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SAFE

Sustainable Accessible Future Environments

T 2.3

Behavioral mapping tool including safety

Co-funded by the European Union

SAFE

SUSTAINABLE, ACCESSIBLE FUTURE ENVIRONMENTS

The course is a collaboration between five European Universities

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T2.3 Behavioral mapping tool including safety

CONTENT

HANDBOOK STRUCTURE

Each chapter is divided into 6 crucial points

01

NUMBER AND NAME OF THE TOOL

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What it is useful for?

04

TOOL USE
How it is done

05

AN EXAMPLE
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06

LAYOUT
Pre-preparation for work

I. TOOL | PRELIMINARY RESEARCH

DEFINITION

Prior familiarization with the space through publicly available data in public institutions, books, or online. (Ministry for the environment, Manatü Mö Te Taiao, 2009)

USEFULNESS

Preliminary research provides invaluable information about the space, its specifics, characteristics, and historical development. Among other things, they can offer us informations about what shaped the space and established the situation as it is today.

USE

The collection of maps, drawings, and photographs are particularly useful for these kinds of research. Nowadays more and more information is available also via GIS maps and systems that are publicly available. The Google Maps service is also particularly useful for preliminary research of an unvisited area. With its help, we can virtually walk through the space and understand many specifics that we might have missed in the field. With the help of the mentioned tools, we can go out on the field fully prepared which makes work faster and more effective.

USEFUL LINKS

Google maps	https://www.google.com/maps
Google earth	https://earth.google.com/web

II. TOOL | QUESTIONNAIRE

DEFINITION

A systematic way of determining the views and opinions of a large number of people on a particular topic through the use of interviews with structured questions or a standardised questionnaire.

USEFULNESS

Questionnaire can be used to gather large amounts of comparable and easily quantifiable data, and to provide an objective basis for planning and future action. It can provide both qualitative and quantitative data. A structured interview will uncover qualitative data on people's values and perceptions that can be quantitatively tabulated. A professionally produced survey is a useful means of accurately and objectively assessing community opinion on high-profile and controversial community projects.

USE

Questionnaire types used most commonly in urban design projects include 'public satisfaction surveys' and '3+, 3– surveys', also known as 'three questions surveys'. 'Three questions surveys' are common in open space and neighbourhood improvement projects. They ask people to identify three things they like and three things they dislike about the current environment, and note their suggestions for changes. A 'visual preference survey' obtains community responses to a range of images and is used to develop an understanding of, and consensus on, the character of a place or future development.

III. TOOL | MAPPING

DEFINITION

"A graphic technique for recording and analyzing the physical features and structural patterns of a geographical area."(Ministry for the environment, Manatü Mö Te Taiao, 2009).

USEFULNESS

"Providing base information for all types of projects and initiatives. The application of mapping is virtually unlimited. It includes, for example, the assessment of spatial enclosures, street edge conditions, distribution of open space and street types, public–private space assessments, and distribution of landscape elements. Mapping to scale allows quantitative analysis of physical features and is a base for showing planned design interventions in context. Mapping enables comparative assessment or monitoring of quantitative and qualitative design conditions and elements over time." (Ministry for the environment, Manatü Mö Te Taiao, 2009).

USE

Mapping techniques range from simple paper records to complex digital systems. General mapping techniques include:

- "Overlay mapping" using different mapping layers or montages of tracing paper, or within a computer, to add or remove layers of information to reveal patterns and relationships that would not otherwise be obvious.

- 'GIS mapping' is a computer system designed to allow users to collect, manage and analyse large volumes of spatially referenced information and associated attribute data. It is an efficient means of sourcing and presenting comprehensive graphic information on entire neighbourhoods, towns and cities, as well as elements within them. GIS techniques enable analysis of complex multiple map overlays. A number of local councils have simplified GIS maps available on the web.

