



# HEALTHY CORRIDOR CONCEPT SOFIA

**Project**

Healthy corridors as drivers of social housing neighbourhoods for the co-creation of social, environmental and marketable NBS

**Acronym**

URBiNAT – Urban inclusive and innovative nature

**Title**

Healthy corridor Concept

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# **PART 3 – SOFIA HEALTHY CORRIDOR**

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# Sofia



Figure 1. Aerial view of the city and the study area.

# 1. From the city to the intervention area

Sofia – the governmental, financial and cultural centre of Bulgaria, is located at the heart of the Balkan Peninsula in the western part of Bulgaria at the crossing of many historical routes and currently important elements of the Trans-European Transport Network. Sofia CITY population is 1,31 million and it is continually and fast growing. The territory within the city boundaries is 209,56 km<sup>2</sup> – too big and compact compared to other Bulgarian cities.

Nadezhda district – the Northern gateway to the capital city, has a population of 67 905, which is 5.3% of the city's population. There are about 2113 ha urban and rural areas within the boundaries of Nadezhda district.

The housing estates in Nadezhda fall within the priority areas for urban regeneration aiming at improved living conditions and better connections to the city center and the

neighbouring territories, and improved condition, connectedness and accessibility of the available public spaces. Despite these challenges, the availability of abundant green areas and municipal vacant lots in the URBiNAT study area represent unique opportunities for inclusive urban regeneration through the use of multifunctional nature-based solutions (NBS).

A comprehensive analysis of the current territorial, social, economic and environmental situation at three levels – city, the study area (and Nadezhda district), and the Healthy corridor area – were conducted and respectively delivered in the Local diagnostic Stage 1 and Stage 2 reports. The transition from the local diagnostic to the co-creation process imposed the need to introduce the fourth level of analysis – the groups of lots.

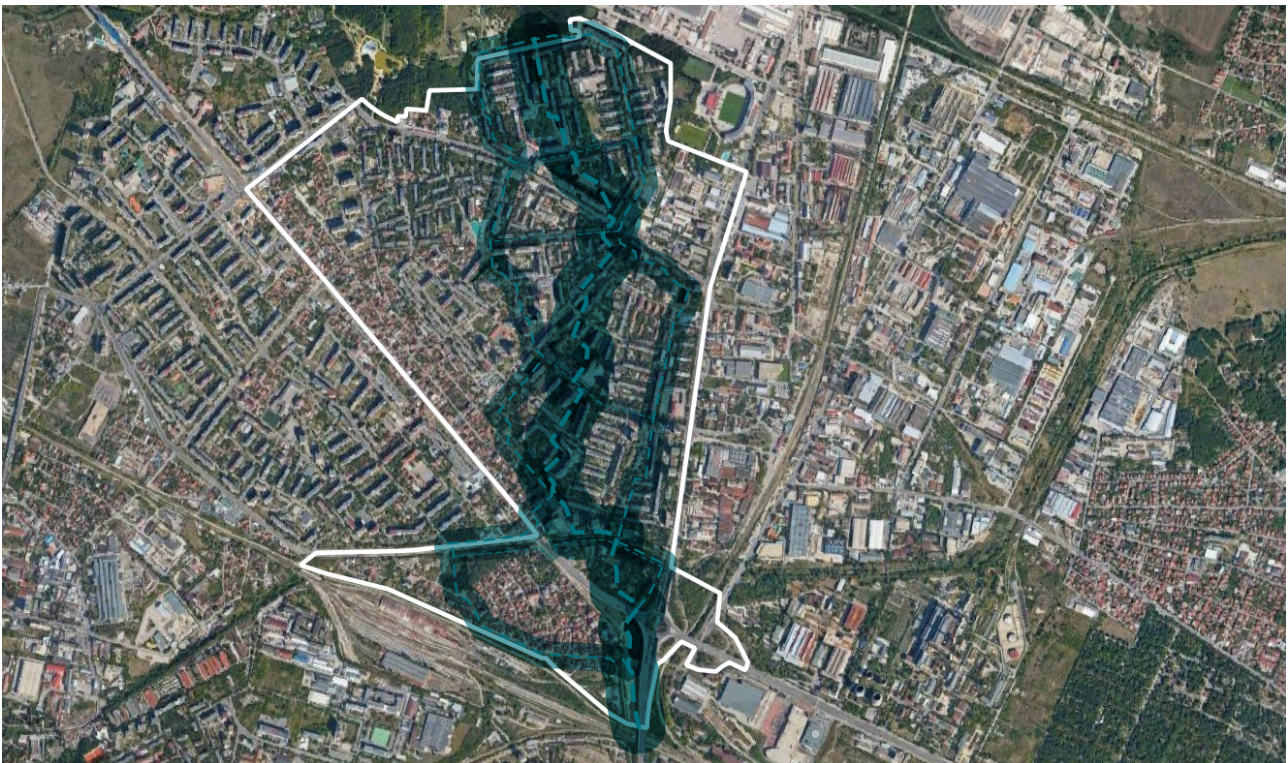


Figure 2. Aerial view of Nadezhda and the study area.

## The intervention area and its integration on the city

Urban fragmentation, was identified at different levels:

- At the city level – although relatively close to the city center, the area is spatially isolated from the city centre and the whole southern part of the city due to the existing physical barriers such as railway lines, adjacent predominantly area built up with warehouses (from south, east and north), multilevel junction (southeast of Nadezhda), and general lack of pedestrian friendly crossings.
- At the district level – Planned according to the concept of the microregion during the 1960-1980, the area nowadays suffers a major division due to the profile of boulevards (Lomsko shose, Rozhen and General Nikola Zhekov) and their inconvenient crossing leading to jaywalking at several points as well as scarce number of bridges providing the crossing of the corrected river bed of Suhodolska river.
- At the neighborhood level – abundant interblock spaces which are pinched around block edges or next to high rise multifamily blocks of flats where parking space does not answer to the motorization rate. A much denser pedestrian network than the initially planned one responded to residents' diversified needs since the 1990s and searched for walking convenience. An increase of pedestrian flows between the neighboring housing estates is now motivated by the diversity of services and personal motivations.
- Along the corridor axis – specific accumulation of all of the barriers mentioned above between park Nadezhda and Severen park and beyond, all of which are addressed by the concept of the route intended to link and bridge the divided parts through a walkable Healthy Corridor with four areas of intervention along its axis.

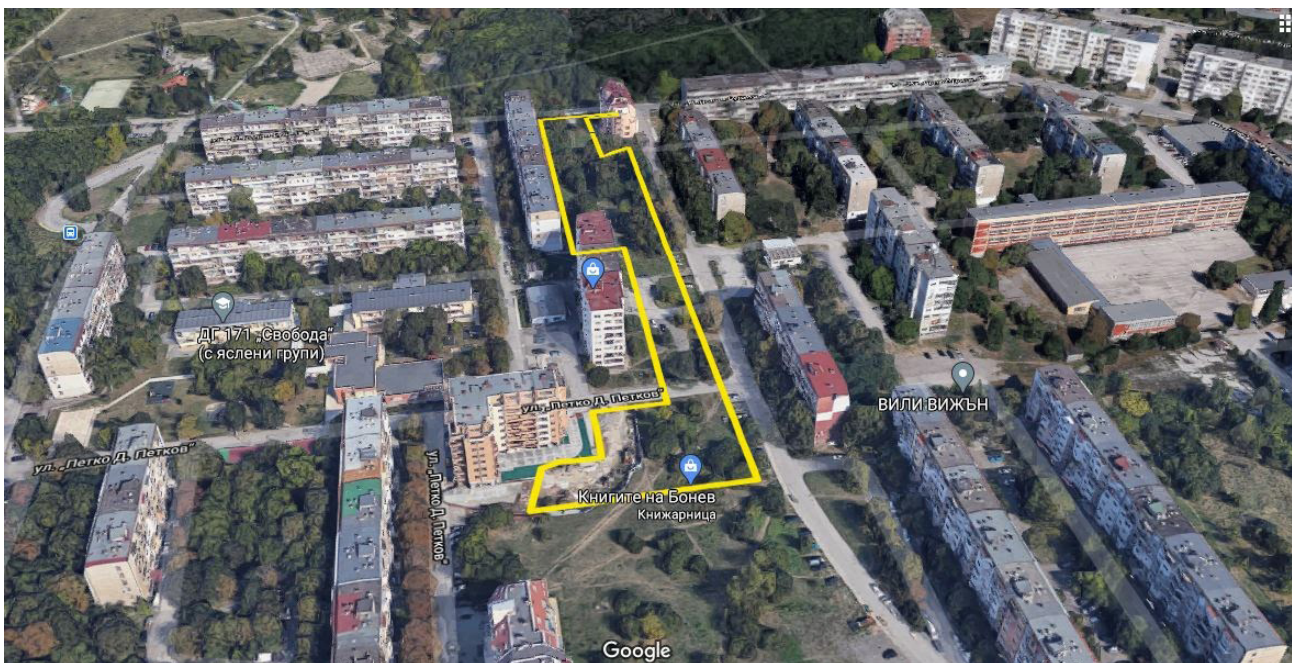


Figure 3. Intervention zone 1., Sources: Google, Изображения @2021 CNES/Airbus, Maxar Technologies, Картографски данни @2021





Figure 4. Intervention zone 2., Sources: Google, Изображения @2021 CNES/Airbus, Maxar Technologies, Картографски данни @2021

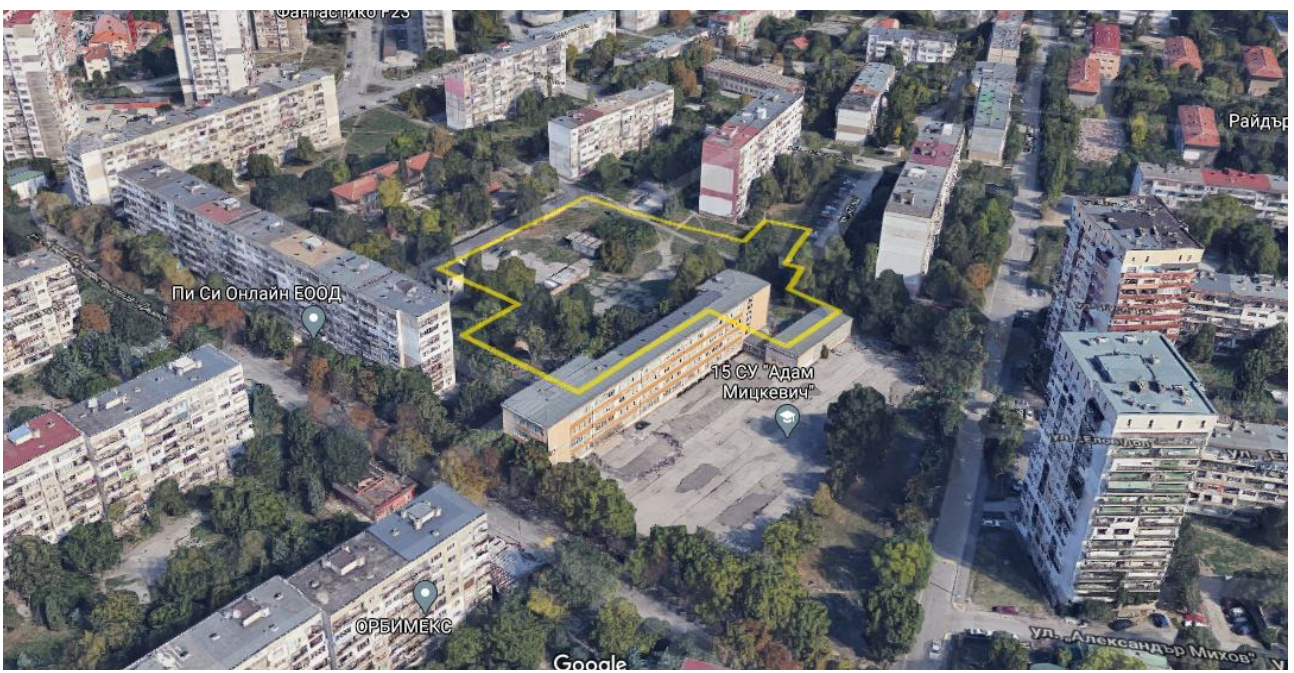


Figure 5. Intervention zone 3., Sources: Google, Изображения @2021 CNES/Airbus, Maxar Technologies, Картографски данни @2021

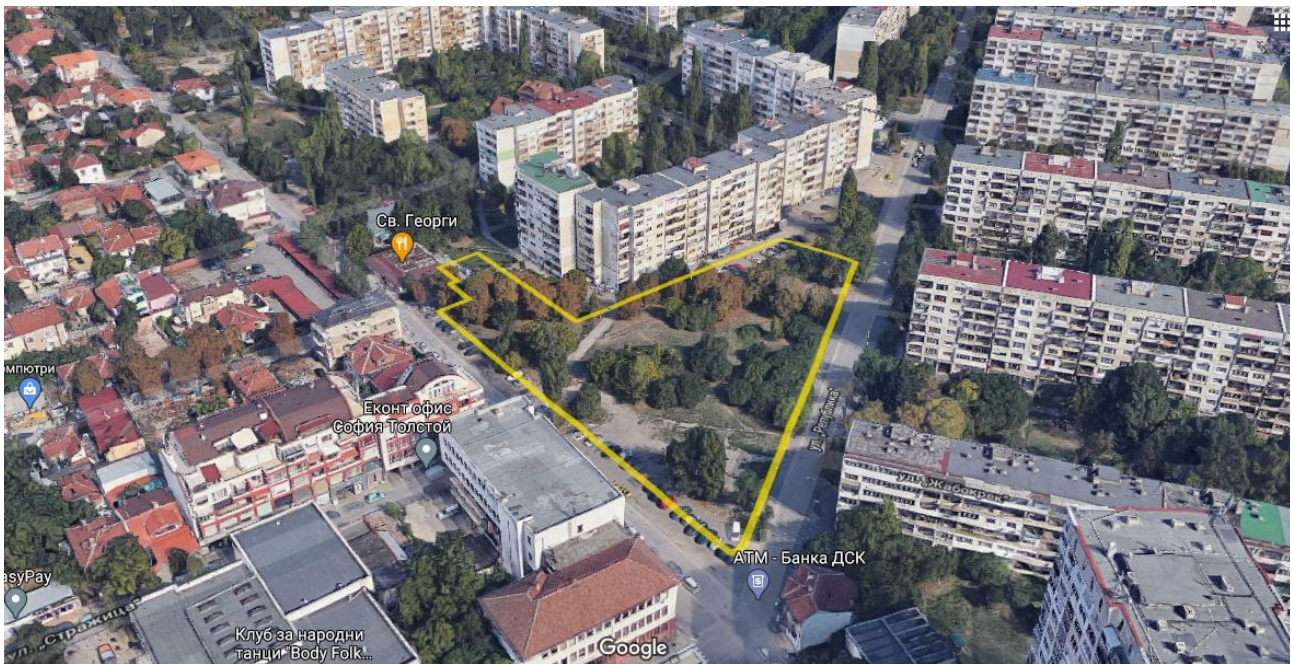


Figure 6. Intervention zone4. , Sources: Google, Изображения @2021 CNES/Airbus, Maxar Technologies, Картографски данни @2021

## Urbinat study area and the Healthy Corridor territory. Introduction

The core of the intervention area is under final estimations and will be precisely defined after the co-design of the NBSs and the zones of intervention. The location of the specific interventions related to the co-implementation of the NBSs is in about 20 vacant lots provisioned by the plans as part of the green infrastructure and public spaces in the four residential estates, namely Lev Tolstoy, Nadezhda 2 and 4 and Svoboda. The 2,5 km long axis of the Healthy corridor provides connection between Severen park and park Nadezhda and integrates important available territorial resources related to the major themes of the URBiNAT project – mobility, energy, water and nature.

The URBiNAT study area is 2,57 km<sup>2</sup>, while the intervention area has an overall surface of 1,43 km<sup>2</sup> of which 5,6 ha is the area of the vacant municipal plots that obtained the highest scores when subjected to multicriteria evaluation. The indicative buffer area of the primary and secondary axes of the corridor is 138,1 ha.

The area is mainly occupied by multifamily apartment housing constructed during the period of Centralized planning and predominantly built between the 1950-80s.

The pedestrian paths and open spaces vary in terms of actual and planned significance and use. Most often there are narrow streets and informal unpaved paths as well as inter-block vacant and partially underutilized lots.

Among the main constraints are the poor pedestrian connectivity and contested spaces due to high motorization rate and density of occupation as well as many abandoned, marginalized and unattended plots.

The main opportunity is the implementation of major improvements in the large green open public space such as public works, playgrounds and social spaces that can help the area to overcome its long restructuring both in environmental and social-economic terms. Furthermore, stimulation of participatory culture and solidarity networks can have a synergistic effect when combined with the physical improvements based on the self-confidence of the inhabitants and their attachment with the place.

## 2. The co-creation process

### 2.1. The Co-Creation activities and timeline

The co-creation of the healthy corridor concept was implemented according to the methodology defined by URBiNAT and adapted to the local context in two stages: co-diagnostic and co-design.

#### Co-diagnostic

During the co-diagnostic stage, the project was introduced to diverse groups, mainly political representatives, municipal technicians, citizens, and other stakeholders. The conducted “mapping of the local participatory culture” that started during the Consortium meeting in Sofia (Jan. 2019) gave a good start to the identification of active and interested actors, existing practices and projects under implementation in the Sofia,

Nadezhda and the URBiNAT study area. Two strategies to develop the “participatory activities” were adjusted by the local taskforce, one focused on specific groups that were approached through diverse methods, and another – focused on a public event in the Nadezhda Institute of Culture held in May 2019. These activities and actions involved a large group of citizens in URBiNAT and activated the Sofia Living Lab (see milestone 2). The outputs of the methods applied and the implemented actions were reported in the D2.1 Sofia Local Diagnostic (Dec. 2019) and constituted the baseline for the planning of the co-design stage. The main steps in the actors’ involvement and the activities performed are briefly presented on Table 1.

ACTORS [1]	CO-DIAGNOSTIC STEPS		
	PRESENTATION	MAPPING THE LOCAL PARTICIPATORY CULTURE	PARTICIPATORY ACTIVITIES
Pupils from the 4 schools in the URBiNAT study area	Meetings with the Pupils’ Parliaments, presenting URBiNAT	Events in schools; Exhibition of the results of the local diagnostic	Walkthrough Photovoice Motivational interviews
Pedagogical staff from the 4 schools in the URBiNAT area	Meetings with the headmasters of the schools and the teachers presenting URBiNAT	Focus group with teachers; Events in schools; assistance in the participatory activities with pupils	Walkthrough (assistance) Photovoice (assistance) Regular meetings with the “Work with children” mini working group
Staff from the kindergartens in the URBiNAT study area	Presenting URBiNAT On-line seminar to introduce the “tasty gardens of learning”	Focus group with teachers	Regular meetings with the “Work with children” mini working group
Staff from the local cultural institutions	Presenting the project to the staff of Nadezhda Institute of Culture, The centre for arts, culture and education, The 2 Local cultural centres	Cultural mapping Focus group Interviews	Participation in workshops Participation in the public events

Parents of the children attending activities at cultural institutions	Presenting the project goals, philosophy and activities	Focus groups	Participation in the public event
Citizens	Public Events (1 kick-off event) – informing Open – air exhibition – 14 days, information provided by URBiNAT representative 3 hours per day; On-line access to the Exhibition materials	Box for comments Cultural mapping	Presentations Mini-focus groups Participation in the public events
NGO-s and professional organizations, usually operating on city level	Meetings to present URBiNAT with NGOs and professional organizations (e.g., owners of nurseries)	Present their projects with URBINAT taskforce and share experience with citizens	Participation in the public events Focus groups Cultural mapping
Local organizations and local businesses	Informing through Face-to-face contact on-site	Mapping stakeholders' activities and engaging	Participated in the public event
Municipal technicians and staff at Sofia Municipality and Nadezhda district administration	Meetings to present URBiNAT Involvement in the meetings of the Mini working groups (e. group “work with children”)	Participation in the regular meetings of the Local task Forces Coordinate with other projects	Training to get in touch with URBINAT methodologies and involvement in the activities at public events; Walkthrough Cultural mapping – mixed groups
Political representatives	Presentation of URBiNAT	Validation of the scope of the study area Coordination with other projects	Participation in Public Event

Table 1. Main steps in actors' involvement and activities performed.

The wider framework of the analysis and the holistic approach to the LD brought the challenge to identify a broader scope of basic and specific human needs, the satisfaction of which is impossible to be handled financially, temporally, operationally and in terms of capacity for implementation. It was realized that this might threaten the management of expectations. In this way, and in the light of the theory-practice dialogue on the right to the city and the representative democracy in order to address the pressure on time, budget and capacity, Sofia task force started to design the procedures and formal rules for the establishment of the advisory board at the earliest stage, soon after the opening

of the co-design stage. Meanwhile the Sofia Task force (STF), along with the municipal and district technicians, made the prioritization and validation of the problems addressed in the LD. An exhibition and a public event made it possible to reach more citizens' groups, share the results and announce the forthcoming feedback and argumentation on the choices during the co-design process.

Based on the analysis of the understanding about the rights and obligations and the arising tensions, different arguments were identified that give insight to the culturally rooted and intergenerational differences to the approaches and motivations to collaboration and participation among the closely involved groups of actors –

inhabitants, pupils and representatives of the district administration, citizens. As children are recognized both by the citizens and STF members as a “channel for influencing and motivating for action”, the STF considered that parents of students and children should be encouraged and engaged to participate and motivate other friends and parents. Young people aged 19-27 were eager to participate but they were likely to lose interest if there were no immediate tangible results. The recognized diversity by the user groups involved outlined the important role of the co-evaluation and effective control during the public space co-creation process since the very beginning of any initiative of upgrading or planning for new development of urban public places in the URBiNAT housing estates.

## **Co-Design**

The co-design activities are organized in seven steps, according to the methodology proposed in the co-creation process: transform, self-projection, ideation, design, validate, argue, systematize. These steps aim to diversify among the different levels of commitment to the project, as involvement, interaction and integration. Although the self-projection and ideation were already part of the implemented techniques during the co-analysis, the kick-off of the co-design on June 20th 2020, was considered as the formal start of the co-design process for Nadezhda Living Lab. According to the level of details discussed and the results from the participatory activities implemented, two sub-stages could be identified within this stage. The first sub-stage focuses on the appropriation and relating the NBSs solutions to the areas of intervention, which includes the activities of transformation, self-projection and ideation. At the end of this stage, the NBSs suitable for implementation in the four intervention zones were co-selected from Sofia URBiNAT mini-

catalogue and the new NBS were identified and classified according to the URBiNAT catalogue into territorial, technological, participatory and social-and solidarity economy. The focus of the workshops and the results gave good representation of new technological and territorial co-selected solutions and very few proposals for the nonmaterial solutions. There are several reasons for this result: the applied methodology of the workshops and the conscious attempt to seek interrelation between the solutions and their spatial localization, the cultural perceptions and expectations of the participants on public space, the low popularity of the social and solidarity economy among the inhabitants of Nadezhda. Nevertheless, these findings, it is also important to outline that many of the ideas appropriated to some of the immaterial solutions related to education, culture and civic capacity building were addressed during the conducted interviews and focus groups in the Local Diagnostic Stage 2. All of the collected new proposals were further related to one of the following groups of categories: public space, sports and recreation, social economy, education, culture, and solutions providing for climate change resilience (climate adaptat). The URBiNAT team systematized all the information collected and went through a decision process with the municipal technicians in order to further diversify the proposals according to the possibility to develop the proposal as NBS, the need to channel the proposal to other municipal projects, and not to develop the NBS. (Figure 7)

Finally, the NBS approved were integrated in the Healthy corridor preliminary project, the approved version of which was presented to the citizens and other stakeholders before the implementation of the co-design workshops. Some NBS are being developed in parallel, namely the immaterial solutions that will activate the use of the Healthy corridor.

