Interreg
EUROPEAN UNION
Danube Transnational Programme
CityWalk

CityWalk

Walkability Planning Guide

November 2017

Document version 1.0

Project co-funded by the European Union funds (ERDF, IPA)

Table of Contents

1 Part1: Background and context 5
1.1 Introduction - what is this document? 5
1.1.1 CityWalk 5
1.1.2 The Practical Guide on Walkability Planning – purpose and users 7
1.1.3 The structure of the Guide 8
1.2 Why plan? 10
1.3 How to plan? 11
1.4 Who to plan for – understanding the pedestrians 12
1.4.1 Groups of pedestrians 12
1.4.2 Pedestrian characteristics 13
1.4.3 What makes people walk? 15
1.5 What plans to prepare? 17
1.6 What is the planning process? 18
1.7 Managing walkability planning 18
2 Part2: Preparing the local walkability strategy 21
2.1 Logic, structure 21
2.1.1 What is this document? 21
2.1.2 Rationale, purpose and logic of the strategic plan 21
2.1.3 The structure of the strategic plan 22
2.1.4 Who should be involved in the preparation of a walkability strategy 23
2.2 First steps: laying the foundations 24
2.2.1 Establish the case 24
2.2.2 Secure commitment 24
2.2.3 Plan the planning process 25
2.2.4 Recruit your team 25
2.2.5 Kick-off the planning process 27
2.3 Understanding the policy context (EU, national, local) 28
2.3.1 Policy areas affecting mobility planning 28
2.3.2 European policy context of Sustainable Urban Mobility 29

2.3.3 Important EU projects and actions for sustainable urban mobility 31
2.3.4 National, regional and local policy context 31
2.4 Understanding the local walkability environment 33
2.4.1 What to analyse? 33
2.4.2 Document analysis 35
2.4.3 Data, statistics 37
2.4.4 Consultations and engagement of the local community 43
2.4.5 Surveys 46
2.5 Strategy development 49
2.5.1 Strategic assessment 49
2.5.2 Strategy development 50
2.5.3 Identifying interventions 53
2.6 Implementing the strategy 57
2.6.1 Approving the strategy 57
2.6.2 Communicating the strategy 57
2.6.3 Starting the implementation of the strategy 58
2.6.4 Launching the preparation of neighbourhood walkability plans 58
3 Part3 - Preparing the neighbourhood walkability plans 60
3.1 Logic, structure 60
3.1.1 What is this plan? 60
3.1.2 Key elements of the plan 61
3.2 Understanding the neighbourhood 61
3.2.1 Demographic and social analysis 61
3.2.2 Identification of pedestrian traffic attractors and generators 63
3.3 Collecting information using primary methods 66
3.3.1 Questionnaire survey 66
3.3.2 Walkshops – barriers to and state of the ingredients of walkability 68
3.3.3 Street level walkability audit 70
3.4 Identifying interventions 74
3.4.1 Main types and areas of interventions 74
3.4.2 Providing the key ingredients for walkability 74

3.4.3 Restriction of car traffic, parking facilities and regulation 75
3.5 Setting priorities and allocating resources to lay the foundations of implementation 78
4 Part4 – Tools and templates 81
4.1 Walkability Strategic Plan – template 81
4.1.1 Executive Summary 81
4.1.2 Introduction 81
4.1.3 The coverage of the strategy 81
4.1.4 Policy environment 82
4.1.5 Strategic analysis 82
4.1.6 Strategy 83
4.1.7 Implementation 85
4.2 Neighbourhood Walkability Plan – template 86
4.2.1 Introduction 86
4.2.2 The exact coverage of the plan 86
4.2.3 Description of the neighbourhood 86
4.2.4 Walkability problems 87
4.2.5 Actions to improve walkability 88
4.3 Data template – key statistical data and their sources 89
4.4 Questionnaire Survey – Walkability Strategic Plan 91
4.4.1 Introduction 91
4.4.2 First, some questions about you 91
4.4.3 …and about your mobility habits 92
4.4.4 Key conditions of walking 93
4.4.5 Necessary improvements in the walking environment 94
4.5 Questionnaire Survey – Neighbourhood Walkability Plan 95
4.5.1 Introduction 95
4.5.2 First, some questions about you 95
4.5.3 …and about your walking habits 96
4.5.4 Usefulness 96
4.5.5 Safety 97
4.5.6 Convenience 98

4.5.7 Attractiveness 99
4.5.8 Public transport and bikeability 100
4.5.9 Any other comment you might want to share with us: 101
4.6 Walkability Audit Sheet 102
4.6.1 Introduction 102
4.6.2 Street Sketch 103
4.6.3 Survey Legend 104
4.6.4 General Impressions and Summary 107
4.7 Walkability walkshops – methodological guide 108
4.7.1 Introduction 108
4.7.2 Letter of invitation 108
4.7.3 Detailed script of the workshop 109
4.7.4 Walkability assessment tool 115

1 Part1: Background and context

1.1 Introduction - what is this document?

1.1.1 CityWalk

This document is a Practical Guide on Walkability Planning, developed as part of the project "**CityWalk** – Towards energy responsible places: establishing walkable cities in the Danube Region", co-financed by the Danube Transnational Programme of the European Union.

Sustainable urban mobility is an issue of increasing importance in cities around the world – our still very much car-oriented cities struggle to cope with this mobility pressure – and its various negative consequences. Recognizing this challenge, 17 partners from 9 countries – Slovenia, Hungary, Slovakia, Croatia, Romania, Bulgaria, Czech Republic, Austria, and Serbia – started working on the CityWalk project. Their project – aimed at establishing walkable cities in the Danube Region – has been granted over 2,2 million € in the frame of the INTERREG Danube Transnational Programme. *CityWalk project helps cities in the Danube Region to reduce emissions, noise and to become safer, better places to live, by increasing the role of more sustainable forms of mobility in the urban transport mix, especially active transport forms – like walking and biking. To achieve that, the focus of the project is to improve key conditions of walkability.*

The following Table 1 provides a quick overview of the key characteristics of CityWalk project.

Project at a glance		
Project title:	Towards energy responsible places: establishing walkable cities in the Danube Region	
Related DTP priority:	Better connected and energy responsible Danube region	
Related DTP specific objective:	Support environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas	
Start date: 01.12.2016	**End date:** 31.05.2019	
Total budget:	**ERDF contribution:**	**IPA contribution:**
2.229.590,5 €	1.669.430,16 €	225.721,75 €
List of partners:	*Lead partner:* • Scientific Research Centre Bistra Ptuj (SI) *ERDF co-funded partners:*	

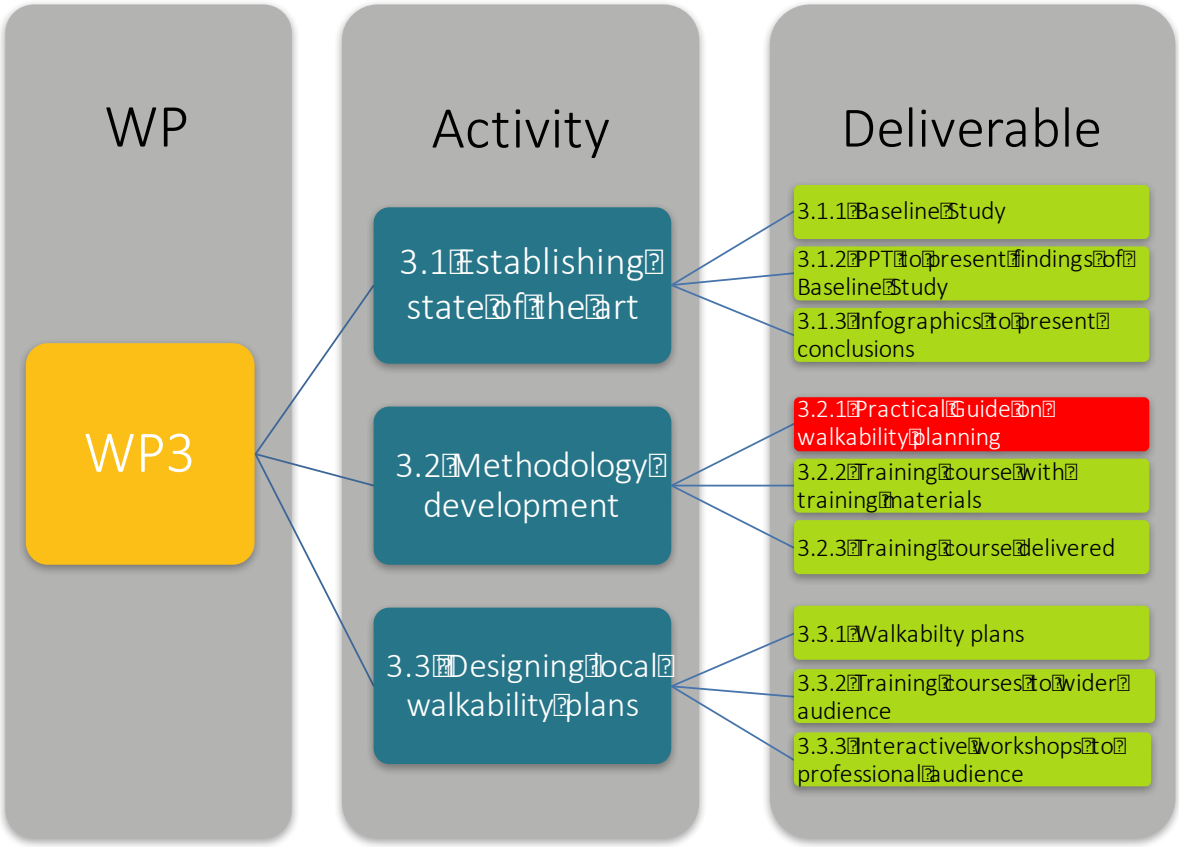
	• First Hungarian Responsible Innovation Association (HU) • Development Centre of the Heart of Slovenia (SI) • Cassovia Life Sciences (SK) • City municipality of Varaždin (HR) • Municipality of Oradea (RO) • Varna Free University "Chernorizets Hrabar" (BG) • Regional Development Agency of the Pilsen Region (CZ) • Municipality of Weiz (AT) • Varna Municipality (BG) • Municipality of Nyíregyháza City with County Rank (HU) *IPA co-funded partners:* • City of Valjevo (RS) • Chamber of Commerce and Industry of Serbia (RS) *Associated strategic partners:* • City municipality of Ptuj (SI) • City of Stříbro (CZ) • Ministry of Construction, Transport and Infrastructure, Serbia (RS) • Nyíregyháza Industrial Park Ltd. (HU)

1. Table 1: Project at a glance

The Guide is the first deliverable as part of Activity 3.2 (“Methodology Development”) under Work Package 3 (“Walkability Planning”).

The Guide is a work in progress: it is being tested in the partner cities by using it to prepare their walkability plans. After the preparation of the plans, partners will feed back their experiences, requests for additions, proposed changes. Based on their recommendations, the Guide will be fine-tuned to further improve its usability and user-friendliness.

The following Figure 1 shows the deliverables to be produced as part of WP3.



2. Figure 1: Deliverables of Work Package 3

1.1.2 The Practical Guide on Walkability Planning – purpose and users

The intention behind CityWalk project is not only to provide a sound theoretical background to developing walkability, but – more importantly – also to initiate positive change at the level of partner cities. **CityWalk intends to be instrumental to improve walkability in all partner cities.** The first step in that process is to prepare the Walkability Plan for each city.

Walkability plans are tools to contribute to a shift towards sustainable urban mobility. The plans identify the obstacles hindering walkability and propose interventions addressing these obstacles. By laying the foundations of better walkability, the plans contribute to reducing transport related CO_2 emissions and lead to a more integrated use of sustainable transport modes and improved traffic safety in the involved cities.

To support the partner cities to deliver a planning process that results in unique, tailor-made, but at the same time professionally sound and comparable walkability plans, a complex methodology – this Guide – has been developed. In addition to this Guide, a Training Course on Walkability has also been designed and delivered to representatives of the partner cities. The combination of the Guide and the Training Course enables partners to coordinate the preparation of their own walkability plans.

The **immediate target group of this Guide consists of the partner cities**. However, **the Walkability Planning Guide and the Training Course will enable many other cities in the Danube region and beyond to prepare their own plans**. Cities intending to improve walkability will have a **field-tested guide and a practical training course at their disposal to help their work**.

1.1.3 The structure of the Guide

The Guide has been designed to be concise, easy to navigate and easy to understand for the partners, as well as for future readers. Below, we provide a summary overview of the structure and the main chapters of the document.

3. Figure 2: Main chapters of the Guide

The Guide is structured into four main parts as presented on Figure 2 above.

Part 1 (this part) provides the background and context to the Guide. It presents the CityWalk project briefly, and then answers the following questions:

- What is challenge? Why walkability is one of the key elements of sustainable urban mobility?
- Why do we need walkability plans – what is the rationale behind walkability planning?
- How to plan – what are the most important principles of walkability planning?
- Who do we plan for? What are the key attributes of pedestrians?
- What walkability planning documents need to be prepared? What are their functions? What is their relation?
- How does the planning process look like – what are the most important steps in the process?
- How are cities supposed to manage the planning process? Who is responsible? Who should be involved?

Part2 provides a step-by-step guide to preparing the document that provides the city-level strategic framework for improving walkability – the Local Walkability Strategy. In this part, the Guide:

- Presents the logic and the proposed detailed structure of the strategy.
- Draws the attention to the importance of properly laying the foundations of walkability planning – securing commitment, planning the process and recruiting a good team.
- Helps to understand the policy context of walkability planning – presents what policies and strategic documents are in place. What are the documents that need to be consulted and taken into account?
- Helps to understand the local walkability environment by defining the key ingredients of walkability, as well as proposing specific tools to analyse the level of walkability – including document review, data analysis, consultation and engagement of the local community, the delivery of various surveys and strategic assessment of the information collected.
- Provides support and proposed methods to designing the strategic part of the document – including strategic assessment, strategy development and the identification of interventions.
- Presents the steps to do after completing the strategy.

Part3 provides a practical guide to preparing neighbourhood level walkability plans. This part:

- Presents the logic and the proposed detailed structure of the neighbourhood level walkability plans.
- Proposes steps to better understand the neighbourhood – especially its socio-economic attributes, the traffic generators and attractors and modal split.
- Introduces the toolkit to be used to deliver the walkability review of the neighbourhood, including a questionnaire survey, walkability "walkshops" and a street level walkability audit.
- Helps to identify very specific neighbourhood level actions.
- Supports the setting of priorities and the allocation of resources.

Finally, **Part4 presents ready-to-use tools and templates** that can be applied during the walkability planning process, specifically:

- The detailed template of the Local Walkability Strategy;
- The detailed template of the Neighbourhood Walkability Plan;
- The proposed list of data to be collected, also including the definition, possible source;
- The template of questionnaire surveys;
- The methodology and template for the walkability audit;
- The methodology and template for the "walkshops".

Those who will have a responsibility for coordinating the walkability planning process on city level will probably benefit more if they start by carefully reading the Guide AND attend the training course on walkability planning. During the planning process, however, they can use it more like a reference document whenever a question comes up.

The most pragmatic part of the document is the collection of specific tools – these have been designed in a way that they can be easily applied as they are, or with minor modifications (certainly after translation to the local language) in the appropriate phase of the planning process.

1.2 Why plan?

Mobility is an essential ingredient of city life. Good urban transport systems need to ensure that people (labour force and consumers) and goods move between different locations within the city. Urban economy, productivity, social life – basically the entire life of cities – depend on how efficiently and effectively urban transport systems operate.

Urban transport systems, however, are at a tipping point: they struggle to cope with the demand even today (especially in bigger cities, but increasingly in small and medium sized cities), and, considering the expected growth of urban population, their challenges will steadily increase.

The core problem is the strong dominance of the automobile in our cities. The transport systems in most of the cities today heavily rely on car use. In the 20th century cities have been built (and rebuilt) to create ideal conditions for cars – **cars simply took over our cities.** This has led to a multitude of problems – long term negative consequences on the health of the residents, on the quality of the city environment, on the local economy and even on social cohesion.

As they are, the transport systems are not sustainable in their current form in most of our cities. To move towards a more sustainable transport system in any city, first and foremost a major change of philosophy is necessary: **instead of planning traffic and focusing on moving CARS as efficiently and quickly as possible, we need to concentrate on moving PEOPLE as efficiently and quickly as possible**. This is only possible if a **dramatic shift in modal split** is achieved: the proportion of active forms of transport (walking and cycling), as well as of public transport need to be increased significantly, while the proportion of car trips need to be reduced.

Active forms of transport – cycling, and especially walking (as the most basic form of moving around in cities) **play a crucial role in making urban transport more sustainable**. Increasing the proportion of walking is only possible, if we can offer optimal conditions for pedestrians. **Making cities more walkable** – and what is even more important, making **people**

walk more –, however, **is a complex challenge**, requiring investments, changing local regulations, awareness raising, education and a variety of other interventions. Improving walkability is not simply about improving pedestrian infrastructure in the city. **Given the complexity of the challenge**, the process of **improving walkability needs to be carefully thought through and planned**.

Even today, **various types of plans exist in cities that affect the issue of walkability** in some form.

As mobility is a crucial part of city life, it is usually included in **integrated urban development strategies**, and is also the subject of dedicated plans. **Local traffic plans, for instance, cover the developments needed to improve the urban transport system**. Most of these plans, however, are exclusively prepared by traffic engineers and still focus too much on creating the best possible conditions for moving (or parking, for that matter) cars, while ignore the needs of pedestrians. Even if they don't, however, local traffic plans concentrate almost exclusively on improving infrastructure.

Fortunately, in more and more cities traditional local traffic plans are being replaced by, or complemented with **sustainable urban mobility plans (SUMP)**. As the name suggests, these plans provide a strategic framework for creating sustainable urban transport systems and place an emphasis on active forms of transport as well as public transport. Usually **SUMPs are not detailed enough, though, to design the specific, practical interventions needed to make a city more walkable**.

Considering all these, cities that take walkability seriously need to deliver a dedicated walkability planning process – a process that is presented in this Guide.

1.3 How to plan?

When planning for walkability, the following key principles need to be applied:

- The planning process needs to be truly **participative** – walkability directly affects the life of citizens, besides, improving conditions for pedestrians often create inconveniences for drivers (road diet projects, establishing lower speed limits, reducing the number of parking places in downtown areas, etc.). A good walkability plan results in significantly better environment for pedestrians – and slightly less convenient environment for drivers. This often creates conflicts which need to be managed during implementation, but the sooner (already in the planning phase) drivers are involved, the easier it will be to mitigate negative consequences. Involving all stakeholders as early in the process as possible is crucial.

- Walkability planning needs to rely on a thorough analysis – **a detailed walkability analysis**. This analysis uses information from a variety of sources:
    - Higher level statistical data;
    - Mobility related data available either on national level or locally;
    - Walkability planning needs to rely on extensive surveys collecting information on travel habits, barriers to walking, walking-related perceptions and feelings.
- Walkability planning needs to use an **integrated approach**: first and foremost, integration with local transport policies and all other local transport forms is of key importance, but not sufficient. Walkability plans need to be aligned with other urban development areas.
- It is important to stress that **better walkability is not just about improved pedestrian infrastructure**: walkability plans need to address the walkability challenge in an integrated way. Therefore, walkability plans need to propose investments in pedestrian infrastructure, soft interventions like actions to better harmonize the various transport modes, or initiatives to raise awareness of the importance of walkability, as well as proposals for changing local regulations (for instance parking regulations, building regulations).
- In addition to designing interventions and policy proposals, **walkability plans should also recommend walkability principles and practices** that need to be applied in any urban development project (like building a new road, or when a public space is rehabilitated, etc.).

1.4 Who to plan for – understanding the pedestrians

When planning for walkability, it is essential to have at least a basic understanding of the pedestrians, their needs and preferences: who they are, why do they walk (or the opposite – why don't they walk). In this chapter, we help you to understand the pedestrians – those you prepare your walkability plan for.

1.4.1 Groups of pedestrians

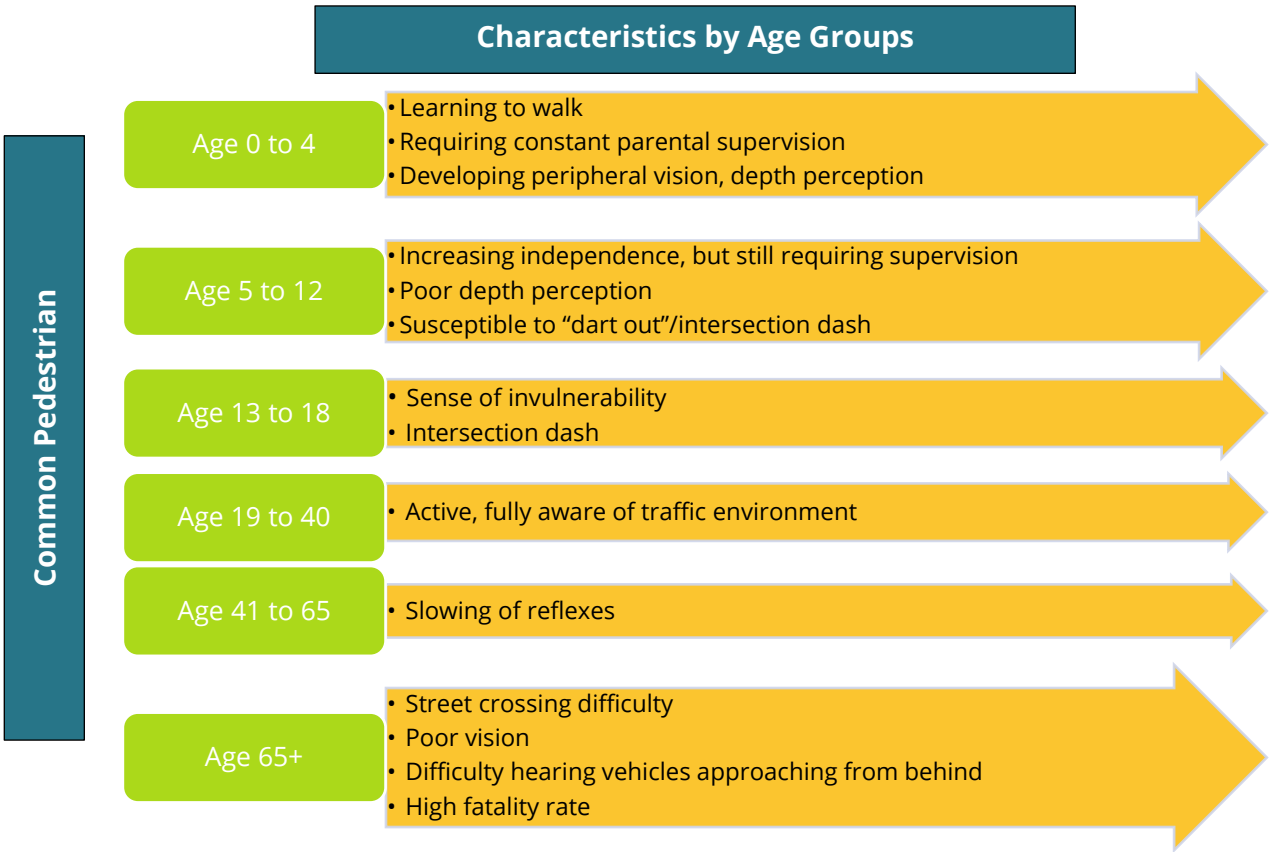
When it comes to improving walkability, it is important to answer a basic question: **who walks?** It is a simple question with a simple answer: everybody walks**,** because every trip — whether by bus, bike, car or train — begins and ends with a walk. The pedestrian network is the very foundation of our urban transportation system. Increasing walking for any type of trip has the potential to reduce traffic congestion, add to the city's liveability, and improve the environment and public health. The pedestrian network needs to work for people of all ages and abilities. The users of the pedestrian network may be grouped as follows:

- **pedestrians on foot** (adult pedestrians, children, young pedestrians, aged pedestrians [also cane assisted], impaired pedestrians [sensory impaired or with a guide dog], runners/joggers),
- **pedestrians on small wheels** (in-line skates, roller skates and skateboards, kick scooters, pedestrians with a pram,
- **mobility impaired** (mobility scooters, manual and electric wheelchairs, pedestrians with a walking frame).