- 'Aerial photographs' are photos taken from an elevation and are generally available from local councils and private agencies for most urban areas. They provide insight into patterns of building and urban landscape development, including views into areas and details of development that otherwise cannot be seen from ground-level observation. Aerial photographs can also be overlaid with other map-related information, such as topographic contours, rivers, streams, soil structure, buildings and land uses. (Ministry for the environment, Manatü Mö Te Taiao, 2009).

IV. TOOL | URBAN WALK

DEFINITION

An assessment of urban qualities and design issues done by walking through an area. Recording observations and impressions the walker has along the way. Observations are mainly recorded using graphichal method.

USEFULNESS

A walk-through gives an overview of the design issues, and is often the first stage of a more intensive appraisal that involves both qualitative and quantitative methods. This technique helps establish the extent of the design issues and identifies further work required.

USE

Before the walk the route and plan of the walk must be made with all the crucial points of interest. Observational analysis of place that records the main features, both successful and unsuccessful, in a preliminary urban design assessment. Key findings are often recorded by graphic means, such as photographs or annotated sketches and plans. Checklists are typically used to ensure consistency when appraising a number of buildings, streets or areas.

URBAN WALK | EXAMPLE

Figure 1. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

Trail of the walk

1 2 Crucial points

Date, time: _____

Walk leader: _____

Indicate direction north

Paste your photo here

Legend of the symbols

-------- Trail of the walk

① ② Crucial points

Date, time: _____

Walk leader: _____

Indicate direction north

Notes

V. TOOL | SAFETY WALK

DEFINITION

Safety Walk is an organized event where officials and residents can meet and exchange their ideas and concerns about safety of the specific area. The group of people (residents, officials and other people connected to the area) walk together in the specific area and observe safety related details. Observations can be positive or negative. During and after a safety walk the participants can tell their concerns and suggestions to the officials.

USEFULNESS

Safety walks are informal events and usually people are keener to give their feedback and suggestions to officials than through more official channels. Often residents and other service users have a better understanding and knowledge what is or isn't working well at their local area. Residents get the feeling that their opinion and needs matter. The more people (and different actors) are involved in this kind of events, more useful information can be collected.

USE

1. Firstly, the objectives of the safety walk should be set. The organizer should also contact possible co-operation partners in the area.

2. The walking route should be selected based on objectives and area information collected beforehand. If the participants can have a map of the area it helps.

3. The walking route can include any public areas, such as streets, pedestrian pathways, parks, public transportation stops, underpasses, staircases, playgrounds, parking areas etc.

4. Safety walk participants should observe different factors affecting safety, for example functionality

Figure 2. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Date, time: _____ Walk leader: _____

Legend of the symbols

Good Lighting

Bad Lighting

Bad surface

Good celanliness

Bad celanliness

Avaliable informations

Emergency and first aid equipement

Positive safety observ.

Negative safety observ.

Indicate direction north

Paste your photo here

Date, time: _____ Walk leader: _____

Legend of the symbols

Good Lighting 

Bad Lighting 

Bad surface 

Good celanliness 

Bad celanliness 

Avaliable informations 

Emergency and first aid equipement 

Positive safety observ. 

Negative safety observ. 

Indicate direction north

Notes

VI. TOOL | MORPHOLOGY

DEFINITION

Analysis techniques used to study the patterns of urban structure, form, land use and patterns. Provides an understanding of the existing physical form and structure of the urban environment at different scales, from individual buildings, lots, street patterns and blocks.

USEFULNESS

Defining urban patterns and characteristics that create a unique sense of place. It helps in the appraisal of successful and unsuccessful urban form, and can examine the processes that shaped past change, or features that persist in the present urban fabric. It can define urban boundaries, inform development controls, and form the basis for design guidelines for character and heritage areas.

USE

Characteristics of an urban area, such as its buildings, lots, blocks, street patterns, open space, land-use activities and building details, are recorded, measured, mapped and analysed using existing and/or historical information.
At its simplest, the mapping of buildings and open space patterns or 'figure-ground mapping' is where the building footprint is blacked out, with open space left blank on a plan. With this technique, the open space and other character features of the site can be analysed. A 'typological analysis' classifies buildings, lots, streets, blocks or open space into typical or atypical types. Type is defined by a combination of plan, dimension and use characteristics. This information can be used in character studies, design development and urban design policy.