# From co-diagnosis to co-creation. The Inclusive Process

**2019**

**JAN-APRIL**



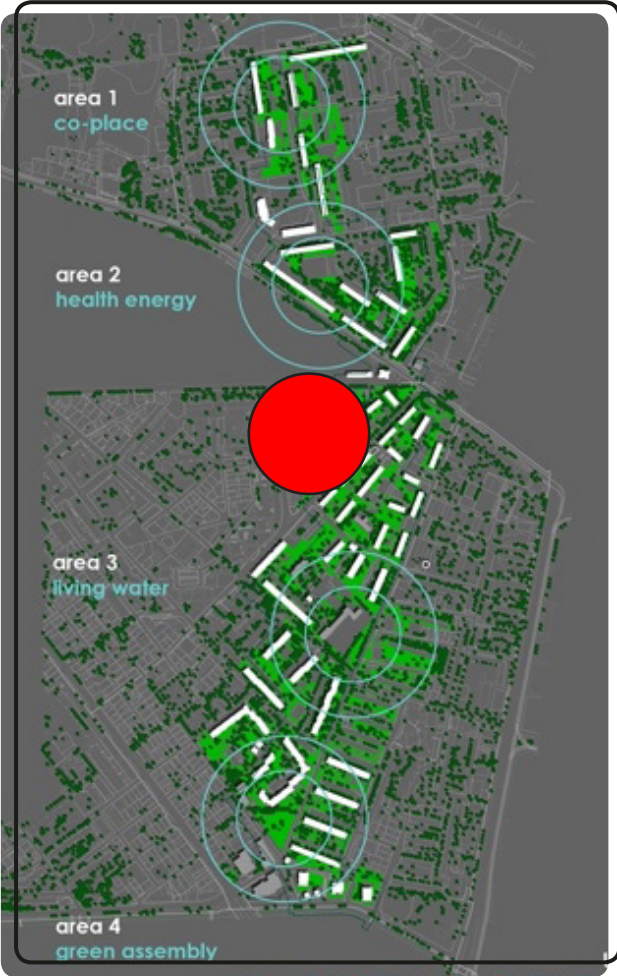
**Kick-of Participation process**  
with local stakeholders and citizens

**2019**

**MAY-SEPT**



**Perceptions & Engagement**  
with schools



**Preliminary Project of the Healthy Corridor**

**2019**

**MAY-JULY**



**Main needs & challenges** through Behavioral mapping, Focus-groups and Interviews

**2020**

**DEC-FEBR**



**Ideas co-development and consolidation** (systematization/discussion/validation/

**2021**

**NOV-MARCH**



**Feedback to citizens Decision and experimentation** sessions and workshops

**2020**

**JUN-SEPT**



**Dissemination and Co-selection:** Presentation of the LD to the citizens and workshops

Figure 7. The co-creation process in Sofia.

The first stage of the Co-design was closed in January 2021, followed by a two-month procedure of finalizing the Healthy corridor concept and presenting it to different Municipal Council's Commissions, and finalized with the Political approval (March 18<sup>th</sup> 2021) of the axis of the Healthy corridor, the zones of intervention, and the groups of NBSs to be implemented. At the time of the delivery of this report, the second stage was under implementation, with most of the participatory activities implemented outdoors implementation in June 2021.

The second stage focused on the participatory co-design of each NBSs and its interconnectedness

with the solutions within the group already selected and validated by the municipal technicians and politically approved by the municipal Council. During the first half of June, Sofia task force (STF) worked with 3d models and in close interaction with inhabitants and stakeholders at the proximity of each intervention zone in order to precise the NBSs already selected. Meanwhile, in January and February 2021, several on-line co-design workshops were already conducted and led by IAAC for the development of the educational pavilion in 15<sup>th</sup> school and Superbarrio session was organized for the pupils of 154<sup>th</sup> sports school.

## 2.2. The co-creation Chronology

co-diagnostic

### M01

00/07/2018



#### Involvement

Observation visits of the Local Taskforce to Nadezhda

#### Mapping

Observation of the URBiNAT study area, passive territorial mapping and mapping of activities

### M02

06/11/2018



#### Involvement

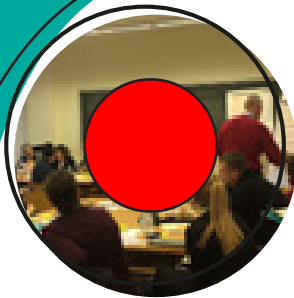
Meeting with the Deputy Mayor and the Mayors of Nadezhda and the neighboring districts

#### Mapping

Awareness raising among the elected politicians and discussion of the scope of the URBiNAT area, its connections with neighboring territories, and common projects planned or underway

### M08

25/01/ 2019



#### Integration

Workshop with local stakeholders during Sofia meeting of URBiNAT partners

#### Perceptions

Cultural mapping among the municipal staff, local champions, and NGO-s operating on city level

#### Training

To share principles of for implementation of the Cultural mapping

### M07

23/01/2019



#### Involvement

Visit to the Municipal centre for Personal Development in Nadezhda

#### Mapping/Self-projection

To present URBiNAT and engage children in the co-creation process  
To present some of the cultural activities to the consortium members

### M09

01/02/2019



#### Involvement

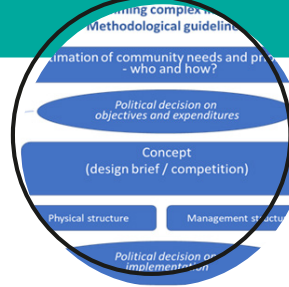
Formalization of the Sofia Task Force

#### Internal communication and Training

To present URBiNAT and engage citizens and stakeholders in the participatory process of local diagnostic

### M10

05/03/2019



#### Involvement

Local task force meets thermal water and swimming specialists

#### Perceptions/Co-design

Discuss the innovative aspects and characteristics of the thermal water swimming pool as NBS. Establishment of a life-cycle strategy for implementation



## M03

03/01/2019



### Involvement

Formal approval of the scope of the URBiNAT study area

### Agreement

local political actors for agreed on coordinated actions within the selected area of the 5 neighborhoods for the co creation of the Healthy Corridor

## M04

08/01/2019



### Involvement

Meeting of Sofia Taskforce with local stakeholders

### Mapping/ Self-projection

To present URBiNAT to NGOs operating at city level

## M06

23/01/2019



### Involvement

URBiNAT consortium - meeting the chief architect of Sofia and the mayor of Nadezhda district at Sofia City Hall

### Perceptions

Awareness rising within the Municipal elected politicians and administration

## M05

17/01/2019



### Involvement

Meeting with the staff at the Municipal centre for Personal Development in Nadezhda

### Self-projection

To present URBiNAT to the staff prepare activities for the Sofia Meeting

## M11

20/04/2019



### Involvement

Public Kick-off in Nadezhda Institute of Culture

### Presentation

To present URBiNAT and engage citizens and stakeholders in the participatory process of local diagnostic  
**Mapping/Self-projection**  
cultural mapping and motivational interviews  
*in-small-groups*

## M12

09/05/2019



### Involvement

Meeting with headmasters and deputy headmasters of schools and kindergartens in URBiNAT study area

### Presentation

To present URBiNAT and engage the municipal educational institutions and their pupils in the co-creation process

## M13

10/05/2019



### Involvement

Presenting URBiNAT to the Pupils' Parliaments in four schools

### Self-projection

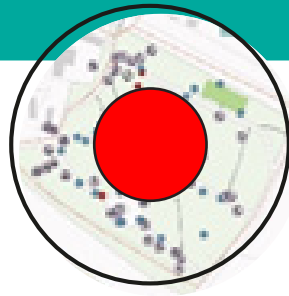
To present URBiNAT and engage active pupils in the co-creation

### Ideation

To collect concrete ideas outlined as mini-projects/initiatives

## M14

16/05, 18/05, 13/06, 15/06/2019



### Observation

Behaviour mapping at 19 locations within the URBiNAT study area

### Mapping

Observation and mapping of activities, users, and flows during working and nonworking day

## M20

15/01/2020



### Interaction

Citizen workshop

### Ideation

Presentation of NBS catalogue and co-selection of new NBS

## M19

17/09 – 10/10/2019



### Involvement and Sharing

Exhibition on the Local Diagnostics in the 4 schools

### Presentation/ Self-projection

To activate schools as horizontal partners  
To explain the opportunities to participate  
To negotiate further forms of collaboration during the co-creation process

co-selection  
and co-design

## C01

12/2019 – 02/2020



### Integration

Validation of the URBiNAT plots by the Municipal technicians

### Coordination

Validation of plots to be chosen for the Healthy corridor activities and the suitable NBS for each plot

## C02

24/01/2020



### Involvement

Focus group of professionals related to health, thermal, water, and swimming and its inclusive potential

### Perceptions/Co-design

Discuss the innovative aspects and characteristics of the thermal water swimming pool as NBS

## M15

28/05, 05/06/2019



### Involvement

To engage pupils - "sports champions" from the 153th sports school in the co-creation process  
To engage the staff from Nadezhda district administration

### Ideation

To gather ideas and relate them to NBSs

## M16

06/2019, 07/2019



### Involvement

3 focus groups with the local administration staff, staff from cultural institutions, parents  
1 focus group related to mineral water

### Ideation

To collect ideas for activities and projects

## M18

11/07/2019  
27/08/2019



### Involvement

Activities of the Mini Working Group "Work with pupils".

### Presentation and organization

Engaging pupils from the schools within the URBiNAT study area

## M17

11/06/2019



### Interaction

Meeting with the Deputy Mayor the Chief architect of Sofia Municipality

### Coordination

Political and municipal experts' validation

## C03

01/03/2020



### Integration

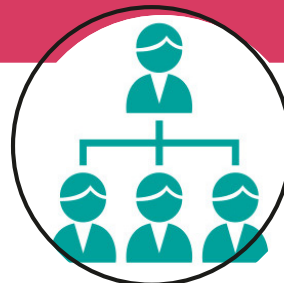
Preliminary Mini catalogue of Sofia

### Co-selection

To select relevant context sensitive NBSs from URBiNAT's catalogue in order to use them as reference examples in the co-creation process

## C04

05/06/2020



### Interaction

local administration technicians and politicians from the district

### Presentation

Presentation of the local diagnostic

## C05

13/06 – 27/06/2020



### Involvement, sharing, and discussion

Two-week exhibition in the public space in front of the Nadezhda Cultural Institute

### Presentation

Explaining and sharing URBiNAT's philosophy, achievements and steps forward

### Perceptions and Ideation

To map perceptions and to collect ideas for NBSs

## C06

20/06/2020



### Kick-off event

Closing local diagnostics and opening of the Co-creation process

### Presentation

To present the Local diagnostics to the citizens

## C12

10/09/2020



### Interaction

Citizen workshop at place of intervention "Green Assembly"

### Perceptions/Ideation

To collect solutions and ideas and relate them to NBSs

## C11

27/08/2020



### Interaction

Citizen workshop at place of intervention "Co-place"

### Perceptions/Ideation

To collect solutions and ideas and relate them to NBSs

## C13

24/09/2020



### Interaction

Citizen workshops at places of intervention "Aqua Vita" and "Health Energy"

### Perceptions/Ideation

To collect solutions and ideas and relate them to NBSs

## C14

10-11/2020



### Interaction

Preparation of the Urban Plan Design brief

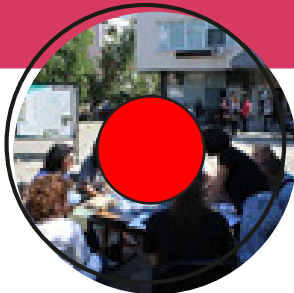
### Validation Design

Summarize the local diagnostics for the purposes of the plan elaboration

Define the scope and content of the Urban Plan  
Summarize ideas and their expert validation

## C07

20/06/2020

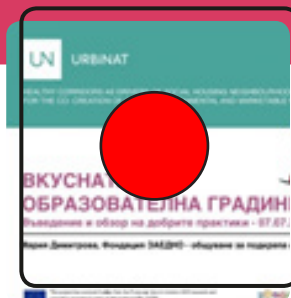


### Interaction

Citizen workshops for 4 places of intervention

### Ideation

Collecting ideas through 4 workshops with citizens for 4 locations



## C08

07/07/2020

### Involvement

On-line seminar for the staff from the kindergartens in Nadezhda District

### Presentation

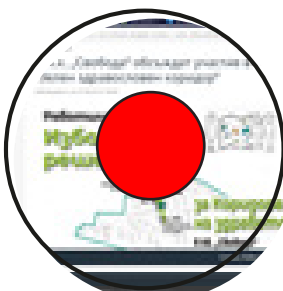
Introduction to the Edible Gardens of Learning.

### Transform

Ideas for transformation of the kindergarten's yards

## C10

27/08/2020

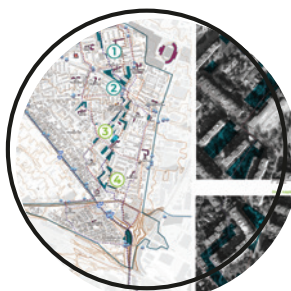


### Involvement

Radio interview (for Radio Sofia)

### Presentation

Interview on the URBiNAT's aims and open call for citizens to join the forthcoming workshops



## C09

27/08/202

### Interaction

Meeting with the Mayor of Nadezhda district

### Validation

Formal approval of the selected 4 areas for workshops with citizens and to discuss the possible interventions

## C15

17/12/2021

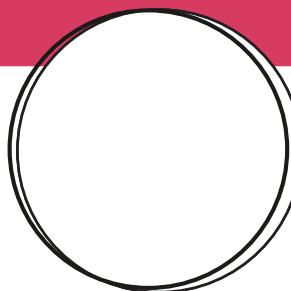


### Interaction

Sofia task force meets the Headmistress of 15<sup>th</sup> school

### Ideation

Discussion on the needs of educational facility and its location within the school yard



## C16

### Expert judgement

Observation visits of the Local Taskforce to Nadezhda

### Mapping and in-depth studies of the areas of intervention

Observation of the URBiNAT study area, passive territorial mapping and interaction with citizens

## C17

02-03/2021



**Interaction/coordination**  
Internal validation among municipal technicians

**Validation**  
Agreement on NBS ideas to be channeled for implementation

## C18

13/01/2021  
04/03/2021



**Interaction**  
Sofia Task force meets IAAC team

**Ideation/Co-design**  
Agreement of the design, functions and structure of the Greenhouse in the 15th school yard

## C23

17/03/2021, 18/03/2021



**Interaction**  
Sofia Municipal council

**Validation**  
The Healthy Corridor Concept (plots for intervention and axis of the Corridor) approved

By Commission on Ecology at the Municipal Council, By Commission on Spatial Planning, Architecture and housing policy at the Municipal Council and finally By the Municipal Council

## C24

05/2021

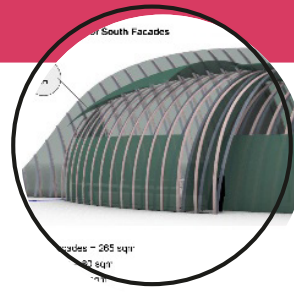


**Involvement**  
Pupils from 15th school

**Perceptions/Ideation**  
To test "learn for life – GIS for citizen participation – preparation of the workshop

## C25

01/06/2021



**Interaction**  
Technical meeting between Sofia municipality Urban Plan Team and IAAC

**Co-Design**  
Discussion on the requirements in the design brief for the educational pavilion in the yard of 15 school

## C19

18/02/2021



### Interaction

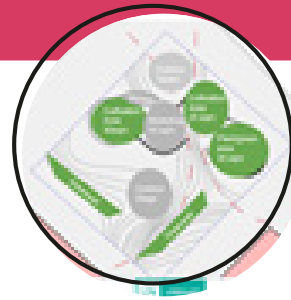
Presentation to the Sofia Municipal council

### Presentation

Sending the Report for the Healthy Corridor Concept to the elected politicians at the Municipal council

## C20

23/02/2021



### Interaction

Meeting with the headmaster of kindergarten 90 in Svoboda

### Ideation/Co-design

Discussing options for the layout and the technical parameters

## C22

15/03/2021



### Interaction

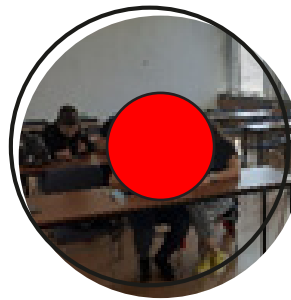
Headmistress of 15 school

### Co-Design

Co-design of the educational pavilion in the yard of 15 school

## C21

05/03/2021



### Interaction

Super Barrio workshop with pupils from 153 school

### Presentation/Ideation

To introduce the NBSS concept and to inform on their benefits to collect solutions and ideas for the area around the sports school through gamification

## C26

04/06/2021



### Interaction

Citizen workshops at place of intervention "Health Energy"

### Co-Design

Co-design of the subzones and NBSS

## C27

05/06/2021



### Interaction

Citizen workshops at place of intervention "Co-Place"

### Co-Design

Co-design of the subzones and NBSS

## C28

08/06/2021



### Interaction

Technical meeting between Sofia Task Force and IAAC

### Co-Design

presentation of the revised concept and the administrative, legal and technical requirements to the design, and the possibilities for implementation of the educational pavilion in the yard of 15 school

## C29

11/06/2021



### Interaction

Citizen workshops at place of intervention "Aqua Vita"

### Co-Design

Co-design of the subzones and NBSs

## C31

15/06/2021



### Interaction

Advisory Boars

### Presentation and oundation

First meeting

## C30

12/06/2021



### Interaction

Citizen workshops at place of intervention "Green Assembly"

### Co-Design

Co-design of the subzones and NBSs

## C32

23/06/2021



### Interaction

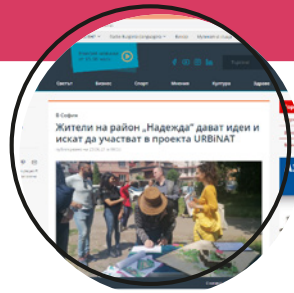
Sharing results of the co-design and prototyping of the tasty gardens of learning in Kindergarten N 90

### Co-Design

Demonstration of the non-formal activities to the Mayor of Sofia and the Mayor of Nadezhda district

## C33

23/06/2021



### Involvement

Radio interview (for Radio Sofia)

### Presentation

Interview on the URBiNAT aims and results from the co-design workshops



## 2.3. Challenges of the co-creation process and the impact of the Covid 19 crisis

During the first pandemic wave (March-May 2020) the main anti-epidemic measures against the spread of coronavirus (COVID-19) were the prohibiting the access to Nadezhda Park, North Park, and all sports facilities and playgrounds in the city, including those in the URBINAT area. Schools and kindergartens were closed until the state of emergency ended, and parents had to organize a home office and parenting. On the recommendation of the Government, Green shopping corridors in supermarkets, grocery stores and pharmacies opened only for elderly people aged 65 and over. Although required and constantly monitored, the opinion about the efficiency of this measure was very controversial. The high vulnerability of the elderly did not allow the Taskforce to organize a special workshop with the club members of the retired elderly in Svoboda housing estate.

The situation of emergency imposed various challenges, such as the need for access to equipment and Internet, especially for the vulnerable population as well as the need for additional equipment and space for the households with more children and those organizing a home office. In fact, the restrictive measures did not allow any project events to be held indoors, while the winter season limited the Taskforce to hold them outdoors. The planned public event for closing the local diagnostic and the co-design kick-off in the beginning of April was postponed for June 13<sup>th</sup> and due to the rain was postponed a second time for June 20<sup>th</sup>. The time under the lockdown was effectively used to

synthesize and appropriately present the local diagnostics in 13 panels and to prepare the methodology for the workshops held on the day of the event. Regardless of the holiday summer season, the risk of infection, and requirements for social distance, four open air workshops at the places of intervention were organized during August and September 2020. Though planned in advance, the need for more space for the public events in order to maintain a safe social distance, even outdoors, has been recognized during the workshops.

During the second wave (November 2020) the large shopping centres (malls), bars, sports halls and sport facilities for persons under 18 years were closed. Restrictions on public gatherings with more than 15 participants were introduced and all public hearings on the territory of Sofia Municipality were cancelled or postponed.

During the period of the imposed measures from November 2020 onwards, the planned SuperBarrio workshops with pupils and the design workshops were postponed. Meanwhile the design of the concept and rules of the Stakeholders Advisory Board were created, allowing for remote participatory actions to be taken. The Design brief was prepared and the work on the Urban plan concept and its adoption took place during the second long period of imposed measures (November 2020 – March 2021) The preparation of the methodological guidelines and the 1:500 scale models for the planned co-design workshops at the places of intervention in May took place during this second long period of restrictions.



Figure 8. Social Distancing measures applied.



Looking at the future, there is the need to maintain the organization and coordination of the digital work process and exploit effectively the advantages of online communication tools. The exhibition panels produced for the public event in June 2020 were uploaded and accessible online thus allowing the inhabitants of Nadezhda, but also the general public to get information about the project's progress in Bulgarian language. The test for performing some of the co-creation activities online started with the "Tasty gardens of learning NBS" seminar, organized for the headmasters and staff of the kindergartens in Nadezhda and the workshops for the co-design of the educational pavilion in the school yard of School N15. Interactive co-design online workshops and feedbacks on the proposal mainly with the members of the Advisory Board are scheduled for the second half of August and September and a series of on-line discussions and an online competition for project ideas for the swimming pool are also under preparation.

The long period of disconnection with citizens and stakeholders due to the second and third pandemic waves, combined with the winter season (lasting from November 2020 to April 2021) demotivated many of the local leaders and active inhabitants during the workshops held in June 2021. Due to the long delay, most of them demonstrated indifference and mistrust of the activities at hand.

# 3. The Healthy Corridor Strategy

## 3.1. The strategic and operational framework

The city policies related to the URBiNAT project objectives are defined and developed in a series of strategic documents, plans and programs. (Figure 9) The objectives of the URBiNAT project are in line with a significant part of the current general, framework and long-term objectives of the strategic and tactical documents, as well as with the envisaged specific interventions associated with the Healthy Corridor. Their parallel existence is determined by the national legislation, international agreements, funding conditions or civil and market expectations. Some of the planning instruments are provided with resources, but for most of them there are no explicit financial resources.

Protecting and strengthening the residents' health is a priority of the Sofia Municipality. The topic of health is included in the section "People" of "Vision for Sofia 2050" together with sports, supporting the youth friendly environment, social and territorial cohesion, and quality education. The surveys conducted in connection with the development of the document show that, unfortunately, the majority of Sofia residents still do not play sports actively – every seven out of 10 respondents (71%) admit that they do not spend time on sports activities during the week. At the same time, only 34% of Sofia residents are completely satisfied with their health condition (compared to 45% only partially). It has been recognized that the people of Sofia like their city in general, but there is also criticism of the condition of the inter-block spaces and the infrastructure in the neighborhoods. That is why in the section "Living Environment" of the "Vision for Sofia 2050" there is an explicit emphasis on the green inter-block spaces and courtyards (step 7), the vertical and roof landscaping of the buildings (step 8); building a park environment for recreation around urban rivers (step 9).

The Sofia Municipality's Sustainable Urban Mobility Plan imposes walking and cycling as the most important priorities for transport in the city and proposes measures to encourage cycling. The program for the development of bicycle transport on the territory of Sofia Municipality aims to turn bicycle transport into a significant part of the city's transportation modes.

The municipal policy in support of civic initiatives aimed at creating a quality urban environment has been channeled through several innovative programs of Sofia Municipality since 2008: "Europe", "Culture" and "Green Sofia".

The initiative "Sofia – Green capital" and the strategy for the valorization and reconstruction of the mineral water deposits in Sofia municipality, along with the Sustainable Energy and Climate Action Plan (still under development) put at the front the value of the natural capital, climate change resilience, and the potential of its added value for socio-economic development and citizens' health and wellbeing.

Sofia is among cities such as Zurich, London, Stockholm, Copenhagen, New York, Istanbul, Moscow, Shanghai and Bern, which have worked with Prof. Jan Gehl in the last 10 years for building and implementing strategies for development of public spaces. The "Sofia – a city for the people" report describes in detail the challenges Sofia municipality has to deal with and prescribes sets of measures in order to transform the city's public spaces into a well-functioning people friendly network. Five of these measures are currently being implemented: pedestrian zone expansion and the introduction of traffic restrictions of small streets in the historical centre of the city; discovering and exhibiting the cultural and historical heritage and its transformation into well-used public spaces well integrated into the life of the city centre; connecting bicycle lanes into a common network; removing transit traffic from the city centre; and amendments to the Building and Construction Act of Sofia Municipality, which should provide good solutions for both citizens and investors. As the URBiNAT study area was not included in this pilot attempt focused on the city centre, the The City Administration, envisioned The Healthy corridor construction as a good occasion for promoting the idea for making cities for people in the North-West periphery of Sofia.

Sofia plays strategy proposes the implementation of a system of measures that will create the preconditions for healthy and socially engaged development of children and youth, for the formation of sustainable local communities

and for the implementation of flexible financial models for the construction and maintenance of playgrounds. Sofia Plays is a strategy for building, maintaining the 1,770 playgrounds and

adapting them. The strategy has been initiated by the Green System, Ecology and Land Use Directorate and commissioned by the Chief Architect of the Sofia Municipality.