1.4.2 Pedestrian characteristics

1.4.2.1 Pedestrian movement (physical space)

The physical dimensions of the human body determine the space needed for standing and moving. The surface area occupied by an average adult is about 0.14 m^2, but the actual space requirements depend on individual characteristics such as **age, gender and physical condition.** Pedestrians are not able to walk in an exactly straight line, they need more space in longitudinal direction and this additional space depends on speed, trip purpose, travelling time. Movement of pedestrians, unlike movement of any type of vehicles on a road, can be multidirectional.



4. Table 2: Pedestrian characteristics by age groups (source: Washington State Bicycle Transportation and Pedestrian Walkways Plan)

Age, gender and physical condition are the main characteristics of pedestrians to determine their abilities and way of travelling. Different pedestrian age groups have different needs and abilities *(see Table 2)*. For example, the primary need of young pedestrians is their safety and adult supervision.

Some groups of traffic participants walk or cycle more than other. Age groups for which walking is particularly important, are children below the age of 12 and adults aged 75 and above. Older adults use the car slightly more often (38%), but considerably less often than younger adults aged 25 to 74 years, who use this vehicle for more than half of their trips (Eurostat statistics 2017).

Older adults and people with disabilities have a variety of needs as pedestrians. Research shows that people over 60 walk more, yet, in some cases may have impaired mobility and they need carefully designed facilities that eliminate barriers. The needs of pedestrians with disabilities can vary widely depending on the type of disability and level of impairment.

1.4.2.2 Walking speed

The speed that pedestrians travel can vary greatly, usual pedestrian walk measured at average speeds of 4.8 to 6.4 km/h. Walking speed and pedestrian flow are affected by pedestrian characteristics such as age, gender and physical condition. However, many studies acknowledge – and common sense also suggests – that the speed is significantly slower for children, older adults, and people with certain disabilities: they typically travel at 3.2 km/h.

There is a linear relationship between walking speed and density, where pedestrian density is expressed in persons per square meter (Fruin). This is because, unlike cars, people do not move in one line. Thus, density defines also the unit area or space module available per person. Walking rates slow when pedestrian volume increase and square footage per person decreases.

The speed is also affected by the directional characteristics: bidirectional flow is slower than unidirectional (Fruin). Trip characteristics as walking purpose, route familiarity and distance are determinants of pedestrian speed and flow.

Walking speed is affected by:

- **pedestrian characteristics** such as age, gender and physical condition;
- **trip characteristics** such as walking purpose, route familiarity, trip length and obstacles;
- **route characteristics** such as width, gradient, surface, shelter, attractiveness, pedestrian density and crossing delays;
- **environmental characteristics** such as weather conditions.

1.4.2.3 Walking distances

Acceptable walking distances will vary depending on geography, climate conditions, and land use patterns. Pedestrian trips account for 39% of all trips less than one mile, ranking second

only to private motor vehicle trips; 73% of all pedestrian trips are less than one-half mile; one out of five trips is work related. *(Sources: Washington State Bicycle Transportation and Pedestrian Walkways Plan; Best Foot Forward Pedestrian News)*

The distance pedestrians will travel is also influenced by the weather, the time of day, demographics, the purpose of their trip, and many other factors. Most people will walk longer distances for recreational purposes, but prefer to walk shorter distances when they are commuting or in a hurry, such as from the bus stop to their office.

Walking as a means of transport is commonly used for rather short trips. Survey data (Eurostat statistics) from a selection of seven European countries show that 12-30% of all trips is made by walking (as main transport mode), the highest figure being for Great Britain. For short trips under 5 km, the share of walking is higher, with a maximum of 45% in Great Britain. The average length of walking trips varies from just under 1 km (Great Britain) to 2.8 km (Finland). It should be noted, however, that the extent of coverage of short trips depend of many factors: climate, connectivity, time of trip, etc.

1.4.3 What makes people walk?

1.4.3.1 The ingredients of good walking environment

In order to successfully design pedestrian facilities, we must recognize that pedestrian needs are wide-ranging, and our approach must be flexible to meet the diversity of needs. In the baseline study we define the four most important attributes of walkability: **useful, safe, comfortable and interesting** *(see Table 3)*. People will only walk and abandon their car, if walking meets their needs for safety and convenience.

USEFUL	• dense neighbourhoods
	• mixed-used neighbourhoods
SAFE	• traffic safety
	• low level of crimes
COMFORTABLE	• efficiency
	• convenience
INTERESTING	• varied street scenes
	• green areas
	• facilities for social encounters

5. Table 3: The ingredients of a good walking environment (source: Baseline Study, CityWalk)

1.4.3.2 Why People Walk?

Pedestrians travel for a wide variety of social or recreational reasons, but there are two different types of walking: everyday walking and periodic walking *(Table 4)*.

TYPICAL TYPES OF PEDESTRIAN TRIPS	
Everyday/permanent	• To and from work • To and from school • Health and exercise • Appointments
Periodic/incidental	• Social visits and events • Errands and deliveries • Recreation • Extra curricular activities (shopping) • Combined (recreational walking while shopping) • Multimodal trips (walking to a bus stop)

6. Table 4: Typical types of pedestrian trips

1.4.3.3 Reasons of not walking

People need access to the pedestrian system. They have various abilities in agility, balance, cognition, coordination, endurance, flexibility, hearing, strength, vision and walking speed. Individual's access to the pedestrian network depends on overcoming movement and information barriers:

- **Physical barriers:** restrict a person's ability to physically move along or within the environment, and for pedestrians this means along and across streets (bad quality walking surfaces and public infrastructure).
- **Information barriers:** restrict a person's use of information, that is, to recognize, receive or understand the information within the pedestrian environment that is required to take a decision, take action (complex intersections, diverted paths such as at work zones, and lack of information to cross a street).
- **Social and economic barriers:** lack of time to make journeys; other modes perceived as more convenient; a lack of confidence in the walking infrastructure; perception that pedestrians generally have a low social status, fear of being attacked in isolated or potentially risky areas, uncertainty about whether a route is fully accessible.

Common reasons for low levels of pedestrian travel in the cities are:

- ✓ poor quality walking infrastructure, poor-quality lighting;
- ✓ obstacles on the footpath, including poorly placed street furniture;
- ✓ lack of footpath maintenance, including litter, dog fouling and overhanging vegetation;
- ✓ increased distances imposed by road layouts, barriers, footbridges and subways;

- ✓ lack of continuous pedestrian routes;
- ✓ missing or unsuitable crossing treatments creating severance;
- ✓ speeding traffic, traffic fumes and noise;
- ✓ lack of rest areas and seating;
- ✓ lack of shade, lack of shelter from inclement weather;
- ✓ lack of interesting features on route.

1.5 What plans to prepare?

The walkability planning process has two main levels:

- The preparation of a **city level local walkability strategic plan**, which covers the entire city and usually aims at increasing the proportion of active forms of mobility – primarily walking – at the expense of automobile use. The local walkability strategic plan provides the strategic framework for walkability improvements in the city and identifies the neighbourhoods where investments need to be made.
- **Community/neighbourhood level walkability audits and plans** to identify the very specific improvements necessary in a certain part of the city – these plans are specific and action-oriented.

In a smaller town, the two types of plans may even be combined, whereas in a larger city the city level strategy may be complemented by numerous neighbourhood walkability plans.

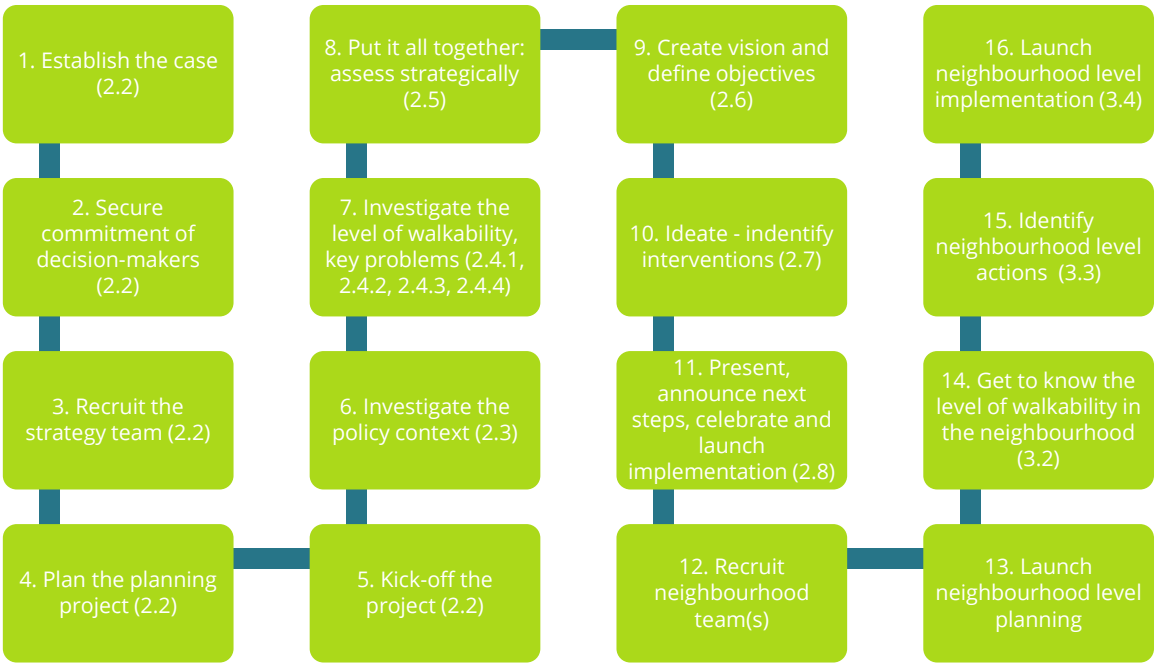
In this guide, we will provide specific guidelines, methodological tools and templates to the preparation of both types of documents.

The following Figure 3 presents the hierarchy of plans in a larger town.

7. Figure 3: Hierarchy of plans in a larger town

1.6 What is the planning process?

The following Figure 4 provides a simplified overview of the planning process. At each step, we indicate in brackets the chapter where more details are provided.



8. Figure 4: The planning process

1.7 Managing walkability planning

Managing an activity is about setting and achieving goals; managing walkability planning is about how to organize the process of planning urban mobility so to achieve specific goals. To define the goals of the activities and to manage these activities, it is essential to identify precisely whose needs should be satisfied, precisely what needs, what specific activities need to be carried out for this purpose, who should provide the resources, who is responsible for the execution of the activities and who will benefit. Therefore, to define the structure of the process management we need to answer three basic questions:

- Who is responsible?
- Who should lead the process?
- Who else should be involved and should assume important roles in this process?

The first question is about the person in charge, who should be responsible to those who are defined to be the beneficiaries of the activities. Obviously, the benefits provided by the mobility system of a city will vary for different social groups, but the goal of the development of such a system should be to provide maximum benefits to the local population and all social strata.

Thus, the development of the mobility system of a city, its efficiency and the level of walkability are the responsibility of the local authorities. However, the second question is about expertise – that is, the local authorities should assign the leading role to those officer and municipal employees, who are experts in this field. Traditionally, mobility has been associated mainly with the expertise of transport engineers, because the transportation system of a city has been considered the core of urban mobility. Over the past two or three decades, however, the professional understanding and the prevailing attitudes have changed, and today it is widely acknowledged that the productivity of the urban transit systems is not the only factor, but social, economic and ecological efficiency and other social, economic and ecological implications are often much more important than just productivity. As a result, the roles of the experts involved in mobility planning have changed as shown in Table 5.

Traditional Transport Planning	Urban Mobility Planning	Sustainable Mobility/Accessibility
Focus on traffic and infrastructure	Focus on traffic, infrastructure and side effects	Focus on people and all impacts on individuals and society
Vehicle movement and speed are beneficial; congestion or inadequate roads are seen as the problem.	The efficient movement of people and goods are beneficial and are key aim of policy. Attention is placed on the search of efficient ways of moving people and goods.	It is the ability to REACH opportunities that is beneficial. In remote areas, access to goods and services will require a lot of mobility. In dense urban contexts accessibility involves very short trips.
Primary objectives: uninterrupted traffic flow, capacity and speed	Primary objectives: social, economic and ecological efficiency of the system of mobility comprising various mobility options	Primary objectives: Accessibility and quality of life, as well as sustainability, economic viability, social equity, health and environmental quality
Focused on traditional modes of transport	Balanced development of various modes of mobility	Balanced development of all relevant transport modes and shift towards cleaner and more sustainable transport modes
Prescribes measures and actions to improve mainly the road infrastructure	Prescribes measures and actions to improve mainly the road infrastructure	Integrated set of actions to achieve social, economic and ecological results
Short- and medium-term delivery plan	Short- and medium-term delivery plan	Short- and medium-term plan embedded in a long-term vision and strategy
Limited impact assessment	Impact assessment of various transport modes and various impacts	Regular monitoring and evaluation of impacts to inform a structured learning and improvement process

Planning by experts	Planning by experts from various sectors	Planning with the involvement of stakeholders using a transparent and participatory approach
Domain of traffic engineers	A team of traffic, urban, social, economic and ecology experts	An interdisciplinary planning team of social, ecology, traffic and economic experts led by an urban planner

9. Table 5: Comparison of the main approaches to planning for traditional and sustainable forms of mobility (source: the table is based on Barter, P., at Sustainable Transport [http://www.gdrc.org/uem/sustran/access-mobility.html] and the Guidelines of the Directorate-General for Mobility and Transport of the EC – Developing and Implementing a Sustainable Urban Mobility Plan)

According to the principles of sustainable mobility/accessibility planning, this is a complex activity requiring cross-sectoral approach involving many different experts: sociologists, economists, transport engineers, utilities engineers, planners, ecologists, and even physicians. However, the key role should be assumed by urban planners, because it is the planners who are trained to perform multi-disciplinary analyses and organize and manage cross-sectoral activities and projects.

2 Part2: Preparing the local walkability strategy

2.1 Logic, structure

2.1.1 What is this document?

A walkability strategy is the core component of a city's sustainable mobility/accessibility strategic plan, whereas the sustainable mobility strategic plan is the main instrument of strategic planning of the system of urban mobility/accessibility at the higher – citywide – level. As planning systems vary across Europe, different countries adopt different approaches and instruments of planning; however, insofar as there are important intrinsic relations within urban systems and, respectively, there are essential commonalities in the methods of urban planning. Thus, the sustainable mobility/accessibility plan should be structured in two levels: a higher strategic level with wider (i.e. citywide) spatial scope and longer vision and more detailed neighbourhood level for shorter term of time. In turn, the higher citywide level should comprise four parts:

1. a general part presenting a detailed vision regarding the key accessibility issues of the urban structure and the main directions of the development of the mobility system with its social economic and ecological implications;
2. spatial accessibility: the directions of the development of accessibility (the spatial connections) between the main areas and districts and between the functional zones of the city (with their social economic and ecological implications);
3. strategy of the development of the sustainable forms of mobility – this is what we call "**walkability strategy**" –, that is, the directions of the development of pedestrian and bicycle traffic and other sustainable traffic forms (with their social economic and ecological implications);
4. strategy of the development of the traditional forms of mobility – motor traffic forms.

Bicycle traffic and, especially, pedestrian traffic are both traditional and sustainable. Still, the precise meaning, stressing the social and ecological implications and the importance attached to these sustainable mobility forms are key characteristics of the new approach to sustainable urban mobility/accessibility. Also, the mass transit systems occupy a special area between the traditional and sustainable forms, because those systems have always been of crucial importance for any city and they have always had major positive long-term (i.e. sustainable impact).

2.1.2 Rationale, purpose and logic of the strategic plan

The purpose of any strategy (strategic plan) is to identify major problems of a system and to determine the general directions to solve these problems. Therefore, the purpose of a

walkability strategy is to define the main directions to enhance the sustainability of an urban organism by improving the urban mobility system.

The key problems to be addressed by a walkability strategy are those relating to the balance between the modes of mobility by restricting the unsustainable modes and promoting walkability at the city level. The purpose of a walkability strategy is to manage the development of the mobility system of a city and specifically the development of all components of the system that are associated with walkability (the pedestrian traffic with all its elements and aspects – social, economic, ecological), so that walkability should be promoted in order to provide for high level of sustainability of the urban environment and the urban socio-ecological system.

A specific, but important reason for the need of a walkability plan is the existing structure of mobility in European cities, which should be assessed as unsustainable because of the domination of cars. The first section of this guide has explained in some detail the disadvantages and major problems associated with the traditional car-traffic mobility forms. To solve these problems, cities would obviously need relevant strategies that should identify the directions to overcome the impediments (usually termed as barriers) to the sustainable traffic modes and improve their productivity, attractiveness and accessibility. The sustainable modes of traffic are walking, mass transit and bicycle traffic.

Since a strategic plan is an instrument of the higher level of planning, it corresponds to the level of the master plan, whereas, for comparison, the neighbourhood walkability plan corresponds to the level of the detailed urban plan. The scope of a strategic walkability plan is the whole territory of the city. It covers all parts of the urban structure.

2.1.3 The structure of the strategic plan

A strategic walkability plan should comprise three main parts: analytical part, strategic part and implementation part.

The analytical part should analyse the mobility system, the land-use structure and the urban form of the city that is subject of planning. Its goal is to identify the main issues of the urban physical (spatial) and socio-economic structure of the city that present problems and threats to sustainability. More specifically, the analytical part of a walkability strategy should investigate the modal split at the city level and explore the positive and negative characteristics of each form of urban mobility.

The strategic part should first define the strategic vision of the plan, and then, the major problems to be solved at the city level and the main directions and general interventions to enhance the sustainability of the mobility system. Typical interventions for a mobility strategy are:

- Improvement of public transport to enhance its performance, efficiency, comfortability and attractiveness;
- Infrastructure development promoting sustainable forms of urban transport;
- Intelligent systems of public transit;
- Definition of priority areas at the city level promoting walkability;
- Planning the scope of pedestrian zones at the city level;
- Definition of the main approaches and types of interventions concerning public and pedestrian spaces;
- Planning of a citywide network of the main bikeway routes;
- Definition of (key) standards and norms concerning public and pedestrian spaces and bikeways;
- Prioritization of activities at the city level.

The implementation part should plan for the methods and the instruments of realization of the strategy. Typical examples of such methods and instruments of implementation of a mobility strategy are:

- Provision of resources from the central and local budget, European programmes and local initiatives;
- Allocation of resources between the central and other city districts;
- Appointment of a managing body comprising representatives of the planning/investment department of the local authority, representatives of interested NGOs and associations;
- Development and adoption of a detailed plan and a schedule of the execution of planned activities.

2.1.4 Who should be involved in the preparation of a walkability strategy

The roles of the parties involved in the development of a walkability strategy have already been briefly discussed in the final paragraphs of the first part of this guide (section 1.6). Based on this discussion, the roles of the different parties, social groups and institutions can be identified as follows.

First, a city's mobility system serves the mobility needs of the local community, that is, all residents of the city. Therefore, it is the local community who should have the initiative, but this is realized through the local government/authorities, so the preparation of a walkability strategy should normally be initiated by the local planning authorities (LPA). However, local formal or informal groups or associations may assume this role as well – e.g. an NGO, an association of local residents or a bike club. In either case, it should be the LPA who assumes responsibility for the management of the preparation of the strategy.

Still, the local community should remain involved at any phase of the preparation through the mechanisms of public participation. The local community through all kinds of formal and

informal groups and associations should continue exercising the role of an initiator and controller of the process.

The role of the LPA and the city's planning experts is actually the role of consultants, but, because the experts have the highest competence in these highly specific activities, they should lead each step of the process, although they should be under the direct control of the public.

2.2 First steps: laying the foundations

2.2.1 Establish the case

Fortunately, more and more cities recognise the pressing need for making the local transport system more sustainable and prepare a forward-looking transport plan or even develop a Sustainable Urban Mobility Plan (SUMP). Many of those cities even prepare their bicycle transport strategy – a plan to develop the bike path network, the related infrastructure and promote bicycle use. However, very few cities do prepare a dedicated plan to improve walkability without something (for instance a new national policy or regulation), or someone (for instance a forward looking professional working at the Traffic Department of the mayor's office) triggering the process.

Let's assume that someone is planning to initiate walkability planning in your city – when is the right time to do it? Well, the famous (and very true) Chinese proverb can be applied here as well: "The best time to plant a tree was 20 years ago. The second-best time is now." In most cases, it is best not to wait too long. However, the easiest to sell the idea is when the issue of mobility is already on the table – for instance when the city intends to launch a transport related planning process – preparing a new transport strategy or SUMP. In such circumstances, local decision-makers would be more susceptible to the idea of improving walkability in the city.

But how do we actually start the process? We cannot approach local decision-makers unprepared – we need to *establish our case.* The best way to do it to prepare a short, to-the-point paper or presentation on the risks of excessive car-orientation and the benefits of walkability. Fortunately, CityWalk has a library of documents that can support this work – including the Baseline Study, the walkability factsheets (infographics) as well as the easy-to-adapt presentation material.

2.2.2 Secure commitment

Once you have established the case for walkability – it is time to obtain strong commitment of key decision-makers. You need real commitment though – "we want to do it and we will do it because we believe in it" type commitment – and you need this commitment at the highest possible level. Having the commitment of the head of transport department is not enough – you want the mayor, or at least one of the vice mayors to stand behind the case of improving

walkability in the city. Having this commitment from the beginning can be the difference between success and failure – so do anything to get it. And do not stop there: do your best to establish a consensus around the issue of improving walkability in the city council. Work closely with your ally city leader, and convince council members. Talk to them one by one, if necessary, and then present your proposal (or, rather, have the mayor or the vice mayor present it with your support) at the council meeting; make a compelling case, create consensus.

2.2.3 Plan the planning process

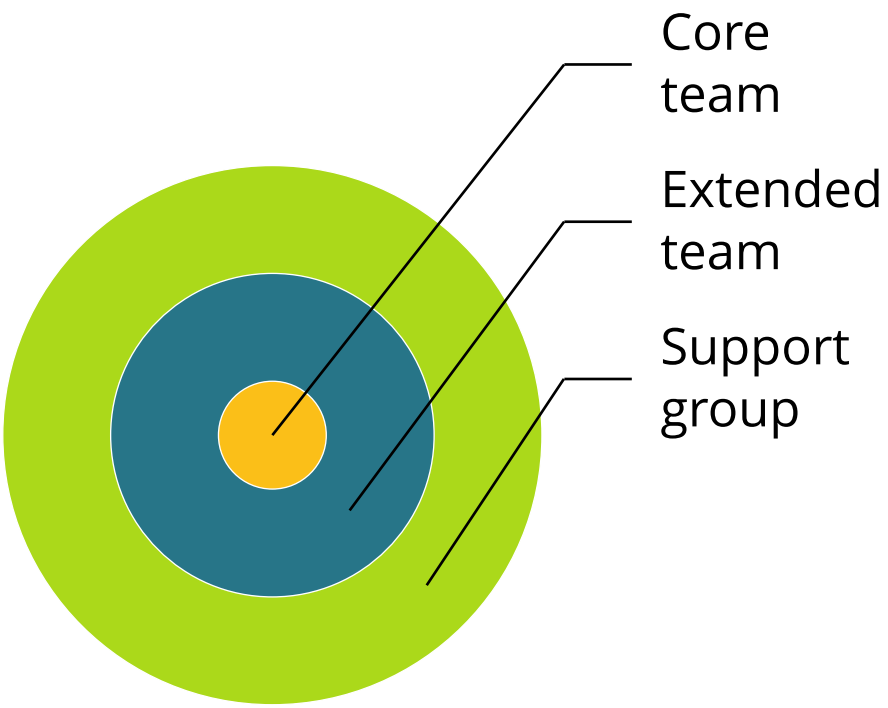
As Benjamin Franklin said: "If you fail to plan, you are planning to fail."