Figure 3. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

Object

Indicate direction north

Paste your photo here

Legend of the symbols

Object

Indicate direction north

Notes

VII. TOOL | TRAFFIC CONNECTIVITY

DEFINITION

Traffic connectivity is an analysis that shows which categories of streets are present on a site. It also shows how the street networks are connected and how they work to establish a system of functioning of the space.

USEFULNESS

Explains why some streets and spaces are used more than others. It also shows the relative accessibility of parts of a place, neighbourhood or city and identifies areas where accessibility, safety and functionality can be improved.

USE

This technique determines the degree of connectivity or separation of streets and other spaces in a neighbourhood, city or town by studying traffic lines. The centre lines indicate the main movement routes, which vary according to the traffic category. The analysis can be based on hand-made drawings or using different software.

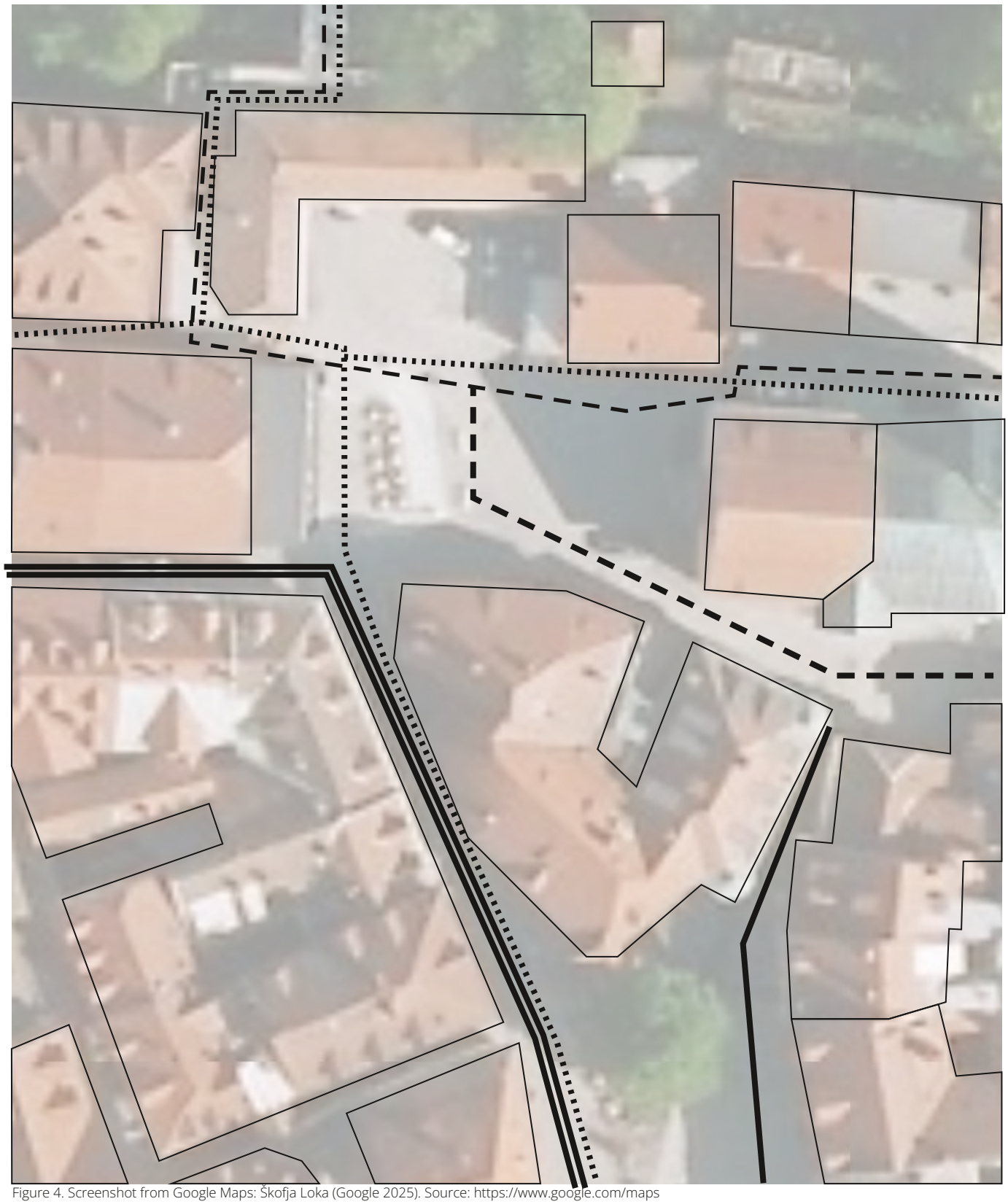

Figure 4. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

- One way road
- Two way road
- Cycle path
- Walking path

Indicate direction north

Paste your photo here

Legend of the symbols

One way road

Two way road

Cycle path

Walking path

Indicate direction north

Notes

VIII. TOOL | OPEN PUBLIC SPACES

DEFINITION

Analysis of the public open spaces present in the study area to determine their design, functionality and relationship to the needs of their environment.

USEFULNESS

It explains the relationship and functioning of open public space with the existing fabric. It also explains the landscaping of open spaces and analyses whether they are designed according to the needs of the users and the needs they face in the environment.

USE

On a map of the area, mark the public open spaces, their functionality and current use. The suitability of the design in terms of materiality and functionality is also a very important factor in the functioning of such spaces.

Figure 5. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

Green surfaces

Paved surfaces

Indicate direction north

Paste your photo here

Legend of the symbols

Green surfaces

Paved surfaces

Indicate direction north

Notes

IX. TOOL | THE PROGRAMME

DEFINITION

An analysis defining the type and quantity of existing programming in the study area.