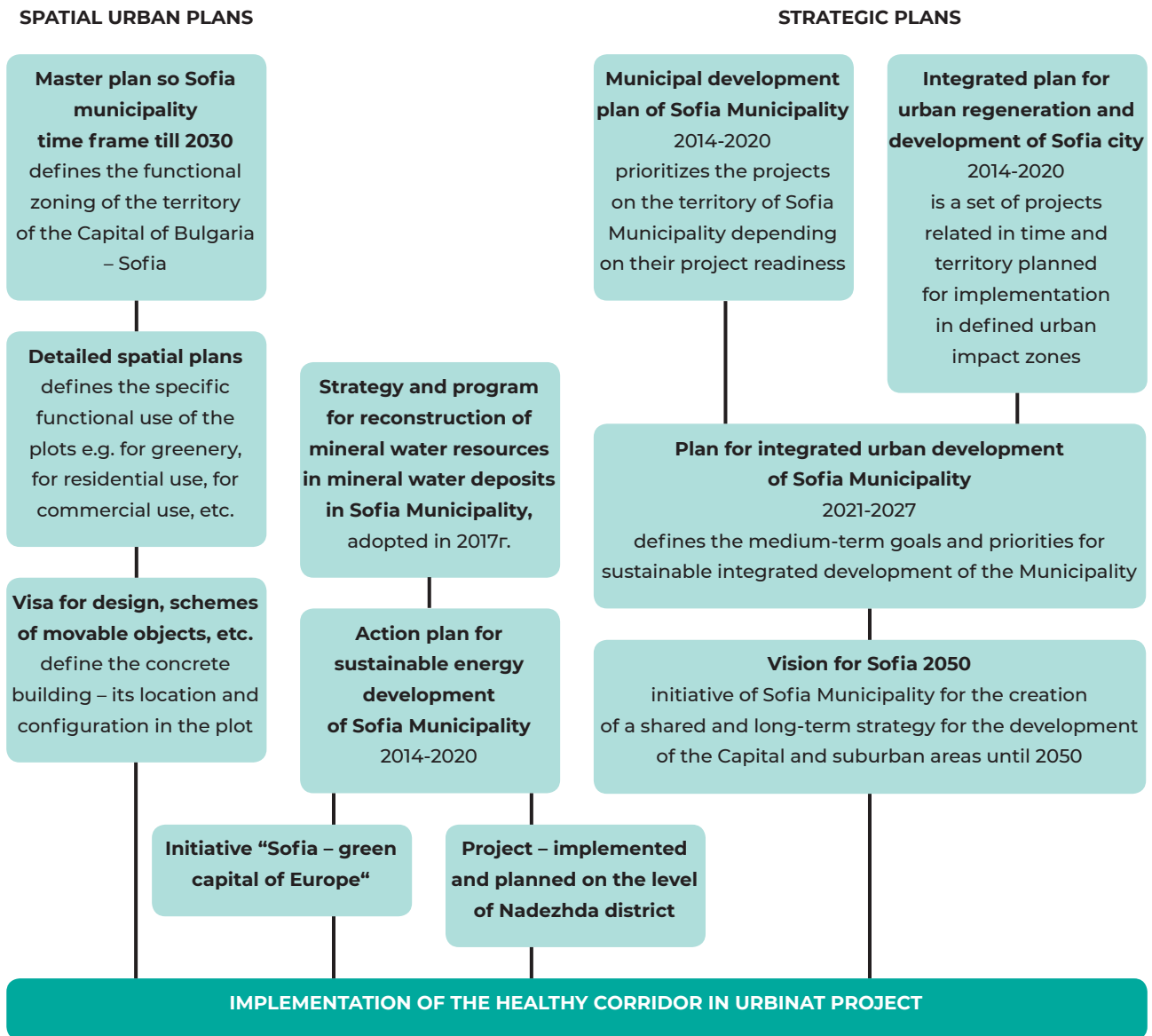


Figure 9. Healthy Corridor Strategy. The strategic Reference Framework

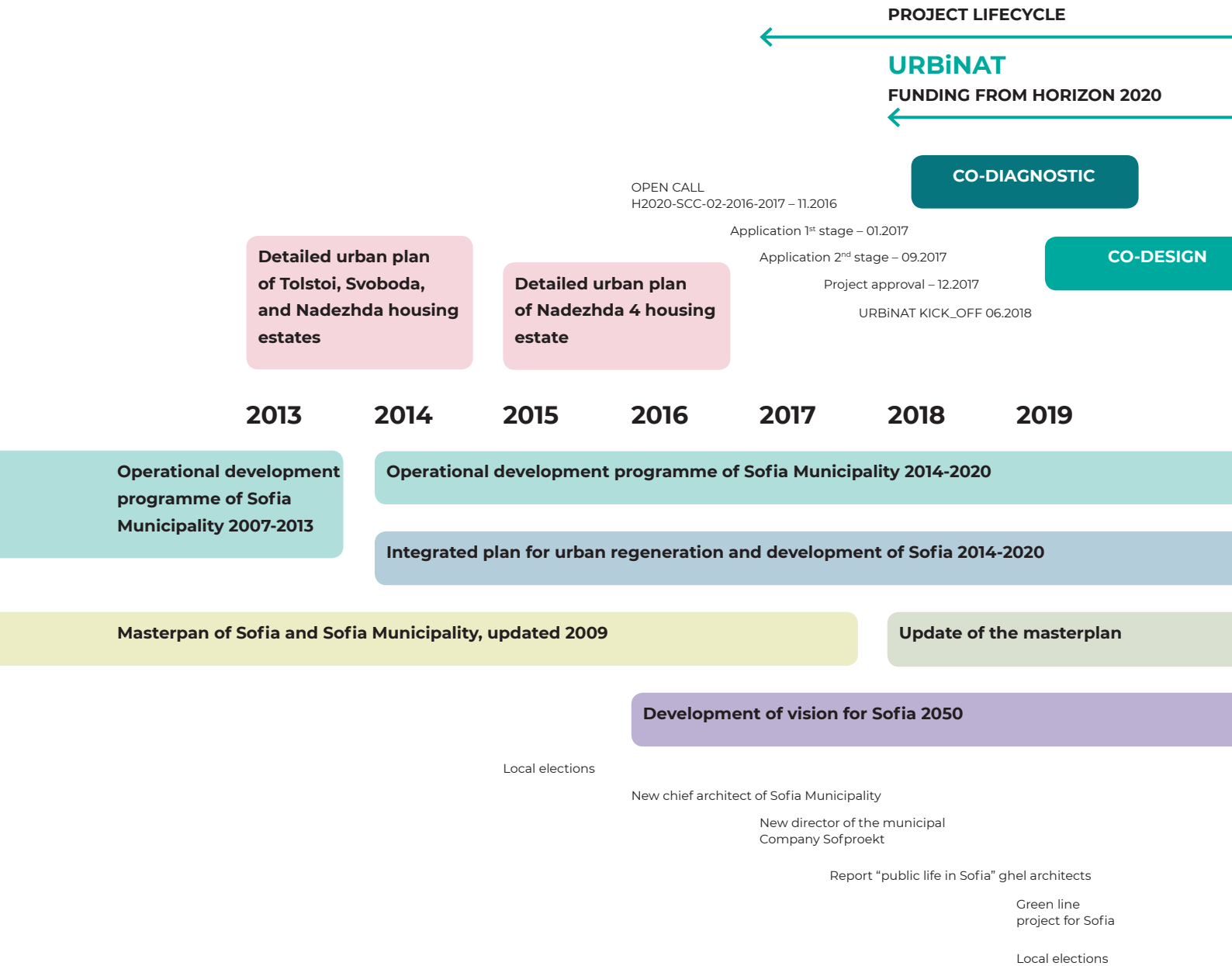
An important condition for achieving synergy are the commitments of the Municipality to make planned investments in the restoration and development of the elements of the urban environment and public works. The Healthy Corridor plan is implicitly related and is fully coordinated with The Integrated Plan for Urban Regeneration and Development (IPURD) 2014-2020 and the approved detailed spatial plans of the housing estates. It will be coordinated with the Municipal Plan for Integrated Territorial Investments 2021-2027 (still under elaboration), the annual investment programs of the

Municipality, and with the forthcoming update of the Master Plan of Sofia Municipality.

The URBiNAT study area falls within the boundaries of the social zone of intervention of the Integrated Plan for Urban Regeneration and Development of Sofia 2014-2020 (IPURD). The Municipality has been implementing the IPURD, mainly through projects for improving energy efficiency of buildings (housing and public buildings – schools, kindergartens, etc.), construction of new buildings, development of infrastructure, public works, and rehabilitation of the green areas and sport facilities. The studies

within the URBiNAT framework further seek the prospective to provide synergies through the integrated territorial investments in health, green system, public space and mobility. The sectoral and hierarchical system of the planning of documents and the resulting difficulties to integrate the changing set of documents and their scope and content in the midway between

two planning periods, imposed challenges for integration of the URBiNAT plan with the existing planning system reference framework. (Figure 10) Therefore it has been agreed that the plan will cover both a strategic part, but also will provide a specific scheme for the implementation of the Healthy Corridor, the areas of intervention and the specific NBSs.



PROJECT LIFECYCLE

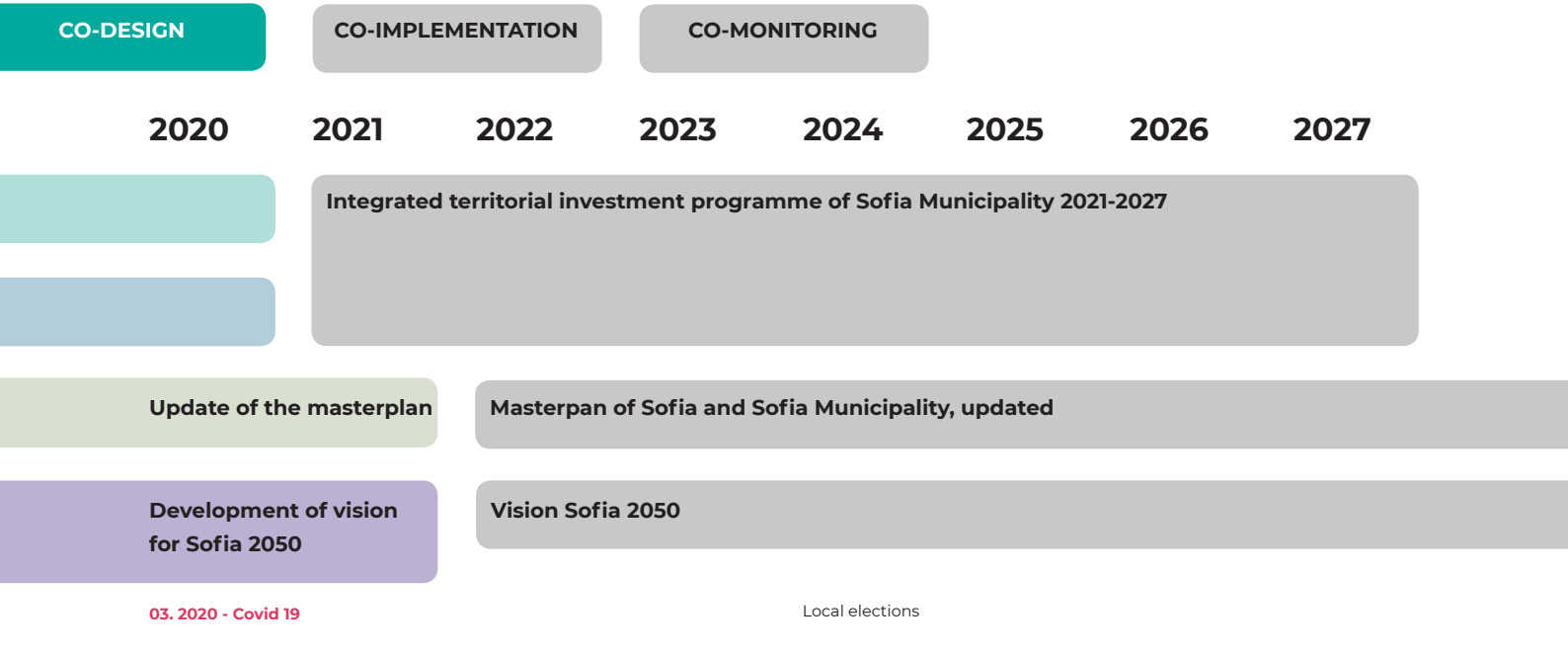
**URBiNAT**

FUNDING FROM HORIZON 2020



END OF URBiNAT PROJECT

SUSTAINABILITY



PROJECT LIFECYCLE



**URBiNAT**

SUSTAINABILITY

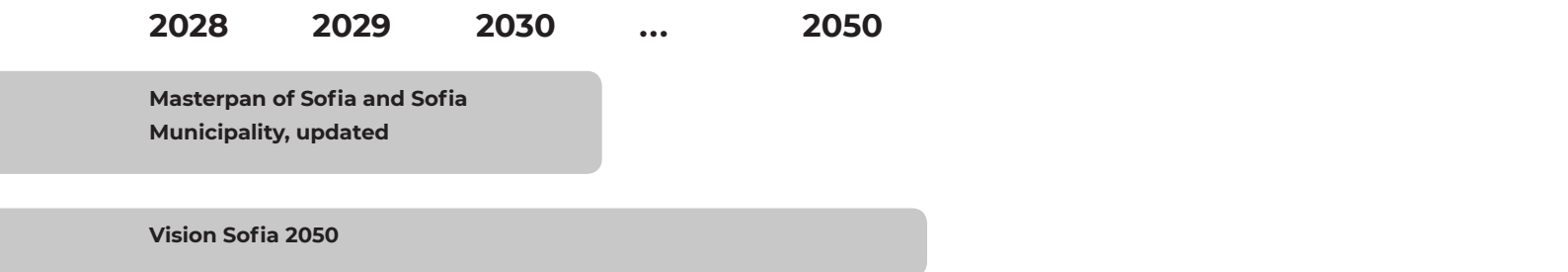


Figure 10. The changing spatial planning framework of Sofia Municipality.

In the course of the Healthy corridor co-creation, the process consisted of a sequence of four main groups of activities involving citizens, experts, politicians and municipal experts. The co-creation process was integrated into the planning framework, respecting the procedures and validating solutions proposed at three steps, mainly connected to: approval of the municipal

plots for future interventions and the NBS mini catalogue of Sofia, the approval of the healthy corridor concept, and the approval of the detailed scheme for movable objects, the NBSs technical projects, issuing a construction permit for the Healthy Corridor and the zones of intervention. (Figure 11)

## The co-design process of the healthy corridor in Nadezhda, Sofia

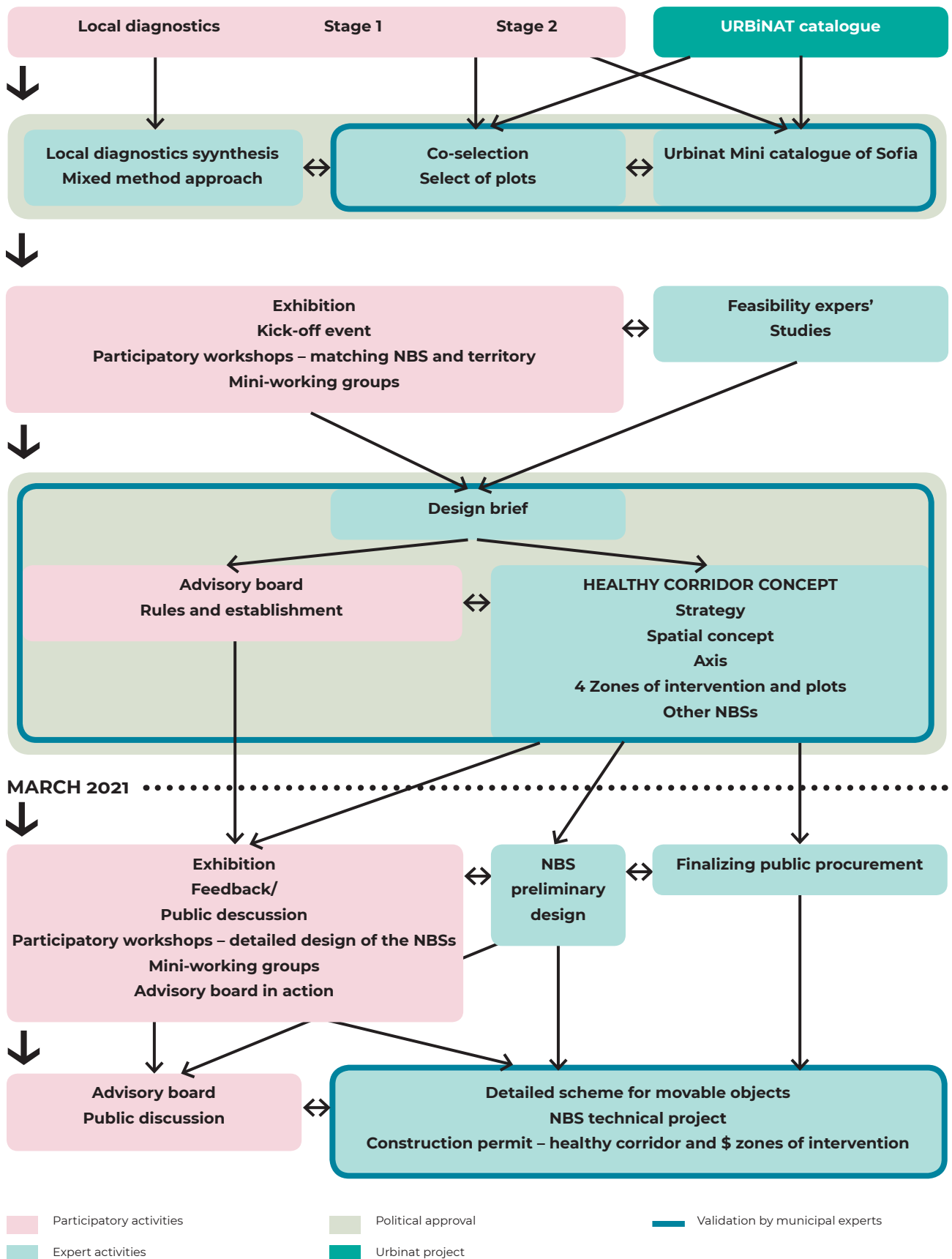


Figure 11. The URBiNAT Healthy Corridor in Nadezhda: Process, scope of activities, and content.

## 3.2. From co-diagnostic to co-design

### 3.2.1. Methods and research questions

Based on the overall URBiNAT methodology, the Healthy Corridor co-creation process in Nadezhda was adapted to the local administrative framework and cultural context. This chapter presents the first two phases of the co-creation process – co-diagnostic and co-design in terms of the activities developed, participating actors, and main goals achieved. The planned activities in May 2021 for concluding the second stage of the co-design process are presented briefly.

#### Local diagnostic

During the co-diagnostic stage, analyses were conducted at three levels: city, district, and URBiNAT study area. Except the conducted analysis and evaluation of the biophysical characteristics, the green structure, the biodiversity, and the land-cover, the territorial analysis in the first stage of the local diagnostic focused on the transportation network and

services, the local masterplans, and the urban/ landscape design projects. The social description explored the demographic data and information on safety and health, summarized the perceptions and demonstrated participatory culture, and compiled a description of the public services in the district. Income, employment, activity sectors and available facilities were also addressed as part of the economic description of Nadezhda district. The Local Diagnostic Part 2 zoomed in over the study area where the Healthy corridor is planned to be implemented. This zooming in over the area and the neighbourhoods of Tolstoy, Nadezhda 2, Nadezhda 1, Svoboda and Triagalnika neighbourhoods and Park Nadezhda was based on the project ambitions to achieve a level of detail that would impact and involve the communities whose life's can be improved by URBiNAT's goals and lines of action.

The synthesis from the various methods and techniques makes the connection between the co-diagnostic and co-design phases through the elaboration of the Healthy Corridor concept. (Figure 12)

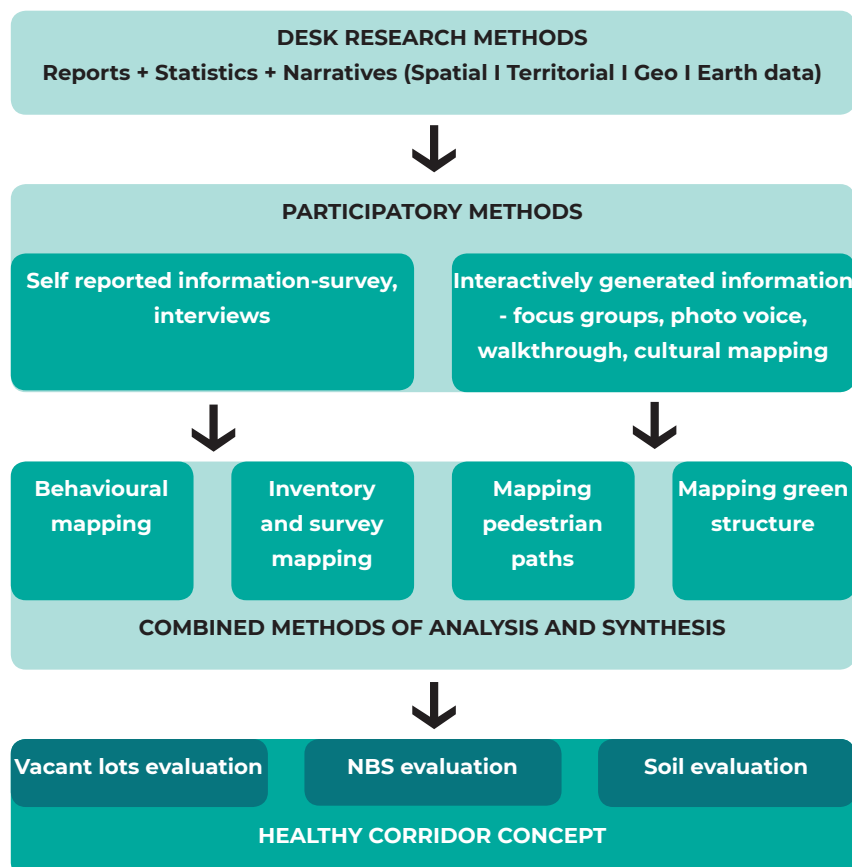


Figure 12. Mixed-method approach implemented in the co-diagnostic phase.



Focusing by zooming in and changing scales, along with the implementation of the mixed-method approach helped to identify specific complementary or contradictory findings related to perceptions, aspirations, fears and threads, but also daily, seasonal and weekly dynamics aspects of public space use, activities, flows and preferred location. The various methods applied involved different number of participants and followed preliminary designed methodology (Table 2). The real challenge came along with the contested “hot points” where competition for space and among uses imposed the need to fully address

the multifunctionality of inclusive public space when designing the Healthy Corridor by applying the principles of Universal design. Grounding on the local context, the implemented mixed-method approach combines traditional methods for information gathering and synthesis, inclusive participatory methods for gathering specific information about the area and its inhabitants. All these, along with the intensive consultations and validation procedures were gradually integrated into the established statutory planning process.

METHODS	PERIOD OF IMPLEMENTATION	NUMBER OF PARTICIPANTS	RESEARCH QUESTIONS
<b>Participatory – Territorial</b>			
Cultural mapping	01/2019 05/2019	24 participants 40 participants	The questions to the participants in the course of the discussion were: What do you like about the area? What would you like to change? How can you contribute? And who should help?
Walkthrough and Motivational interviews	05/2019	30 pupils from 153 <sup>rd</sup> sports school “Neofit Rilski” 4 Nadezhda district administration staff	General knowledge of the place and transportation habits. General Impression on buildings, public space, schoolyards. Places of interest. Main dangers perceived. Things they like and things they do not like.
Photovoice	05/2019	30 pupils from 153 <sup>rd</sup> sports school “Neofit Rilski”	What they would change. Ideas for change.
<b>Participatory – Self-reported</b>			
Focus groups	06-09/ 2019	21 participants, 4 focus groups	What aspects of the built environment are liked and disliked; Interest, motivations and degree of participation of the residents;
Face-to-face Interviews	06-09/ 2019  03/2019	11 respondents/ citizens, 10 interviews Representatives of 24 green and social businesses in Sofia	District administration – degree of satisfaction with the district management, communication and interaction with citizens; Potential and ideas for changes in the corridor; To identify the eco-social benefit and the eco-social costs the companies are creating or causing, to evaluate the eco-social benefit and weigh it against the eco-social cost, assess the overall objective and solutions the business model is thriving

Survey	11,12/2019	400 inhabitants of the area along the HC, 40 people – control group	Some of the possible correlations that the data can provide are: Wellbeing and health status related to location, to available green space, to satisfaction with the neighbourhood; Neighbourhood satisfaction related to location, to available green space, to social activity or network; Level of discomfort in the neighbourhood related to location; Physical activity – duration and frequency related to available green space (GIS); Social activity – duration and frequency related to quality of open space (GIS); Social network – range and intensity related to quality of open space (GIS).
<b>Analysis – Territorial</b>			
Territorial mapping	01-09/2019		Inventory and analysis of the green structure, pedestrian paths, vacant lots, public facilities, services and housing.
<b>Observation</b>			
Behavioural mapping	05,06/ 2019 – 4day observation at 19 sites  05/2019 – 2day observation of play activities and game	Sum total of 7685 users mapped between 54 and 4788 people who walked through the observed directions in the working day Between 126 and 5700 people walking through the observed direction in the non-working day	Main characteristics of people observed: (approximate) age, gender group, general pattern of stationary occupation, major areas and types of play, and key directions of non-motorized flows of movement through or along the sites; Types of behaviour, categories of people and place inventory; Main categories of the observed behaviour – moving, staying and playing, activities such as gambling, smoking, drinking, taking drugs, fast food eating, usage of media and communication devices, socializing (talking, music playing, collective games).

Table 2. Methods applied, number of participants and followed preliminary designed methodology.