Preparing walkability plans is a complex process - it is actually a project that deserves careful planning. You will collect and analyse data, deliver surveys, have consultation workshops, work with the citizens, carry out interviews, assess walkability of streets, just to name a few. You need to be aware of the time necessary, the capacity requirements, as well as the budget needed to properly implement the planning process. You need to define specific steps in the planning process, set deadlines, specify deliverables, allocate human and other resources. Be realistic and prepare for contingencies.

Having a realistic plan helps you not only to efficiently manage the planning process, but it also provides the arguments needed when you request resources to prepare the plans.

2.2.4 Recruit your team

Preparing a walkability plan is not a solo operation – it is a team effort. So, you need to recruit a strong team before you start working. As Figure 5 illustrates, there are three layers of the people directly involved in the planning process.



10. Figure 5: People directly involved in the planning process

The **core team** consists of a small number of people:

- the project leader/manager (You?);
- someone with extensive knowledge about local transport issues;
- if external experts support you, one of the external experts;
- a project assistant.

The core team reports regularly to the responsible city leader.

The **extended team** is the next level of the team. The extended team includes all other professionals (primarily from the mayor's office) directly involved in the preparation of the plan. They could be other professionals from the transport department, other members of the external expert team, as well as people from other departments (for instance if the department of communication supports the consultation process, it should be represented in the extended team; similarly, the urban planning department also needs to be represented).

The **support group** is a wider group involving various stakeholders – groups and institutions – from the local community. Its exact composition highly depends on the local circumstances and may change from city to city, but the support group typically includes representatives of:

- organisation responsible for road safety and management;
- local police;
- walking and cycling advocacy groups;
- public transport operator(s);
- local running clubs;

- business organisations – especially those representing shop owners;
- organisation responsible for the maintenance and management of public spaces;
- schools;
- etc.

An important factor to consider when recruiting the team is the expertise needed when setting up the core and extended team. To have a balanced planning team, the following fields of expertise definitely need to be represented:

- spatial and urban planning;
- traffic and road engineering;
- road safety;
- accessibility;
- planning;
- community engagement, consultation, facilitation.

When setting up the team, one important decision is whether to involve external expertise – i.e. a consultancy company. To take that decision, the following questions need to be considered:

- Do we have all necessary expertise in-house?
- Do we have the necessary time/capacity in-house to deliver the planning process in a timely manner?
- Do we have all the necessary resources/tools (for instance access to specialised data, software) available in house?

Generally, the best setup is a combination of in-house and external experts. We do not recommend, however, the complete outsourcing of the planning process, for the following reasons:

- it is the responsibility of the municipality – so you need to maintain control of the team;
- even if most of the tasks are outsourced, certain tasks need to be delivered in-house (for instance collecting data that is only available at the municipality);
- the planning process and its outcomes should be identified (by the local community) with the municipality and not with an external consultancy company.

2.2.5 Kick-off the planning process

Congratulations! You have commitment and empowerment, a thorough plan and an excellent team – it is time to kick-off the process.

And it shouldn't be an invisible internal kick-off meeting – it should be a real event that is visible to the local community. After all, walkability is an issue that affects the everyday life of the citizens – so if the council wants to improve walkability, it is something people should know about. In fact, the launch event should be considered as the first step of the

promotion/consultation process. How exactly you organize such an event really depends on local circumstances. But make sure that the news gets out to as many people as possible:

- Involve the mayor (or vice mayor) in the event – she/he should be present and demonstrate her/his commitment;
- Have a press conference at the end of the event;
- Give interviews in the local newspaper, television and even in radio – explain the importance and benefits of improving walkability;
- Use social media extensively – share content related to walkability.

2.3 Understanding the policy context (EU, national, local)

2.3.1 Policy areas affecting mobility planning

Spatial, land-use, development and transportation policies are no doubt major factors for the achieved level of sustainability of the mobility system, the state of the modal split and the level and the state of walkability in an urban system. With the help of appropriate policies and measures the urban cores and residential zones can be made much more attractive and much easier to access for pedestrians and cyclists, and other active forms of transport. On the other hand, the outdated and unsustainable urban development and transportation policies can favour car use and keep their dominant role in the urban modal split.

Of crucial importance for the success or failure of any policy is its implementation. Actually, people chose how to move through the city depending on the results of the implementation of the policy and not because of the policy itself.

A policy is considered to be a deliberate plan of action taken by governmental entities to guide decisions and achieve desired outcomes. Policies are typically issued in official written documents, such as laws, ordinances, or planning documents. Policies are commonly implemented by a wide variety of decisions, programs, and practices that support the desired outcomes. Therefore, many agencies will need to develop division- or department-level policies that implement the intent of the sustainable urban mobility and walkability concept. These enabling policies can be categorised as **funding policies, planning policies, engineering and design policies, and maintenance policies.**

Funding policies – Refers to the process by which funding is allocated to pedestrian and bicycle improvement projects, facilities, and programs. *For example, is there a process by which funding for safety improvements is allocated to pedestrian and bicycle improvements (such as by proportion of fatalities)? Is there a dedicated percentage of construction funding for pedestrian and bike facilities, or do pedestrian and bike facilities compete with motor vehicle capacity improvements through a quantitative process?*

Planning policies – Refers to the process by which pedestrian and bicycle improvement projects and facilities are identified and developed. *For example, is there a process to identify and fund the most important routes for pedestrian and bicycle improvements? Or, are pedestrian and bicycle improvements only considered when a motor vehicle capacity improvement occurs? Most importantly, is land-use coordinated with transportation improvements?*

Engineering and design policies – Refers to the process of designing and constructing pedestrian and bicycle facilities that meet or exceed accepted standards and guidelines. *For example, is there a clear technical guidance on design parameters for different types of streets and highways? Is there a clear direction on how to deal with design policy exceptions? Is there a design review process that ensures compliance with engineering and design policies, including for construction work zones?*

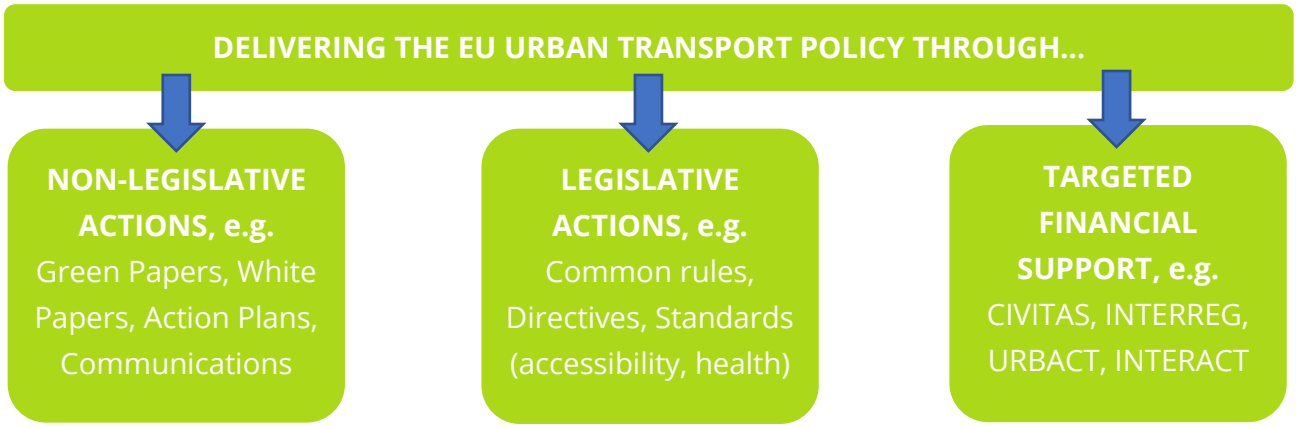
Maintenance policies – Refers to the process by which pedestrian and bicycle facilities are operated and maintained. *For example, what is the snow removal policy for sidewalks, bike paths and bike lanes? How often are bike lanes and other facilities cleaned? Are signal timings and equipment updated to ensure compliance with current pedestrian and cyclist requirements?*

There are also other policies, described as **supporting policies** which are not directly related to street facilities or road improvements, but nonetheless are critical for improving pedestrian and cyclist safety and mobility. Some of them are **vehicle parking policies** (pricing and availability), **vehicle restrictions** (travel restrictions on certain streets), **traffic calming** (roundabouts, raised intersections, raised pedestrian crossings), **education policies** (traffic safety education for kids), **encouragement policies** (European Mobility Week), **enforcement policies, system and policy evaluation** (assessment of the policies' and projects' effectiveness using performance measures and key indicators).

2.3.2 European policy context of Sustainable Urban Mobility

Throughout the last decades, the European Commission has encouraged the development and application of new sustainable urban mobility planning approaches and innovative solutions. This is part of its policies, through the European Structural and Investment Funds and through its research and innovation funding programmes.

The European Transport Policy has been based on the development of policy documents such as White Papers, Green Papers, Action Plans and Programmes as well as Directives and Regulations. Long-term policy papers ('White Papers') are preceded by discussion papers ('Green Papers') and regular communications, and often followed by 'Action Plans' and by legislative 'Directives' or 'Regulations' *(see Figure 6)*.



11. Figure 6: European Transport Policy

The main transport-related discussion paper is the **Green Paper 'Towards a New Culture for Urban Mobility' (2007)**. This paper sets the foundations for the EU agenda for sustainable urban mobility and provides guidance for solving urban mobility issues such as actions for encouragement of walking, cycling, public transport and the development of appropriate infrastructure. **The Green Paper** directly addresses local authorities by recognising their unique role in promoting sustainable urban mobility strategies and behaviour.

Example of an urban transport-related action plan is the **'Action Plan on Urban Mobility' (2009)**. It proposed several measures and tools to achieve modernised and sustainable urban transport systems.

The **2011 Transport White Paper** puts forward a long-term strategy for a transition to a new way of life in cities and regions. The main issues of the "new paradigm of urban mobility" are the transition from a mobility paradigm based on the private car **to one based on walking and cycling**, high quality public transport, cleaner vehicles, and more efficient distribution of goods. The White Paper stipulates **Urban Mobility Plans** to be fully aligned with **Integrated Urban Development Plans**.

The EC's **'Urban Mobility Package' (Dec 2013)** reinforces support for sustainable urban transport in Europe. Sustainable Urban Mobility Plans (SUMP) are the central element there. With the 'Urban Mobility Package' were set recommendations to local and regional authorities to develop and implement SUMPs and with European platform on SUMP were released Guidelines on their development and implementation.

On 2 December 2015, the EU Parliament adopted a **Resolution on sustainable urban mobility.** In this document, the EC has once again emphasised the importance of SUMPs in giving space and infrastructure back to all citizens and improving accessibility, improving the environment, quality of life and health and making urban mobility more sustainable, safe and secure.

2.3.3 Important EU projects and actions for sustainable urban mobility

For many years, the European Commission has actively supported and initiated cooperative projects in the field of sustainable urban mobility. Two important urban mobility initiatives which started under the framework programmes (FP) are ***CIVITAS (City, Vitality and Sustainability)*** and ***Eltis (The urban mobility observatory*)**. Many **cycling, and walking projects** have been supported within the EU framework programme for research and technological development, and specifically the **CIVITAS** demonstration initiative. These range from the planning of cycling and pedestrian infrastructure, bike sharing systems, audit schemes, to campaigns aimed at increasing bicycle use or an accessible pedestrian infrastructure as a precondition for the use of public transport by people with disabilities.

There are several programmes and funding schemes that allow **non-EU parties** to cooperate in EU-funded projects and acquire funding for urban mobility projects and initiatives. The interregional co-operation programme (INTERREG IVC) and 3 networking programmes (Urbact, Interact and ESPON) cover all 27 Member States of the EU. They provide a framework for exchanging experience between regional and local bodies in different countries. With regards to transport, cross-border cooperation is devoted to improving access to transport services and networks.

URBACT is a programme that enables cities to work together on issues of urban development. The projects facilitate the exchange of knowledge among urban decision-makers and practitioners.

INTERACT supports territorial cooperation between Regions of the EU. It promotes cooperation as a tool for growth and change through policy development and strategic orientation, within territorial cooperation and beyond.

2.3.4 National, regional and local policy context

The success of policies and policy objectives that have been agreed at EU level, for example on sustainable urban mobility, accessibility, health or climate change, highly depends on actions taken by national, regional and local authorities *(see Figure 7)*. Mobility in urban areas is an important facilitator for growth and for sustainable development in the cities around Europe.

According to the EU and EC concepts, the national, regional and local authorities are responsible for the implementation of sustainable urban transport policies. Despite the

national governments which set the context within which cities develop their transportation and urban development plans, the Commission is leading the development of guidance on Sustainable Urban Development and is encouraging cities to exchange experience in the field of urban planning (including transport) through programmes such as CIVITAS and Eltis.

12. Figure 7: National, regional and local policies

When properly articulated, national urban policy offers the most authoritative instrument for elevating the linkage between land-use and transport planning, respectively SUMPs and Walkability plans, as a vital part of an urban transportation system.

As mobility is a crucial part of city life, it is usually included in integrated urban development strategies, and is also the subject of dedicated plans. Urban transport plans, as a part of General Urban Development Plans, for instance, cover the developments needed to improve the urban transport system. Most of these plans, however, are exclusively prepared by traffic engineers and still focus too much on creating the best possible conditions for motorized transport, while ignore the needs of pedestrians. Even if they don't, transport plans concentrate almost exclusively on improving infrastructure.

Fortunately, in more and more cities, traditional urban transport plans are being replaced by, or complemented with sustainable urban mobility plans (SUMP), such as for instance is Dresden's Transport Development Plan. These plans provide a strategic framework for creating sustainable urban transport systems and place an emphasis on active forms of transport as well as public transport. Usually, SUMPs are not detailed enough, though, to design the specific, practical interventions needed to make a city more walkable.

A local walkability strategic plan, as an important part of the vision for sustainable development, focuses on urban mobility at the urban agglomeration level. Nevertheless, any kind of urban transportation plan is embedded in a wider regional and national planning framework on urban mobility. This includes for example regulations, funding streams or higher-level strategies for spatial and transport development (e.g. a national transport plan, where one exists). It is crucial to assess the impact of the regional and national planning framework to fully exploit opportunities and avoid conflicts with higher-level authorities at a later point.

2.4 Understanding the local walkability environment

2.4.1 What to analyse?

The purpose of the local walkability strategic plan is to significantly increase the proportion of active transport – primarily walking – at the expense of individual car transport. Simply put, this requires people walking more and driving less within the city.

People will only walk (and abandon their car), if walking is **useful, safe, comfortable and interesting** – so these are the four most important attributes of a walkable city. (We discuss the ingredients of walkability in more details in the Baseline Study – below, we provide only a quick overview.)

13. Figure 8: Most important attributes of a walkable city

People regularly move between different parts of the city because usually they want to reach a specific destination. Walking with a destination in mind means that the walk is **useful**. So, people only choose walking regularly as their preferred "mode of transport", if a wide range of functions, services are accessible within walking distance.

People may choose walking if they can reach various services easily, but we can only convince them to walk **if the walk is safe – AND feels safe.**

Having streets that enable useful walking, are and feel safe is half success, however, we can't quite persuade many people to walk if the walking is not **comfortable**. Walking requires muscle power, and pedestrians love efficiency – as well as hate losing time and energy.

The last piece of the walkability puzzle is making the walk **interesting.** If facades of the buildings alongside the streets are huge blocks of concrete, bricks or non-transparent glass, if there is no street life to speak of, if the shop windows are ugly, unkempt, if there are no outdoor cafés – the walk is not interesting. And if the walk is not interesting, people will only walk when they have no other choice.

The purpose of the analysis is to understand how walkable the city is now – to what extent are the key ingredients of walkability present. We also need to look at what are the main walkability challenges, obstacles that may and should be overcome.

If we want to assess the level of walkability, we need to take a holistic approach: it is not sufficient to look at the pedestrian infrastructure; there are various other factors that need to be analysed, including for instance the geography and spatial structure of the city, the economy, the demography – just to name a few. Most of the information can be obtained by consulting existing documents, official statistics and city level data.

In addition, however, we also need to understand the residents' attitude towards urban mobility and walkability. How do they move around in the city, how much do they walk, what are the things that prevent them from walking more? And the only way to get this information is to ask people.

In the following chapters, we present in detail what information to look for, where to get that information and what methods may be used.

2.4.2 Document analysis

Various types of plans exist in cities that affect the issue of walkability in some way. Planning systems vary across Europe – different countries adopt different approaches and instruments of urban planning. Besides, some countries do not have regional level, only national and local levels. However, as far as there are important individual relations within urban systems, there are essential similarities in the methods of urban planning. For instance, it can be taken that around Europe, on city (LAU2) and municipal (LAU1) level, **Walkability Strategic Plans and Neighbourhood Walkability Plans** are closely related to Master plan (or General Urban Development Plan) and Detailed Urban Plan. When analysing the existing documents, professionals need to be aware of their context in the sense of **time** (when?), **place** (where?), **maker** (by whom?) and **the intended receiver.** Documents can differ **in type and form** (current or retrospective, outdated; written or audio-visual; published or unpublished; public or secret, institutional or internal) which should also be taken into account.

Often, walkability plans and strategies are not separately prepared but are integrated within other documents like: Local traffic plans, Urban Transport plans, SUMPs, Transport strategies, Transport plans, etc. However, cities that take walkability seriously, usually develop a dedicated walkability planning process. It starts with the design of a local walkability strategic plan, aimed at increasing the number of walking trips, and to achieve that proposes specific interventions – including soft measures. Some local walkability strategies also include cycling to make a combined strategy. The local walkability strategy also needs to define the specific neighbourhoods where walkability improvements are needed, and this way ensure the concentration of the interventions, or, as a bare minimum, prioritize the walkability improvement of the various neighbourhoods/districts.

Before the beginning of the walkability planning process, an analysis of the existing policy documents (on all levels) must be carried out, including documents on:

14. Figure 9: Existing policy documents affecting a walkability plan

The goal is to identify sections in the existing relevant documents that address pedestrians, to determine who is responsible for which aspects of the pedestrian environment, to flag potential institutional and coordination barriers to pedestrian mobility, access and safety, and to identify key stakeholders who must be involved in improving the pedestrian environment. It is a common problem world-wide that transport and urban planning are the responsibility of many separate departments, agencies, and international organizations – many of which do not naturally work together. Devising and implementing **Walkability Strategic and Neighbourhood Walkability Plans** that engage all of these organizations would go a long way towards encouraging and facilitating coordination.

Providing for walking is governed by legal requirements, policies and planning instruments such as strategies and plans, and the social, transport and administrative context in which walking occurs. Strategic plans for walking work best when supported by broader strategies and policies that value the contribution walking can make to liveable communities.

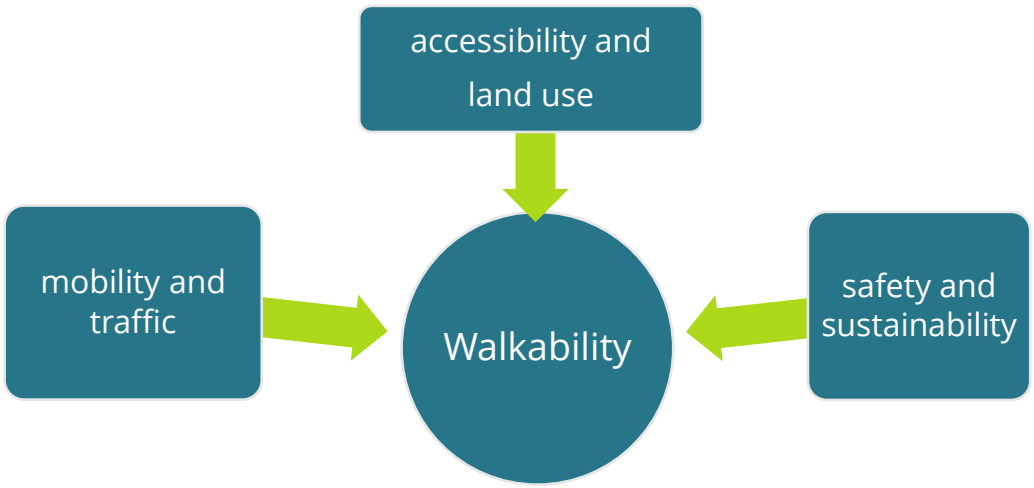
A large variety of stakeholders are involved in policies with an impact on the pedestrians' urban environment at the European, national, regional and local levels. Such policies range from urban and land-use planning to detailed road and street design through transport and traffic management, traffic safety, health promotion, reduction of CO2 emissions or even regulatory policies on the prevention of terrorism and violence. Policies are rarely coordinated with regard to their impact on walking and walking conditions, although some of their components do interact. So, it is crucial to identify documents and assess:

- Legal regulations and guidance with respect to Urban Mobility (if any);
- Regional/national funding criteria that relate to a Sustainable Urban Planning;
- Higher level plans, strategies and objectives that might influence your Walkability Plan, *for example, a National Road Authority's plans for new or improved roads could work against the objectives of a city's Sustainable Urban Mobility by encouraging more driving into the city;*
- Higher level influence on responsibilities or planning perimeter for a Walkability Plan;
- Requirements or initiatives for coordination and integration of different policies, e.g. *the integration of local and regional land use planning such as new housing developments or business parks in the region can decisively change mobility patterns on the local level;*
- And then create a summary of relevant regional/national framework with suggestions as to how to address these points for the local Walkability Plan.

2.4.3 Data, statistics

To be able to identify the necessary improvements in pedestrian areas, assessment of the existing pedestrian system is essential. Furthermore, to measure the actual progress in improving the level of walkability in neighbourhoods and cities, quantifying and measuring walkability is a must. Collecting and analysing data helps identify which elements of walkability have the greatest impact on active forms of mobility and what are the core elements that create the backbone of the surrounding area.

The creation of a successful Strategic Walkability Plan depends on many internal and external factors that provide an overall framework for the planning process and the plan's implementation. The following describes the key factors, information and data necessary to develop a mobility strategy.



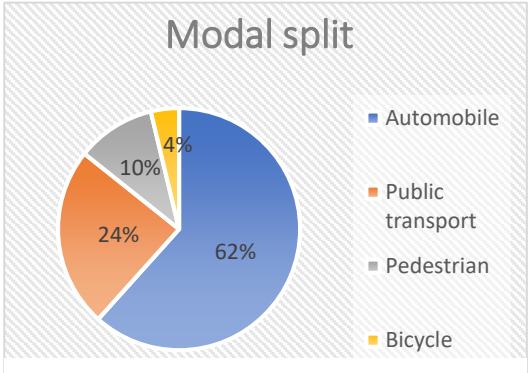
15. Figure 10: Key factors to develop a mobility strategy

2.4.3.1 Mobility and traffic

Mobility behaviour is universally the same for the most parts of Europe: on average, all persons use about 1-1,5 hours per day for their mobility and make about 3-4 trips per day – no matter where they live or what their cultural background is. (EPOMM) The only big difference is the transport mode that people use for their journey and this is what mobility management is all about: how to manage transport mode choice in an effective way with a positive outcome for the individual, for the city, for the economy and for the planet. The modal split is THE indicator for the outcome of this management.

