) are implemented through the motorisation of waste collection parks (e.g., natural gas, electric trucks, green hydrogen);
- Taking into account the unevenness of human flows according to seasonality or days of the week, a gradual transition to the model of active monitoring of waste quantities in real time and route optimisation is being achieved: 1) smart waste containers (sensors of volume, temperature, etc.) are installed, the received information is processed in real time; 2) rules are prepared for the collection route in response to the real time data.

4. Reuse

- Waste that can be reused according to its original purpose must be prepared for use and returned to the market. Secondary use of packaging and sharing stations for usable items are encouraged;
- When managing cultural heritage objects and areas, to use sustainable building materials (secondary and traditional use of local materials both in the performance of management and construction maintenance or landscaping works);
- To strive for carbon dioxide neutrality in cultural heritage objects, to increase the energy consumption efficiency of buildings without violating the established
- valuable properties (heating of non-valuable structures, non-valuable appurtenances, walls, etc.);
- Where possible, use secondary raw materials for the maintenance of buildings: performing brick work with ancient bricks brought back to life, restoring windows, doors, etc., wood products, metal and stone products. To use local materials for decoration and construction of buildings: wood, sand, clay, gravel, crushed stone, etc. (EU Green Deal).

5. Waste recycling

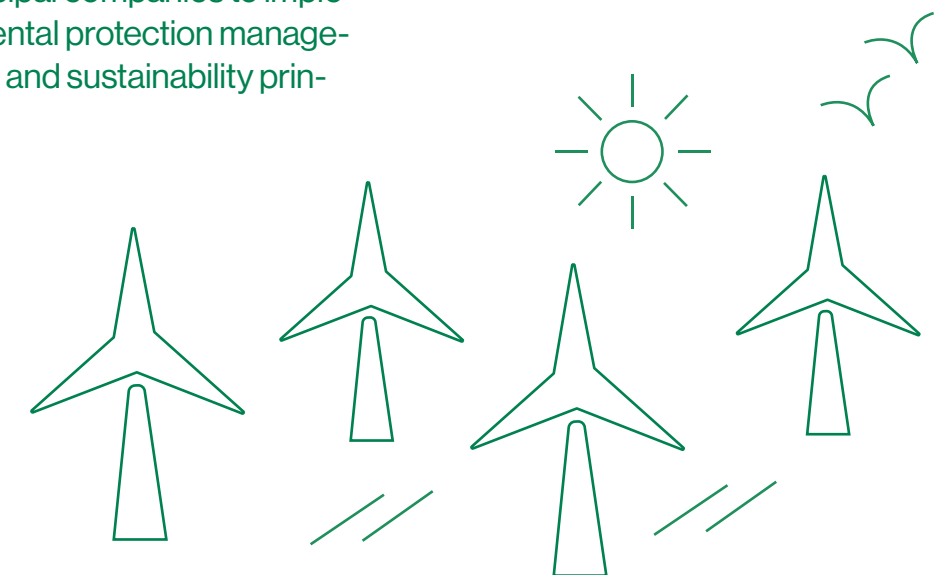
- To improve waste recycling processes in order to maximise the use of recycled materials and avoid the creation of new waste. Recycling processes should also be as environmentally friendly as possible.

6. Sustainable use of building materials

- During construction, for structures, finishing, urban infrastructure and public spaces, to use local (regional) materials that are durable, functional, water-permeable and resistant to the prevailing climate;
- To use easily assembled and durable structural construction elements and parts made from renewable resources and easily recycled. When carrying out building reconstruction, renovation and repair, to promote replacement of hazardous materials or their significant reduction, and use clean construction processes and technologies;
- After evaluating the specifics, to use only water-permeable materials produced in the surrounding areas for public spaces in the cities;
- To create opportunities for the secondary use of building materials while maintaining the building properties of the materials;
- In construction, encourage the use of local or secondary building raw materials by reducing the costs required for construction.

7. Advanced business

- To promote the development of business models that implement circular economy strategies, including promoting the development of small businesses providing trade in used items and their repair services;
- To aim for municipal companies to implement environmental protection management standards and sustainability principles, in order to reduce the negative impact of the company's activities on the environment.



It is proposed to measure the changes of the circular economy city in a complex manner using the following indices:

1.

ZERO WASTE.

The zero-waste principle is a principle of a sustainable economy to reduce the impact of the use of resource and amounts of waste on the environment. Using this principle, waste is not seen as an unnecessary pile of garbage, but as opportunities and something that can be reused. This helps to reduce use of resources, reduce waste and minimise harmful environmental impacts, contributing to sustainable development and long-term economic growth.

2.

CLIMATE CHANGE MITIGATION.

Climate change mitigation aims to reduce the influence of human activities on climate change and reduce the negative effects of climate change on people and ecosystems. This set of actions includes ways to reduce greenhouse gas emissions, store and manage carbon sinks, as well as increase resilience to and mitigate the effects of climate change.