### 3.2.2. The transition from co-diagnostic to co-design: The strategy process

The transition from the local diagnostic to the co-design process focuses on the scale of the neighborhood level and the scale and scope around the axis of the corridor and the four intervention areas, in order to further develop the Healthy Corridor Concept, where the expert knowledge and assessment were critical for the precise definition of the areas of intervention.

#### 3.2.2.1. Defining the scope of the areas of intervention

Initially, 107 municipal plots of land and undeveloped land within the URBiNAT study area were identified in Svoboda, Lev Tolstoy, Nadezhda 2a and 2b (eastern part), Nadezhda 4 (eastern part), Triangle area, Nadezhda Park and Nadezhda road junction. The process of plot selection included multi-criteria evaluation for preliminary and final selection of plots, preliminary and interim criteria for the evaluation within stage 2 of the local diagnosis, and final

selection of groups of municipal plots for NBS implementation during the co-design process. Then an interim coordination was carried out with the mayor's office at Nadezhda district and the Sofia Municipality experts. Developed in order to shorten the list of possible properties, the selection criteria aimed at prioritization of investments and achieving a synergistic effect after the implementation of (potential) interventions.

Except mapping, the plots pre-selection criteria include: valuation of property, assessment of development forecasts and investment intentions, evaluation of the implemented municipal and other public investments; assessment of the state of the environment; assessment of the proximity to elements and variants of the route of the Healthy Corridor. The main criteria for final selection of plots for intervention include: behavior mapping and expert evaluation of behavior; expert and inhabitants' assessment of the possibility to integrate Nature-Based Solutions within the defined budget; and political assessment of specific needs (in) compatible with URBiNAT investments. As a result, the short list of about 20 vacant plots was proposed and validated by the Municipal experts. The Healthy Corridor concept is further developed around these plots, grouped into 4 areas of intervention.

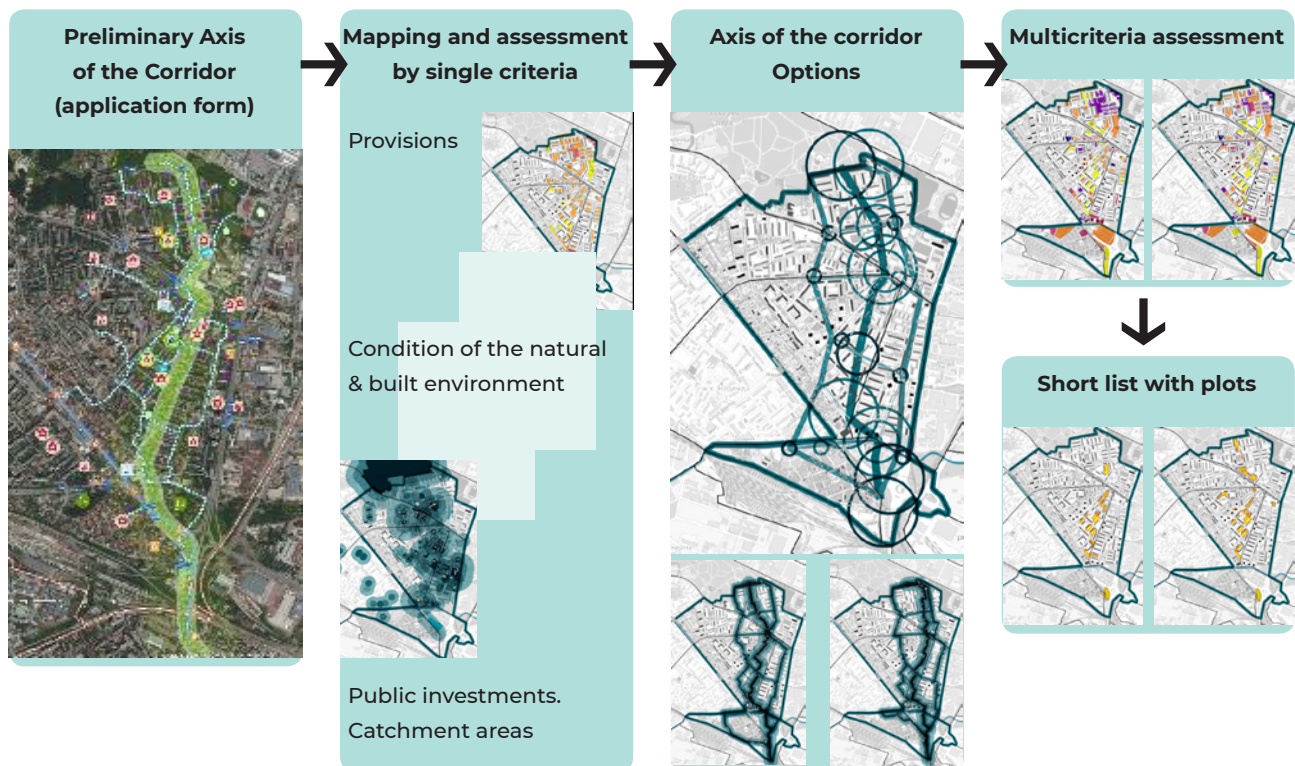











Figure 13. From co-diagnostic to co-creation. From mapping and assessment to selection of plots.



Figure 14. Local features and intention of the Healthy Corridor.

-  Study area
-  Underground stations
-  Cycling alley






Street network

-  IIrd class - urban highways
-  IIIrd class - district arteries
-  IV class - primary streets
-  Vth class - collector streets
-  VIth class - service streets
-  links and local lanes






Buildings

-  1-3 stories
-  4 stories
-  5-9 stories
-  10-14 stories
-  15+ stories
-  Public buildings
-  Land lots
-  Major parks in Nadezhda

Service areas of the major parks in Nadezhda

-  150 m
-  300 m
-  450 m
-  600 m
-  Mineral water drills

Service areas of a rehabilitated mineral water drill


-  150 m
-  300 m
-  450 m
-  600 m
-  Suhodolska river

Green healthy corridor



-  'Airborne' stright line between the major elements of the Healthy green corridor

Axes pointing to the major route and network of places along the corridor



-  1st level
-  2nd level
-  3rd level
-  4th level

-  Route of the project idea
- Green line Sofia

Nodes of intersection

-  Primary
-  Secondary

Base from OpenStreetMap

-  170
-  242

### 3.2.2.2. The process and methodology

The approach applied to evaluate the impact of URBiNAT interventions in the study area and promote the transition from co-diagnostic to co-design comprised 5 steps: (1) Analyzing the local diagnostic results to identify local needs relevant to URBiNAT project; (2) Relating the findings to the broader frame of contemporary urban challenges (as outlined in Eclipse typology);

(3) Describing the key activities chosen to address specific local needs and demands in the study area; (4) Defining expected impacts, and relevant criteria to evaluate action effectiveness in addressing one or several challenges; (5) Developing an indicators set related to available information sources, type and scope of impact, and monitoring procedures. CO-DESIGN proposals were then developed to be integrated into the urban plan. (Figure 9)

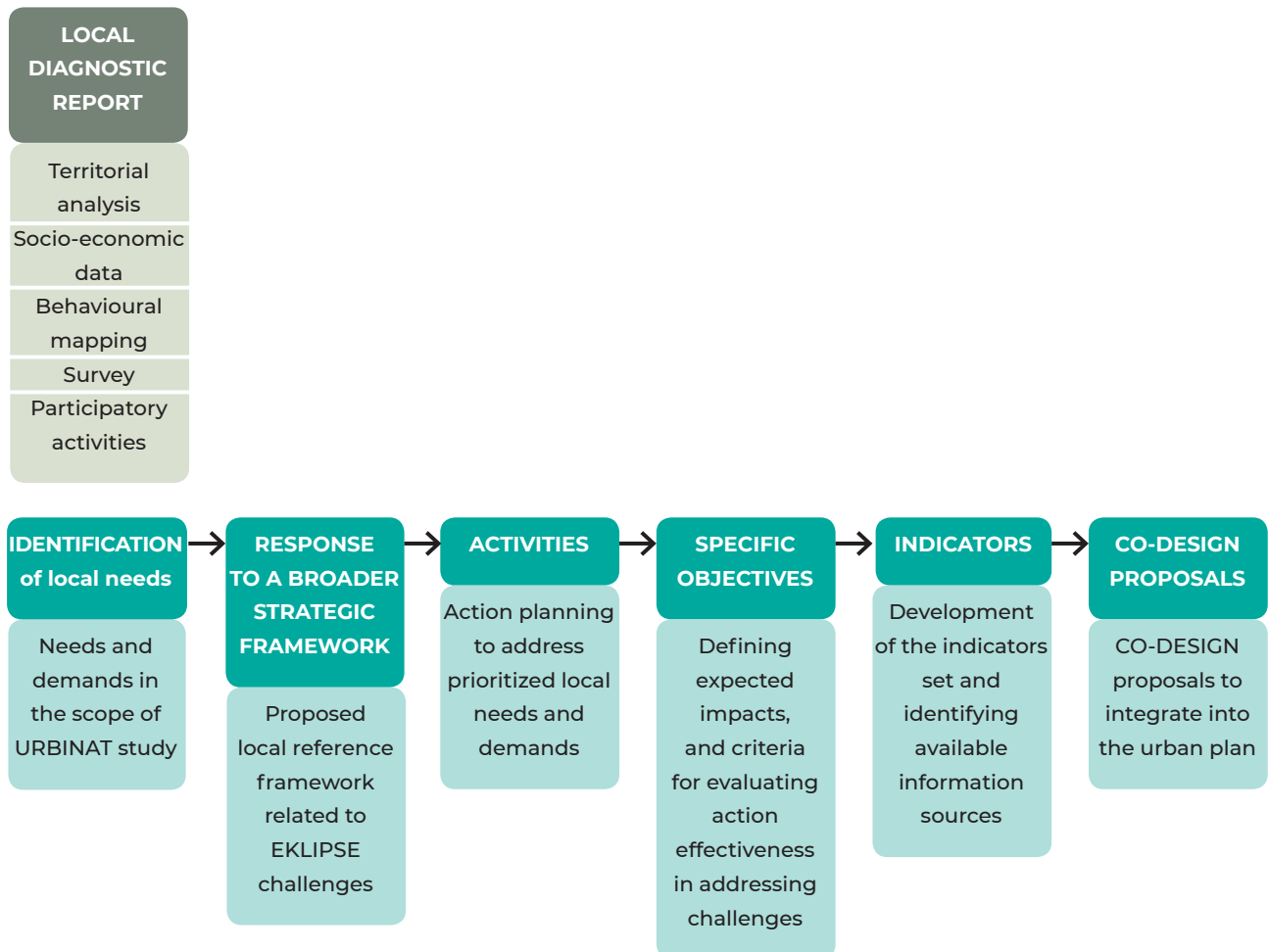


Figure 15. From co-diagnostic to co-design. Process and methodology.

### 3.2.2.3. Linking needs, Eclipse challenges, indicators, strategic objectives and co-design proposals

In order to formulate the strategic objectives, a brief review of the findings from the local diagnostics were analysed in terms of needs, actions to be undertaken in order to answer the Eclipse challenges and possible solutions in meeting the needs identified.

#### Methods Applied during the local diagnostic:

- Desk and field studies, spatial data processing
- Focus groups, Interviews, Cultural mapping
- Questionnaire
- Behavioral mapping
- Territorial mapping and spatial analysis

#### Analyses of the co-diagnostic results that informed the co-design process:

#### Green structure



The relatively flat URBiNAT area, part of Nadezhda district, is slightly sloping towards the north-east and is bypassed by the small Suhodolska river at the south-east side.

The vegetation cover is partially autochthonous, partially planted or kept after the reconstruction of the housing estates over green fields or low-rise housing. In the last three decades it is mostly represented by volunteer pioneer plants, self-grown in vacant or poorly maintained areas. Older age and higher canopy of trees is found in Lev Tolstoy housing estate as well as in the parks. Many of the interblock spaces in the other housing estates – Svoboda, Nadezhda 4 and Nadezhda 2 as well as Triagalnika are not that well covered by healthy vegetation due to the intensification of uses and soil sealing resulted from the urban development processes that took place in the last century. In addition, along with non-accomplished and not fully equipped parts of the estates, the

transition period after 1989 led to shifts in the land, property and asset rights, management, redistribution of local resources and culture transformations. The fast-growing demand for parking areas proved to be a major challenge difficult to cope with. New residential buildings, shops on the ground level, but also playgrounds and sports facilities appeared on restituted plots to meet new societal needs and market demand. New points of interest and new barriers have shaped the new daily routes of the inhabitants. Alternative informal paths – usually over municipal private land, were trodden by and actively used in the large inter-block spaces, mainly connecting the buildings to the public transport stops and the playgrounds located in the inter-block spaces. A much denser pedestrian network than the initially planned one responded to residents' diversified needs and searched for walking convenience. Residents pointed out the poor condition of the natural and built environment as

a major shortcoming. An increase of pedestrian flows between the neighbouring housing estates was motivated by the diversity of services and personal motivations.

The aim of the project is to recover and fill some of the gaps in order to provide conditions for more diverse social interactions in as much closer to the natural environment as possible in this high densely populated housing area.





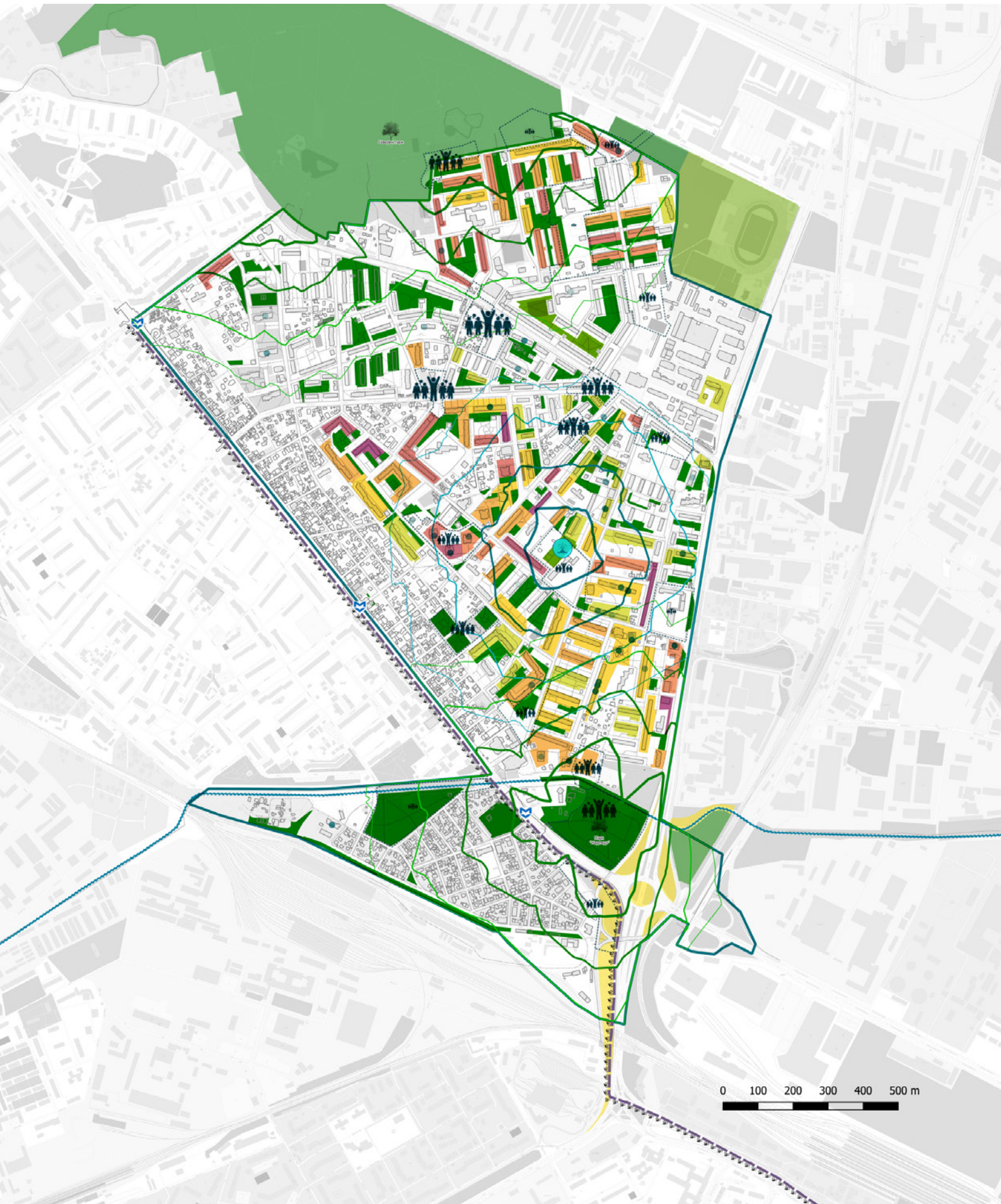


Figure 16. Green structure – synthesis. Results that informed the co-design process.

## Synthesis / critical aspects:

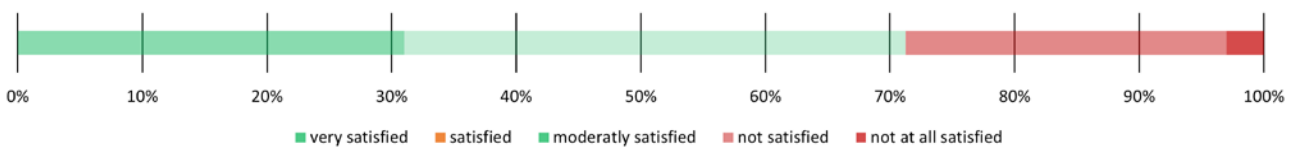
### 'Brown spots' of bare sealed soil

Many open spaces are covered by bare soil, sealed and polluted by past construction, and resulted by the poor waste management and illegal parking of vehicles. These generate more dust and particulate matter that is a major contributor to respiratory and other diseases. Most of these spaces become muddy and inaccessible after intensive rainfall or snow melting and also heat up if not covered by tree canopy during summer hot waves and contribute to the micro heat island effect, part of the bigger one observed in Nadezhda.

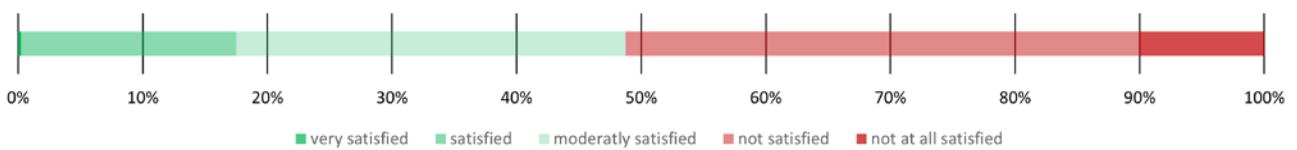
## Findings from the Survey:

A large proportion of survey respondents are dissatisfied with environmental protection in the area. Dissatisfied with the degree of naturality are more than 40% and dissatisfied with green areas and parks are 26%. Responses indicate that the level of discomfort caused by air pollution among the respondents is not satisfactory for 16%, while 44% are moderately satisfied. Respondents dissatisfied with the noise level generated by the traffic are 23%, while 47% are moderately satisfied.

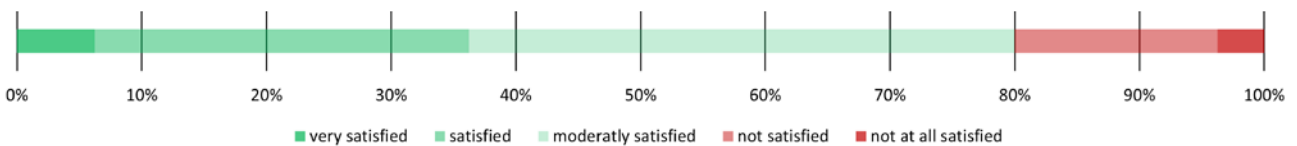
Satisfaction with green areas and parks



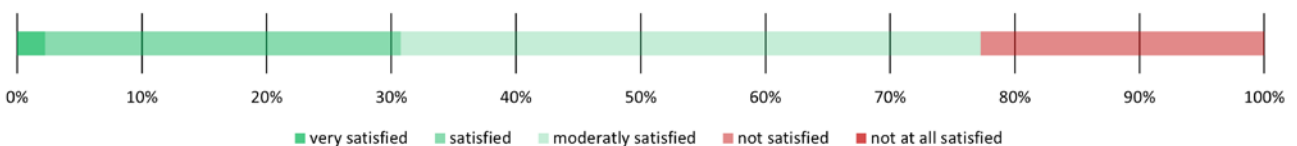
Satisfaction with the degree of naturality



Level of discomfort caused by air pollution (smoke, dust, exhaust fumes...)



Level of discomfort caused by noise due to the traffic



NEEDS	Eclipse challenges	Indicators	Specific objectives addressed by the co-designed proposals	Co-design proposals
To eliminate the 'brown spots' of bare sealed soil which significantly contribute to the exceeding levels of fine particulate matter and are inaccessible or perceived as unfavourable areas during contrasting or severe weather conditions	<p>Challenge 1 Contribution of NBS to Climate Resilience</p> <p>Challenge 5 Air Quality</p> <p>Challenge 9 Public Health and Well-being</p>	<p>Challenge 1 Temperature reduction, Soil quality – Physical and chemical properties combined with biological characterisation</p> <p>Challenge 5 Air quality – levels of fine particulate matter</p> <p>Challenge 9 Proximity measures, (green space of min. 2 ha within 300m, Percentage of green space</p>	<p>Co-create healthy urban environment</p> <p>Implement climate change adaptation measures</p> <p>Improve governance framework for NBS implementation</p>	<p>Rehabilitation of open space surfaces through care and recovery of existing green cover,</p> <p>Planting of new trees for canopy and creating meadows</p> <p>Creating the linear and smaller spot green features</p> <p>Implement innovative NBS solutions answering the technical norms</p>

Table 3. Needs on green structure.

### Methods Applied during the local diagnostic:

- Desk and field studies, spatial data processing
- Focus groups, Interviews, Cultural mapping
- Questionnaire
- Behavioral mapping
- Territorial mapping and spatial analysis
- Desk and field studies, spatial data processing
- Focus groups, Interviews, Cultural mapping
- Walkthrough, Photovoice

### Analyses of the co-diagnostic results that informed the co-design process:

#### Mobility, pedestrian network and proximity to services, parks and other facilities

After the construction of the underground with the support of the EU and the national funding, the mobility options for the study area were significantly improved in terms of connectivity on city level. This also provoked higher development interest towards the district. At the same time the regional rail and bus services, as well as the

urban public transport have been continuously losing positions in the modal split despite the improvements in the fleet. The car dependency continues to lead to stronger and stronger car dependency along with the many obstacles and inconveniences for the non-motorized and/or micro mobility modes. The public transportation services cover most of the area but in the core of Nadezhda 2 and Nadezhda 4 as well as in Svoboda these are limited. Due to the remoteness of these housing estates, combined with the need to reach them, pedestrians have to pass through many informal paths with poor condition and sidewalks or alleys which are overwhelmed by illegal car parking. Most of the services have good distribution and coverage although the observed concentrations at the edges of most of the neighborhoods. The concept of the Health Corridor proposes better connectivity, especially for the internal peripheries which are less accessible, less maintained and sometimes with very high density of residents and ageing buildings and residents.