Modal split

Modal split may be calculated on the city level or it can be calculated between the zones in one urban area. After the modal split calculation, the traffic experts and transport planners can plan the land use in a more efficient way. There is no unified approach developed for the modal split calculation in the scientific community, therefore, before actual calculation a set of terms must be defined. It represents an important step towards modal split calculation because input data must be collected in a consistent way for the future analysis. Consequently, modal split is defined as the ratio of different transport modes in the total journey from the origin (O) to the destination (D).



16. Figure 11: Modal split as an indicator

- **public transport:** (bus, tram, train, taxi, metro, public bicycles)
- **private car traffic**
- **cycling**
- **pedestrian traffic** (definition: e.g. more than 100 m, 1-2 minutes)

Traffic counting falls in two main categories: manual counts and automatic counts. The most common method of collecting traffic flow data is the manual method, which consists of assigning a person to record traffic as it passes. Permanent traffic-counting teams are normally set up to carry out the counting at the various locations throughout the road network at set intervals. The duration of the count is determined prior to commencement of traffic counting and it is dictated by the end use of data.

Traffic data

Traffic refers to vehicle movement; this perspective assumes that "travel" means vehicle travel and "trip" means vehicle-trip. Traffic management and road network performance are critical to smoothly functioning urban areas. Trip data is a big data resource for understanding the movement of drivers through the trips they take on road networks.

Traffic volumes, travel speed, road capacities

Data can be collected through non-embedded traffic monitoring devices as loop detectors. Those devices can register the number of vehicles passed in an interval giving the occupancy. Other sources are literally embedded into vehicles and collect position or other vehicle behaviour during its full trip. Such devices can be wireless sensors like Global Positioning System (GPS), floating car data (FCD) and mobile phones. These types of data can eventually be collected in real-time.

Road network data and parking zones

Another important factor that has significant effects on walkability is the road network and parking zones. Determining how changes in the road network impact the vehicle speed at a system wide scale is a difficult task. Effective transport systems have many advantages: reducing land use, generating revenue, reducing development costs, supporting transit and many others.

Parking zones have a significant impact not only on the urban landscape, but also on the choice of mode and transit. Free parking area usually encourages the use of vehicles and causes congestion, pollution, reduction of transport efficiency and public health impacts. The results of many studies clearly state that the creation of effective parking policies can influence the walking and the wishes of communities and should be included as part of the Walkability Action Plan.

Vehicle ownership has a major impact on travel behaviour and mode choice with research indicating that each additional vehicle per household decreases transit mode share by almost 25%. Providing alternatives is crucial to limit the necessity for vehicle ownership or multi-vehicle ownership. Research indicates that providing bus service can have an influence on vehicle ownership decisions.

Related data are as follows:

- Data information for parking zones (free/paid, location)
- Data for vehicle ownership
- Public Transport network maintenance data
- Infrastructure maintenance data

2.4.3.2 Accessibility and land use

Access can be evaluated at different geographic scales. At a fine-grained scale, accessibility is affected by the quality of the pedestrian conditions and the clustering of activities within a site, mall or commercial centre. At the neighbourhood level, accessibility is affected by the quality of sidewalks and cycling facilities, street connectivity, geographic density and land use mix. At the regional level, accessibility is affected by street connectivity, transit service, geographic density and land use mix. Interregional accessibility refers to the quality of highways, air service, bus and train service, and shipping services to other regions.

Three aspects of the built environment (or urban form) are the most important predictors of walkability, mode choice, and physical activity: density, land use mix, and connectivity.

Density refers to providing a concentration of people (residential density), jobs (employment density), or shopping space (commercial density) within a unit area. Density affects travel in at least three ways:

- By influencing what types of households make up the travel market, producing a tendency for less need of travel and a higher dependency on public transit;
- By offering a wider array of choices for meeting a household's daily travel needs within a reach of walking or very short productive auto trips; and
- By making the driving not so attractive due to a lessened availability of parking places (Kuzmyak et al., 2003).

Land use mix refers to providing a variety of land use destinations within walkable proximity of one another, encouraging activity throughout the day by locating different types of activities close together, such as shops and schools within or adjacent to residential neighborhoods, reduces the amount of travel required to reach common activities.

Connectivity refers to providing convenient and direct links between the supportive uses (e.g. residential to commercial or employment). The third essential walkability element is connectivity, which provides convenient linkage between trip origins and destinations. Connectivity can be measured using a number of different metrics including intersection density, block length, or comparing straight-line distances to actual walking distances between two points (i.e. route directness). Research has shown that pedestrian trips are more significantly impacted by the street network than are the vehicle trips (Frank et al., 2005). Ensuring that pedestrian trips are as direct as possible will help to encourage more walking trips to be made.

The **individual dimension of accessibility** relates to the (different) needs, capabilities and perceptions of (different) individuals. Individuals vary in terms of their physical capabilities, which can affect their feasible set of options for transport. Their opportunities may also be affected by their economic resources, or the time constraints, or the information that is available and salient to them, and so on.

Accessibility also has a **temporal dimension** for several reasons; activities/opportunities are often only available at particular times (for example shops will often close for part of the day) or else it is mandated that certain activities (like work) take place at certain times. Furthermore, individuals are constrained in when they can travel to certain destinations and perform certain activities due to the other activities they must perform, such as work, care, or meeting other individuals (Geurs & van Wee, 2004).

Related data to be analysed:

- Demographic data: age, gender, physical condition;
- Demographic and social surveys by districts/areas;
- Overall balance between the number of residents, number of jobs and service provision in the city centre (CBD) and the local (district/secondary) service centres.

2.4.3.3 Safety and Sustainability

Personal Security and Pedestrian Safety

Pedestrian safety is primarily a function of urban form and roadway regulations such as speed limits. Sprawling urban form, wide streets, and auto-oriented land uses all impact safety. The condition of sidewalks (footpaths), crosswalks, street furniture, signage and the accessibility of the pedestrian network also impacts pedestrian safety, in particular for those with limited mobility.

Related data to be analysed:

- Data information about infrastructure condition and street design;
- Road traffic accidents, persons killed in road traffic accidents;
- Theft and crime.

Sustainability

Quantifying **the sustainability of urban transport** is important as evidenced by a growing number of studies to measure sustainability in transportation. Transport has a direct impact on economic and social development. The main economic and social benefits of transport, which are extremely difficult to balance with high social and environmental costs, define the transport sector as crucial for sustainable development.

Transport has a significant negative impact on the environment**.** Emissions of pollutants in transport affect air quality and thus affect human health. One of the goals of sustainable development is to meet the transport needs with a decreasing damaging impact of transport

activity. The guidelines for the future development of the sector are achieving sustainable levels of energy consumption in transport, reducing greenhouse gas emissions and shifting transport to more efficient and environmentally friendly modes of transport.

The indicators included in this index are as follows:

- Modernization of transport infrastructure
- Energy consumption in transport by modes of transport
- Distribution of freight by modes of transport
- Share of electric transport from the volume of urban transport
- Share of newly registered and registered new vehicles
- Persons killed in road traffic accidents

2.4.3.4 Data availability and sources

As much as possible, data collection should be standardized and should allow for sustainability impact assessments at various project phases – planning, design, and operations. Some indicators may rely on existing data sets. Others may require special data collection or analysis. Improving and expanding the collection of transportation-related data will support all sorts of transportation planning, including sustainability planning. For example, improving travel surveys and traffic counts to collect better information on non-motorized travel, travel by children and people with disabilities, energy consumption, and user costs is useful for general transportation planning as well as for sustainability planning.

Main data sources at **national level** are:

- National Statistical Institute (Bulgaria), Hungarian Central Statistical Office (https://www.ksh.hu/?lang=en), Statistical Office of the Republic of Slovenia (http://www.stat.si/statweb/en/home)

Another data sources at **European level** are:

- Eurostat (http://ec.europa.eu/eurostat) – Eurostat Database Core Cities: provides various sustainable and transport performance indicators – data are collected at several different levels, namely: core cities, larger urban zones and sub-city districts (for a smaller subset of indicators).
- European Environment Agency: https://www.eea.europa.eu/data-and-maps
- THE WORLD BANK: http://datatopics.worldbank.org/jobs/country/bulgaria
- https://data.oecd.org/transport/passenger-transport.htm#indicator-chart

Other data sources are:

- **document sources:** Municipal development plan, Strategic plan, Transportation master plan, Public transport strategy
- **different public institutions:** Municipality, Ministry department, National agency of transport, National statistical institute

2.4.4 Consultations and engagement of the local community

2.4.4.1 Why should we involve the local community?

Today, consultation is supposed to be an integral part of any planning process that affects the community. In fact, in many countries there is even legal obligation to deliver and document a consultation process when preparing plans, strategies. When we plan any aspect of the local mobility system, consultation is a must, as urban transport systems directly affect the life of practically every resident in the city. So, when we prepare the local walkability strategic plan (and especially when the neighbourhood walkability plans are designed) we need to deliver a proper consultation process.

And, certainly, we do not engage the citizens and deliver consultation only because it is requested. Improving walkability, making cities more walkable, shifting modal split are major changes – and no change can really take place without the support of those affected most.

Consultation is also important because it greatly improves the quality of the plans. After all, we would like to make people living in the city walk more (and drive less) – so we'd better understand properly what would make them walk and what are the obstacles that deter them from walking. And, the best way to learn that is to talk to them and ask them. We may have some assumptions that prove to be right, but more often, than not, consultations – if done properly – bring to surface various issues we haven't thought of.

So, involving the community from the very beginning of the process is also important to raise their awareness and to (hopefully) achieve their "buy in". If we can achieve that, people will better understand the benefits of walkability improvement, and instead of "suffering" the changes, they become actively involved. As a bonus, if there is a strong and visible support behind our plans, decision-makers will be more inclined to commit resources to the necessary interventions.

2.4.4.2 Who should we involve?

One key to the success of the consultation process is to properly define the groups to be involved. The exact groups may change from one city to the other: the most important guidance is to involve all groups that are affected – positively or negatively – by the possible outcomes of the plan. Some examples of such groups are as follows:

- **Existing pedestrians** – residents of the city who walk regularly; we need to be selective to ensure a proper representation of the local community – at least from gender and age perspective. When it comes to age, children and elderly people deserve special focus.
- **People who currently walk rarely** – they can help us in better understanding what is needed to be done to make more people walk more.
- **Pedestrians with special needs** – usually we tend to focus on "normal" pedestrians, but we want walkability for all – so it is crucial to understand what we need to provide

for people with special needs (wheelchair users, people walking with some type of walking assist like canes, visually impaired people, people with prams, even youngsters with skateboards).

- **Visitors** – in addition to residents, tourists, visitors to our city also walk (quite a lot) and they have a different perspective and needs. If we have a significant number of visitors spending time in our city, we definitely need to understand their special walkability needs, too.
- **People directly affected by improving walkability**/pedestrian infrastructure – when we improve walkability in a city, that also affects groups other than just the pedestrians, chiefly among them the other users of the transport infrastructure – drivers and bikers. They may be the biggest potential opponents of our walkability improvement plans so we'd better involve them, too, from the beginning.
- **People/groups indirectly affected** – these could be for instance shop-owners (who may be afraid they lose their clients if a street is turned into a pedestrian-only area), but also various employers who may need to adjust to the changing mobility habits of their workers.

2.4.4.3 What methods can we use?

Depending on the purpose, the level of interactivity, the number and type of people to be consulted, we need to carefully select the proper methods to be used. While the methods and tools always need to be adjusted to the specific occasion and environment, there are some typical consultation channels we use depending on the purpose.

One-way communication – providing information

The best consultation is where there is real dialogue, however, **providing information**, reaching as many people as possible also has an important place in the communication process.

- **Media** – in providing information, the media – especially the local media – plays a very important role. Press conferences, articles related to the issue of mobility, walkability, interviews with experts, panel discussions on local television are all important tools. It is beneficial to have a media-friendly planning process – one where we regularly provide easy-to-follow, bite-sized information, interesting facts and figures, press-releases, and happily answer questions when they come up. Supportive local media can be a major help in raising awareness.
- **Posters, leaflets, brochures** – although the relevance of printed materials is gradually decreasing, there are still groups in the local community who prefer paper over the internet. So, well-designed, visually-pleasing printed materials with short, easy-to-understand texts can be also useful in explaining to people the importance and benefits of walkability.

- **Presentations** – developing and delivering intriguing presentations is also useful; such presentations can be delivered at conferences, in schools, also other types of local meetings of various groups.
- **Public meetings** – the best public meetings are where there is two-way communication; however, sometimes it is helpful to have public meetings where city leaders present issues related to walkability and mobility to a large number of people.
- **Internet** – the internet is an increasingly important channel of information provision (as well as of exchange of information, but we come to that later) – what's not on the internet is does not exist for certain groups. So, having information on the internet (for instance a dedicated subpage on the city's website, or even a specific site dedicated to walkability) is crucial.

Getting information is at least as important as providing information. The most widely used methods are presented below (note that in most cases, even in this group of methods some level of interactivity is involved):

- Questionnaire surveys are important tools of obtaining information from the various groups to be consulted. Designed properly, these tools can be valuable sources of information on the perception and opinion of people regarding different aspects of walkability. There are different ways of carrying out questionnaire surveys – you can use interviewers at the street who stop and ask people randomly; web-based questionnaires are quick and simple ways of getting information; and, of course, sometimes you need to deliver a survey based on representative sampling. More on questionnaire survey in the next chapter.
- "Walkability booth" at cultural and sports events, exhibitions: it could be a good idea to create a small booth or even a simple desk that can be set up at events wherever there's a concentration of residents. These events provide good occasions to strike up conversations and ask the opinion of people about the various aspects of walkability – or even carry out a quick questionnaire survey. It also makes walkability planning more visible.
- Focus groups involving representatives of various target groups can also be useful tools to discuss even more complex issues – done properly, this tool can provide extremely useful qualitative information.

The "highest level" of consultation where real dialogue, joint thinking and **co-creation** takes place. Such occasions enable residents to become active participants of the planning process.

- Smaller scale workshops can be used to work on a specific topic related to walkability with selected people, or with representatives of specific target groups (for instance students or retired, elderly people). Such workshops are not simply about exchanging information – they could efficiently contribute to identifying the solutions to specific problems.

- Co-creation is possible also on a larger scale: it may be a good idea to organize for instance a walkability day where there are many people present from different groups of the population and participate in a co-creation process. You need to be aware, though, that such events are costly, and require careful planning, as well as high quality professional facilitation to succeed.
- **Hackathons** started from the IT community – a hackathon is a design sprint-like event in which programmers, graphic designers, interface designers, project managers and even users collaborate intensively on software projects with the purpose to create useable software. Usually hackathons or hack days last 24 hours. Lately, the approach behind hackathons has been applied to other types of problems, also in urban development. A hackathon or design sprint is a co-creation session at its best, arriving at the prototype phase of the development process. Hackathons (or design sprints) may be attractive for the younger audience and can result in creative, novel solutions.
- **Social media** can also be used for active dialogue around specific topic. While it does not allow deep conversations around issues, it still facilitates discussion, exchange of information, ideas, possible solutions. Today, engaging people via social media cannot be ignored. Also, it is an inexpensive tool.

2.4.5 Surveys

2.4.5.1 The importance of surveys

In the previous chapter, we talked about the importance of properly understanding the urban transport environment, the infrastructure, the modal split, as well as the mobility behaviour of people.

Depending on the country, very different levels of statistical information may be available – but overall, in most places city-level transport statistics is quite limited. Even if appropriate data are available, it is impossible to understand the behaviour and motives behind the mobility choices of people from existing statistical data.

That is why we need to use various forms of consultation. Most of the consultation methods enable us to collect useful qualitative information. Questionnaire surveys, however, can provide a combination of qualitative and quantitative information and help to prepare more realistic strategies.

Planning and delivering surveys is a huge topic requiring specialized knowledge and extensive practical experience. Therefore, we can't possibly undertake to provide detailed instructions regarding questionnaire surveys, but – given the importance of the issue in the planning process – we present some guiding principles.

2.4.5.2 What kind of surveys?

Ideally, any city committed to increase the share of active transport should deliver questionnaire surveys on travel habits, with a focus on the use of active transport modes. Such surveys should be carried out on a regular basis (every two or three years) among the residents of the city. The results of the first such survey can be channelled in the walkability strategy, while consecutive ones can provide feedback on the effectiveness of the interventions implemented – and thus support the monitoring and evaluation process.

For best results, this should be a survey based on a sample representative to the city's population. Two sample criteria could be proposed:

- Age groups
- Place of residence within the city (downtown or suburbs)

While delivering the survey online could be tempting, as not everyone in the target population has internet access, it is not recommended. For best results the survey should be carried out using questionnaire based phone interviews or (even better) questionnaire based personal interviews.

Either way, given the complexity of such a survey, it is best to hire a professional company to design and deliver the survey.

While this would be the ideal way, life is not always ideal; time constraints, budget constraints could get in the way and we need something simpler. Instead of dropping the questionnaire survey entirely, we propose to use the method anyway, but in a less complex way. The results of such a "light" approach may be slightly less reliable, but the survey can still give us valuable insights regarding the travel habits and related perceptions of the residents.

In this case, we recommend using a relatively short, simple, easy-to-understand questionnaire (a sample, that can easily be adapted to local circumstances, is included in Annex 4).

Using some quick questions regarding the basic demographic attributes of respondents (for instance age-group, gender, educational attainment and residence within the city) can even help us to understand the distinct mobility behaviours of different groups.

If we use this "survey light", the more people respond, the better results we can count on. Therefore, its best to use a variety of channels to get the questionnaire to people:

- First and foremost, having an online version in place is crucial. There's an increasing number of people – especially from the younger generations, who would never touch a paper-based questionnaire, but gladly fill in an online questionnaire. So, we need to make an easy-to-access and visually pleasing online version available, and – using different channels (newspaper, news sites, local television, radio stations as well as the most popular social media networks) – we need to encourage people to fill it in. Offering sweepstakes would further sweeten the deal.

- If we have a "walkability booth" set up at the location of important city events, people can stop by and fill in a questionnaire there – on paper or using, for instance, a dedicated tablet.
- We can ask schools to disseminate the questionnaire and ask their students and their family members to fill it in.
- We can also team up with large employers.
- We need to find ways to reach the elderly population – we can, for instance, approach elderly homes.
- We can use any other relevant organization, institution, NGO or advocacy group in our city.

2.4.5.3 Topics to be covered

Certainly, any questionnaire needs to be tailored to the local circumstances and the specific purpose of the survey. Nevertheless, it is possible to identify some important areas that need to be covered.

Topics to be covered	"Representative" survey	"Survey light"
"Demography" • Age-group • Gender • Location of residence within the city (if resident of the city) • Educational attainment	✔	✔
Typical mode of travel to work/school	✔	✔
Walking in the past 7 days	✔	
Recent travels – type and travel and purpose	✔	
Average number of minutes/day walked	✔	✔
Frequency of biking	✔	✔
Frequency of using public transport	✔	✔
Obstacles of walking more	✔	✔
Factors that would motivate more walking	✔	✔

17. Table 6: Necessary topics in a questionnaire

As a final note, it is worth mentioning that questionnaire surveys are flexible tools that can support the process of information collection. Besides the general questionnaires focusing on the overall topic of walkability, depending on the time and resources available, you can carry out smaller questionnaire surveys focusing on certain specific aspects of walkability (for instance safety) or obtaining information on the perceptions of specific target groups (for instance schoolchildren).

2.5 Strategy development

2.5.1 Strategic assessment

2.5.1.1 The essence of strategic assessment

Strategic assessment is a process of strategic decision-making based on the information already collected and received. This is a large-scale evaluation, which, after detailed and specific analyses of individual data, offers generalized solutions and explores their combined effect. The reason for making a strategic assessment is to seek/validate solutions that would benefit everyone and would not prioritise a group of users and their interests at the expense of another.

2.5.1.2 Organising the data

The collected data is organised by means of transportation and type. For means of transportation, the data is separated for pedestrian, cycling, public transport or private transport (cars). The types of data can be separated into statistical data from official sources of statistical data, statistical data conducted by researchers for the needs of the plan, regulations and strategic documents for mobility policies and observation data – the variety of surveys organised in tabular or graphical forms.

2.5.1.3 Data analysis

Data analysis needs to be done on a cross-sectional basis, once by means of transportation and secondly by type. The aim is to identify the strengths and weaknesses of individual modes of transport and to assess the potential for future development and improvement of the situation. It looks at the main routes, where the different types of streams start and where they end, what places on these routes are dangerous, where the infrastructure is inadequate or missing, where the infrastructure is sufficient, but in poor condition, which are the informal routes that can be formalised without difficulty for other users, which areas need to improve their pedestrian/bicycle infrastructure beyond the mainstream or outside of the main routes. The analysis ends with summaries for each mode of transport.

2.5.1.4 Strategic assessment of the possible remedial measures and interventions

After the summaries, proposals are made for corrective interventions for future infrastructure development and local policies/practices to promote improved pedestrian mobility

(walkability). Strategic assessment is being prepared to support decision-making, assessing the need for interference, based on strategic considerations.

Strategic considerations	Yes	No	Unpre-dictable	Additional comments
Is there a need for intervention and why? Does the intervention correspond to our intentions?				
Does the intervention bring community benefits? How will the intervention be achieved?				
Is the intervention applied elsewhere and what is the effect of its application?				
Does intervention bring environmental, social and economic benefits at the same time?				
Will the intervention lead to a reduction in the existing risk for pedestrians?				
Is it permissible to intervene in the light of current legislation?				
Is the intervention permissible in terms of the current urban planning predictions for the city?				

18. Table 7: Strategic assessment of the possible remedial measures and interventions

Based on the answers to these questions, a concise strategy is developed and the final corrective measures/interventions supporting the strategy are defined.

In addition, an assessment of the future need for intervention can be made. For this purpose, research is carried out on similar locations with more developed infrastructure where our future needs have already occurred. It is also possible to create a model/equation that creates a relationship between the existing population and the number of pedestrians, thus predicting the future need for pedestrian and bicycle infrastructure based on a predominantly declining population.

2.5.2 Strategy development

Developing strategies is a crucial task of every future plan for improving walkability. Strategies consist of a vision for providing better walkability and defining goals with objectives that will lead to the successful realization of that vision. Strategies should focus on defining action plan, monitoring tools, clear ideas on how the interventions are going to be funded and how the governance is connected to the implementation of the strategy. The development of the

strategy is directly related to the identification of the necessary interventions under the previous table and should consider the inhabitants' opinions and the surveys that were conducted. It must be approved by the inhabitants during a communication process and, of course, by the city council/authorities.

2.5.2.1 Creating vision, defining objectives

Walkability plans are tools to contribute to a shift towards sustainable urban mobility. The vision, goals, and objectives lay the foundation for all recommendations of the plan. Together, they describe the preferred future of walking in your city and guide actions to achieve the desired outcomes.

Create a Clear Vision

The vision should express the community's aspirations and future intentions around walking. It should be simultaneously bold and achievable. A strong vision:

- Describes how walking fits into the city's future in a brief, fascinating manner;
- Provides a sense of the outcomes that people hope to achieve;
- Establishes a clear direction for the development of goals and objectives.

Getting the vision right requires public outreach, collaboration, and refinement. This should include a constant process in which planners receive ideas, draft potential vision statements, and circulate them for feedback and revisions. This process may repeat more than once before consensus emerges.