USEFULNESS

Explaning the type and quantity of existing programe in the study area. With the mapping technique, it is also possible to determine the concentration of a particular program within a given area, thus defining the development process of the area.

USE

With mapping, we identify and locate the program type in each facility within the study area. The gathered data of the program can be used to define the guidelines for the past and future development of the area and to analyze its functionality.

Figure 6. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

- Housing
- B Business
- B Housing / Business

Indicate direction north

Paste your photo here

Legend of the symbols

Housing

B Business

B Housing / Business

Indicate direction north

Notes

X. TOOL | ACCESSIBILITY ASSESSMENT

DEFINITION

A measurement of how easy it is for people to reach a desired activity, including places of work, health care facilities, education facilities, food shops and other destinations that are important for participating fully in society.

USEFULNESS

To identify barriers to accessibility and the resources available to address those barriers. The base data and evidence guide decision-making and inform the development of an accessibility action plan.

USE

The accessibility assessment identifies barriers to accessibility, relying as far as possible on data gathered from the study area. Gathered data identifies the type and location or range of accessibility for each type of user. This includes vulnerable user groups such as people with disabilities, blind, deaf, hard of hearing, elderly, mothers with wheelchairs, etc.

Figure 7. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

- Access with a car
- Access without a car
- Tactile pavement
- Contrast pavement marking
- Disabled parking access
- Tactile pavement on parking ground
- Wheelchair ramp access

Indicate direction north

Paste your photo here

Legend of the symbols

- Access with a car
- Access without a car
- Tactile pavement
- Contrast pavement marking
- Disabled parking access
- Tactile pavement on parking ground
- Wheelchair ramp access

Indicate direction north

Notes

XI. TOOL | BEHAVIOUR OBSERVATION

DEFINITION

Observations that track and record on maps and diagrams the movements, use and interaction of people with urban spaces and the built environment.