Index Indicator Table of the Circular Economy City Guideline:

INDICES	INDICATORS
1. ZERO WASTE	1.1. Index of utilisation (circularity) of secondary raw materials, %
	1.2. Amount of municipal waste per inhabitant (kg/ year/capita)
	1.3. Share of municipal waste disposed of in landfills, %
	1.4. Share of ready-to-reuse and recycled municipal waste, %
	1.5. Generated hazardous waste per 1 inhabitant (kg/m. /capita)
	1.6. Accessibility of green waste composting sites (GWCS)
	1.7. Accessibility of bulk waste collection sites (BWCS)
	1.8. Management projects include secondary raw materials (e.g., quantities of historical bricks), sq m.

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMEN
Data source: • Indicator from the state waste prevention and management plan 2021–2027. Source: Eurostat This indicator is currently collected at the state level. It is recommended to adapt the indicator to the city level.	No less than the EU average
This indicator is currently collected at the municipality level. It is recommended to adapt the indicator to the city level.	< 100
This indicator is currently collected at the municipality level. It is recommended to adapt the indicator to the city level.	Value of no more than 5% to be achieved by 2030.
This indicator is currently collected at the municipality level. It is recommended to adapt the indicator to the city level.	Value of no less than 60% to be achieved by 2030.
This indicator is currently collected at the municipality level. It is recommended to adapt the indicator to the city level.	The aim is to reduce the amount of hazardous waste generated
GWCS places are known, but not digitised. It is recommended to digitise and convert them to an accessibility indicator.	The aim is to create conditions for residents to conveniently dispose of waste
BWCS places are known, but not digitised. It is recommended to digitise and convert them to an accessibility indicator.	The aim is to create conditions for residents to conveniently dispose of waste
This indicator is currently collected at the municipality level. It is recommended to adapt the indicator to the city level.	The aim is to create conditions for the secondary use of materials and, accordingly, the reduction of waste.

Index Indicator Table of the Circular Economy City Guideline:

INDICES	INDICATORS
2. CLIMATE CHANGE MITIGATION	2.1. Greenhouse gases emitted into the atmosphere in the transport sector (tCO ₂ eq/ 1,000 inhabitants)
	2.2. Natural gas consumption, kWh/capita/year
	2.3. GNatural gas consumption in apartment buildings, kWh/m ² /year

INDICATOR TYPE, DATA SOURCES	TARGET VALUES / COMMEN
This indicator is currently not collected, it is recommended to collect it.	To contribute to the national goal — by 2030 to reduce greenhouse gas emissions by 14% as compared to 2005
Territorial indicator. Data source: • EnMin data The indicator is collected, but EnMin did not share these data during the preparation of the report	The aim is to reduce natural gas consumption in the country to a technically feasible level.
Territorial indicator. Data source: • EnMin data The indicator is collected, but EnMin did not share these data during the preparation of the report	0 kWh by 2050

*Attention must be drawn to the lack of data for territorial indicators allowing to represent the indices.