Example for Vision:

To create a city where people choose and are able to walk as a way to travel, to be healthy and to relax, a city where authorities, organisations and individuals have:

- recognised the value of walking;
- made a commitment to healthy, efficient and sustainable communities; and
- worked together to overcome the physical, social and institutional barriers which often limit people's choice to walk.

Most visions of an active city share some common factors or themes:

- a wide range of accessible and attractive routes for active transport such as cycling and walking and access by foot or bicycle to efficient public transport;
- mixed-use, high-density communities with easy access to destinations such as shops, parks, schools and recreation facilities;
- walkable, attractive neighbourhoods and trail connections between neighbourhoods;

- planning decisions related to the built environment consider public health and physical activity concerns;
- schools, workplaces and health care facilities support active living choices;
- spacious green and open spaces for physical activity, sport and enjoying nature;
- accessible facilities and equipment for physical activity;
- streets and neighbourhoods that are safe in terms of road safety and crime;
- programming and services for special groups that enable active living for all ages and abilities;
- experts in local government and other sectors;
- strong involvement by a variety of stakeholders and citizens, and social norms and expectations that support and encourage active living as a way of life in the city.

Develop Plan Goals

Goals are usually fairly broad statements that reflect the achievement of the vision, make it more explicit, and help guide actions. Goals describe the positive change – end results – that you want to achieve, such as:

- Increasing rates of walking;
- Increasing the safety of pedestrians.

The main goal of a Walkability Plan is to ensure that walking has a high profile in transport and urban planning throughout the world. What is not measured is not seen as important, and what is not seen as important is not properly measured. With that in mind, it is best to have goals that are measurable, otherwise it is impossible to know whether we have achieved them. Therefore, when we identify goals, we immediately need to think about possible indicators to measure them. The number of goals in active transportation plans varies, although most plans contain between two and six. Nevertheless, it is best to keep it simple and not have more than two or three goals.

Examples for Goals

- Provide safe, convenient and enjoyable travel for pedestrians;
- Increase the amount of trips made on foot;
- Increase the average time per day spent walking;
- Make the modal split more sustainable; and
- Reduce the number of car trips.

Generate Plan Objectives

Objectives specify how each goal will be achieved. Each plan goal is likely to be associated with several objectives, since there are almost always multiple pathways to the attainment of a given

goal. Objectives can be seen as a group of tasks or initiatives that, if completed, will result in (or at least move toward) the accomplishment of a particular goal.

Examples for Objectives

- Establish a linked network of walkways;
- Create linked neighbourhoods by providing accessible, efficient, and convenient methods for pedestrians to travel to the places where they live, shop, work, and play by expanding and improving the pedestrian network;
- Help pedestrians choose safe and convenient routes;
- Research and develop a range of walkability indexes (like Walkscore 8), which can be used to measure and monitor walkability. Undertaking annual monitoring will allow cities to track the success of the steps taken on walkability initiatives;
- Provide maps and infographics on public spaces and on massive urban transport stations showing pedestrian routes and travel time to public locations within walkable distance;
- Manage vehicle speeds;
- Promote the health benefits of active transportation.

While goals can be more or less general, objectives should be more specific. Measurable objectives are best because they enable measuring and evaluation of progress. For example, “Decrease pedestrian fatalities” is a good objective because it clearly specifies both a unit (pedestrian fatalities) and the desired direction of change (a decrease). Based on this objective, the plan could then create a performance standard or a reference point that defines success as a 10% decrease in pedestrian fatalities over a certain period of time. In contrast, “Make walking fun,” is problematic as an objective because it is unclear how “fun” will be measured or what level of “fun” might be considered as success.

2.5.3 Identifying interventions

2.5.3.1 Intervention logic and level of interventions

Once we understand where we are in terms of walkability, what are our strengths and challenges, we know what we want to achieve (we have a clear vision and goals in place), and we also decided which areas do we want to focus our efforts, we need to identify the actions that enable us to meet our goals.

Although developing our strategy and identifying interventions is not a clear-cut linear process, a good strategic plan can tell us **where we are, where we want to be, and how do we get there**. So before moving to the interventions, it is worth checking whether the intervention logic is in order.

Below, we demonstrate it through a simplified example.

- Let's assume that our core problem is that the residents of the city walk significantly less than people in comparable cities. (Certainly, we have indicators to back this statement – for instance the average time per day spent walking.)
- We did our homework, so we understand the main causes behind this problem:
    - Our pedestrian infrastructure is outdated;
    - People perceive streets as unsafe;
    - Public transport service quality is poor.

    (Certainly, at each cause, we go much deeper than that, but for the sake of the example, now we remain at this level).
- So, the specific goal of our strategy will be to increase the average time per day spent walking.
- To achieve that, we will focus on the following objectives:
    - Improving the pedestrian infrastructure;
    - Increasing safety in our streets;
    - Improving the quality of public transport.

So, we have a clean intervention logic: we know what is the problem, we understand the reasons behind the problem, we know what we want to achieve, and we also know what areas we want to focus on to meet our goal.

Now it is time to identify specific interventions. When doing that, however, we have to keep in mind that this is a strategic level document, that will ideally be translated into neighbourhood level plans defining street level interventions. Consequently, this document is supposed to identify:

- Specific interventions (affecting the entire city, not just a single neighbourhood, street or street section) aimed at improving walkability (for instance organizing regular car-free days, implementing city-wide awareness raising campaigns, reducing the number of parking places, etc.);
- Interventions that are implemented in various parts of the city (for instance reducing the speed limit in small residential streets or installing traffic calming infrastructure at schools across the city);
- Preparation of neighbourhood walkability plans, and the neighbourhoods where such plans will be designed.

Examples of Interventions

To help the identification of interventions, below we provide examples of actions that may be proposed (depending on the needs and specific circumstances in the city) in the strategic plan. These are just some examples – there are many other possibilities. We encourage everyone to use this list not only as a menu, but also as an inspiration to come up with new ideas to address the specific problems of the city in question.

- Car-free initiatives and open street days: car-free initiatives are specific days every year or month when people are encouraged to leave their car at home and use other forms of transport; open street days are days when certain streets of the city are closed for vehicular traffic for a short period of time.
- Awareness raising campaigns on walking and its health benefits.
- Competitions promoting walking – for instance participants commit to walk at least a certain amount of time or distance every day and undertake that their results – measured by their smartphone or activity tracker – are fed into a city database.
- Educational programmes on the importance and health benefits of walking at schools.
- City-wide street design principles and engineering templates to be applied whenever a new street is built or an old one is rehabilitated.
- City-wide street furniture principles, guide and catalogue – defining what street furniture can be placed and how in different parts of the city.
- Identification of streets to be turned into pedestrian-only streets or shared streets.
- City-wide speed-reduction initiative to be applied in all streets falling into a certain category.
- Public transport development programme.
- Street signage principles and templates.
- Citywide development of parking system – number of places, pricing.
- Building regulations and principles to increase density, enable mix of functions and improve the conditions of walking (for instance using maximum parking requirements instead of minimum parking requirements when a new building is erected).

2.5.3.2 The process of identifying interventions

You've been through the analysis of various documents and statistical data, you have participated in endless consultations, delivered numerous surveys, spoken to experts and have an agreed vision and a set of objectives in place. Now that you got to this point, you feel that you know everything possible about walkability problems – and you have a very clear view what the city should do. The temptation is big to spend some time alone, sit behind a desk and write the chapter on interventions.

Don't! Don't waste the knowledge and wisdom of your local support group at such an important phase of planning. Instead, schedule a meeting for identifying interventions. Why? There are a couple of reasons.

1. By now – if you worked well – members of the support group are committed and want to share their thoughts – do not take this pleasure away from them.
2. By involving other people – and their diverse expertise – you multiply the number of innovative ideas.
3. By being part of the co-creation process members of the support group will be committed to the interventions and will gladly have a role in their implementation.

The most important steps in the process are as follows:

- Set the date and time of the workshop – to do that, informally consult the key people you definitely want to be there about their availability. You need to dedicate sufficient time to the workshop – co-creation to identify interventions is not something that can be done in one hour. Allow at least 2,5 hours, possibly even 3 for the workshop.
- Arrange a room: it must be large enough to host the number of people you expect, and suitable for flexible arrangements. Don't use the official meeting room of the mayor's office with huge, immovable tables. You need a room where people can freely move around, work in small groups and post the results of the group work on the wall. The place has to be centrally located – and easy to access on foot. Provide food and drinks.
- Call the meeting – invite people well in advance: you want as many people present as possible. With the letter of invitation send out a summary document presenting the most important outcomes of the planning process up to that point. You may be tempted to send every possible detail, but it is better to send a concise paper that can be quickly read through but contains all important information – people will actually read it. Provide ample time prior to the meeting.
- Start the meeting – after introducing the purpose and the agenda of the workshop, (even though you assume that everyone read the summary paper), give a quick presentation highlighting all the necessary information.
- Time to roll up the sleeves and work. Use a methodology fitting the purpose and the circumstances (like for instance the number of people), and start the ideation process. In designing the methodology, you can rely on a wealth of workshop tools, you use them as they are, or adapt and combine them. If you don't have sufficient facilitation experience, use the person in your team who has. The important thing is to have a plan and avoid improvisation by any means. Good facilitation equals good results and satisfied participants, poor facilitation (or no facilitation) leads to poor results.
- Brainstorming and listing a bunch of ideas is not sufficient – you should dedicate time to categorising the ideas, and to carrying out at least an initial assessment and selection. When assessing the ideas, use predetermined criteria the team identifies together (like for instance the cost of the intervention, the time necessary to implement it, its impacts, acceptability by the population, etc.).
- Finish the workshop with drawing up a clear plan of action: delegate responsibility for each selected intervention to a member of the group, and have a timeline for elaborating the interventions. No need for detailed feasibility studies, though; a simple, one-page description of the interventions (objective, short description of activities, outputs, results, estimated budget) would suffice at this stage.

2.6 Implementing the strategy

Strategies are useless without good implementation and making it wrong can lead us to unwanted situations and further difficulties on the communication with people. The key points from the strategy are its objectives to improve the key ingredients for walkability and we should define very carefully a specific step by step procedure and timing for implementing the interventions that will lead to the successful realisation of the goals. To implement successfully the strategy, we need to implement all the interventions in the right time, in the right order and to verify their success among people before the next step is done.

2.6.1 Approving the strategy

After identifying the interventions, you have all the important ingredients of an excellent walkability strategic plan. Work with the members of your core group to put everything together and prepare the final draft.

For some reasons, we have a tendency to write lengthy strategic plans; but the real value is in the content, and not in the volume of the plan. So, it is best to be concise: focus on the essence and cut out all unnecessary information – your readers will thank you later.

Once you have a final draft in place, organise a support group meeting. Send the draft strategic plan to members well in advance, so that they have sufficient time to study it. At the meeting, **briefly** present the plan (after all, everyone had time to study it), and then discuss the document. By this time, if members of the support group have been active part of the planning process, probably there would be a small number of proposals – if any. Nevertheless, have an open discussion. By the end of the meeting, it is important to:

- have an agreement on the changes that may need to be made;
- have the document approved (pending the proposed changes).

After the meeting, make the necessary changes and prepare the final version that has the approval of the support group.

This is the version you will submit to the city council for approval. If possible, use the help of the mayor or the responsible vice-mayor, and make sure that the walkability plan is not just one insignificant item among the topics to be discussed at the council meeting, but a major item deserving the attention of council members. You want the council members to understand the importance, implications and potential of the plan, and preferably have the commitment and support of as many of them as possible.

2.6.2 Communicating the strategy

Communication is a crucial element of the entire planning process, as we said earlier. Having a walkability strategic plan approved by the support group and the local council is an important

milestone. You need to use this occasion to rev up communication and get the news out to as many people as possible.

- After the decision, have a press conference dedicated to the walkability strategic plan. At the press conference have the mayor or responsible vice mayor to briefly present the plan and highlight its importance. Distribute a press release and a condensed, visual version of the plan (containing information interesting for the press and the wider public) to the journalists being present.
- Disseminate the condensed version of the plan through various other channels, too:
    - Make it available for download at the website of the mayor's office, or the dedicated site of walkability planning. (Certainly, you need to make the full version, too, available on the site.).
    - Use visual elements of the condensed version (graphs, figures, simple infographics) with short explanations for sharing on social media channels.
    - Be an evangelist of walkability: grab every occasion – discussions on local radio stations, television interviews, interviews in the local newspapers, presentations at conferences – to explain the importance and benefits of walkability. Be a part of related conversations on social media channels, too.

Whenever you communicate about the plan, make sure to mention the next steps:

- starting the implementation of the plan;
- launching the preparation of neighbourhood walkability plans.

2.6.3 Starting the implementation of the strategy

In the plan, there are sections dedicated to implementation (action plan, monitoring, funding, governance). Should have been mentioned earlier, but carefully plan these chapters – this can provide a nice framework for the implementation process – and an itinerary of tasks to be done.

Do not let the walkability strategic plan to become one of the many plans, studies, feasibility studies sitting on the shelf, collecting dust. Use the momentum of the planning process and launch implementation as soon as possible. It may take time to arrange funding for more costly interventions, but you can quickly start smaller scale soft projects – do it as soon as possible to have quick wins. This will keep the topic of walkability in the forefront.

2.6.4 Launching the preparation of neighbourhood walkability plans

While having a local walkability strategy is a major step forward, the really important street level specific interventions shall be included in the neighbourhood walkability plans. Therefore, it is crucial not to stop here – you should launch the preparation of neighbourhood level plans. As a minimum, such a plan should be designed for the immediate core of the city – the city centre.

Starting to design (and then implement) specific walkability improvements in the city centre is proposed for numerous reasons:

- The city centre is the district in the city which is probably used by the most residents – improving its walkability affects many people.
- The city centre is visible for everyone – seeing the city centre becoming a better place would help to alleviate doubts regarding the importance and benefits of walkability.
- The city centre is the "face" of the city – if it gets a more walkable, better place, that will contribute to a better image of the city.
- The city centre is one of the places in most cities where visitors concentrate.

3 Part3 - Preparing the neighbourhood walkability plans

3.1 Logic, structure

3.1.1 What is this plan?

The city level local walkability strategic plan provides a strategic framework, challenges, objectives and city level interventions to significantly improve walkability and implement a shift towards sustainable urban mobility in the city. Once your city has it in place, you are already way ahead of most of the cities. However, you cannot stop here – the strategic plan needs to be translated into very specific neighbourhood walkability plans, each focusing on different parts of the city. (The relationship of the two types of documents is presented in Chapter 1.5 - What plans to prepare?)

So, it is time to launch the preparation of neighbourhood level walkability plans. How many such plans are needed? That depends on the size of the city (large cities will have more neighbourhood level plans, while smaller ones only need a handful), as well as the resources available (if there are ample resources for walkability planning, it is possible to have a good coverage). If there are limited resources, as in most cases, you may consider having a scheduled process of preparing neighbourhood walkability plans, starting with the parts of the city most important from walkability perspective.

It is also important to note that there is no need to cover the entire city with neighbourhood level plans: industrial areas, residential areas, already well designed, walkable places can be ignored without any problems.

When preparing neighbourhood level walkability plans, the use of participative approach and engaging the community is crucial. People generally tend to agree with the beautiful principle of walkability, or even with related interventions – if such interventions take place elsewhere. When, however, changes start to happen in their immediate environment, the NiMBY (not in my backyard) attitude suddenly cuts in. So, you need to extensively consult and actively involve the residents and other stakeholders when preparing the plans.

Neighbourhood walkability plans are not general, theoretical plans; on the contrary: they are very specific, concise documents, that focus on identifying the concrete obstacles of better walkability, failures of the pedestrian infrastructure, and they propose solutions. Most of the solutions are street level, and of physical nature (like for instance painting pedestrian crossing signs at specific points of a specific street).

3.1.2 Key elements of the plan

In Annex 2, we attached the proposed structure of the plan; however, below we walk you through its most important elements.

- Definition of the coverage of the plan
  After a short introductory text, first you need to exactly define the specific area covered by the plan. This section should contain the list of all streets involved, and a detailed map that shows exactly the area covered.
- Understanding the neighbourhood
  You need to briefly introduce the area from a walkability perspective. No need for general descriptions, though; you simply need to present fact-based information, data describing the aspects important for walkability. In this section, you provide basic data (like the surface area, basic demography, number and length of streets, etc.), as well as describe the area's location within the city, its links with other parts, traffic challenges, access by public transport, etc. Finally, you also need to present the list of major traffic attractors and generators.
- Walkability review of the area: identification of walkability problems – in this section you provide a detailed overview of walkability problems. It is divided into two parts:
  - General overview of walkability in the area – a short, to-the-point description of strengths and weaknesses from a walkability perspective. You can use the criteria presented briefly in Chapter 2.5.1 to structure the walkability characteristics of the neighbourhood.
  - Street-level audit – in this part you present a summary of the detailed street level audit carried out for the streets of the neighbourhood. Here, you only present a summary (we propose a table structure in the document attached in Annex 2), and the details of each street is presented in the annex of the plan.
- Interventions to improve walkability – this is the section where the very specific proposed interventions are presented. Here, you present all the street level actions that would be necessary (again, we propose a table format for that), but also the general actions that are not dedicated to just one specific street in the neighbourhood.

3.2 Understanding the neighbourhood

3.2.1 Demographic and social analysis

3.2.1.1 Objective of demographic and social analysis

Demographic and social analysis is important because it helps to understand the residential density and the structure of the population in a variety of qualitative and social dimensions. In

order to select the most appropriate strategy to improve pedestrian mobility, the laws and patterns of development in time and space of the neighbourhood's population or parts of it must be understood. For the need to implement specific measures for walkability at a local level, the social structures and groups of the population targeted by the strategy should be identified. Demographic and social analysis will help us to understand the qualitative characteristics of the population and, accordingly, we can more clearly predict and specify measures and interventions for improving walkability.

3.2.1.2 Content of demographic and social analysis

We can obtain a variety of data but for our needs the minimum is residential density, average age and physical conditions. Of course, we could obtain a full image at place by:

- Calculating the residential density;
- Understanding the types of demographic growth:
  - natural growth – births and deaths, marriages and divorces;
  - mechanical growth – migration processes;
- Understanding the demographic structure of the population and trends of change:
  - by age and gender;
  - by family status;
  - according to the educational level;
  - by ethnicity;
  - by income;
  - by employment;
  - by physical status.

3.2.1.3 Methods of data collection for demographic and social analysis

- Direct methods – current and past statistics collected from official sources or polls for the walkability plan;
- Indirect methods – analysing economic, political, social and other indicators to determine demographic characteristics. It is harder to collect and analyse these kinds of data because of the necessary reliable information.

3.2.1.4 What to do with the data

Residential density is of huge impact not only by suggesting the need for improvements such as correct sizing of walking spaces and pedestrian/bicycle lanes, but also to find how the demographic characteristics reflect people's life and of course their mobility.

The main analysis output should bring out data about the variety of social groups of people and the differences in their habits toward walkability. This data must be directly connected to other data such as distances from attractors, generators, etc. For example, young students tend to walk to school if school is nearby or have a school bus if it is in longer distance. In the opposite, older students may prefer to use a bike for longer distances than the bus. In dense areas there

are shorter distances to attractors/generators and walking is easier to promote than in less occupied areas. If the analysis shows us a big diversity of people, and especially the presence of children, seniors and people with disabilities, that would call for certain qualities of the walkable spaces. Demographic and social analysis is of a crucial importance to suggest the right improvement.

To obtain these data we usually need to conduct detailed observations on site. It is crucial to understand for whom our strategy objectives are addressed. Which citizen groups make short or long travels? Are there many young families with kids or the area has mainly older people who need different approach? Are people in the area healthy and sporty and what are the obstacles for them? Understanding the demographics of a neighbourhood can also help us in better communicating with people. For example, if the population in one neighbourhood is younger we should think of a different communication process than if it is older. The observations and understanding of the demographic and social analysis are part of the data that needs to be collected for the walkability strategy to target the right people and to be successfully implemented among the inhabitants.

3.2.2 Identification of pedestrian traffic attractors and generators

Understanding how different places in the city influence human mobility is significant for walkability planning. In general, there are three ingredients necessary to promote pedestrian activity: land use, presence of facilities, and design of facilities. A mix of different land use types and activities in close proximity to one another encourages walking.

3.2.2.1 Attractors, generators and detractors

Understanding the patterns by which places in the city attract or generate visitors is essential for planning and modifying the transportation system/mobility plan. To understand pedestrian traffic, we can define and analyse three basic components:

- **Pedestrian attractor:** a residential, commercial, office, recreational, or other land use that is expected to be an end destination for pedestrian trips during a particular time of day.
- **Pedestrian generator:** a residential, commercial, office, recreational or any other land use that serves as the starting point for a pedestrian trip during a particular time of day.
- **Pedestrian detractors:** detractors generally undermine broadly accepted pedestrian improvement goals of safety, connectivity, and walkability. The pedestrian detractor data helps identify locations that are in greatest need of improvements to make them attractive to pedestrians.

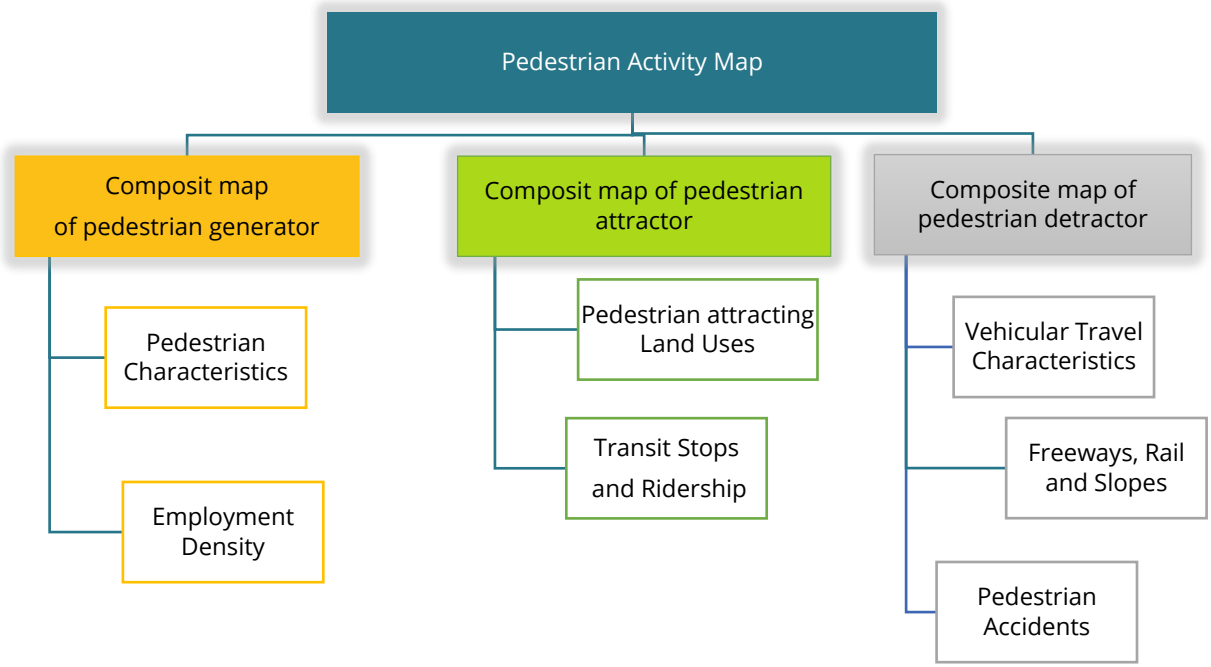
Pedestrian generators	Pedestrian attractors	Pedestrian Detractors
- transit centres - transit stops - multi-family housing - health care and social assistance - shared-use path	- schools, college, university - parks - libraries, post offices, community centres - hospitals - senior centres - retail, recreation and services - major shopping centres, supermarkets/grocery stores - large employment centres - rail stations, bus transfer centres - hotels, recreational areas - residential developments of at least moderate density - parking garages or large parking lots	- pedestrian/vehicle collisions, - high traffic volumes - high posted speed limits - steep slopes - un-traversable infrastructure (freeway and rail corridors)

19. Table 8: Attractors, generators and detractors

In order to assess the condition of the pedestrian system of the (city) neighbourhood we need to know what level of pedestrian activity is being experienced. It is also important to know where pedestrian activity is occurring to better understand the reasons why there may or may not be pedestrian activity in different areas of the town/neighbourhood.