USEFULNESS

Understanding how the physicality of the built environment affects activities and social behaviour, through recording the use of urban spaces by people. These observations and understandings can help direct design development and changes to urban spaces and places.

USE

Systematic observation and recording of patterns of human behaviour through notes and diagrams, mapping, or categorisation and counting of activities. Photographs, including timelapse photography, can also be used. 'Behaviour mapping', also called 'activity mapping', involves recording on a plan or map the patterns of movement of people and use in a particular space or place, and may include getting users themselves to plot how they use spaces. Behaviour observation may include 'physical trace observation', a systematic inspection of a place in the absence of its users to identify traces of activity.

Figure 8. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

- Walking
- Running
- Cycling
- Individual retention
- Group retention

Indicate direction north

Paste your photo here

Legend of the symbols

Walking

Running

Cycling

Individual retention

Group retention

Indicate direction north

Notes

XII. TOOL | SAFETY

DEFINITION

A process by which an existing study area is assessed to determine the factors affecting its actual and perceived safety. The aim is to make recommendations to improve the safety of the area or, more importantly, to help prevent safety problems.

USEFULNESS

Identifying the safety factors that increase the actual and perceived vulnerability for users in a certain area. It also determines the measures and design applications required to enhance the safety of that area for users, and to deter potential offenders.

USE

A wide range of data analysis, including an exploration of social, economic and environmental issues, is required. Several site visits may be necessary to assess and investigate various aspects of the area at different times of the day and week and to identify the different user groups.

SIX LEVELS OF SAFETY MAPPING

LIGHTING

- Lighting of the area (where are the dark corners where is easy to lurk if someone want to attach someone/ what are the safer well lit areas)

SURVEILLANCE

- Technical security surveillance (are there technical security surveillance = cameras) what is the area that the cameras can cover / what is the uncovered areas)
- Guards and authorities (are there some security guards or police officers walking/driving in the area?)

CLEANLINESS

- Visual appearance (are there trash thrown on the ground, graffitis, broken windows, abandoned broken bicycles, dog poo etc.)
- Odors (is somewhere some unpleasant smells (human urine or other feces, vomit, dog poo, strong cigarette or marijuana smell, etc.)

PEOPLE THREAT

- Other people safety or threat in the current time and considered your own company?
- What kind of individuals/groups of people are there? : young, old, all male/female, mixed, couples, alone, in a bigger group....
- What they are doing? sitting on a bench, walking their dog, carrying their groceries or gym or school bag, speaking loudly in a group even arguing, trying to sell something, fighting...)
- How they are behaving? : are they drunk or high, behaving aggressively, calm, minding their own business with audiphones on....

URBAN STRUCTURE

- What are the open easy exit areas /what are the areas with dead ends or narrow exits)
- Is there a risk to fall because of the urban structure? (are there some locations with different surprising levels on the ground, holes, drops without sturdy or high enough fences...)
- Is there a risk that something is going to fall on you? (are there some ill-maintained buildings or structures where something might fall on the pedestrians (there might be some fallen debris on the ground to indicate the possibility), construction site, old trees, ice or snow on the winter time...)

URBAN SAFETY INFORMATIONS

- Urban safety information (is the safety information needed and if so, is it clearly visible? Is the address of the location easy to see in case you need to call emergency call and tell your location?).

Figure 9. Screenshot from Google Maps: Škofja Loka (Google 2025). Source: https://www.google.com/maps

Legend of the symbols

	good / bad		good / bad
Lighting	L+ / L!	People threat	P+ / P!
Surveillance	S+ / S!	Urban structure	U+ / U!
Cleanliness	C+ / C!	Safety information	I+ / I!

Indicate direction north

Paste your photo here

Indicate direction north

Legend of the symbols

	good / bad		good / bad
Lighting	L+ / L!	People threat	P+ / P!
Surveillance	S+ / S!	Urban structure	U+ / U!
Cleanliness	C+ / C!	Safety information	I+ / I!

Notes

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