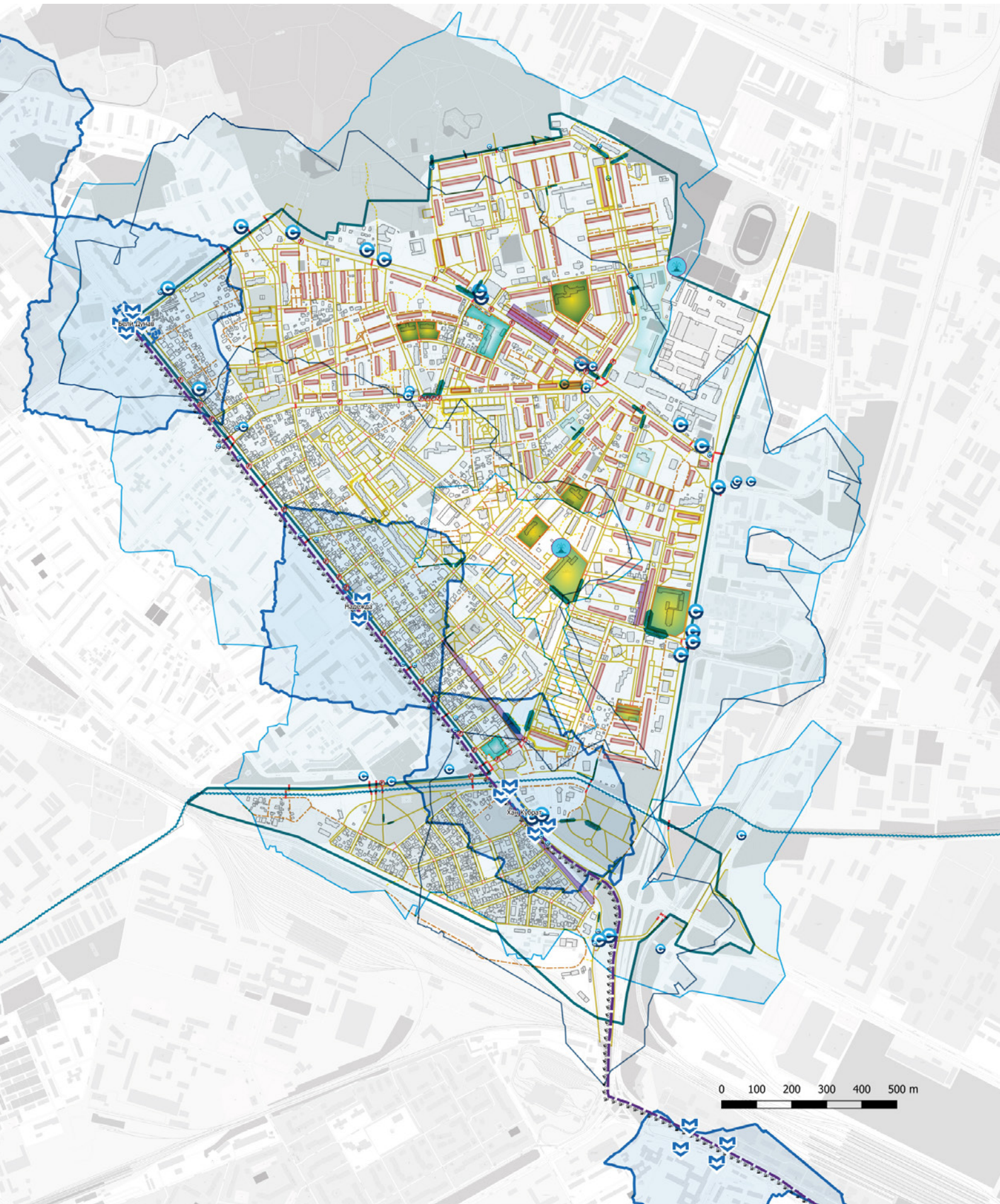






































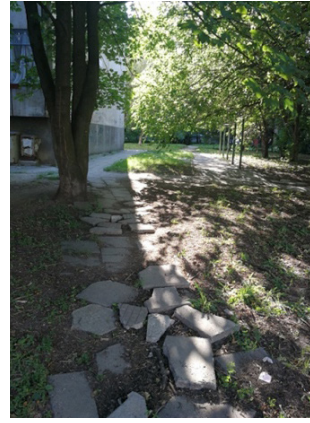
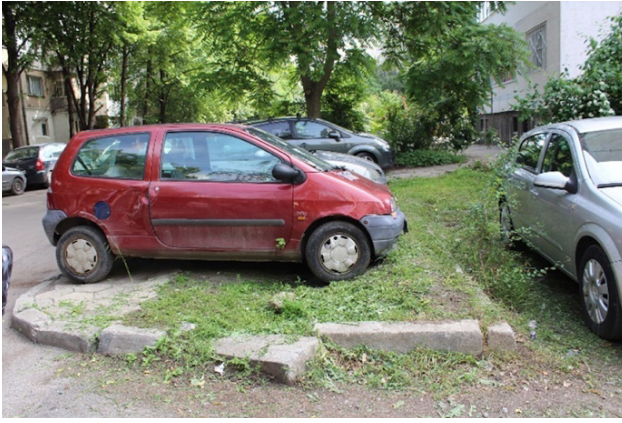


Figure 17. Map for the proximity network.

-  Study area
  -  Land plots
  -  Buildings
  -  Suhodolska river
- Mobility and transport
-  Jaywalking across IIIrd class primary streets
- Average volume of non-motorized mobility between 7-19 o'clock
-  50 - 1000
  -  1000 - 2000
  -  2000 - 3000
  -  3000 - 4000
  -  4000 - 5000
- Pedestrian network
-  Alley
  -  Informal path
  -  Sidewalk
  -  Shared space with parking
  -  Shared space with street
  -  Crossing at walkway
  -  Crossing at traffic lights
  -  Crossing by subway
  -  Crossing by bridge
  -  Unregulated crossing
-  Cycling alley
-  Public transport stops (size depending on the number of lines stopping)
-  400 m service area around bus stops
  -  400 m service area around tram stops
  -  Underground stations
  -  Entrances of the underground stations
  -  400 m service area around underground stations
- Investments from the municipal budget
-  Newly built parking areas in 2019
- Energy and buildings
-  Mineral water drills
  -  Multifamily housing built prior to 1970
- Investments from national and EU funding
-  Renovated buildings by 2017
  -  Renovated buildings by 2018
  -  Renovated buildings by 2019
  -  Buildings being renovated during 2020
  -  Buildings planned for renovation after 2021
  -  Buildings candidates for renovation without approved funding
- Base from OpenStreetMap
-  170
  -  242



### Existing features on lightning and intentions of the project

The condition of street lighting, where available, is predominantly good, but there are many places lacking lighting infrastructure or in need of upgrading of the existing infrastructure. These are the northern parts of Nadezhda 2a residential area, the garden next to the church of Sveti Duh, the northern and southern parts of Lev Tolstoy housing estate, Park Nadezhda, the inner neighborhood spaces in Svoboda housing estate, as well as the peripheral parts of Triagalnika neighbourhood and Park Gorska kultura. (Source: Actual state of lighting in Sofia, Vision for Sofia 2050, 2017). The concept of the corridor includes better lighting for pedestrian routes along the major axis, especially around the entrances of Severen park and park Nadezhda.

### Perceptions on safety, visibility and lightning

The identified needs through focus groups, interviews, walkthrough and cultural mapping during the Local diagnostic stage 2 are directly connected to physical and mental determinants of health varying from needs for walkable connections and feeling of safety to needs of equipped space for leisure and recreation, creative action and socializing. The number of zebra crossings is insufficient compared to the big number of unregulated crossings, poor visibility and missing traffic calming measures. Jaywalks and bridges are scarce, hardly accessible, narrow and dimly lit. In order to provide better accessibility, higher capacity of the facilities and safety should be provided. Apprehensions and fears are connected to the unsafe jaywalking and the growing shrubs and ruderal vegetation at some abandoned sites.

Green areas and trees are not maintained on a regular basis, which creates more shadowy and branchy areas, streets, sidewalks, and inter-block spaces. This is an issue of comfort and friendliness

of the environment, but also of safety due to the lack of openness and visibility. In addition, pupils who participated in the walk-through admitted that they are afraid of stray dogs and cats, and of suspicious people that they tend to meet while going through the forest on their way to the sport facilities or through shadowy non lighted public spaces.

The district and the neighbourhoods in the study area have an image of places with higher numbers of criminal activities than the average. Data from the police department to which the district belongs reveal relatively high levels of drug presence compared to the other city police departments, though when estimated against the number of residents, these levels are comparable to the city average. The levels of satisfaction with crime prevention among the citizens within the URBiNAT study area neighbourhoods (being part of the larger zone 5) rank 4<sup>th</sup> out of 13 zones., with around 46% of respondents fully and 54 % partially, partly, and fully unsatisfied. (Source: Sociological survey on the quality of life in Sofia, Vision Sofia 2050, 2019)

The district administration staff is mostly concerned about safety and vandalism over amenities and urban furniture and they acknowledge responsibility for lighting, visibility (maintenance of municipal plots, including mowing and cleaning shrubs), and safety. The elderly citizens, however, believe that the noisy groups gathering in the evenings happen at well-equipped and lighted interblock-spaces, and therefore nothing should be done in order to keep the peace during night hours. The co-design of the zones of intervention explicitly addresses these contradictions.

According to the local administration of Nadezhda district, the presence of good lighting in the area of some playgrounds in inter-block spaces is a prerequisite for gathering of companies and vandalism in the evenings. Inhabitants also

do not appreciate good lighting in the inter-block space as it “invites” noisy groups. Therefore, and in order to avoid light pollution, the Healthy

corridor project will seek flexible and energy saving solutions for lighting the main axis as well as the places for intervention.



### Synthesis:

Physical conditions and connectivity between formal and informal pedestrian walkways are poor, including many of the sidewalks, the shared street spaces with no traffic calming measures, depreciated alleys and many dirt tracks.

Several lines of jaywalking across boulevards are observed and they pose risk to all age groups due to inconvenient configuration of the formal places for crossing and passing around public transport stops. Illegal car parking is overwhelming and it is a major concern but challenging to be tackled due to the very high motorization rate which has grown in the past 15 years.

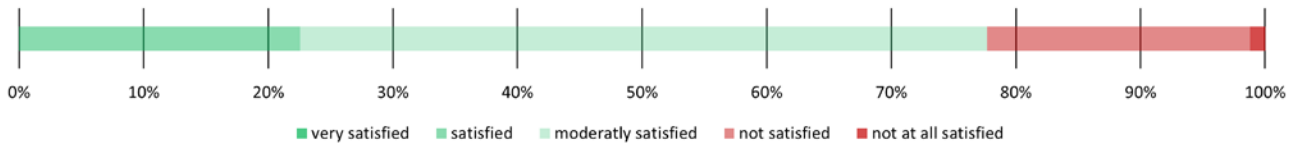
Eliminating physical, social and psychological barriers, the Healthy Corridor should provide convenient, safe and inclusive pedestrian connection between the two parks and the areas of co-creation.

### Findings from the Survey:

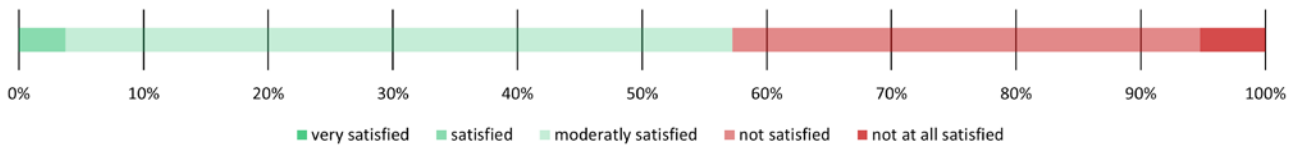
One fifth of the respondents are dissatisfied with the possibility of walking on sidewalks in their neighborhood and more than 55% are moderately satisfied. The upkeep of the streets is another factor that brings together many dissatisfied (38%) and moderately satisfied (54%) respondents.

Around 62% of the respondents are satisfied with the public transport services provided to the district, while 28% are not satisfied with the security in the neighborhood.

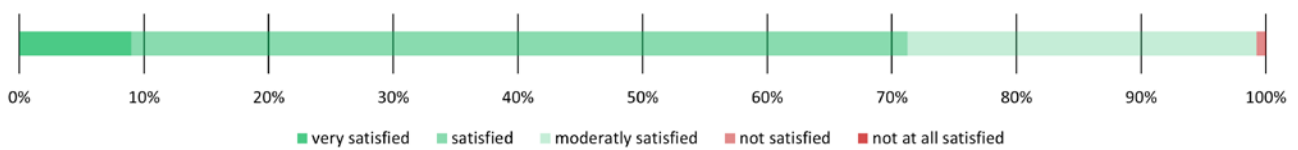
Satisfaction with the ability to walk on sidewalks in your neighbourhood:



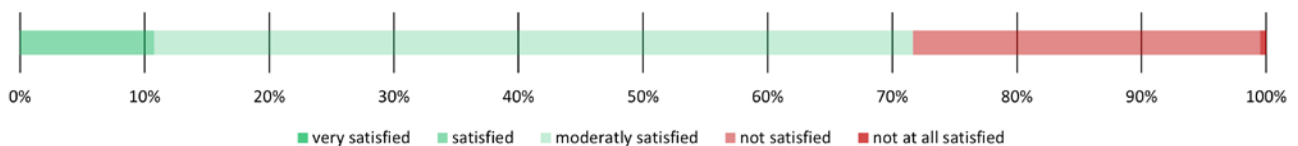
Satisfaction with the upkeep of the streets:



Satisfaction with the public transport service to the district:



Satisfaction with the level of safety in the neighbourhood (police, delinquency, theft, drugs,):



NEEDS	Eclipse Challenges	Indicators	Specific objectives addressed by the co-designed proposals	Co-design proposals
Better physical conditions, convenience and connectivity of pedestrian walkways, safe crossing of boulevards and optimised parking.	<p>Challenge 6 Urban Regeneration</p> <p>Challenge 9 Public Health and Well-being</p>	<p>Challenge 6 Land devoted to roads: percentage of site area occupied by roads (and parking facilities); Land dedicated to pedestrians: percentage of road network; Access to open space: average journey time for residents/ employees by foot or average distance to sports centre, recreation area, or green space Level of devices contributing to the safety of users in the neighbourhood: lighting of common areas</p>	<p>Upgrade existing pedestrian paths Create new connections Curb jaywalking and improve pedestrian safety Reduce conflicts between walking and parking</p>	<p>Creation of favorable conditions for choosing walking before other modes of mobility through making it more convenient and well lit; Construction of eco-parking for different kinds of vehicles; Construction of comfortable pedestrian access to the existing parks and transport nodes including for people with disability.</p>

Table 4. Needs on mobility and physical urban features.



## Methods Applied during the local diagnostic:

- Desk and field studies, spatial data processing
- Focus groups
- Interviews
- Cultural mapping
- Walkthrough Photovoice
- Questionnaire
- Behavioral mapping

## Analyses of the co-diagnostic results that informed the co-design process:

### Public space and public life activities

The observed public life activities during the local diagnostics stage are related to the urban public spaces, which usually accommodate simultaneously one or several activities providing for access, encounter, and exchange. The existing public space in the four housing estates is nowadays multifunctional and liveable. Pedestrians walking and socializing are found in most of the analysed public places. The most intensive activities are ascribed to places enabling encounters. Although intensive and multi-layered, with established rhythms, and meeting points, the public life in the LHEs is rather fragmented into numerous places due to the disperse location and discontinuity of the public lots, the

poor amenities, and the existing barriers such as abandoned and non-maintained private lots. Despite the declared high level of self-identification with the neighbourhoods, people do not gather often in open public space except the small territorial communities that gather at specific places. There are very few mass events, cultural activities, and celebrations in the housing estate and no place explicitly intended for that, though many of the participants during the co-diagnostics outlined the need for such a place. Public life is interwoven into residents' daily activities. The specific atmosphere in the neighbourhoods and the community spirit there are shaped by the prevailing pedestrian walking and biking. There is no public place explicitly intended for teenagers in the housing estates, the places for public gathering and entertainment are insufficient, and few cultural activities are organized in the open space.

People who took part in various participatory activities stress on the need of keeping the neighbourhoods greener and preserving the open space and the greenery between the blocks and other buildings. Although currently people have not complained about overly dense construction, a concern of such a phenomenon has been expressed.





## Synthesis

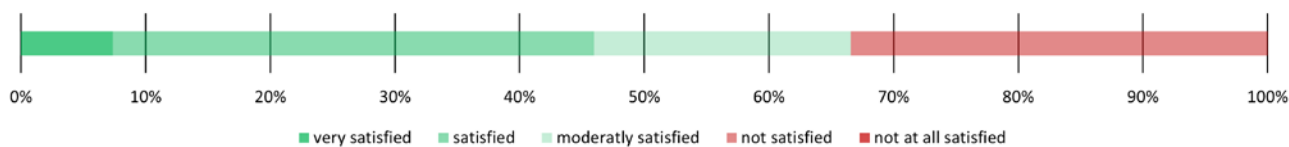
The 'no man's land' image of the interblock green spaces has turned them into either neglected sites or ones for which aspirations to privatize or turn them into club goods exist. This makes some of the places more semi-private and altogether with their poor physical condition – exclusive for various groups depending on the place and the social context around. Functions are backed by do-it-yourself facilities rather than specially designed and managed equipment and public works – a sign for the need and potential of many spots and pockets. Some of these initiatives were supported by the 'Green Sofia' program but they do not seem to have good continuity, especially for the greenery. The informal elements enrich some of the more monotonous

areas but often few of the neighbours associate with them and there are often conflicting situations.

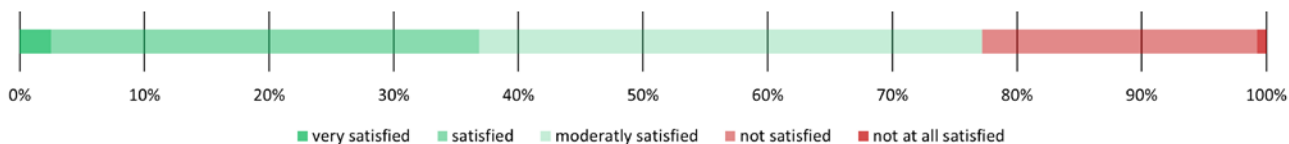
## Findings from the Survey:

Respondents cite the large distance between the buildings as a strength. The share of those satisfied with the size of the open inter-block spaces is 58%. At the same time, 22% of the respondents are not satisfied with the leisure facilities available on site. The most worrying are the very small shares of those who performed activities with friends that took place outdoors in the neighborhood (merely 2%), and the marginal share of respondents who performed personal relaxing activities outside in the neighborhood.

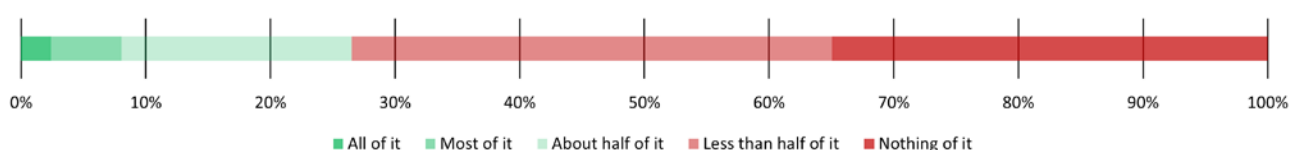
Satisfaction with distance between the buildings of your neighbourhood (luminosity in your building, intimacy regarding building opposite):



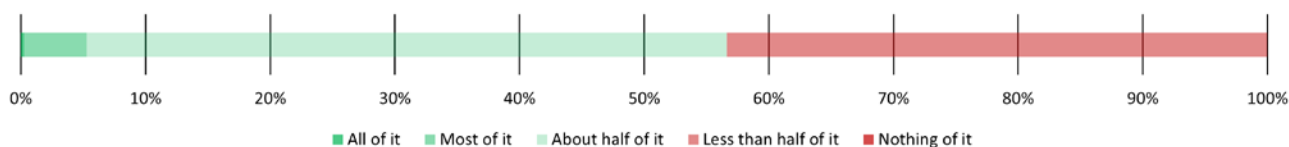
Satisfaction with leisure facilities available on site (cafés, restaurants, cultural sites, playgrounds...):



How much of you and your friends' activity is spent outside in your neighborhood?



How much of your relaxing activity is spent outside in your neighborhood?



NEEDS	Eklipse Challenges	Indicators	Specific objectives addressed by the co-designed proposals	Co-design proposals
Improved management, planning, design and renewal of green and other public spaces, accessible for all and recognised by more diverse groups which can find their suitable individual, group or community activities	Challenge 4 Green Space Management	Challenge 4 Accessibility: distribution, configuration, and diversity of green space and land use changes	Safeguard urban open space	Activation of public life in existing open space and green areas through activities for attachment and involvement in place making
	Challenge 6 Urban Regeneration	Challenge 6 Ratio of open spaces to build-form	Manage inclusive public space	
	Challenge 8 Social Justice and Social Cohesion	Challenge 8 Senses, imagination and thought: being able to use the senses, to imagine, think, and reason about the environment, informed by indicators of levels of literacy, mathematics and science knowledge	Enhance diversity of uses and multifunctionality	
	Challenge 10 Potential for Economic Opportunities and Green Jobs	Challenge 10 Consumption benefits: property betterment and visual amenity enhancement resulting from NBS.	Recreate identity and uniqueness	

Table 5. Needs on public space and public activities.

## Methods Applied during the local diagnostic:

- Cultural mapping
- Walkthrough
- Photovoice
- Questionnaire
- Behavioral mapping

## Analyses of the co-diagnostic results that informed the co-design process:

### Education

According to the grades obtained at the state exams of their graduates, the 5 schools in the study area fall into the second and the last third in the ranking of Sofia schools. The schools in the

most northern part, in Svoboda housing estate, are among the last in the ranking. The rest of the schools are in the golden mean, although their performance is lower than the average for the Sofia municipality. This is a stable trend for the last five and more years. Children under 7 years are covered by 7 kindergartens, which are evenly distributed in the study area. Some of the kindergartens are running small self-made vegetable gardens that may be upgraded and developed as places that educate children's sensitivity and respect to Nature. The Healthy Corridor concept will focus on activities that provide for nonformal environmental education and will include initiatives that provoke lifestyle change.



## Culture

The available cultural infrastructure in the URBiNAT study area provides a good basis for the activation of the communities with a strong belonging to their neighbourhoods. Two small community centres provide equipment for general educational and cultural activities for the local people and their children. Residents of the neighbourhoods as well as all children and citizens of Sofia Municipality regardless of their residence can use the educational and cultural services of the Centre for Arts, Culture and Education and the Municipal

Cultural Institute "Nadezhda". The centre teaches children in dance and singing, in mastering several musical instruments, theatre and ballet, fine and craft arts. The Cultural Institute provides a stage and trains theatre, dance and music professional and amateur formations and actors. However, more spaces for individual, independent artists' or people's dances in public space (e.g., for folk dances in open air, tango dance, breakdances, etc.) were envisioned by the participants in the focus groups as important places for active living and socializing.



## Sport

The interest towards sports activities in the district and the study area is high and outdoor fitnesses as well as some of the freely accessible sports fields are attractive places for social interaction though much more often for boys than girls. There are several sports clubs, including a football playground in Svoboda which was funded by FIFA through the Bulgarian football union, as well as the professional sports club Lokomotiv Sofia. The sports club runs a 22 000 seats stadium

and other facilities that are provided through a partnership scheme to the Sport school 153 Neofit Rilski. Despite the availability of a high number of facilities in the study, the inhabitants claim that more various sport spaces for freely accessed are needed in the parks and inter-block spaces. They declared the need to have more places to practice sport/fitness activities in the open air or/and adults to play games (e.g., archery, petanque, fitness, etc.).



**Leisure and recreation**

There are different opportunities for access to informal education in the city but also limitations for those who are less mobile. The affordability and free access to some of the sport and cultural facilities, as well as to informal education is threatened, although many NGOs and civic groups offer free alternatives to “clubification” from time to time. According to some of the teenagers, there is no place for them in the open public space in the housing estates – they are supposed to be in schools, gyms or if they want to meet their friends – in cafes or clubs, to the movies or to a more interesting meeting place. Obesity is also a recent phenomenon which is well observed among the pupils and it is partially attributed to the fast-food diet but also to digital technologies and gaming which have become even more apparent ways of spending time during the pandemic.

**Participation**

Very often a problem is the why-me-syndrome of participation. People would tend to associate participation as an additional effort for others, who are practically not getting involved, just standing by. One block manager, however, insisted that “When people see that things happen (change), they join – trust me on this!”. Therefore, motivators need to be identified and encouraged. Even the team of URBiNAT was identified at one of the focus groups as the potential motivating agent

for such change. It was outlined that citizens’ participation (including the interest, motivations and degree of participation of the residents) is low and that people are not very active and interested. People would like to be informed at their local/neighbourhood which is closely related to the residence.

The Healthy corridor strategy will pay careful attention to the mechanisms of motivating and involving the citizens. Potentially some key agents (citizens and representatives of the culture institutions) have to be included in the activist nucleus, which could design and take care of spreading wavelike spirit until a larger active core is created. Interventions, messages and events should be provoking interest, should be catchy and fun-bringing. Parents of pupils/at schools/ and kids/at kindergartens/ should be encouraged and involved to participate and motivate other friends and parents to join. Kids are seen as a “channel to bring impact and motivate participation”. Young people could/should be involved and educated through involvement (e.g., design, organisation of events, etc.) – they would ensure motivation and spread out to other groups of the population. Pensioners, with their good organisational skills, culture and wisdom, are another group which could be very well integrated in the process if clear ideas and tasks are set.

## Synthesis

There are outdoor activities observed in the warmer season (mid-April – mid October) mostly related to socialization and passive recreation among elders, as well as active recreation and play as socialization among youngsters. Elders and especially women are rarely physically active. There are many small places of socialization that exist just in front of the high-rise prefabricated blocks of flats. Tensions have been observed between long established residents and newcomers but also between different sub-cultural and age groups which sometimes escalates into intolerance and conflicts. Regarding minorities, there are no conflicts and problems between the locals and the newcomers from abroad. Even some of the communities are seen as “better” and more conscientious and disciplined citizens and neighbours in their attitude towards the environment and the community. People live very easily and on friendly neighbourly terms with various communities – e.g., Chinese, Armenians, Arabs, etc.