3.2.2.2 How to measure pedestrian activity?

Pedestrian traffic can be measured by the number of pedestrians observed at various locations throughout the neighbourhood and then make composite map for identifying areas across the neighbourhood that warrant relatively higher consideration for pedestrian projects and improvements.



20. Figure 12: Pedestrian activity map

Composite map of pedestrian generators: This map summarizes population and employment densities, as well as the distribution of key pedestrian-generating subpopulations. Population characteristics associated with higher levels of walking, including youth, elderly, physically disabled, and median household income. Certain population characteristics, such as age and household income, have been shown to influence pedestrian activity. *(For example, youth tend to walk more given they cannot legally drive; elderly and physically disabled tend to walk or use sidewalk facilities more given physical impairments which may restrict their ability to drive; and finally, lower income households tend to walk more given their lack of access to vehicles for driving.)*

Composite map of pedestrian attractors: This map summarises the distribution of various land use types across the neighbourhood, that are typically associated with high levels of walking, especially land use types that attract a pedestrian trip, such as schools, transit stops, parks, beaches, retail, and civic facilities (libraries, post offices, and government buildings).

Composite map of pedestrian detractors: This map summarises the distribution of various factors across the neighbourhood, which tend to discourage people from walking: vehicular travel characteristics; freeways, rail and slopes and pedestrian accidents). For example, presence of infrastructure and natural barriers inhibit pedestrian network connectivity. High accident rates, high speeds and traffic volumes are generally indicators of low levels of pedestrian safety.

3.3 Collecting information using primary methods

3.3.1 Questionnaire survey

Questionnaire survey was an important and useful method as part of preparing the city level walkability strategic plan – it is even more relevant on neighbourhood level. Here you ask people about their very own (loved or hated) neighbourhood, their immediate environment, which they know intimately, see the problems and surely have opinions and ideas of how to make it more walkable.

Besides, by asking people you can have a much better understanding of their attitude towards walking, and the most important causes of not walking. Finally, if the questionnaire survey is done properly, it could become a useful vehicle of awareness raising and education, too: you can make people aware of the importance and benefits, as well as of the most important conditions of better walkability by formulating the questions.

As the neighbourhood level walkability plan deals with very specific obstacles of walking and we want to know the opinion of people about streets they know well, the questionnaire can (and should) contain much more specific questions than the one used in the strategy phase.

Here as well, you can use (and we encourage you to do so) an online version of the questionnaire: there is an increasing segment of the population – especially the younger generations – who prefer this method. With active promotion, you can expect more responses than with a general city level questionnaire.

However, at neighbourhood level it is definitely a good idea to use the survey to get into personal contact with people. Therefore, setting up “walkability booths” or tables in central areas of the neighbourhood, and having volunteers stopping people, having a conversation and asking them about walkability is a good idea. It is always helpful to offer something – a small present – in return for people’s time and effort.

In addition, you can also carry out targeted actions to collect responses: you may – for instance – approach secondary schools in the neighbourhood and ask for their support. They can dedicate one or two classes to walking around a neighbourhood and then have the students fill in the questionnaire.

In terms of quantity, the minimum number highly depends on the number of inhabitants and users of the specific neighbourhood. Be careful, though! The number of residents in the city centre for instance may not be that high, but the number of frequent “users” is much higher – consider this when you decide the minimum number.

On neighbourhood level, though, you cannot go wrong with having as many questionnaires filled in as possible.

Below we present the most important topics to be covered in the questionnaire – its logic follows the key ingredients of good walkability as presented in Chapter 2.4.1. In Annex 5, we attach a sample questionnaire – you can use it and adapt it to the local circumstances.

Topic	Description
Demography	At the beginning of the questionnaire you need to include a group of questions that provides a general image of the responder. As a minimum, you need to know her/his age-group, gender, general physical condition.
Usefulness	One of the key conditions of walkability is to have "reasons" to walk – services, institutions in the neighbourhood to walk to. In this part of the questionnaire you list typical services, places, and ask which of these places may be reached within a set amount of time (10-15 minutes) of walking.
Safety	People only walk if they feel safe – so (perceived and real) safety is crucial. Therefore, in this section you should ask specific questions regarding general safety and traffic safety to better understand the most important safety failures of the walking environment.
Convenience	Convenience is also essential when it comes to persuading people to walk so it is important to know how convenient people feel walking in the area, and what could be improved to make walking more convenient. Issues like the quality and width of the pavement, objects (or parking cars) blocking walking routes, possibilities to sit, etc. should be asked about.
Attractiveness	Truly walkable neighbourhoods are attractive and interesting, so it is useful to see how interesting people find the area for walking. Colours, interesting buildings, nice shop-windows, outdoor cafés and other people – among others – make a walking route interesting so you need to ask questions about those things.
Public transport (and bikeability)	Public transport and bicycles are pedestrian accelerators. Whenever we need to move to places that are beyond comfortable walking distance, we can use a bus, a tram or a bike – so from walkability perspective the quality and frequency of public transport services, and bikeability are also important issues and worth addressing in the questionnaire.

Any other comments	It is probably a good idea to leave some space for comments that are not related strictly to any of the above topics.

21. Table 9: Neighbourhood survey topics

3.3.2 Walkshops – barriers to and state of the ingredients of walkability

"Walkshop" is a novel concept – in the context of walkability, walkshops are interactive meetings, that:

- Focus on the walkability of a specific area;
- Involve walking of the participants.

Walkshops bring together people from a specific neighbourhood to jointly look at the level of walkability and the obstacles preventing people from walking more in streets within the neighbourhood.

3.3.2.1 Why is it useful?

Simply put, the walkshop concept is an additional method for collecting information regarding walkability. While it addresses issues, problems similar to the ones already covered in the questionnaire survey, as a method, it has numerous additional benefits that really justify its use. These benefits are as follows:

- Many aspects of the walkability planning process are "theoretical" in that you talk about or analyse various elements of walkability. When you do walkshops, however, you don't just talk about walking – you actually walk the walk, literally.
- As people participating record their observations of the walking experience during – or immediately after – the walk takes place, the information provided by them is of better quality and more reliable.
- It facilitates real dialogue, interaction instead of one-way information provision, thus you have the opportunity to ask and look behind the answers.
- If you choose so (which we recommend), in addition to recording problems and obstacles, people can be asked to ideate about possible solutions, actions to overcome those problems.
- By actively involving people, walkshops can help build commitment to better walkability of the citizens involved.
- Walkshops are effective tools also in awareness raising and "walkability education".
- Walkshops are events that are attractive for the media, too; you can use them also as part of your communication activities.

3.3.2.2 How to organize and deliver walkshops?

In Annex 7, we added a detailed script of successfully implementing a walkshop. Nevertheless, below we present the summary overview of walkshop organization and delivery.

22. Figure 13: The steps of implementing a walkshop

Preparation

- Participants – you need to recruit participants. The ideal size is between 12 and 15 people, mostly residents of the neighbourhood, complemented with one or two representatives of the Mayor's Office. It is best to have a variety of people from different age-groups, male and female, with various educational levels. You need to approach and convince these people one by one, and prepare them to allocate half a day (3,5-4 hours) to the event.
- Date – you need to identify a date. When considering different options, you need to consider the weather, visibility, availability of participants.
- Route – you should select the route the group will walk together. It is best to select streets that are important walking routes within the neighbourhood, used by many people.
- Location of the briefing and debriefing meeting – the walkshop starts with a briefing (prior to the walk) and ends with a debriefing (after the walk). Therefore, you need a room with the necessary amenities, preferably in the proximity of the selected walking route.
- Necessary equipment – you will need some basic equipment and stationery.
- Media – it is best to think about the involvement of the media well ahead of the meeting. Will the representatives of the media be invited to the meeting, part of the walk or only to a press conference?

Delivery

- Briefing – start the day by welcoming participants, then do a quick ice-breaking exercise. Inform people about the objectives and the agenda of the walkshop. Address questions.
- Presentation – give a short presentation about the benefits and most important pre-conditions of walkability.
- Preparing for the walk – explain what is expected during the walk, distribute the notebook.
- The walk – go out for the walk as a group; stay together, but allow (and encourage) people to stop, observe and take notes, even snap pictures using their smartphone. Be

there to answer questions whenever something comes up. If you want the media to be present, allow them to shoot footage and take pictures during a short part of the walk. (You may consider inviting one or two journalists strictly as participants – they have to do everything the other participants do – and then report on their experience after the event).

- Debrief – return to base together after the walk; have a structured feedback based on the notes of people.
- Ideate (optional) – people love to think not just about problems, but also about solutions. So, if time allows, it is useful to have a very quick ideation session to collect ideas of actions to improve walkability.
- Close the workshop.

Follow-up

- Process information – have the information collected during the walkshop structured and processed.
- Build the information in the neighbourhood walkability plan.
- Provide feedback to participants – send a short, visually pleasing report to each participant about the outcomes of the walkshop.
- Repeat – launch additional walkshops if you have time and resources.

You may use variations of the walkshop – for instance have a "light" version for secondary school students, organized in cooperation with schools.

3.3.3 Street level walkability audit

To understand the very specific barriers and problems hindering walkability in a neighbourhood, it is important to carry out a detailed investigation of at least the most important streets.

Street level walkability audit is a thorough review of the various conditions of walkability, street by street. It is similar to walkshops, in that a team (or various teams) "interrogates" the walkability qualities of the streets using a pre-designed set of criteria. The two main differences from walkshops are as follows:

- Instead of a group of voluntary residents, a professional team of mayor's office staff members (or professionals subcontracted by the mayor's office) carries out the audit;
- The audit goes into more details than the review done as part of the walkshops.

3.3.3.1 How to do it?

Careful preparation of the audit process is one key to success.

First, you need to select the streets to be audited. Ideally you should review all streets where there is any pedestrian traffic, but in a larger neighbourhood it may be impossible – but also unnecessary. So, select the streets that are important routes for pedestrians. Once you have a

list of streets to be audited, collect and register information already available on those streets (baseline information) within the mayor's office.

Once you have an overview of the amount of work that need to be delivered, recruit your team(s). Two-person teams can carry out the audit efficiently. If you have sufficient time, one or two audit teams can handle the work – if, however, you are under time pressure, you may want to consider setting up more teams. Your primary choice should be working with internal people, but if you have capacity problems, you can involve subcontractors.

You know the amount of work at hand, and the capacity available – it is time to plan the audit process. Prepare an action plan in which you allocate work (if there are more than one team), identify and schedule the most important steps and deliverables.

Then the team(s) needs to be prepared. Chances are, that even if the team members have experience with traffic planning, they have not delivered street level walkability audits yet. Consequently, it is necessary to schedule a prep meeting where all the details of the audit process may be discussed. It is important to speak about the context (what is walkability, why it is important, what makes a good walkable neighbourhood, etc.), to discuss the rationale and function of the street level audit, the method to apply and the deliverables to produce. It is probably a good idea to carry out a pilot audit on a selected street (or street section), then discuss the experiences and fine-tune the methodology.

Once every condition is in place, the audit process can be launched. While the team is working, it is useful to have short meetings from time to time to discuss questions, problems and possible changes to the plan.

3.3.3.2 What to look for?

During the audit, the team is using a pre-designed template (in Annex 6, we propose a possible template that can be adapted to local circumstances). Whenever the team faces specific, tangible problems, obstacles, in addition to recording it in the template they also need to take a picture. The information collected can be continuously processed, so that by the time the audit ends, the findings can be easily channelled in the neighbourhood walkability plan.

Typical problems occurring may be as follows:

1. Width of sidewalks:
    a. Is it wide enough for pedestrian traffic flow? It should allow for comfortable "two-way" traffic of pedestrians usually carrying shopping bags. If benches or outdoor sitting for cafes are present, they should not obstruct the main flow of pedestrians.
    b. Are wheelchair users, prams/strollers can bypass comfortably each other? The width of a wheelchair is 75 cm and requires extra space due to the nature of its movement. People pushing strollers also need more space to freely move to approach interesting shops or objects along the sidewalks.

2. Sidewalk condition:
    a. Overall condition of surface – presence of cracks can be a result from uneven settlement of substrate under the pavement or tree roots. This can present a tripping hazard or in severe cases be an obstacle for wheelchairs or any handicapped users.
    b. Adequate accessibility for people with disabilities – the ramps in correct locations and at acceptable gradient, tactile pavers installed as warning for pedestrians with vision impairments.
    c. Is there contrast when the surface changes levels? Unexpected changes in sidewalk level could endanger even healthy pedestrians, therefore visual warnings such change in colours to prevent tripping accidents for all users.
3. Obstructions:
    a. Do the barriers, fencing/street furniture allow free passage? All benches, garbage receptacles, bus stop shelters should be positioned so that they do not hinder pedestrian traffic flow. Their proper places are at the edge of the sidewalk, near the road.
    b. Are there obstructions that hinder a sight-impaired road user? Any low hanging signs, marquees or untrimmed tree branches could be obstacles for the visually impaired.
    c. Are there temporary obstructions on the footway (signage, etc.)? Movable advertising signs for shops placed improperly could be obstacles for the free flow of pedestrians.
    d. Any light poles, utility boxes blocking parts of the sidewalk? Light poles and stay cables appear in the middle of sidewalks and block the free movement of people.
4. Crossing points:
    a. Are they on street level? For better protection of pedestrians, crossings could be on raised level (basically sidewalk level). This way cars are slowing down considerably in order to cross them
    b. Are they on convenient locations for pedestrians? Crossing should be strategically placed every so often, as main points of attractions are. This way, pedestrians will be less likely to cross haphazardly at their will.
    c. Are they well marked by signs for upcoming cars? Giving car drivers a proper, timely warning for upcoming pedestrian crossing could prevent possible accidents.
    d. Are there curb cuts and are they aligned correctly with crossings? Curb cuts are an essential part of accessible route not only for people with disabilities but pedestrians with baby strollers, push carts, etc. They should be aligned exactly with the crossing lines, so people are not forced to enter the roadway in order to cross.

5. Traffic:
    a. Does the vehicular traffic intimidate or endanger? Walking along a busy road can intimidate pedestrians by sheer noise and volume of traffic, especially at higher speeds. The positioning of trees along the edge of sidewalk has an important psychological role for pedestrians to feel protected.
    b. Are there bicycle lanes marked on the roadway? Bicycle lanes belong in the area between the sidewalk and the roadway. They should not be used for parking and the surface should be clear of large rainwater intakes that could be a potential danger for cyclists.
    c. Are cyclists using the footpath? If there are no dedicated bicycle lanes or the cyclist feel threatened by the traffic, they use the sidewalk. This is a sign of unresolved street planning and should be addressed by the municipality.
    d. Is the on-street parking appropriate? Does it obstruct visibility? Street parking serves as a buffer zone between the roadway and the pedestrians and can be very convenient for both parties. However, if parking spots are not planned adequately, the parked vehicles can obstruct the vision of both pedestrians and cyclists. Angled "head-out" parking configuration is the preferred solution.
6. Signage:
    a. Are signs appropriate for the pedestrian environment? The size and location of signage is an important issue. If the signage is large, on elevated boards and poles, it is meant for cars and creates a "drive-thru" feeling of the area. Pedestrian signage should be well designed and at convenient height and locations for the users.
    b. Are the signs clear and easy to read? Signage creates a sense of order and is an integral part of any well designed and thought-out pedestrian zone. Where possible, special plates with tactile information using the Braille alphabet should be provided as well.
7. Personal security: Does the site feel safe? The feeling of safety is a very personal matter, however, well-lit sidewalks with even surface, clear signage and well maintained landscaping, protected street crossings, the lack of scattered garbage or damaged street furniture creates a welcoming image about the area and a sense of joy and safety for all its users.

3.4 Identifying interventions

3.4.1 Main types and areas of interventions

Interventions at the neighbourhood level:

- Identification of measures promoting the main generators and attractors of pedestrian flows;
- Identification of measures to abolish the barriers to walkability and bikeability;
- Expansion of pedestrian zones;
- Providing for the ingredients of walkability: useful, comfortable, safe and interesting walkable routes;
- Planning of bikeway networks at the neighbourhood level;
- Definition of areas for full or partial restriction of car traffic;
- Definition of locations for buffer parking lots and (if appropriate for the neighbourhood) multi-storeyed car parks.

Methods of interventions:

- direct method (changes in infrastructure, development areas and land use, changes in density or urban rules, organization of transport links, various permits and prohibitions);
- indirect method (improving media awareness, discussions, changing mobility policies).

Addressee of interventions:

Interventions can be addressed to different modes in urban mobility and in this sense, interventions can be targeted at pedestrian, bicycle, public or private transport as well as complex interventions involving two or more than two modes of transport.

3.4.2 Providing the key ingredients for walkability

The key ingredients of walkability are those things in the relation environment/perception that make walking easier for people. As we have discussed previously in this Guide, to promote walking, the plan should provide better conditions so that walking is more:

- useful;
- safe;
- comfortable;
- interesting.

Usefulness means to have reasons to walk, destinations – facilities, services people want to use. To provide people reasons for walk we should provide public and other services at closer distances. We could change some current plans or land use to bring public services closer or we could provide faster and more direct pedestrian routes to the existing ones. In any case,

providing a useful walking by short distances (10-15 minutes) is a must for a successful walkability.

Safe walking means literally safer routes and safer environment. People walk if they feel safe and for that reason providing traffic safety is just that important as providing better perception of a safe environment with less crime. Improving safety in the neighbourhood could involve improvements such as better lighting during night, more efficient work on fighting crime, more efficient pedestrian traffic lights, fewer main street crossings for pedestrians and bikers, reducing the traffic speed, removing the transit traffic from within the neighbourhood, improvements on bicycle infrastructure, etc.

Comfortable walking means walking without obstacles. Conformability is the key ingredient to promote walking. In many cities people don't walk because of the variety of obstructions such as badly conditioned or missing pavements, pavements not wide enough, cars parked on the pedestrian routes or advertising billboards blocking the pavements, not enough places for a walking break like insufficient amounts of urban furniture, etc. On neighbourhoods with a good pedestrian infrastructure we have less need to promote walking and walking is as natural as driving a car in places uncomfortable to walk. To involve people to walk the most natural way is to improve the pavements and to understand for which main routes we have to widen them. We must remove all kinds of obstacles from the walking routes and we need to provide more urban furniture on the places people may want to have a break.

Interesting walking is a walking that provides attractiveness. A truly walking neighbourhood provides vivid colours, interesting facades, outdoor cafés, lots of small gardens or attractive places and other small things that make a walking route interesting. To improve attractiveness, we can think in many improvements such as better urban spaces for people to stay longer, better urban furniture, local pedestrian streets that connect walking generators with attractors and provide better social environment for people to meet and communicate. Making walking interesting and fun is easy and affects a variety of different social groups.

3.4.3 Restriction of car traffic, parking facilities and regulation

Less is more, proclaimed Ludwig Mies van der Rohe decades ago, referring to his building designs. Nowadays his manifesto is topical for our crowded cities. Fewer cars clogging streets and parking lots can make for a better urban environment. Fewer cars allow more people to walk, ride their bicycles, sit in cafés, play, or just relax and watch the world go by in public spaces. Fewer cars also mean cleaner air and fewer worries about finite energy resources.

Restriction of car traffic

Widely proposed policies for reducing car use include discouraging car owners from driving, making driving less attractive, improving alternative travel modes such as public transport, biking, or walking. Several ways of implementing car-use reduction policies can be taken as:

- **physical changes** such as, for instance, closing out car traffic and providing alternative transportation;
- **law regulation and economic incentives** such as congestion charging;
- **information, education, and reminders:** provide people with clear information about the availability of safe and enjoyable opportunities; include children and older people and people with disabilities in educational activities related to walkability; produce and promote a citywide active living map of walking routes;
- **socialization and social modelling** targeted at changing social norms; and
- **institutional and organizational changes** such as, for instance, flexible work hours, or telecommuting.

Transportation congestion charge is a measure growing in popularity as an effective instrument in responding to the high levels of traffic congestion. Such a policy involves charging a fee for operating a motorised vehicle at times and places where there is insufficient road capacity to easily accommodate demand. But making it work effectively is considered difficult because often it lacks public support. The differential parking charge measure can be a starting point for making the idea of congestion charge gradually accepted. A good example of charging cars to enter a zone in the centre of the city is the "traffic congestion charge". Different forms of charging or permit systems to combat congestion and/or environmental problems were implemented in London (2003), Stockholm (2007), Durham (2002), Milano (2008), Rome (2001), Gothenburg (2013) and Valletta (2007). Although the primary objective was to reduce traffic congestion, cyclist and pedestrian journeys in these cities have increased, both as trips but also as part of the increased number of journeys on public transport.

Here are some examples of measures for car traffic reduction:

- Restrictions on speed, 20 km/hour zones, adequately timed lights, clearly marked crossings, traffic-calming devices (such as speed bumps) and crossing guards at crucial intersections. Provide clear signage about road traffic patterns to help cyclists, pedestrians and drivers avoid injuries and learn to respect each other's routes.
- Make driving more expensive. Charge high prices for parking in the city; consider using congestion charging as a means of reducing car use overall and combining it with financial transfers to improved public transport.
- Give priority to funding for public transport and projects such as sidewalks, trails, traffic-calming measures and bike lanes. Park-and-ride schemes should only be used in low-density areas where existing levels of public transport are inadequate. Locate them as close as possible to the source of the traveller: for example, in outlying community sectors rather than the edge of the city. Encourage cyclists and walkers to use them as well.

Parking facilities and regulation

In most cities around the world, parking policy is either non-existent, poorly coordinated, or used to make driving more convenient. By contrast, like most of the European cities do, you should be using parking policy to meet goals like improving air quality, reducing traffic congestion, making streets more liveable, reducing greenhouse gas emissions, and freeing up road space for bike lanes and public space. Using pricing to allocate parking space to those who need it most, is becoming the norm for cities in Europe. In general, good parking management is acknowledged as integral to lively and competitive cities.

We can note four main approaches that are used to effectively manage parking: economic mechanisms, regulatory mechanisms, physical design, and quality of service contracting.

- **Economic mechanisms**: Harmonizing on-street and off-street parking fees minimizes cruising and wisely allocates parking to those who need it most. The most progressive cities are also ring-fencing or earmarking parking revenues to support transit services or bike sharing.
- **Regulatory mechanisms:** A few leading European cities have replaced minimum amount of parking places for buildings with caps and maximums on new parking construction to avoid generating new car trips. The places where parking is allowed can also be regulated in ways that improves the quality of public space and discourages car use.
- **Physical design:** Streets should be designed to minimize the adverse impact on pedestrians of vehicles entering parking facilities. Parking can be used to slow traffic on local streets and protect bike lanes from higher speed traffic on arterials. Extensive use of bollards will prevent the encroachment of parking vehicles on pedestrian space.
- **Quality of service contracting:** Outsourcing certain aspects of parking management to a private third party has shown to improve parking management and increase the cost recovery from parking fees and fines. Setting up performance-based contracts to handle functions such as fee collection and enforcement can help meet parking-related policy targets most efficiently.