LIST OF SOURCES

- <https://am.lrv.lt/uploads/am/documents/files/KLIMATO%20KAITA/Integruotas%20planas/Final%20NECP.pdf>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.429490/asr>
- <https://www.e-tar.lt/portal/lt/legalAct/410f-be3067f511e9917e8e4938a80ccb/asr>
- <https://am.lrv.lt/uploads/am/documents/files/STPD/Lietuvos%20ilgalaik%C4%97%20renovacijos%20strategija.pdf>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.164386/asr>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280587/asr>
- <https://eu-mayors.ec.europa.eu/en/home>
- <https://www.e-tar.lt/portal/lt/legalAct/e629d230e2f811ec8d9390588bf2de65>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/3ae0bd20636211e5b316b7e07d98304b/asr>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.291138/asr>
- <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.391457/asr>
- Resolution No 789 of the Government of the Republic of Lithuania of 29 September 2021 “On the approval of the comprehensive plan of the territory of the Republic of Lithuania”;
- Compass for the comprehensive plan of the territory of the Republic of Lithuania (http://www.bendrasiplanas.lt/wp-content/uploads/2020/07/01_LR-BP-Metodika.pdf);
- Order No D1-485 of the Minister of Environment of 13 August 2019 “On the approval of the main directions of the Lithuanian urban policy and recommendations for the implementation”;
- Guidelines for the Preparation of Plans for Sustainable Mobility in the City approved by Order No 3-108 (1.5 E) of the Minister of Transport and Communications of 13 March 2015;
- Recommendations of the preparation of the sustainable mobility plans (pending, <https://e-seimas.lrs.lt/portal/legalAct/lt/TAP/a14ee6e-1125b11edb36fa1cf41a91fd9>);
- Recommendations for the arrangement of low pollution zones (pending, <https://e-seimas.lrs.lt/portal/legalAct/lt/TAP/0bdcbf01291d11edb36fa1cf41a91fd9?jfwid=asjndpgtk>);
- Order No D1-694 of the Minister of Environment of 21 December 2007 “On the approval of the description of the procedure for determining the separate norms of green areas for recreational purposes and the norms (areas) of dependent green areas”;
- National Climate Change Management Agenda;
- Data and evaluation methodology of the 2022 environmental rating of Lithuanian municipalities; www.aplinkosaugosreitingas.lt;
- UN 2030 Agenda for Sustainable Development (<https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>), taking into account the Sustainable Development Goals, their objectives and the principles underlying the agenda;
- UN New Urban Agenda (<http://habitat3.org/wp-content/uploads/NUA-English.pdf>);
- European Commission Urban Agenda for the EU “Pact of Amsterdam” (http://ec.europa.eu/regional_policy/sources/policy/themes/urban-development/agenda/pact-of-amsterdam.pdf);
- New EU Strategy on Adaptation to Climate Change;
- UN-Habitat International Guidelines on Urban and Territorial Planning Handbook (<https://unhabitat.org/books/international-guidelines-on-urban-and-territorial-planning/>);
- Paris Agreement on climate change (https://unfccc.int/sites/default/files/english_paris_agreement.pdf)
- Current ideas of the new European Bauhaus initiatives (in Lithuania or other European countries) (https://europa.eu/new-european-bauhaus/index_en; <https://neb.lt/>);
- The European Green Deal presented by the European Commission on 11 December 2019 (https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_it)
- The New Leipzig Charter, adopted on 30 November 2020 at the Informal Meeting of Ministers responsible for Urban Matters – (https://ec.europa.eu/regional_policy/en/newsroom/news/2020/12/12-08-2020-new-leipzig-charter-the-transformative-power-of-cities-for-the-common-good)
- The European Commission Territorial Agenda 2030 – A future for all places, adopted on 1 December 2020 at the Informal Meeting of Ministers responsible for Territorial Cohesion – (https://ec.europa.eu/regional_policy/en/information/publications/brochures/2021/territorial-agenda-2030-a-future-for-all-places)
- The report of the Open Method of Coordination (OMC) group of Member States’ experts focusing on high-quality architecture and built environment for everyone, launched on 6 October 2021 – ([Guidelines for the Development of Sustainable Cities](https://culture.ec.europa.eu/news/new-re-

</div>
<div data-bbox=)

- port-provides-recommendations-to-ensure-high-quality-architecture-and-built-environment)
- The Council Conclusions on culture, high-quality architecture and built environment as key elements of the New European Bauhaus initiative, 30 November 2021 –
- ([https://eur-lex.europa.eu/legal-content/LT/TXT/PDF/?uri=CELEX:52021XG1213\(03\)&from=EN](https://eur-lex.europa.eu/legal-content/LT/TXT/PDF/?uri=CELEX:52021XG1213(03)&from=EN));
- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Green infrastructure (GI) – Enhancing Europe’s Natural Capital, 2013 <https://eur-lex.europa.eu/legal-content/LT/TXT/?uri=CELEX%3A52013DC0249>;
- Guidelines for developing and implementing a Sustainable Urban Mobility Plan (2nd edition), <https://www.eltis.org/mobility-plans/sump-online-guidelines>;
- Sustainable Urban Mobility Indicators (SUMI), https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/sumi_en
- <https://culture.ec.europa.eu/lt/cultural-heritage/cultural-heritage-in-eu-policies/sustainability-and-cultural-heritage>
- Vienna Memorandum on “World Heritage and Contemporary Architecture – Management of the Historic Urban Landscape”, adopted on 10–11 October 2005 in Paris, <http://testinis.kpd.lt/lt/node/93>.
- Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by the General Conference of UNESCO on 16 November 1972 in Paris, <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.279517>
- European Landscape Convention ratified by the Republic of Lithuania Law No IX-1115 of 3 October 2002 “On the ratification of the European Convention” <http://www.kpd.lt/euopos-krastovaizdzio-konvencija/>
- International Charter for the Conservation and Restoration of Monuments and Sites, 1964 (Venice Charter)
- <http://icomoschartijos.lt/turinys/tarptautine-paminklu-ir-vietu-bei-vietoviu-konservavimo-ir-restauravimo-chartija-venecijos-chartija-1964-m/>

Project organiser:

Ministry of Environment of the Republic of Lithuania
A. Jakšto g. 4, Vilnius
Į. k. 188602370

Project promoters acting on the basis of a joint agreement:

UAB „Gaučė ir Ko“
A. Goštauto g. 8-32, Vilnius
Į. k. 304688860

MB „Bauland“
Miglos g. 33-3, Vilnius
Į. k. 305622646

Project experts:

doc. dr. Ričardas Skorupskas
Inga Valuntienė
Irena Kliobavičiūtė

Project designers:

„autoriai“
M. K. Paco g. 5-4, Vilnius
Į. k. 303119589