The creation of an active social community in the neighborhood is possible but needs persistence and more contribution from all actors – inhabitants, administration, young people and pupils. Increasing the knowledge and commitment to the improved environmental state and presence of nature, as well as the attitude to healthy food production among the youth are processes that need additional support, capacity building and persistent focus on well-being. The consumption oriented urban lifestyles and status attainment

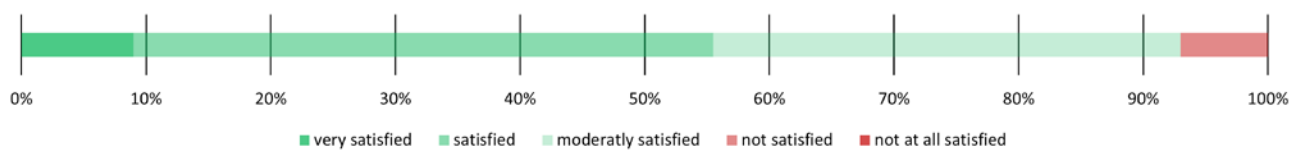
through material, man-made, and technologically driven value systems and favored symbols of being may act as a serious threat to the successful implementation of the corridor and the NBSs as drivers for healthy change.

Needed changes in inhabitants' behaviour and culture are also considered as urgent: A greater personal responsibility and care for the environment by everybody in the quarter is claimed to be important. The need for strengthening the control and imposing strict sanctions for parking on cycle paths, green spaces and sidewalks is associated with a measure that might restrict the hampered movement of pedestrians, mothers with prams and disabled people.

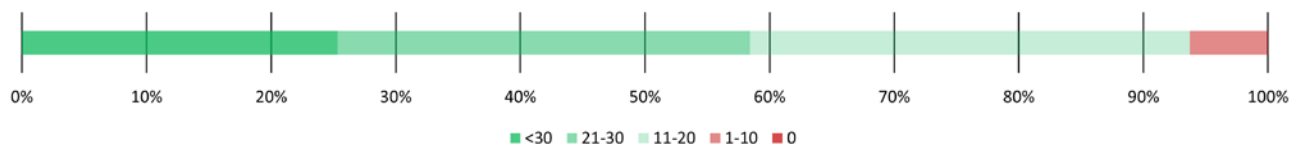
## Findings from the Survey:

The respondents value community connections and their neighbourhood. Around 47% of the respondents are satisfied with the neighborhood relations (conviviality, mutual aid, solidarity), and a quarter say they know the names of more than 30 people in the neighborhood. Almost 50% of the respondents indicate their strong feeling of belonging to a community, and around 36% feel that they have something important to contribute to society. At the same time, the general level of outdoor physical activity in the neighborhood is low. The share of respondents who do not walk even 10 minutes during the last 7 days is 29% and 41% of respondents answer that they do not perform moderate physical activities like carrying light loads or cycling at a regular pace.

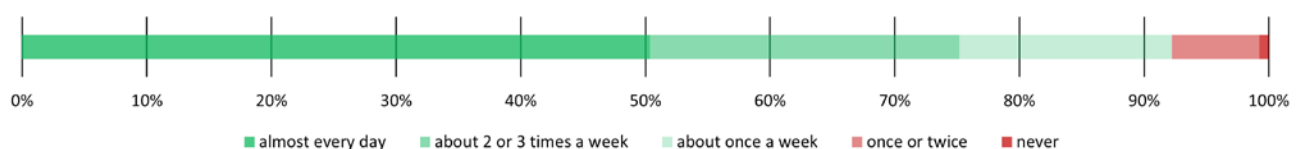
Satisfaction with Neighbourhood relations (conviviality, mutual aid, solidarity):



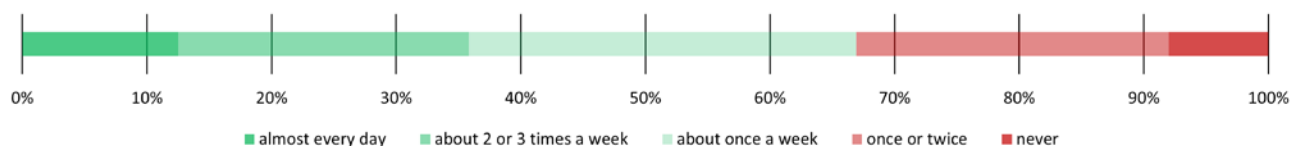
How many people do you approximately know the names of in the neighborhood?



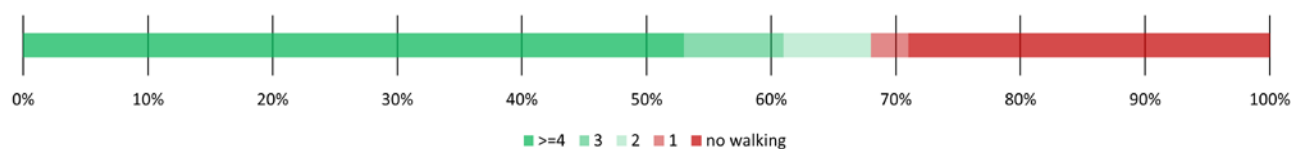
During the past month, how often did you feel that you belonged to a community?



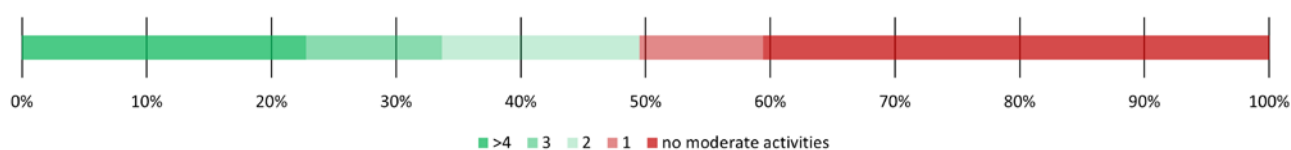
During the past month, how often did you feel that you had something important to contribute to society:



During the last 7 days, on how many days did you walk for at least 10 minutes at a time?



During the last 7 days, how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace? Do not include walking:



NEEDS	Eclipse Challenges	Indicators	Specific objectives addressed by the co-designed proposals	Co-design proposals
<p>More physical activities and wider spaces for community cohesion through arts, culture and play. Places serving as educational environments for various domains of life. People centered approach in planning and design for personal and community development</p>	<p>Challenge 7 Participatory Planning and Governance</p> <p>Challenge 8 Social Justice and Social Cohesion</p> <p>Challenge 9 Public Health and Well-being</p>	<p>Challenge 7 Openness of participatory processes; Legitimacy of knowledge in participatory processes; Perceptions of citizens on urban nature, self-reported perception on Healthy behaviour/ Well-being</p> <p>Challenge 8 Frequency and duration of socializing activities; Range and Intensity of social network, Social Wellbeing; Senses, imagination and thought</p> <p>Challenge 9 Number and share of people being physically active, Frequency and duration of different levels of physical activity</p>	<p>Activate inhabitants, social life and well-being</p> <p>Facilitate movement, sports, and physical activity</p> <p>Provide education and develop capacity for NBS implementation</p> <p>Provoke behavioral change and lifestyle transformations</p>	<p>Construction of places for social gatherings at neighborhood level, also places for public events</p> <p>Creation of a wide variety of possibilities for practicing sports in the urban environment, especially such with use of natural materials and less equipment needed.</p> <p>Provision of recreational routes for cycling and jogging.</p> <p>Establishment of the “tasty gardens” and a greenhouse in 15<sup>th</sup> school Adam Mitkiewicz and in some kindergartens</p> <p>Co-design of thermal mineral water swimming pool with innovative technological and social NBSs for development beyond the URBINAT intervention</p>

Table 6. Needs on participation culture, culture, education and sports.



### 3.3. The global strategy for the intervention

Based on the URBiNAT pillars inclusive urban regeneration, public space, nature, health and NBS marketable solutions, The Healthy Corridor in Nadezhda will focus on four specific objectives supported by different activities in meeting the identified needs during the co-diagnostic and co-design process: 1) Provide healthy and adaptive solutions in the neighbourhood; 2) Improve

connections, access and porosity; 3) Cherish public space for all, diversify its use, and make it distinctive together; 4) Celebrate open space, provoke active life and fruitful community ties. The specific objectives addressed by the co-designed proposals have been discussed in 3.2.2.3. and the needed actions are summarized in Figure 18 (below).

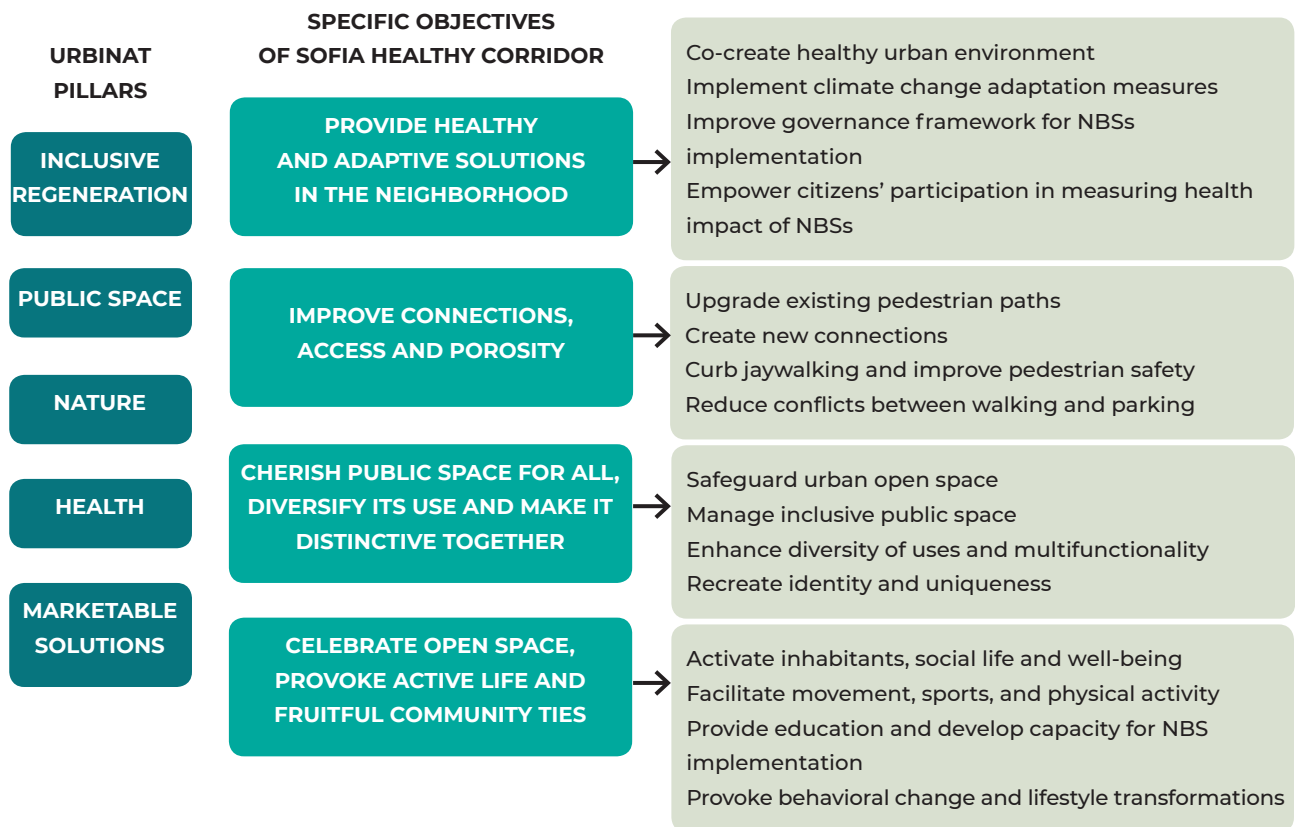


Figure 18. The Healthy Corridor Strategy. Specific objectives and measures related to the URBiNAT project pillars.

The four groups of measures, referred to as specific objectives and each measure are related to several Eclipse challenges thus ensuring the complexity and integration of the measures proposed in response to the local needs. (Figure 19)

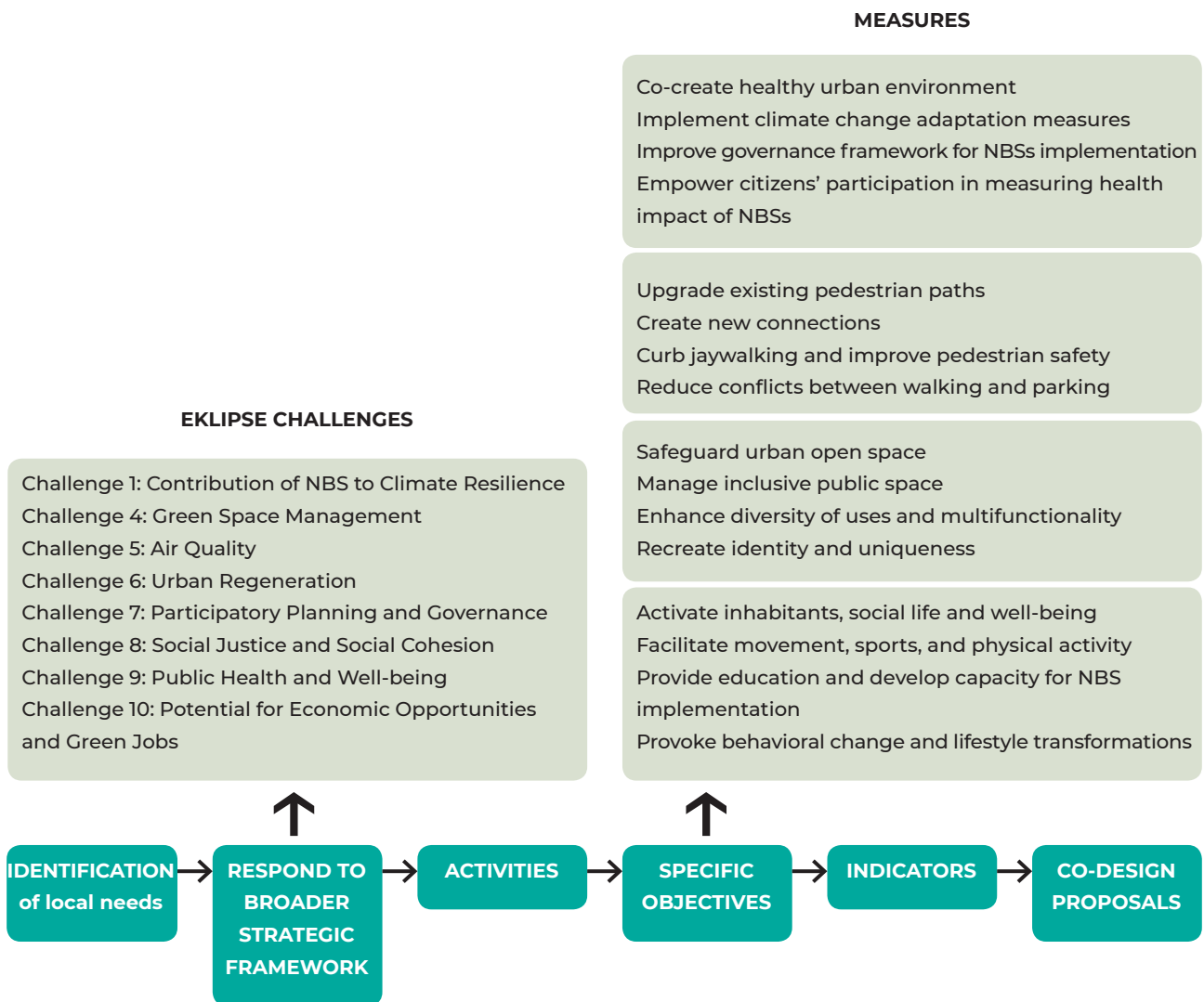


Figure 19. The Healthy Corridor Strategy. Relationship between the Eklipse challenges and the measures under the specific objectives.

The global strategy for the Healthy Corridor integrates the proposals developed by the URBiNAT project with the existing provisions of the planning tools according to the administrative and technical requirements and procedures.

According to the co-creation process (chapter 3), specifically developed in the frame of the local culture of Sofia, a set of goals were co-developed with the actors involved – citizens, local stakeholders, municipal technicians and political representatives.

The Healthy Corridor in Nadezhda focuses on the co-creation and spatial appropriation of nature-based solutions (NBSs) as means to improve living conditions and microclimate, develop public life around existing public spaces, and provoke active life and healthy lifestyles. The four specific objectives supported by different groups of activities aim to meet the identified needs during the co-diagnostic and co-design process:

- 1) Provide healthy and adaptive solutions in the neighbourhood
  - Co-create healthy urban environment
  - Implement climate change adaptation measures
  - Improve governance framework for NBSs implementation
  - Empower citizens' participation in measuring health impact of NBSs
- 2) Improve connections, access and porosity:
  - Upgrade existing pedestrian paths
  - Create new connections
  - Curb jaywalking and improve pedestrian safety
  - Reduce conflicts between walking and parking
- 3) Cherish public space for all, diversify its use, and make it distinctive together:
  - Safeguard urban open space
  - Manage inclusive public space
  - Enhance diversity of uses and multifunctionality

- Recreate identity and uniqueness
- 4) Celebrate open space, provoke active life and fruitful community ties:
- Activate inhabitants, social life and well-being

- Facilitate movement, sports, and physical activity
- Provide education and develop capacity for NBS implementation
- Provoke behavioral change and lifestyle transformations

## CO-PLACE



## HEALTH-ENERGY



## AQUA VITA



















## GREEN ASSEMBLY



Figure 20. Images of the intervention zones.

### 3.4. The Healthy Corridor Spatial Strategy

The Healthy corridor spatial strategy fits into the strategic and spatial development agenda for the city, covers the whole URBiNAT area, and complements the global strategy for the Healthy Corridor. Main thematic focuses of the spatial strategy are: the connections with the wider urban context; the existing and the proposed links between public space, parks and greenery; the existing and proposed spatial organization of the educational (formal and informal) infrastructure, services and activities; the existing and proposed network of facilities for sport/play and the main axis for recreational activities; and the social and solidarity networks. The plots, the infrastructure, but also the flows, the axis, and the physical connections are then further assessed and taken into consideration in the Preliminary Urban plan, where the NBSs are clustered in the 4 areas of intervention: Co-place, Health Energy, Aqua Vita, Green Assembly.

-  Study area
-  Places of intervention and co-creation
-  Recreational connectivity
-  Services/occupational connectivity
-  Suhodolska river
-  Greenline of Sofia initiative
-  Railways and associated land
-  Underground stations
-  Underground line
-  IInd class - urban highways
-  IIIRD class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Parks and gardens
-  Public buildings
-  Buildings
-  Socialist housing estates

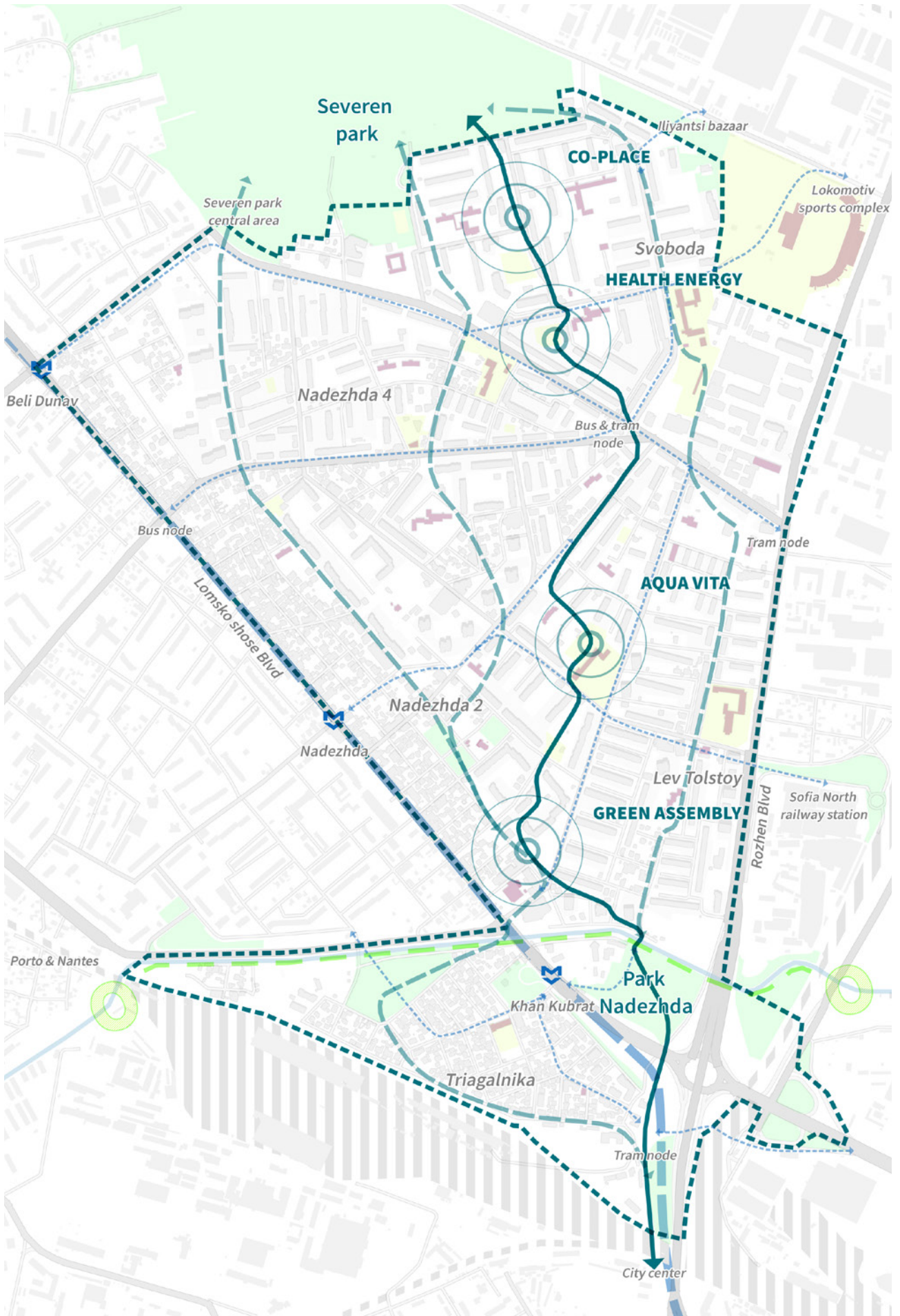
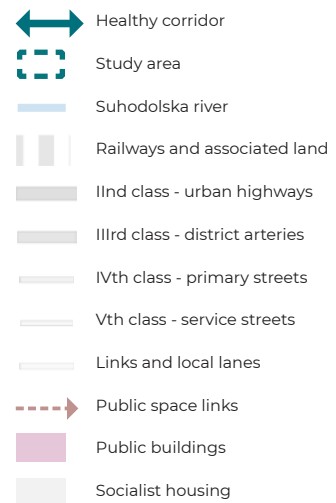


Figure 21. Spatial concept on the Healthy Corridor. Connecting wider urban context.

The urban connections envisioned in the Healthy corridor concept take into account the existing public transport nodes and hubs, the green structure, the pedestrian pathways and the general mobility modes and behavioral patterns. The major dividers as the Nadezhda junction and the Nikola Zhekov boulevard are addressed through the strengthening of the major and secondary axes of the Healthy Corridor, and the connection to the city center. These links need further more detailed planning, design, and implementation of traffic calming, pedestrian and cycling infrastructure and facilities. Some of them are beyond the resources of the URBiNAT project and have to be supported by internal and external funding. Several links seen as prospective connectors depend on integrated national, regional and local policies and projects such as the regeneration and development of the railway station Sofia Sever (Sofia North). The combination of pedestrian, cycling and other micro mobility is necessary for several of the directions and their design and implementation will be realized through municipal funding.