Innovations in technology are also creating new possibilities for regulating and managing parking. Many European cities offer pay-by-phone parking payment services. This minimizes the cost of collecting parking fees and losses from theft and vandalism. Such services are also more convenient, as customers can remotely buy more parking time. The service also sends an SMS alert when paid time is nearly expired. The next wave of parking-fee-collection technology is in-vehicle meters that are linked to a GPS system. A few trials are underway to use GPS technology to vary parking charges based on location, time of day, and day of week, to optimize parking system performance.

Parking planning is undergoing a fundamental change in how the problem is perceived and solutions evaluated. The old model assumes that parking should be abundant and free at most destinations. It strives to maximise supply and minimize price. This model assumes that parking lots should almost never be full, that parking facility costs should be incorporated into the costs of buildings or subsidised by governments, and that every destination should satisfy its own parking needs. The new model strives to provide optimal parking supply and price. It considers too much supply as harmful as too little, and prices that are too low as harmful as those that are too high. It also strives to use parking facilities efficiently, considering full lots to be acceptable, provided that additional parking is available nearby, and that problems related to parking are addressed. It emphasises sharing parking facilities between different destinations. It favours charging parking facility costs directly to users, and providing financial rewards to people who reduce their parking demand.

3.5 Setting priorities and allocating resources to lay the foundations of implementation

The key task of the Neighbourhood Walkability Plan is to review the walkability situation in a very specific area of the city, identify the most important problems, barriers hindering walkability, and propose interventions to improve walkability.

Unless the neighbourhood we plan for offers perfect conditions for walking (which is very rarely the case), it is likely that there is a long list of necessary interventions are proposed to improve walkability. Some of these interventions require major reorganization, decisions and significant infrastructure investments, some others are simpler to implement and can be done with a modest investment (and there may be some that do not even require funding).

Nevertheless, it is very likely that the interventions proposed cannot be implemented all at once, due to one or more of the following factors:

- Limited financial resources;
- Limited capacity to manage interventions;
- Long and complicated licensing procedure;
- Resistance of certain stakeholders, local groups (for instance drivers).

Consequently, it is an important step towards the end of the planning process to set priorities and allocate resources to the proposed interventions. Based on the results of prioritisation and resource allocation, a simple action plan can be prepared to serve as a basis for implementation.

One important question though, is how do we set the priorities? What criteria do we use to select the interventions that will actually be implemented, and how do we schedule the various interventions – which are the ones that will be implemented earlier, and which ones may be

postponed to a later date? Some cities use the completely unscientific method of selecting actions for interventions based purely on perceived need – what people want more. Although this could be a relevant criterion, it is not the only one.

There is no need for an overcomplicated assessment system, but a simple scoring using some key criteria can help in prioritization. There is no 'one size fits all' solution, therefore, instead of prescribing a scoring sheet, below we offer possible criteria that may be used to select the most important interventions.

Criteria	Short explanation
Pedestrian numbers	Interventions on routes with high pedestrian use are considered more important. Using this criterion assumes that we have data on pedestrian numbers, which is not always the case. (A possible disadvantage is that there might be routes with low level of pedestrian usage exactly because the conditions of walking are poor – this criterion disregards that).
Traffic generators and attractors	Interventions in the proximity of traffic generators and attractors may be considered more important. There are various "sub-criteria" that can be used here: • The route where the intervention takes place leads to an attractor/generator; • The number of generators/attractors in the proximity; • The distance from an existing attractor/generator. (When considering these criteria, one should not forget about major attractors/generators under development – so future attractors and generators)
Safety	Interventions improving safety are considered important. One question to ask may be whether the area where the intervention takes place is considered hazardous, and would the intervention improve safety? If we have police data, actions that would presumably reduce pedestrian crashes are also considered important.
Barrier/gap removal	In some cases, a relatively small intervention can remove a prohibitive barrier of walking, for instance restore or create continuity of a walking route and thus can significantly increase pedestrian traffic. Such interventions are efficient.

Perceived need	While perceived need of the residents – what people want – (known from the consultations and surveys) should not be the only deciding factor, considering it as one of the criteria is important.
Costs, simplicity	Actions that are cheapest and/or easiest to implement are considered better – they do not require major funding, while deliver quick wins, which is an important advantage.
Neighbourhood/city specific criteria	Besides the criteria proposed above, there may be others that are important in the specific neighbourhood. For instance, an action that helps to meet a local or national legal requirement could be considered very important.

23. Table 10: Possible criteria for selecting the most important interventions

The simplest way of using the selected criteria is to award scores according to each criterion and establish the priority order based on the total scores. This way, there is an objective and complex system of prioritisation that is more difficult to challenge than a selection without proper argumentation.

We can use the results of such an assessment as a basis to allocate resources to the proposed actions and to schedule their implementation over time. Once we have this in place, a simple action plan can be drawn up, containing at least the following information for each action:

- Name/title of the action;
- Short description;
- Expected outcome, result (as specific as possible, preferably measurable);
- Timing, deadline;
- Cost;
- Source of funding;
- Responsible body.

4 Part4 – Tools and templates

4.1 Walkability Strategic Plan – template

4.1.1 Executive Summary

The Executive Summary should present a concise summary of the Walkability Strategic Plan with emphases on the purpose of the plan, the main problems that the plan should solve, the essence of the planned actions and the key expected results. It should contain a brief statement of the problem or proposal covered in the Walkability Plan, background information, brief analysis and main conclusions. It should address the general public, so it should be written clearly, by avoiding terms that are not popular, in such a way that readers can rapidly become acquainted with the goals of the plan, and the key measures and instruments that will be employed for the achievement of these goals.

4.1.2 Introduction

- What is this document, who prepared it, when?
- Rationale
  This is a clear explanation of the existing issues with sustainable mobility, accessibility in the city. It should give a general but convincing idea of the problems faced due to the current state of accessibility of the different zones, job provision and service centres, with a special stress on the negatives of the prevailing forms of mobility and the existing modal split. This part should also give a good idea how promoting walkability will change the current situation and will improve the access, will produce associated economic benefits, will create positive social and ecological impacts.
- Purpose and logic of the strategy
  The purpose of the strategic plan is defined by a concise statement of the expected improvement of the system by solving the key problems and providing key benefits. Explaining the logic of the strategy is based on outlining the main internal connections between goals, actions, measures and expected results.

4.1.3 The coverage of the strategy

This part should provide a description of exact territorial coverage. The coverage should be presented on a map. The strategic plan should explain its boundaries by the relationships between territories and urban processes and the existing administrative structure of the city, too.

4.1.4 Policy environment

The national, regional and primarily local policy environment of walkability is discussed. A connection should be drawn between the observed issues and problems and the measures defined by the legal system and EU, national and regional/local regulations.

4.1.5 Strategic analysis

4.1.5.1 General introduction to the city and its system of urban mobility

General features of the city

- Location and its importance for the development of the urban system;
- Number of population, key demographic information;
- Economy and its importance for the system of mobility – need for high mobility, the role of the city centre, retail, services and large office centres.

General overview of mobility situation

- Number of residents of the main residential zones;
- Level of the city centre and industries;
- Modal split – existing general balance between the forms of mobility;
- Existing key problems, opportunities and challenges to mobility.

4.1.5.2 Detailed walkability analysis

Location and Geography

If the strategy covers the whole city, the transport links at the regional level should be considered. If the plan covers only part of the city, then this chapter conducts an analysis of the location of the area treated by the plan within the structure of the city. The transport links at the higher level are discussed, as well as the interactions within the urban system.

Furthermore, all geographical aspects are discussed regarding the development of walkability. How does topography and other geographic factors (green areas, rivers, natural barriers) influence the structure of transport and mobility within the boundaries of the plan?

Demography, Economy and Education

What is the demographic and social structure of the population of the city or the part of the city covered by the plan and how it determines the system of mobility? How do the residents access their job locations? How many jobs are in the same area and how many residents travel to the city centre or to other business or industrial areas? What portion of the population would use private cars and what portion use public transit? What about children, teenagers and youngsters? How many elderly residents travel to the city centre by cars and by public transit?

Analysis of the legal framework and regulations at the EU, national and regional/local level and the directions defined by higher level strategies and the city's master plan

Traffic generators, attractors and detractors

This part of the plan is about analysing the urban areas, buildings and transport locations that generate pedestrian traffic, those that attract or detract it.

- **traffic generators**: housing zones, residential developments, multi-family housing areas and larger buildings, office developments, transit centres, stops, rail stations, bus transfer centres and intermodal hubs, parking garages or large parking lots;
- **traffic attractors**: large employment centres, retail, grocery stores, services, shopping centres, recreation areas, schools, supermarkets, colleges, universities, parks, libraries, post offices, community centres, hospitals, senior centres;
- **traffic detractors**: pedestrian/vehicle collisions, high traffic volumes, high posted speed limits, steep slopes, un-traversable infrastructure (freeway and rail corridors).

Detailed analysis of pedestrian infrastructure and traffic

Detailed analysis of the structure of accessibility

- Number of residents of the city districts (if the strategic plan covers only a part of the city, then the number of residents of each sub-zone should be examined);
- Land-use structure and its impact on accessibility;
- Job and service provision in each district of the city (sub-zone of the area covered by the plan);
- Access to city centre and local service centres by traffic modes.

Demographic and social analysis

- Demographic and social surveys by districts/areas, demographic and social analysis;
- Overall balance between the number of residents, number of jobs and service provision in the city centre (CBD) and the local (district/secondary) service centres;
- Which demographic and social groups walk? What are their needs? Which groups don't walk and why?
- Consultations with NGOs, citizen and business associations.

Analysis of the existing structure of mobility

- Analysis of the existing infrastructure for all types of traffic: pedestrian areas, streets and connections, infrastructure for mass transit, infrastructure for car traffic, urban railway;
- Barriers, bottlenecks, emissions;
- Detailed modal split.

Analysis of the ecological impact of the existing mobility system on urban environment

- Sources of pollutions;
- Areas and levels of emissions and pollution.

4.1.6 Strategy

4.1.6.1 Strategic assessment

Strategic assessment is being prepared to support decision-making, assessing the need for interference, based on strategic considerations such as:

- Is there a need for intervention and why? Does the intervention correspond to our intentions? How will the intervention be achieved? Does the intervention bring community benefits? Is the intervention applied elsewhere and what is the effect of its application?
- Does intervention bring environmental, social and economic benefits at the same time?
- Will the intervention lead to a reduction in the existing risk for pedestrians/waiters?
- Is it permissible to intervene in the light of current legislation?
- Is the intervention permissible in terms of the major urban planning predictions of the site and would it change them too much?

The strategic assessment should evaluate the correspondence between the existing situation and what should be done to develop the key ingredients of walkability:

- Useful walkability routes and environment;
- Comfortable walkability environment – pleasant for pedestrians;
- Safe walkability routes and environment;
- Interesting walkability environment – thus attracting pedestrians of all ages.

4.1.6.2 Vision

The vision is the overarching goal of the strategic walkability plan. It is the basis for the development of all objectives, measures and tools. A walkability strategic vision should:

- describe how walking fits into the city's future in a brief, fascinated manner;
- provide a sense of the outcomes that people hope to achieve;
- establish a clear direction for the development of goals and objectives.

4.1.6.3 Planning goals and expected results

Planning goals are the key components of the vision; therefore, they make the decision more explicit. Goals guide the actions of the plan. They describe the end results we seek to achieve. The goals of a Strategic Walkability Plan can be the following or similar:

- Increasing the safety of pedestrians;
- Enhancing the attractiveness of walkability environment;
- Increasing the rates of walking;
- Street design, pedestrian infrastructure;
- Policy, traffic regulations;
- Awareness, promotion.

4.1.7 Implementation

4.1.7.1 Constituting the managing body and adopting a Plan of Action

A strategic plan should include an implementation part, which defines the methods and the details of its realization. The strategy should first develop a structure of actions of the plan's implementation – who should initiate and look after the execution of the planned development of the pedestrian or biking network, what funding should be provided, from what sources, etc. The plan should define the principles of choosing and appointing a managing body of the plan, comprising representatives of the planning/investment department of the local authority, representatives of interested NGOs and associations.

Once the managing body is appointed, it should develop further the implementation plan. The managing body should now go into detail and allocate individual responsibilities. The detailed plan should include a schedule of the execution of planned activities

4.1.7.2 Governance, funding

Resources should be provided from the central and local budget. An important source of funding the development of sustainable urban mobility are the European programmes. Finally, funding should be provided also by local initiatives.

The resources provided at the city level should be allocated between the central and all city districts depending on the problems faced and the existing needs in each area.

4.1.7.3 Monitoring and evaluation

At the start of the implementation a supervising committee should be elected. This committee should be made up of representatives of the NGOs and professional organizations, business associations and informal groups, representatives of the local authority and representatives of the body managing the implementation of the strategy. Next, the monitoring technology should be defined.

The monitoring body should prepare annual reports and biannual updates/revisions of the Walkability Strategic Plan. Information on the implementation of the strategy must be available from the website of the local authority and discussed at the annual meetings.

4.2 Neighbourhood Walkability Plan – template

4.2.1 Introduction

- What is this document, who prepared it, when?
- Rationale.
- Purpose, logic and structure of the plan.

4.2.2 The exact coverage of the plan

Description of exact territorial coverage, with the list of streets, presentation of coverage on a map.

4.2.3 Description of the neighbourhood

4.2.3.1 Key information on the neighbourhood

Basic data

Area, population, length of streets with/without solid surface, length of sidewalk, length of bicycle paths, number of parking places – free/paying; distance from city centre, etc.

Short description

Location within the city, character (residential, retail, industrial, mixed, etc.); links with other parts of the city, public transport links, existing transport problems, bottlenecks.

Demographic and social analysis

Demographic and social analysis is important because it helps to understand residential density and the structure of the population in a variety of qualitative and social dimensions, and thus contributes to selecting the most appropriate strategy to improve pedestrian mobility.

Traffic attractors in the area

A list of institutions, facilities in the area that attract traffic – like a residential, commercial, office, recreational or other land use that is expected to be an end destination for pedestrian trips during a particular time of day. Present their exact location, capacity, typical times when traffic is generated, any problem issues.

Traffic generators in the area

A list of institutions, facilities in the area that generate traffic – residential, commercial, office, recreational or any other land use that serves as the starting point for a pedestrian trip during a particular time of day. Present their exact location, capacity, typical times when traffic is generated, any problem issues.

4.2.4 Walkability problems

4.2.4.1 General overview of walkability

In this chapter, you can provide a summary description of the current status of walkability in the neighbourhood – presenting strengths, problem areas and opportunities alike. To give it a logical structure, we propose to structure this information according to the 4 key ingredients of a walkable neighbourhood.

Usefulness

Safety

Convenience

Attractiveness

4.2.4.2 Street level audit

As part of the design of the plan, walkshops and street level walkability audits are carried out to identify the very specific barriers of walkability, the street level obstacles that prevent people from walking more. In this chapter, the outcomes of this review process are presented in a simple table format. For each street reviewed, a separate summary table needs to be filled in.

Name of the street	
Key data	
STREET DESIGN	
Sidewalks	
Bike lanes	
Vehicle travel lanes	
Parking	
Intersections	
Pedestrian crossings	
Signals	
USER COMFORT	
Lighting	
Street furniture	

Landscaping	
Safety	
Land use	
Signage and wayfinding	
USER BEHAVIOUR	
Pedestrians	
Drivers	
Cyclists	

4.2.5 Actions to improve walkability

4.2.5.1 Proposed street level actions

Name of the street	Short description of proposed action	Estimated cost	Expected results	Priority (1-5, 5 highest, 1 lowest)
Street 1				
Street 2				

4.2.5.2 Other proposals to improve walkability

In addition to street level improvements, there may be a need to deliver actions that are not specifically tied to a street, but may be important to improve certain conditions of walkability in the neighborhood. (One example could be to increase police presence in the area during the night.) Although most of such more general proposals are included in the city level strategy, there might be some that are specific to the neighborhood in question – those are the ones to be presented here.

4.3 Data template – key statistical data and their sources

DATA/STATISTICS	Sources	Online resources
area/land use	✓	
Demographic data	✓	
population: age, gender, physical condition	National statistical agency	e.g. https://www.ksh.hu/?lang=en, http://www.stat.si/statweb/en/home, http://www.nsi.bg/
density: the number of residents per m2	National statistical agency	
density of land use	✓	
Transport data		
traffic volume, speed	Urban master plan/Transport master plan	
parking zone (free, paid)	✓	
modal split	Eurostat EPOMM survey National Transport Agency	http://ec.europa.eu/eurostat/search?p_auth=4K6TnGUf&p_p_id=estatsearchportlet_WAR_estatsearchportlet&p_p_lifecycle=1&p_p_state=maximized&p_p_mode=view&_estatsearchportlet_WAR_estatsearchportlet_action=search&text=modal+split
Economic data		
jobs/employment	Eurostat OECD National statistical agency	http://ec.europa.eu/eurostat/data/database http://www.oecd.org/employment/
vehicle ownership	✓	
Ecologic data		
air pollution	European Environment Agency	https://www.eea.europa.eu/data-and-maps
share of green urban areas	European Environment Agency	https://www.eea.europa.eu/data-and-maps
distribution of green urban areas	European Environment Agency	https://www.eea.europa.eu/data-and-maps

new registered vehicles	National statistical agency	e.g. https://www.ksh.hu/?lang=en, http://www.stat.si/statweb/en/home, http://www.nsi.bg/
Safety data		
theft and crime	✓	
road traffic accidents	✓	

Main data sources at **national level** are:

- National Statistical Institute (Bulgaria), Hungarian Central Statistical Office (https://www.ksh.hu/?lang=en), Statistical Office of the Republic of Slovenia (http://www.stat.si/statweb/en/home)

Another data sources at **European level** are:

- Eurostat (http://ec.europa.eu/eurostat) – Eurostat Database Core Cities: provides various sustainable and transport performance indicators; data are collected at a number of different levels, namely: core cities, larger urban zones and sub-city districts (for a smaller subset of indicators).
- European Environment Agency: https://www.eea.europa.eu/data-and-maps
- THE WORLD BANK: http://datatopics.worldbank.org/jobs/country/bulgaria

Other data sources are:

- **document sources:** Municipal development plan, Strategic plan, Transportation master plan, Public transport strategy
- **different public institutions:** Municipality, Ministry department, National agency of transport, National statistical institute
- other surveys

4.4 Questionnaire Survey – Walkability Strategic Plan

4.4.1 Introduction

Our city is committed to improve sustainable urban mobility, reduce car traffic, related air pollution and improve the conditions of active forms of transport – walking and cycling. To achieve that, the Mayor's Office initiated the design of a plan to improve walkability in ..... (city name). In that process, we would like to ask for the opinion of those knowing most about walkability in this area – you, the users of the streets.

Therefore, please help our work by filling in this questionnaire.

4.4.2 First, some questions about you...

Different people have different concerns regarding walkability. For example, elderly citizens and mothers of young children may be more concerned about safety issues than others.

Do not answer any questions that you are not comfortable with.

Question	Your answer
What is your gender?	☐ Female ☐ Male
What age-group best describes you?	☐ 0-14 ☐ 15-24 ☐ 25-49 ☐ 50-64 ☐ 65-79 ☐ 80-
Would you say in general your health is	☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor
Do you have a physical condition that affects your ability to walk?	☐ Yes ☐ No
Do you live in the city?	☐ Yes ☐ No

4.4.3 ...and about your mobility habits

Before we talk about walkability, we would like to know a bit more about your walking habits, as well as the frequency of cycling and using public transport.

Question	Your answer
When you walk in the city, what is your reason? (You can check more than one.)	☐ Going to a specific place (shop, restaurant, school, work, etc.) ☐ Going to a bus stop ☐ Visit friends ☐ Walk my dog ☐ Exercise ☐ I don't walk in the city
How often do you walk?	☐ Everyday ☐ A few times a week ☐ A few times a month ☐ Rarely ☐ Never
During the last 7 days, on how many days did you walk?	(number of days)
On those days that you walked, how long (in minutes) was your usual walk?	☐ Less than 10 minutes ☐ 10-19 minutes ☐ 20-29 minutes ☐ More than 30 minutes
How often do you cycle?	☐ Everyday ☐ A few times a week ☐ A few times a month ☐ Rarely ☐ Never
How often do you use public transportation?	☐ Everyday ☐ A few times a week ☐ A few times a month ☐ Rarely ☐ Never

4.4.4 Key conditions of walking

In this part of the questionnaire you will need to indicate your level of agreement with specific statements on a scale of 1 to 6 (1: completely disagree, 6: completely agree).

One of the key conditions of walkability is to have "reasons" to walk – services, institutions in the neighbourhood to walk to. In this part of the questionnaire you find typical services, places – please answer which of these places may be reached within a comfortable 10-minute walk.

Statement	Your opinion (circle the appropriate number)
USEFULNESS (One of the key conditions of walkability is to have "reasons" to walk – services, institutions in the neighbourhood to walk to.)	
There are many services, shops within walking distance from my residence.	1 2 3 4 5 6
It is easy to access most of the services in the city on foot.	1 2 3 4 5 6
SAFETY (People only walk if they feel safe – so safety is crucial for better walkability.)	
I feel safe when I walk in the city during daytime.	1 2 3 4 5 6
I feel safe when I walk in the city during night.	1 2 3 4 5 6
CONVENIENCE (Convenience – being able to walk comfortably, without barriers is also essential when it comes to walking.)	
Sidewalks are wide enough, without major barriers.	1 2 3 4 5 6
The quality, condition and maintenance of sidewalks are good.	1 2 3 4 5 6
ATTRACTIVENESS (Truly walkable neighbourhoods are attractive and interesting with nice, well-maintained buildings, squares, green areas, beautiful shop windows, etc.)	
I find the city environment very nice, attractive for walking.	1 2 3 4 5 6

4.4.5 Necessary improvements in the walking environment

In this section, we would like to ask you about the improvements in the walking environment that would make you walk more. We list a number of possible improvements – please prioritize them according to their importance (in your opinion) – 1: most important, 12: least important.

At the end of this section you can also propose further improvements that are currently not on this list.

Wider, better quality sidewalks

More pedestrian-only areas

More green areas, shades in the city

More rest areas and seating facilities

Cleaner air

Better lighting during dark hours

Lower speed of cars

Less waiting time at pedestrian crosswalks with traffic lights

Better separation of pedestrians and cyclists

Better quality public transport, more frequent rides

Better signage of potential destinations

More people in the streets

Other. Please specify (you can list as many as you want):

Thank you for your cooperation!

4.5 Questionnaire Survey – Neighbourhood Walkability Plan

4.5.1 Introduction

Our city is committed to improve sustainable urban mobility, reduce car traffic, related air pollution and improve the conditions of active forms of transport – walking and cycling. To achieve that, the Mayor's Office initiated the design of a plan to improve walkability of ..... neighbourhood. In that process, we would like to ask for the opinion of those knowing most about walkability in this area – you, the users of the streets.

Therefore, please help our work by filling in this questionnaire.

4.5.2 First, some questions about you...

Different people have different concerns regarding walkability. For example, elderly citizens and mothers of young children may be more concerned about safety issues than others.

Do not answer any questions that you are not comfortable with.

Question	Your answer
What is your gender?	☐ Female ☐ Male
What age-group best describes you?	☐ 0-14 ☐ 15-24 ☐ 25-49 ☐ 50-64 ☐ 65-79 ☐ 80-
Would you say in general your health is	☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor
Do you have a physical condition that affects your ability to walk?	☐ Yes ☐ No
Do you live in ..... neighbourhood? If no, you can skip Section 3.	☐ Yes ☐ No

4.5.3 ...and about your walking habits

Before we talk about walkability, we would like to know a bit more about your walking habits as well.

Question	Your answer
When you walk in your neighborhood, what is your reason? (You can check more than one.)	☐ Going to a specific place (shop, restaurant, school, etc.) ☐ Going to a bus stop ☐ Visit neighbours ☐ Walk my dog ☐ Exercise ☐ I don't walk in the neighbourhood
How often do you walk?	☐ Everyday ☐ A few times a week ☐ A few times a month ☐ Rarely ☐ Never
During the last 7 days, on how many days did you walk?	(number of days)
On those days that you walked, how long (in minutes) was your usual walk?	☐ Less than 10 minutes ☐ 10-19 minutes ☐ 20-29 minutes ☐ More than 30 minutes

4.5.4 Usefulness

One of the key conditions of walkability is to have "reasons" to walk – services, institutions in the neighbourhood to walk to. In this part of the questionnaire you find typical services, places – please answer which of these places may be reached within a comfortable 10-minute walk.

Is this destination within a 10-minute walk of your home?	Your answer
Supermarket/grocery store	☐ Yes ☐ No
Shopping centre, other types of shops	☐ Yes ☐ No
Community Centre, cultural facility (movie, theatre, concert hall, etc.)	☐ Yes ☐ No

School or childcare facility	☐ Yes ☐ No
Church	☐ Yes ☐ No
Park or green area	☐ Yes ☐ No
Recreational facility (fitness centre, outdoor gym, basketball court, etc.)	☐ Yes ☐ No
Playground	☐ Yes ☐ No
Restaurant or other places to eat	☐ Yes ☐ No
Personal services (hair care, nail salon, dry cleaners, etc.)	☐ Yes ☐ No
Bank	☐ Yes ☐ No
Medical facility	☐ Yes ☐ No
Workplaces such as offices or businesses	☐ Yes ☐ No
Public transport stop	☐ Yes ☐ No

4.5.5 Safety

People only walk if they feel safe so safety is crucial for better walkability. In this section we would like to ask you about how safe you feel walking in the neighbourhood.

Question	Your answer
How safe do you feel when you walk in the neighbourhood during the day?	☐ Completely safe ☐ Fairly safe ☐ Not safe at all ☐ Dangerous
How safe do you feel when you walk in the neighbourhood at night?	☐ Completely safe ☐ Fairly safe ☐ Not safe at all ☐ Dangerous
What are the main problems reducing safety? (You may indicate more than one.)	☐ Too heavy traffic, too many cars ☐ People drive too fast ☐ Lacking striped crosswalks at junctions ☐ Drivers do not yield to people crossing the street ☐ Parked cars block the view of traffic ☐ Scary dogs in the streets ☐ Scary people in the streets

	☐ Improper lighting at night, poor visibility ☐ Thick bushes, other possible hiding places next to the sidewalks ☐ No people in the streets ☐ Other (please specify):

4.5.6 Convenience

Convenience is also essential when it comes to walking. We would like to know how convenient does walking in the neighbourhood feel.

Statement	Your opinion
There are paved sidewalks along the minor/major streets.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
The sidewalks are in good repair, without areas of uneven or broken pavement.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
The sidewalks are lighted for use at night.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
There are curbs to separate the sidewalk from the street.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
The sidewalks are wide enough for at least two adults to walk side by side.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
Someone could use the sidewalks with a wheelchair, walker, other mobility aide, or pram without difficulty.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
Parking cars don't block parts of the sidewalk.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
There is a grass strip, trees, parking spaces, or other buffer between the street and the sidewalk.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
The sidewalks and the area next to them are clean, clear of weeds, broken glass and garbage.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere
There are benches or other places to rest along your sidewalk/paths.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere

Traffic lights don't make pedestrians wait too long when crossing the streets.	☐ Everywhere ☐ Almost everywhere ☐ Only in a few streets ☐ Nowhere

4.5.7 Attractiveness

Truly walkable neighbourhoods are attractive and interesting. Therefore, we would like to know how interesting people find the streets for walking.

Statement	Your opinion
Streets and their surroundings in general are nice, attractive places.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Buildings along the streets are mostly attractive, in good repair, nice to look at.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Facades of the buildings on the edge of the sidewalks are interesting and diverse.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
There are cafés, small shops, nice shop windows and other amenities along the sidewalk.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
The streets, squares and parks are generally vivid, full of people.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree

4.5.8 Public transport and bikeability

Whenever we need to move to places that are beyond comfortable walking distance, we can use a bus, a tram or a bike – so from walkability perspective the quality and frequency of public transport services, and bikeability of the neighbourhood are also important issues.

Statement	Your opinion
Public transport is accessible within comfortable walking distance from most places in the neighbourhood.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Buses (trams) go frequently, waiting time generally is acceptable.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Buses (trams) are in good condition, clean and well maintained.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Most parts of the city are easily accessible by using public transport.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
There is a good network of dedicated cycle paths and cycle lanes in the neighbourhood.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Cycling in the neighbourhood is safe.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree
Most parts of the city are easily and safely accessible by bike from the neighbourhood.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree

There are appropriate facilities in sufficient number to safely park bikes.	☐ Completely agree ☐ Mostly agree ☐ Mostly disagree ☐ Completely disagree

4.5.9 Any other comment you might want to share with us:

Thank you for your cooperation!

4.6 Walkability Audit Sheet

4.6.1 Introduction

This is the sheet to use during the walkability audit to guide the review process and record the findings under the appropriate section. Study the sheet prior to the audit process. During the audit, use the criteria listed below to assess the various attributes of the street(s) from a walkability perspective.

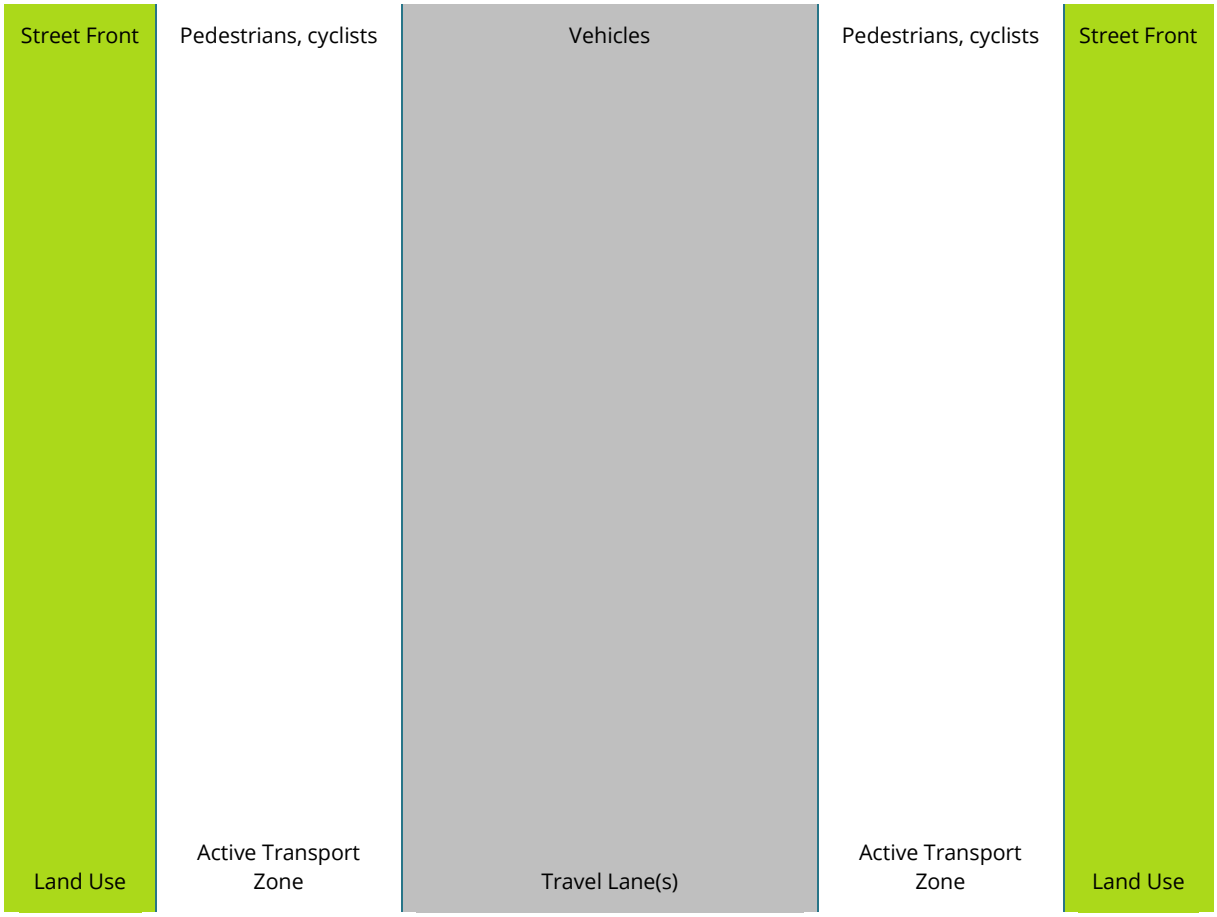
LOCATION:	
TIME AND DATE:	
WEATHER CONDITIONS:	
AUDIT TEAM MEMBERS:	
NAME OF STREET AUDITED:	

Once you decide on the location for your walkability audit, go to **https://maps.google.com/** to print a map of your route. You should use this map to indicate your starting and ending locations, and to capture observations during the auditing process.

Insert Your Map Here

4.6.2 Street Sketch

Use this street sketch to document your thoughts and experiences through words or images (e.g., what you see and what would you like to see).



4.6.3 Survey Legend

Use these pages to capture conditions along your route. For those items that do not exist or are not applicable, you can choose 'Nonrelevant'. If you indicate that something is 'Non-existent', but you feel that these items are needed, make a note of this under 'Observations'. Your goal here is to document your impressions of the built environment.

Categories	Nonrelevant	Non-existent	Needs Improvement	Adequate	High Quality	Observations
Street						
Sidewalk						
Width						
Condition						
Maintenance						
Materials						
Obstructions						
Bike Lanes						
Width						
Condition						
Maintenance						
Materials						
Vehicle Travel Lanes						
No. of Lanes						
Lane Width						
Posted Speed						
Observed Speed (High/Low)						
Parking						
On Street Parking						
Off Street Parking						
Location of Handicapped Parking						
Intersections						
Intersections						
Complexity						
Width						
Visibility						

Categories	Nonrelevant	Non-existent	Needs Improvement	Adequate	High Quality	Observations
Crossings						
Type						
Width						
Condition						
Maintenance						
Frequency						
Pedestrian Refuge						
Signals						
Type						
Placement						
Timing						
User Comfort						
Lighting						
Type						
Location						
Quality						
Street Furniture						
Bike Rack						
Seating						
Trash/Recycling Cans						
Sheltered Transit Stops						
Restrooms						
Landscaping						
Maintenance						
Shade						
Safety						
Transparency						
Activity						
Visibility						
Land Use						
Construction Quality						
Maintenance						
Signage & Wayfinding						

Categories	Nonrelevant	Non-existent	Needs Improvement	Adequate	High Quality	Observations
User Behaviour						
Pedestrians						
Attention to Others						
General Awareness						
Drivers						
Attention to Others						
General Awareness						
Speed						
Politeness						
Cyclists						
Attention to Others						
General Awareness						
Speed						
Politeness						

4.6.4 General Impressions and Summary

Reflect upon your notes from the walkability audit by making statements about the observed strengths, weaknesses, opportunities and potential problems of your route.

PRESENCE OF WALKABILITY INGREDIENTS	
USEFULNESS:	
SAFETY:	
CONVENIENCE:	
ATTRACTIVENESS:	

What are the most important problems?

What are the most urgent and necessary improvements?

What other comments or suggestions do you have?

4.7 Walkability walkshops – methodological guide

4.7.1 Introduction

This document is part of the methodological toolkit supporting the process of walkability planning. This detailed script provides the most important information enabling the professional organization and the delivery of high quality walkability walkshops.

Walkability walkshops bring together people from a specific neighbourhood to jointly look at the level of walkability and the obstacles preventing people from walking more in streets within the neighbourhood. Walkshops contribute to:

- **information collection;**
- **awareness raising;**
- **engaging the local community.**

This methodological guide consists of the following elements:

- Proposal for the content of the letter of invitation;
- Detailed script of the walkshop;
- The walkability assessment tool.

4.7.2 Letter of invitation

Dear ……,

As you may have already heard about it, the municipality would like to improve the key conditions of pedestrian traffic in your neighbourhood – make the neighbourhood more “walkable”. An important step in this process is surveying the streets, identifying the main problems, obstacles hindering walkability, as well as the opportunities to create better conditions for walking.

We believe that nobody else knows better a neighbourhood than the citizens who live there. With that in mind we would like to recruit a small team of residents to review the most important streets, identify problems together and think about possible improvements. To that end, we organize a “walkshop”.

We would like to invite you to be a member of this small team, participate in the walkshop and work with us to improve your neighbourhood.

The walkshop will take place on (day, month, year) from …… to ……

The location of the walkshop:

As you know your neighbourhood and its streets, no special preparation is needed. As part of the walkshop will take place outdoor, make sure to select weather appropriate dressing.

Should you have any questions, feel free to call ..... (name, phone number).

I do hope we can count on your participation.

Thanks in advance for your support!

Sincerely yours,

(date)

.....

(signature of the responsible leader)

4.7.3 Detailed script of the workshop

4.7.3.1 Before the walkshop

Step	When	Description
Recruit and prepare your team	6 weeks before the walkshop	To organize and deliver a walkshop involves numerous tasks – and it is definitely not a one-man-show. You need a good team to ensure smooth delivery of the entire process. The team should consist of: • A moderator responsible for the facilitation of the walkshop and engagement of the participants (it could be yourself or you can decide to hire a professional facilitator). • A support staff providing assistance throughout the entire process of preparation, delivery and follow-up. • A traffic and street design expert, a person who has a good overview of traffic and street design regulations, frameworks and can provide professional feedback during the process. Convene your team and explain the purpose and process of the walkshop. Prepare a detailed plan of action and agree on the distribution of tasks.
Identify the date	5 weeks before the walkshop	You need to identify a date as soon as possible. When selecting a date, consider the season (weather), part of the day (you want to have pedestrian traffic in the streets, but you also want to make sure that participants are available.)

		You may also want to consider inviting the city leader responsible for walkability planning (vice mayor?) – her/his availability is also something to consider.
Identify the route	4 weeks before the walkshop	Selecting the streets to investigate is a crucial step. It is best to select streets that are important walking routes within the neighbourhood, used by many people. Be conservative with identifying the distance the group needs to cover during the walkshop. We propose to spend 60 to 75 minutes outdoor during the walkshop – but in that time people will stop from time to time, take notes and snap pictures, have conversations. Make sure to walk and check the entire route before the walkshop.
Identify and arrange the place	4 weeks before the walkshop	You will need a room where you can brief and debrief the participants – ideally it should be located in the immediate proximity of the walking route (otherwise you need to provide transport to and from). The room needs to be large enough to conveniently seat 15-20 people, ideally in an informal setting. By all means, avoid meeting rooms with a large fixed table in the middle – it is impossible to have an engaging interactive session in such an environment. Classrooms in schools may be a good choice, just like larger rooms in community centres – be creative and use your local knowledge!
Recruit the participants	3-4 weeks before the walkshop	You need a group to work with; the ideal size is 12-15 people, most of whom should be residents of the neighbourhood, plus 1 or 2 representatives of the Mayor's Office (probably transport department). Strive for having a wide variety of people – gender, age, educational level. By simply sending a letter of invitation you won't convince people to participate. After sending a letter of invitation (we provide a sample above) you probably need to approach them one by one, personally, and explain them the importance of the walkshop and their

		role. Be prepared to have reserves on your list of possible participants.
Arrange the necessary equipment and materials	3 weeks before the walkshop	You need some basic equipment and materials to deliver the walkshop. In the room you need a laptop, a projector, a screen and a flipchart. In addition, you also need basic workshop materials – bluetac, large post-its, flipchart markers. Finally, you will need 20 copies of the walkshop assessment tool – a predesigned template – notebook that will be used by the participants to record their observations during the walk. We propose a template in this methodological document – adapt it and print in sufficient number of copies. Make sure that coffee, water, some cookies and fruits are offered.
Contact the media	1-2 weeks before the walkshop	Walkshops are events that are attractive to the media. You have different options to involve the representatives of the media: • You can have a press conference immediately before the walkshop and then invite the representatives of the media to shoot some footage during the walk. Then send a press release after the event presenting the main conclusions. • You can invite 1 or 2 journalists to follow the walkshop as participants and then report on the experience.

4.7.3.2 During the walkshop

Below we present a detailed script of the walkshop delivery. The timing is based on an assumed start at 15:00. Change as necessary.

From	To	Description of activity and method
14:00	14:45	**Pre-walkshop check** Arrive early at the starting point of the walkshop. Check the room, its arrangements, the availability of equipment and materials. (Simultaneously with the preparation, you can have a short press conference if you choose so.)
14:45	15:00	**Arrival and welcome of participants** Receive the walkshop participants – help them to find their place, have small talk, establish the right tone even before the walkshop.
15:00	15:15	**Starting the walkshop – introduction and ice-breaking** Open the walkshop – welcome the participants. Introduce the purpose of the walkshop and the team. (5min) Have a short introductory round of the participants. You may combine the introduction with a quick ice-breaking exercise to set a positive and open tone for the rest of the walkshop. (10min)
15:15	15:35	**Short presentation on walkability** The walkshop participants are normal citizens, they understand urban mobility issues only from a user perspective. Therefore, after the introduction continue the programme with a short presentation of walkability. Describe the WHY, the benefits of walkability, and tell what makes a neighbourhood walkable. Make sure to answer the "what's in it for me" question. Make the presentation interactive, more like a conversation, encourage participants to ask questions. In creating the supporting slides, you can use the slide deck created as one of the outputs of WP3.
15:35	15:45	**Explain the assessment process** The essence of the walkshop methodology is the joint assessment of key conditions of walkability in the neighbourhood. Briefly explain the process and agenda of the walkshop, the use of the assessment tool. Encourage participants to be open-minded, attentive to details and observe the

		behaviour of other pedestrians, bikers and drivers. They can even snap photos of obstacles they notice during the walk. Show the map of the selected route, and describe the agenda.
15:45	16:00	**Walk to the start of the route**
16:00	17:15	**Walk and assess** Start the walk and the assessment process. The facilitator leads the group, pays attention to the dynamics, the speed, makes sure that nobody falls behind too much. (S)he is there to answer questions, move the group and make sure everyone actively contributes. It is no use rushing – participants probably stop from time to time to make notes, or take a closer look at/snap a photo of something on the route. During the walk the assistant can take pictures of the group walking, as well as of major problems, obstacles they discover.
17:15	17:30	**Return to base** Walk back to the base, allow some time to have some water or coffee and small talk among the participants. Ask participants to walk to the predesigned table on the wall and record their scores by each criterion. The assistants record the scores in an Excel sheet and calculate the average value for each criterion.
17:30	18:00	**Feedback time** After everyone returns to her/his seat, the facilitator announces that it is feedback time. - Presenting the average scores – the facilitator presents the average scores under each criterion. (2min) - Individual thinking – participants think individually to select the 2 most important problems under each criterion (5min) - Pair discussion – pairs are formed, and they discuss the selections under each criterion; the pairs are required to select one problem statement per each criterion that they jointly find the most pressing. They write the selected problem statements on A5 post-its. (10min) - Presentation of the selected problems – each pair presents the problems they selected and post them on the dedicated wall space. (10min) - Closing feedback: the facilitator closes the feedback session. (3min)

		Instead of collecting, the assistant takes pictures of the filled-in assessment sheets of the participants so that they can keep their copy.
18:00	18:40	**Quick ideation** While it requires additional time, if at all it is possible, allocate some time for a quick ideation session. People love to propose actions and solutions, and an ideation session allows to finish the walkshop on a positive note. Besides, people can really feel part of the planning process. Emphasize, though, that these are just initial ideas – there's no guarantee that these will actually be implemented –, but will serve as very useful inputs to the walkability plan. There are various simple techniques to choose from – from simple brainstorming through brainwriting to the more structured OPERA method. Whatever method you use, though, make sure that everybody can contribute, not just the more vocal people. The ideation session needs to start with a question – it is up to you to design the exact question. You may use "What should be done to improve walkability in the ..... neighbourhood?" By this time, participants will have a basic understanding of the key conditions of walkability, as well as the main problems, obstacles in the neighbourhood, so you can count on a good list of ideas.
18:40	18:45	**Close the walkshop** After the ideation session thank for the time and active participation of the people. Promise them to e-mail the summary of the walkshop results within one week, and that you keep them informed about the planning process.

4.7.3.3 After the walkshop

Step	When	Description
Process information	Within 1 week from the walkshop	Use the copies of the filled in walkability assessment sheets, the notes from the feedback session, the proposed actions from the ideation session and the pictures to put together a short, visually pleasing summary report of the main findings of the walkshop.
Provide feedback to walkshop participants	Within 1 week from the walkshop	With a cover letter thanking again their work and contribution, send (e-mail) the summary report to the walkshop participants. Offer them to ask questions by

		mail or phone, if they have any, or feedback on the content of the report.
Provide information to the press	Within 1 week from the walkshop	You can use the same report to send to the representatives of the media, together with a short press release highlighting the most important findings.
Use the inputs in the Neighbourhood Walkability Plan		The walkshop(s) brings about valuable inputs to the walkability plan – make sure that these inputs are fed into the planning process.

4.7.4 Walkability assessment tool

4.7.4.1 Introduction

This is the walkability assessment tool you will use during the walk to observe and assess various aspects of walkability. It consists of two main parts:

- In Part 1, you can assess aspects of walkability by giving scores on a scale of 1 to 6;
- In Part 2, you can record your more general observations.

The proposed process of assessment is the following:

1. To start the assessment process, please carefully review the various criteria prior to the walk.
2. During the walk observe your environment and whenever you notice something – a problem or an obstacle, be it physical or other – make a quick note in the observation section (right column) of the assessment sheet, next to the relevant criterion. If the observation is more general and cannot fit one specific criterion, make a note in the relevant section of Part 2.
3. Towards the end of the walk, review your notes and assess the various aspects of walkability by circling the appropriate number on the scale. The values represent the following qualifications:

   1 very poor

   2 poor

   3 acceptable

   4 adequate

   5 good

   6 high quality

4. Add further general notes if necessary.

4.7.4.2 PART 1 – Assessment sheet

Criteria	Score	Specific observations
Sidewalk (width, condition, surface, maintenance, curbs, etc.)	1 2 3 4 5 6	
Pedestrian crossings (type, placement, frequency of crossings, visibility, etc.)	1 2 3 4 5 6	
Street furniture (banks and other seatings, trash and recycling cans, other street furniture)	1 2 3 4 5 6	
Perceived safety (to what extent do you feel the walk safe – consider traffic and criminal safety equally)	1 2 3 4 5 6	

Appearance of buildings and landscaping (general condition, variety, maintenance, etc.)	1 2 3 4 5 6	
Conditions of biking (existence of separate bike track or lane, bike racks, curbs, etc.)	1 2 3 4 5 6	
Public transport (frequency of stops, regularity, quality of stops, quality of vehicles, etc.)	1 2 3 4 5 6	
Drivers' behaviour (politeness, attention to pedestrians, speed, defensiveness, etc.)	1 2 3 4 5 6	

4.7.4.3 PART 2 – General Notes

Problems	
Ideas, proposed improvements	
Any other comment	