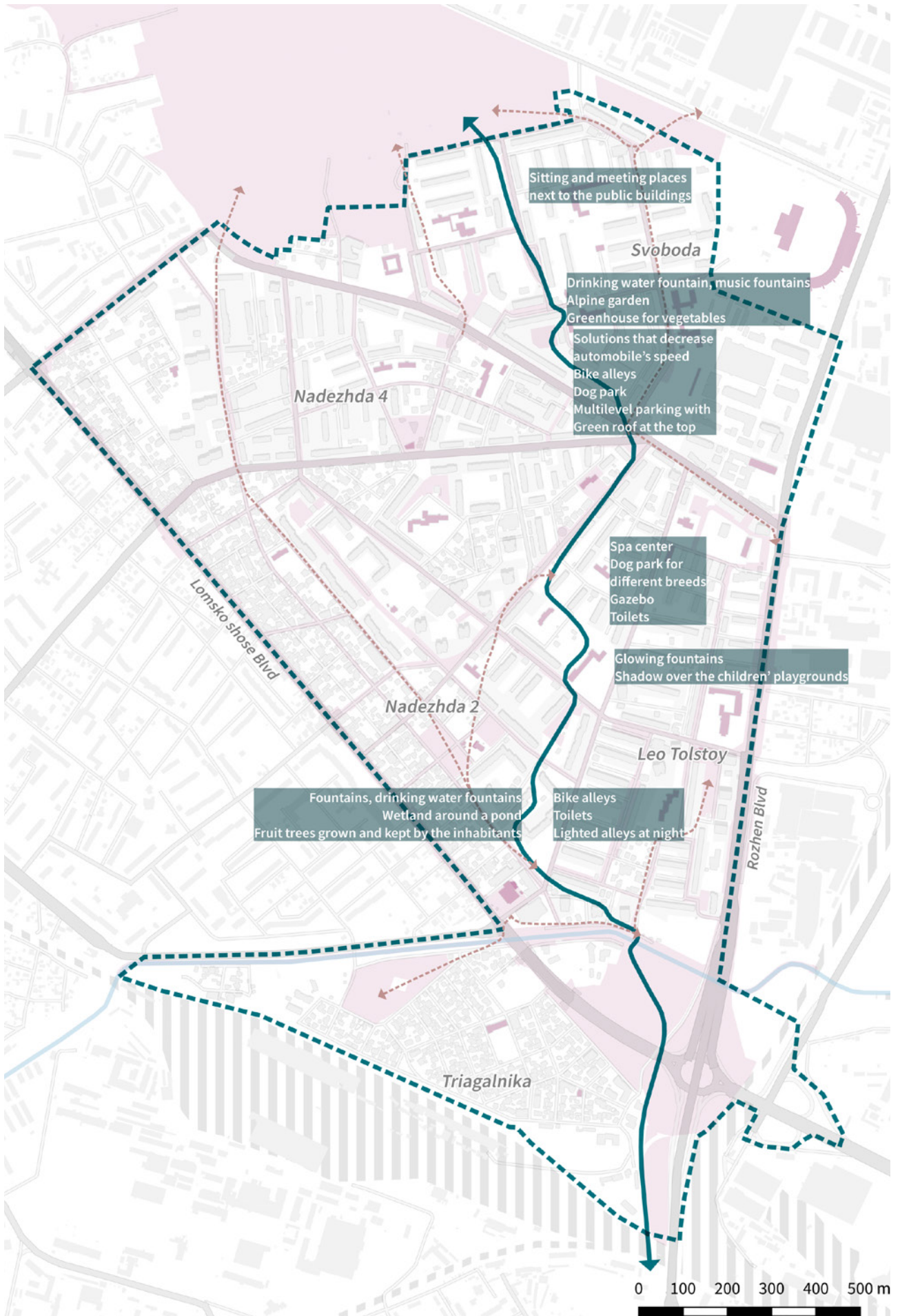
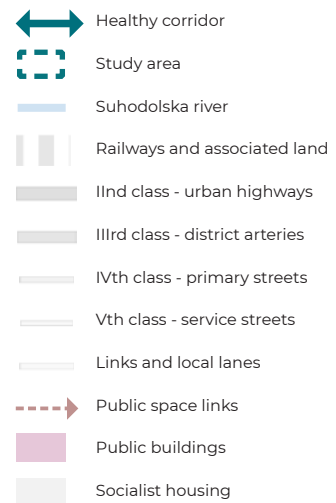


Figure 22. Public space, parks and green areas.

The baseline of the Healthy Corridor in terms of public space are the well distributed places of interest and activities, mostly commercial (markets, shopping centers and the Iliyantsi bazaar) and recreational (incl. Severen park, park Nadezhda, park Gorska kultura, etc.). The functional links between them, however, are weak due to the fragmentation of the urban environment, the existence of strong dividers and some adverse impacts caused by the traffic and the transport infrastructure in the South-east part of the study area. The authentic proposals connected to this theme reveal a rich mix of ideas aiming at reclamation of space for public life; solutions satisfying basic needs in public space (such as toilets); needs to provide permeability, access, safety, comfort (including thermal); and ideas for new attractions and points of interests.





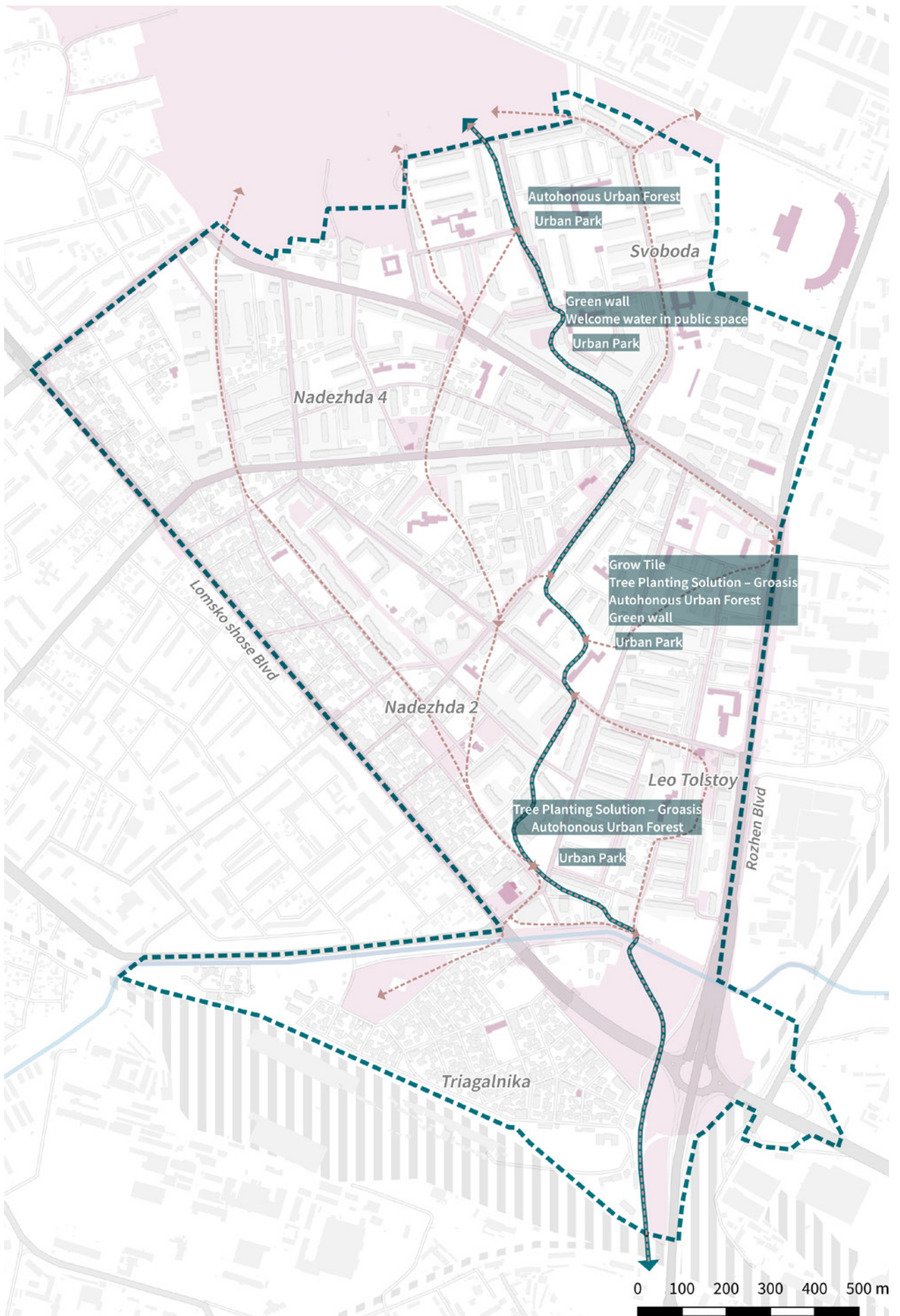
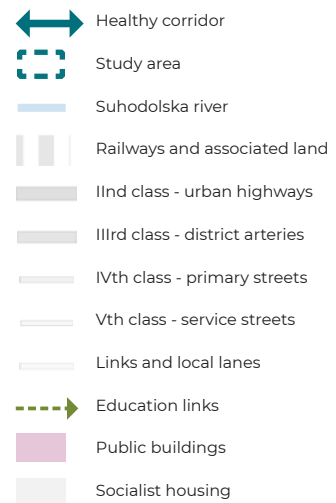


Figure 23. Connecting public space, parks and greenery.

The strategic focus of the Healthy Corridor as public space is based on the various proposals integrated into multifunctional public green spaces that will also provide a favourable micro-climate and will provoke diverse public life. Along with the existing spatial and functional links, the proposed new ones are to connect the territorial and technological solutions, and be supported by the participatory and social and solidarity solutions thus addressing the cultural, sports and other social activities.



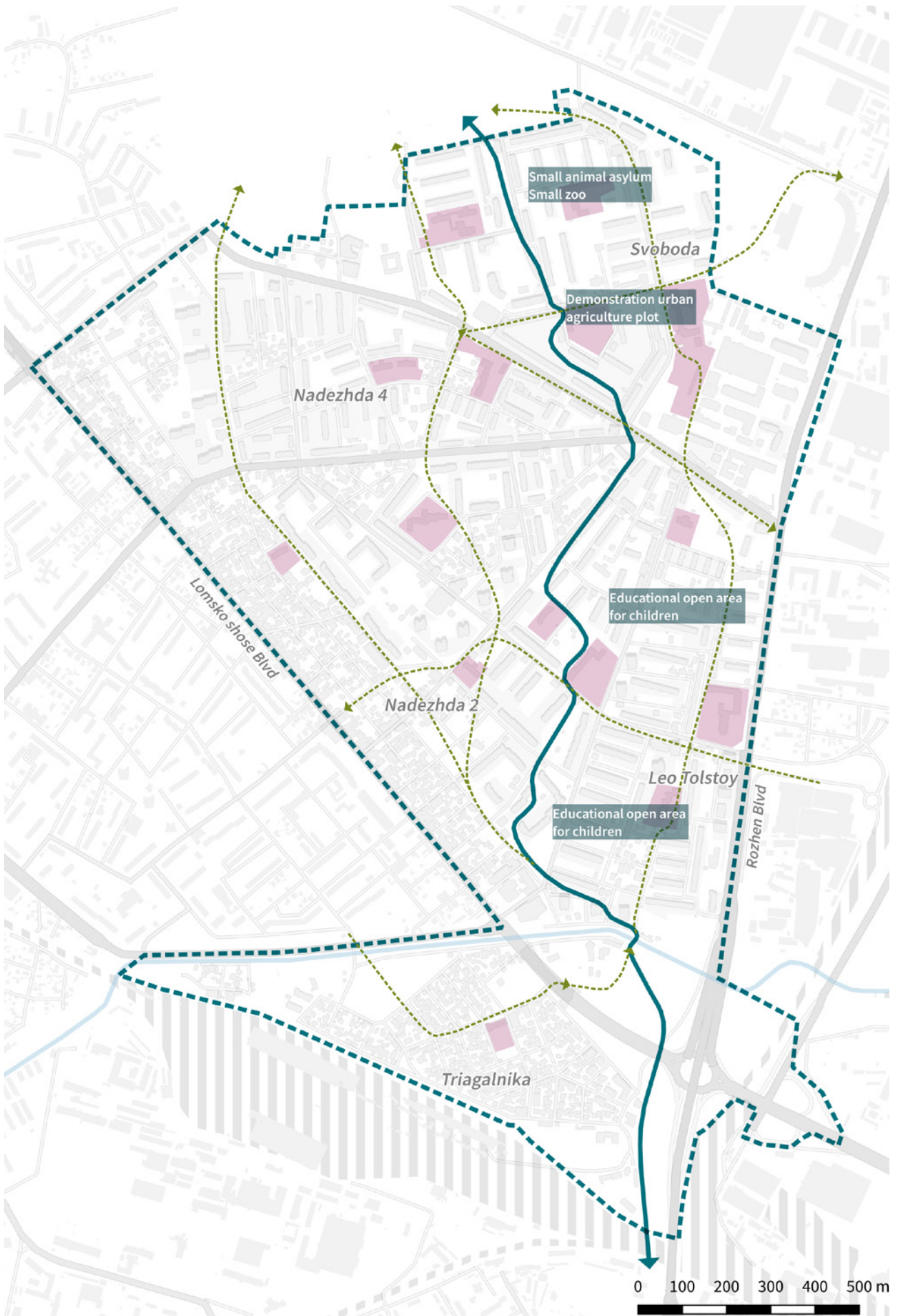














Figure 24. Education.

The high concentration of education facilities and the established strong links between them and other assets in the area are a good prerequisite and baseline for the creation of the Healthy Corridor. Several authentic proposals indicate specific needs for informal education and prompts its strategic role as horizontal strategy and tactics for every place of intervention and co-creation. Most of the specific needs expressed are related to the contact with nature, although some of them are still challenging to implement (e.g., the small animal asylum or the zoo) or in need to reconsider interactive approaches in addressing topics as biodiversity and sinantropic animals in urban open space.

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  IInd class - urban highways
-  IIIrd class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Education links
-  Public buildings
-  Socialist housing

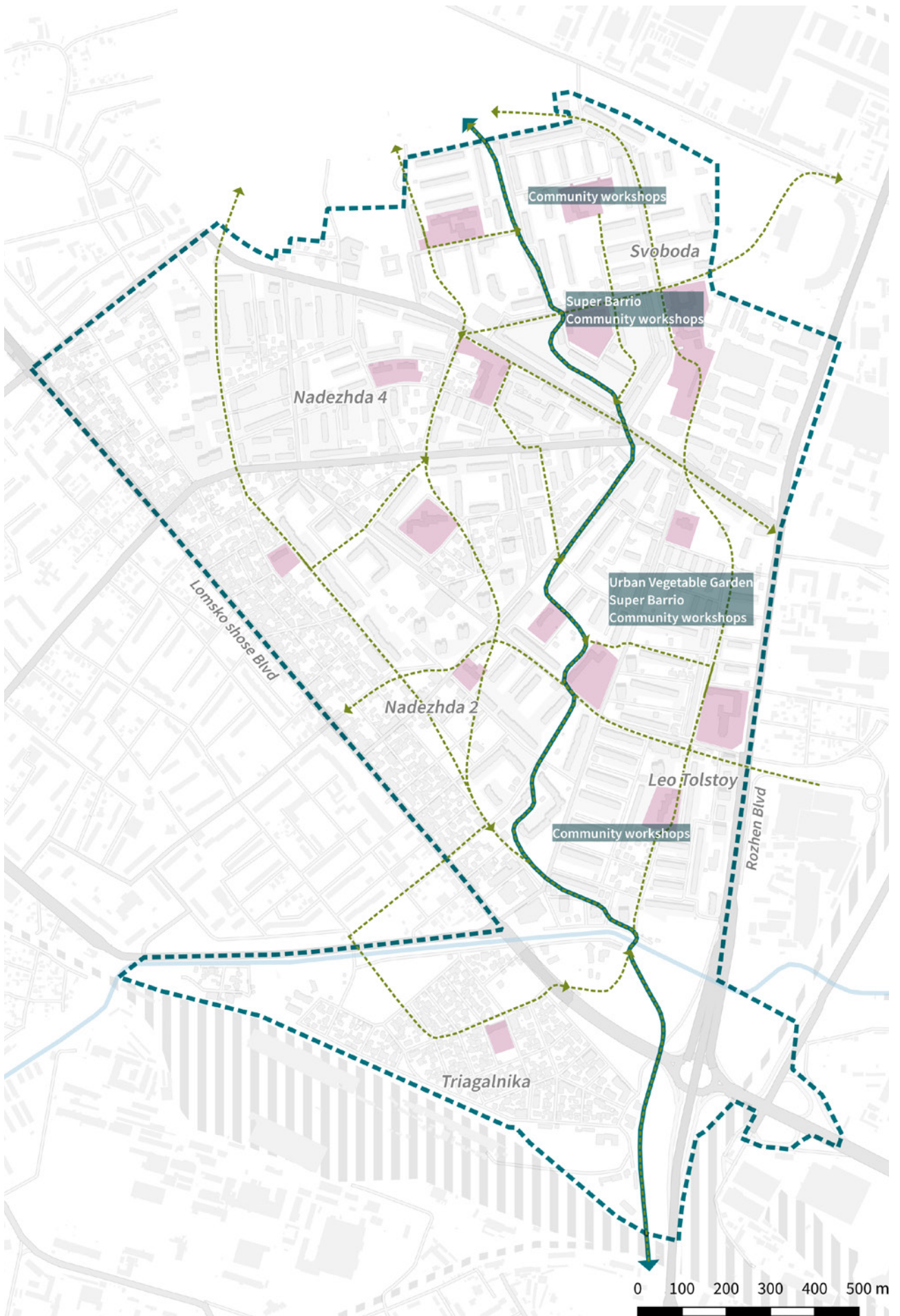


Figure 25. Connecting education.

The strategic focal point of the Healthy Corridor on education is a school educational pavilion in the 15<sup>th</sup> schoolyard that can be managed as an asset accessible for all pupils in the area. Community workshops were frequently proposed and selected as a flexible and dynamic form of providing education in open space for different groups at different times. The central location of the educational pavilion and the established relations between formal and informal educational organizations supports a hypothesis for the future intensification and enrichment of links and networks across different locations and within various timeframes.

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  II<sup>nd</sup> class - urban highways
-  III<sup>rd</sup> class - district arteries
-  IV<sup>th</sup> class - primary streets
-  V<sup>th</sup> class - service streets
-  Links and local lanes
-  Social economy, culture and sports links
-  Public buildings
-  Socialist housing

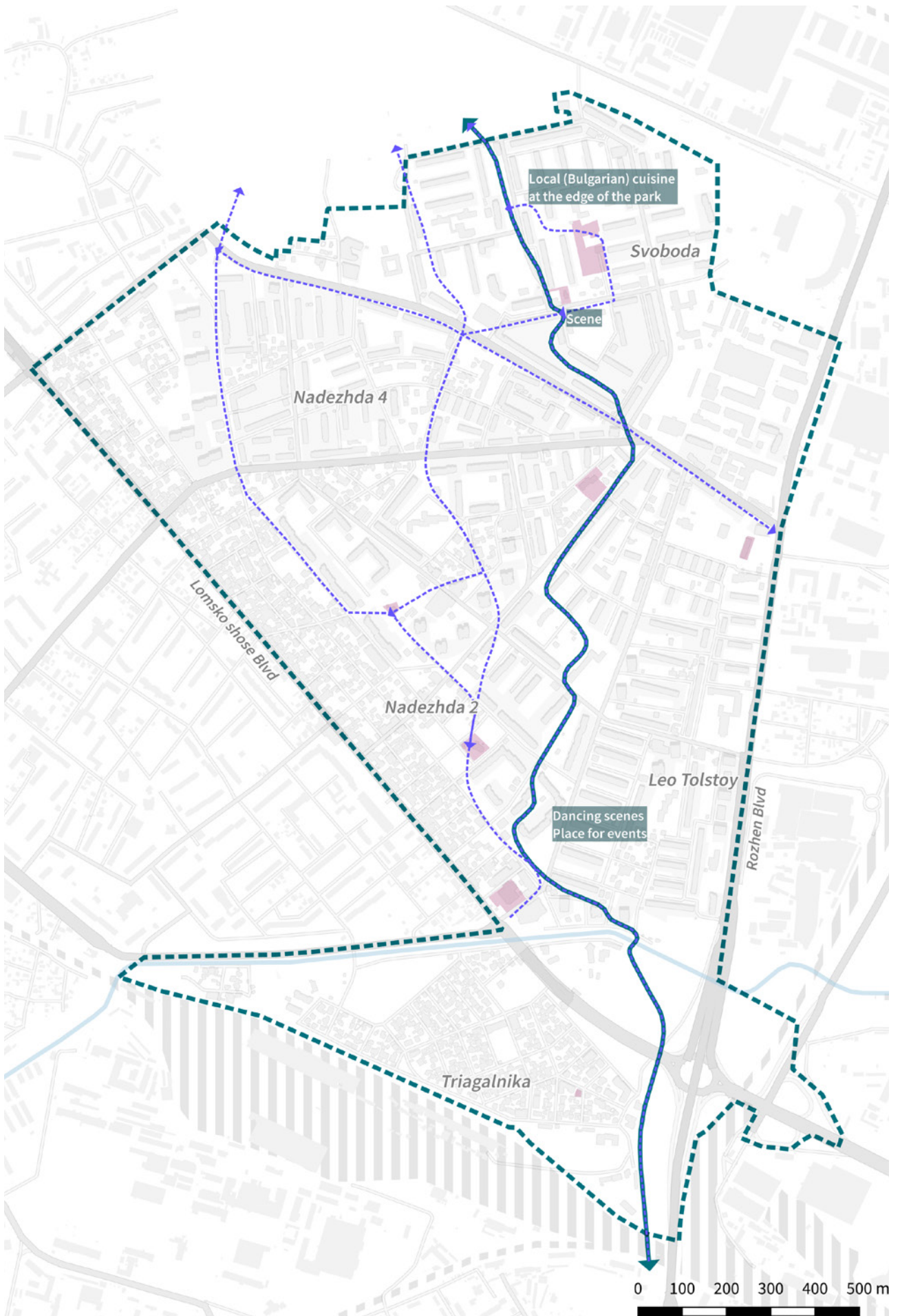





Figure 26. Cultural facilities.

The cultural baseline of the healthy corridor grounds on few links between neighbouring cultural institutions and between them and the Northern Park where some of the yearly events and the district's cultural calendar take place. The buildings of the local cultural centers (chitalishta) in the area seem to be abandoned, and the insufficient cultural life there pushes the inhabitants to the center of the city where many cultural institutions, facilities, independent artists and cultural events are concentrated. Some of the authentic proposals (without mentioning the NBS catalogue co-selection preferences) include the keyword 'scene' which means that there is a need for an open space to accommodate mainstream and sub cultures as part of contemporary events beyond the traditional celebrations.

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  IIrd class - urban highways
-  IIIrd class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Social economy, culture and sports links
-  Public buildings
-  Socialist housing



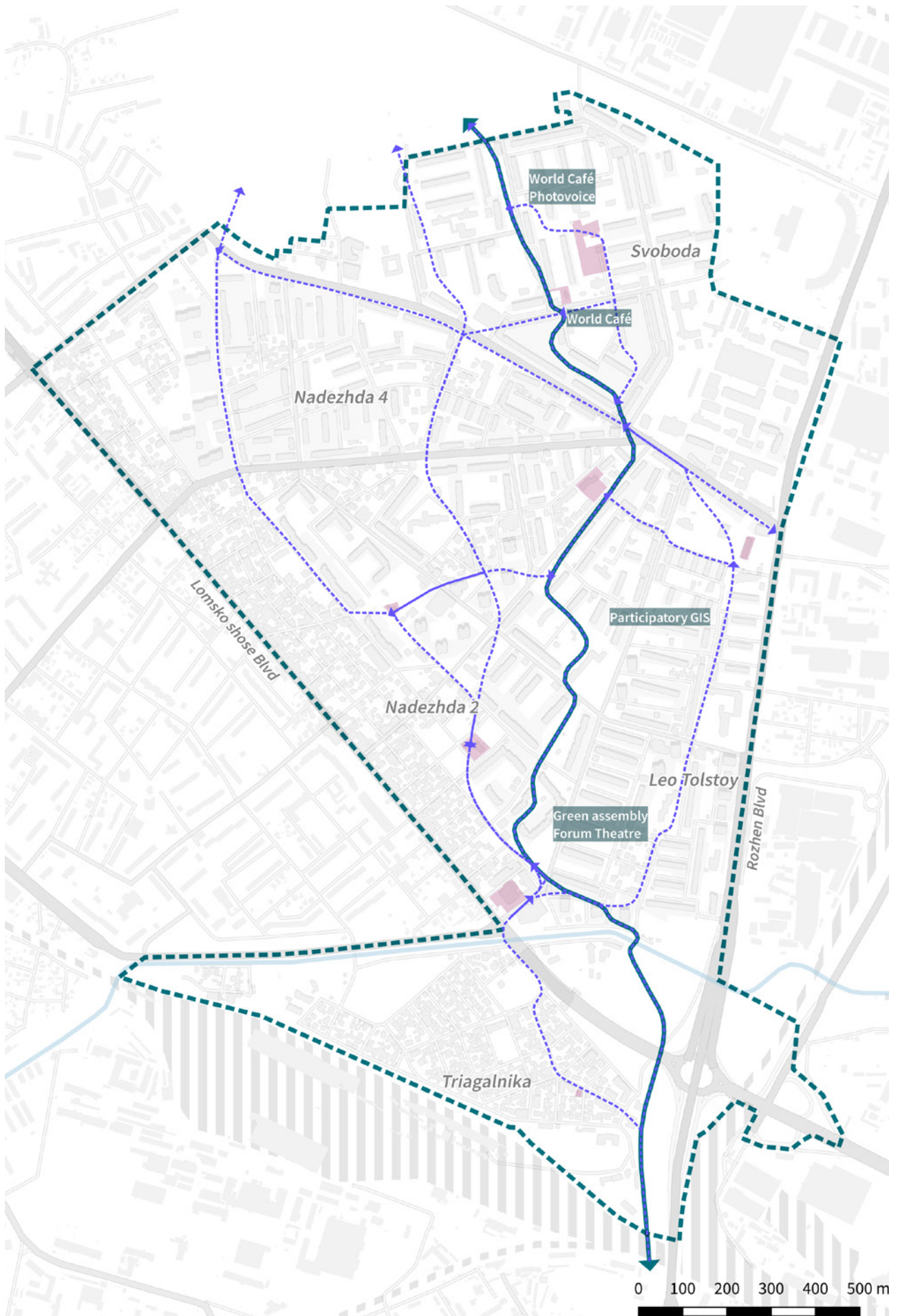















Figure 27. Connecting cultural facilities.

The key spatial element addressing the cultural topic in the Healthy Corridor strategy is the green assembly, situated next to the post office and close to the Municipal cultural institute 'Nadezhda'. This facility would provide ground for diverse cultural events, and combined with participatory and other types of solutions, will cultivate inclusive and interactive community and citizen networks with the participation of the cultural organizations in the public space.

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  IInd class - urban highways
-  IIIrd class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Social economy, culture and sports links
-  Playground facilities
-  Public buildings
-  Socialist housing

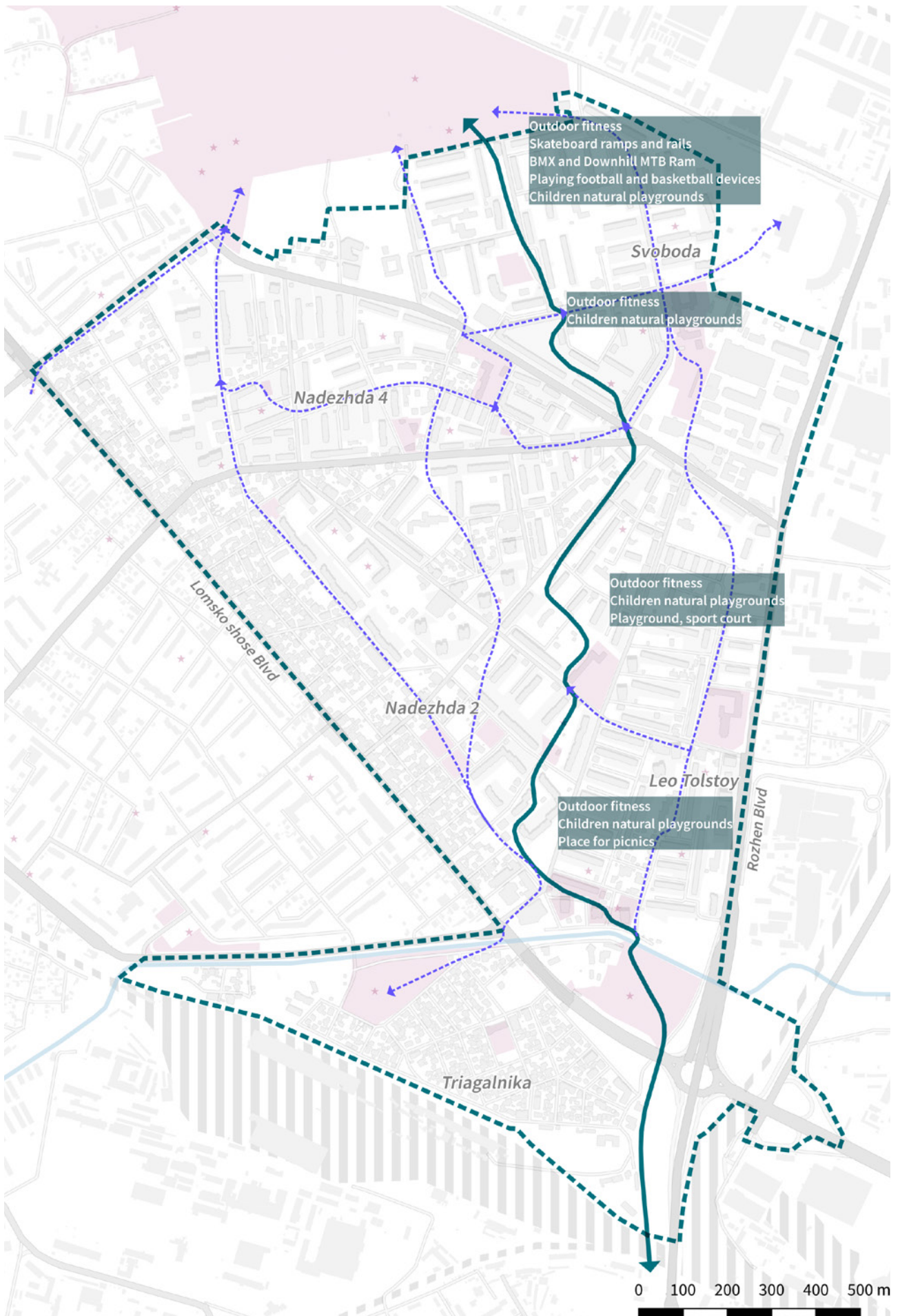















Figure 28. Sport, play and recreation.

The sports activities, play and recreation opportunities as a baseline are well structured in their spatial distribution but still part of them are in poor physical condition although there has been focused rehabilitation of such facilities in the last decade. The links represent the features in relatively good condition and rate of usage. The demand for more facilities similar to known examples in and out of the district as well as an accent on the natural playgrounds can be seen from the local residents' input (without mentioning the NBS catalogue co-selection preferences).

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  IInd class - urban highways
-  IIIrd class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Social economy, culture and sports links
-  Playground facilities
-  Public buildings
-  Socialist housing

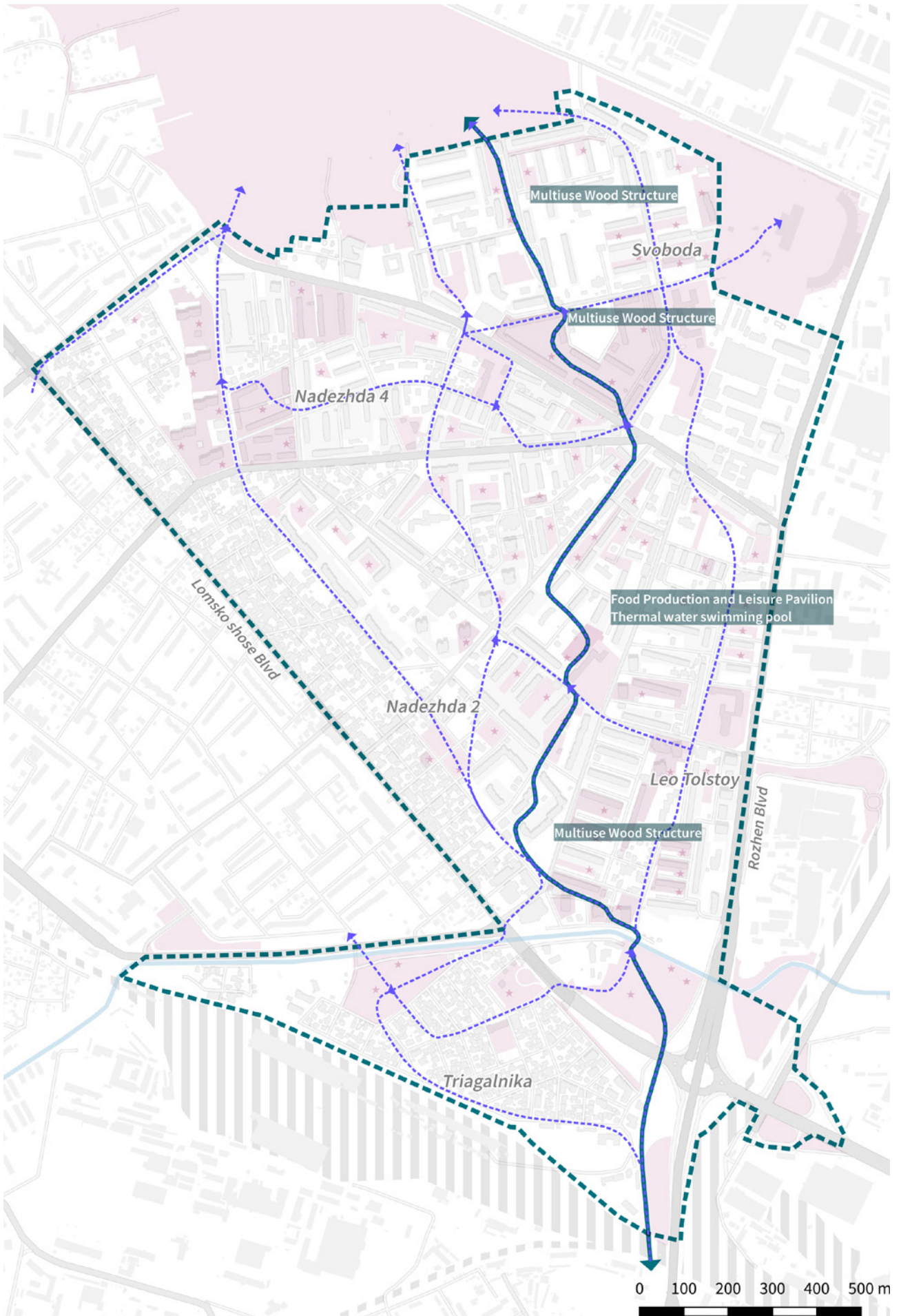
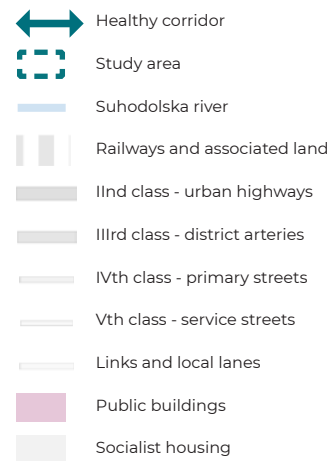


Figure 29. Connecting sport, play and recreation.

The Healthy Corridor strategic accent in terms of sport and recreational activities falls on the thermal water swimming pool next to the 15<sup>th</sup> school 'Adam Mitkiewicz'. The educational pavilion is in almost direct contact with the pool thus forming a recreational and educational hub at the middle section of the corridor. A system of other multipurpose structures will support sports and recreational activities in the other places of intervention and co-creation. The extension and densification of the network and the intensification of the links depends not only on the rehabilitation of the available facilities and regeneration of declined places but also on the higher level of participation in physical activities and active lifestyles that can be promoted through different campaigns and communication channels.



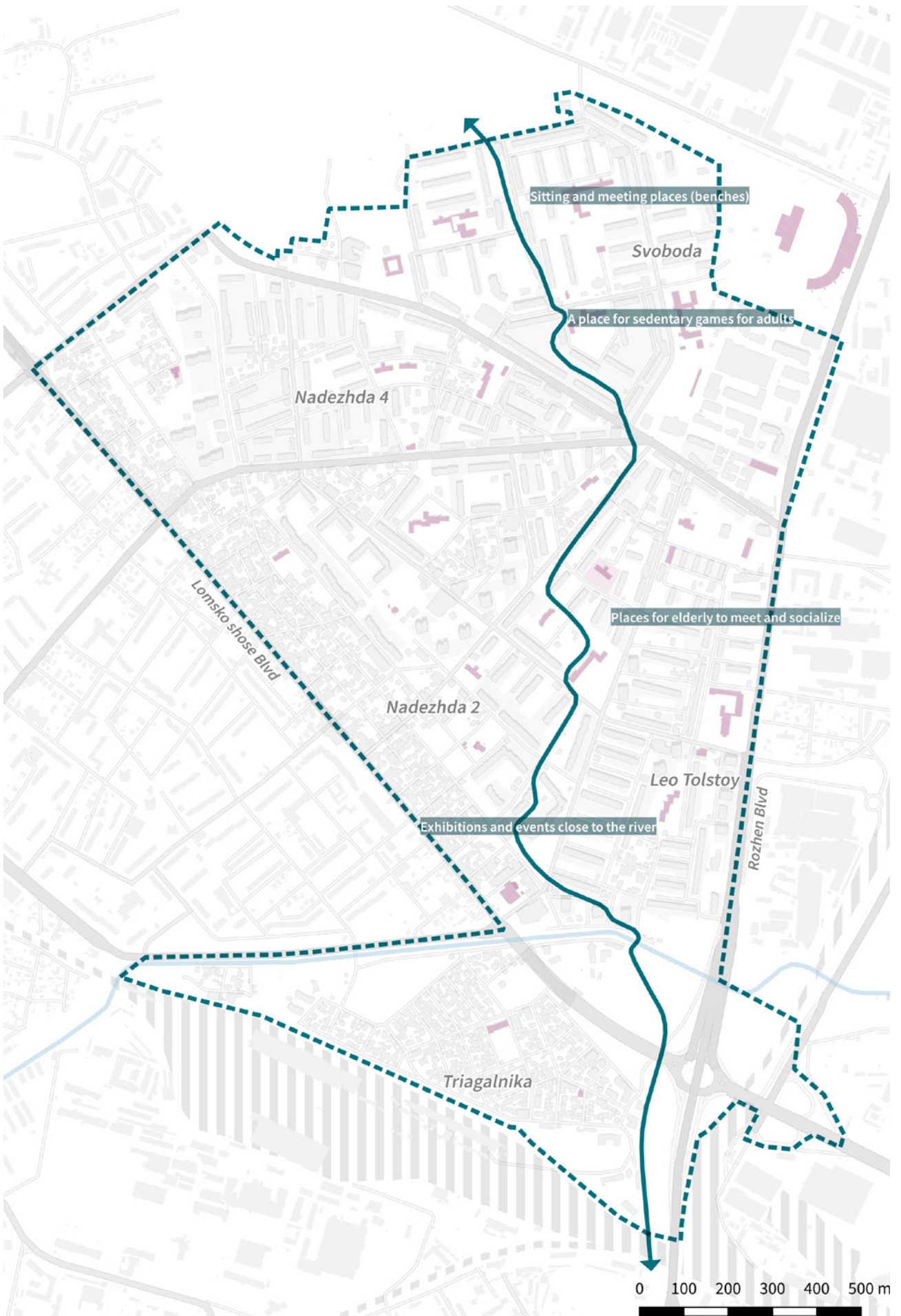











Figure 30. Social and solidarity networks.

The existing social and solidarity networks are almost invisible as they are part of very informal peer-to-peer connections or are municipality or institutionally led with parallel or supporting NGO activities. There are only two social enterprises registered in the area. Overall social and solidarity links are fragmented and due to the Covid19 situation adults seem to be atomized or detached from community life. It was difficult to outline significant links, yet some of the authentic proposals show that there are various needs which can be met by providing small scale solutions for social and economic inclusion.

-  Healthy corridor
-  Study area
-  Suhodolska river
-  Railways and associated land
-  IInd class - urban highways
-  IIIrd class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Social economy, culture and sports links
-  Public buildings
-  Socialist housing



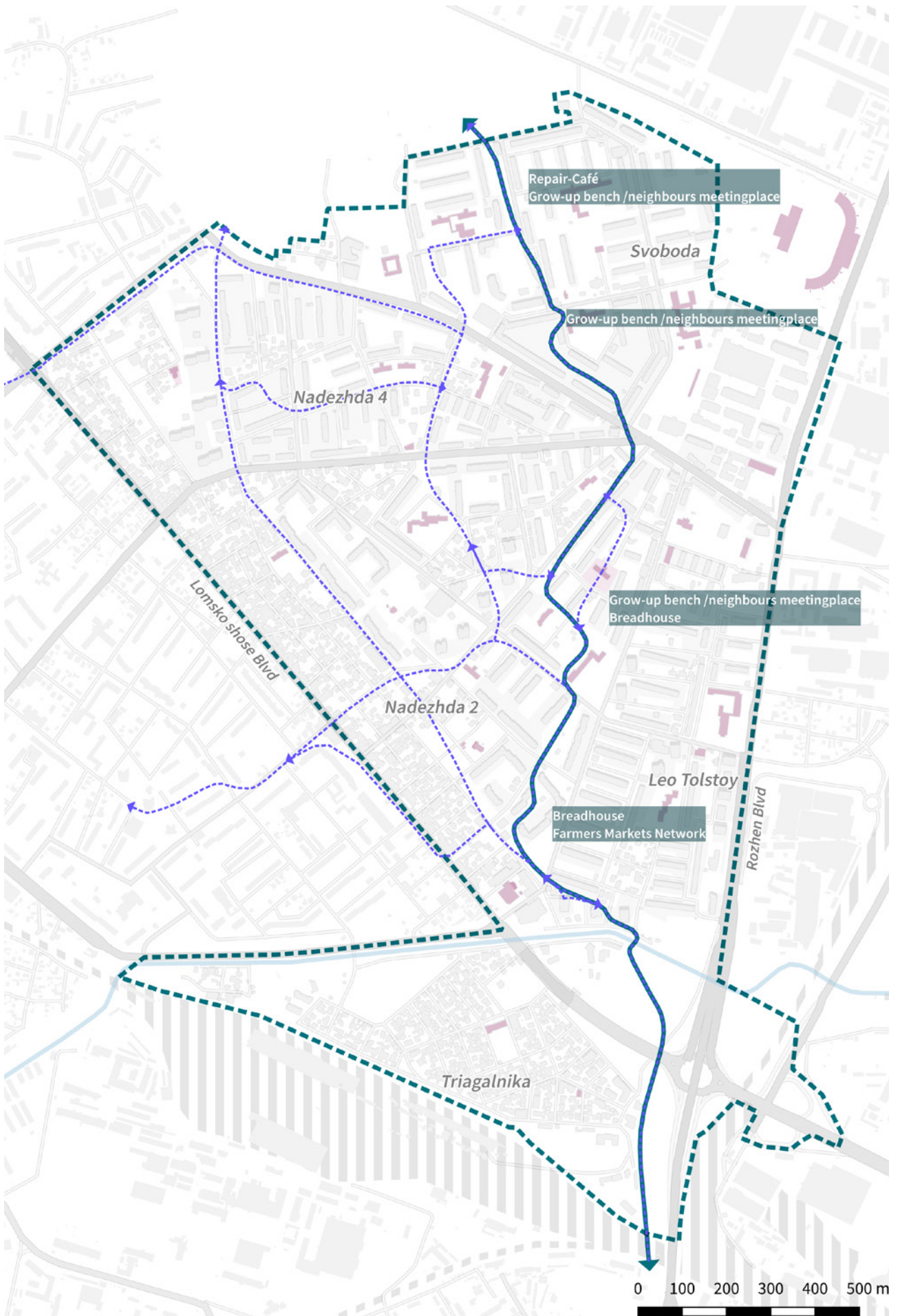


Figure 31. Connecting social and solidarity networks.

The social and solidarity economy component in the strategy for the Healthy Corridor is marked by several solutions well recognised during the co-selection phase – Repair Cafe, Breadhouse and Farmers markets network. The Breadhouse and Farmers markets network are recognised as solutions successfully implemented at other places in the city of Sofia. Building upon the existing socio-spatial format of the neighborhood and community interaction observed, the New NBS “Grow a bench” was added. A perspective exists for more intensive collaboration between the social institutions, deinstitutionalized centers as well as social enterprises and the NBSs along the corridor to shape the possible future links in this domain.

The synergetic exchange of ideas and experience between all partners in the project highlights the potential for the creation of a truly resilient future-oriented and common vision for the district of Nadezhda on the basis of URBiNAT. The Developed rules and the expected establishment of The Stakeholder Advisory Board as part of the URBiNAT tasks will play a preeminent role in the facilitation of dialogue between the various participants in the process. While its establishment is inextricable from the Healthy Corridor project, it possesses tremendous potential to evolve and widen the scope of its activities over time, in order to become a platform for interaction between representatives of the civic society, businesses, academia and the administration. The emphasis on collaborative practices in all stages of the project marks a departure from the established predominantly technocratic approach to urban planning for Sofia Municipality. As a pilot initiative, the Advisory Board aims to empower citizens to overcome the deeply embedded conviction that urban planning is a top-down process, which disregards the public’s voice. Encouraging civic pride and involvement ensures the future sustainability of the Healthy Corridor project and provides a stable foundation for the subsequent development and management of the area based on collaboration and consensus building.

# 4. Healthy corridor NBS

## 4.1. The NBS co-creation process

The timeline planned for the co-creation of the NBS living catalogue for Nadezhda (Sofia) is resumed and presented on Figure 32.

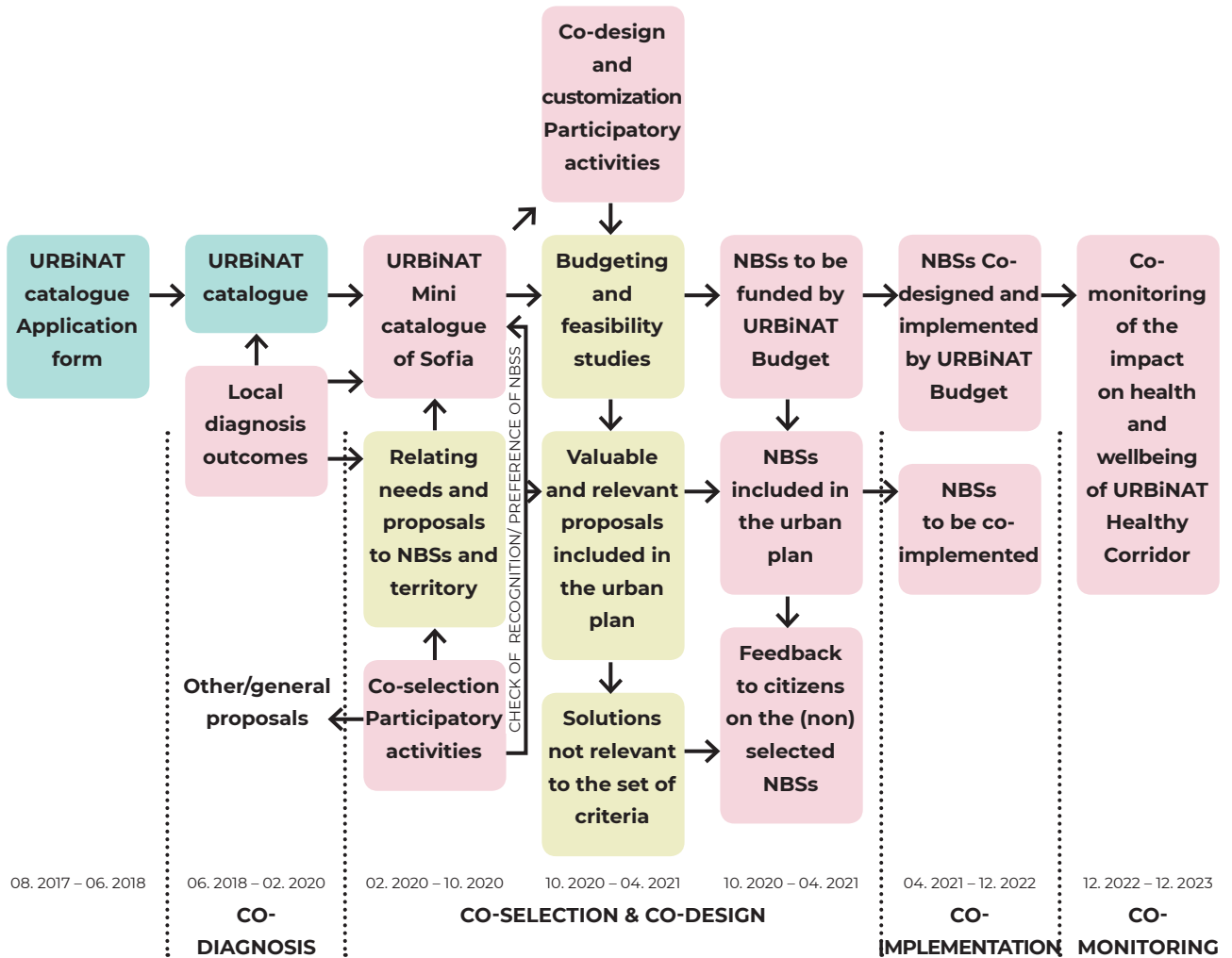


Figure 32. The Co-creation of the living NBS catalogue for Nadezhda, Sofia.

METHODS USED	DATE OF IMPLEMENTATION	NUMBER OF PARTICIPANTS		RESEARCH QUESTIONS
		male	female	
Focus group with thermal water and swimming specialists	05/03/2019	2	8	Identify the innovative characteristics of the thermal water swimming pool as NBS. Meeting NGOs – union of landscape architects, and Hidrolia
Focus group related to thermal water	24/01/2020	1	6	Identify the inclusive potential of thermal water – NGO ParaKinds (children with specificities), professionals
Exhibition and face-to-face interviews and quick-polls	13/06/2020 -27/06/2020	22	27	Explaining and presenting the project, mapping perceptions and collecting ideas for NBSs, Mapping participation culture and interests to contribute
Workshops during the co-design kick-off event	20.06.2020	5	7	Collect ideas, relate them to NBSs and appropriate the ideas from the Mini catalogue – through 4 simultaneous workshops with citizens for the 4 zones of intervention
On-line seminar for the kindergarten staff	07/07/2020		6	Introduction to the Edible Gardens of Learning; Ideas for transformation of Nadezhda's kindergarten yards
Workshop at the Intervention zone 1 – (Co-place)	27/08/2020	8	31	How participants use public space Which are the most preferred spaces What do the participants propose in order to improve the public space (collect ideas and relate them to NBSs)
Workshop at the Intervention zone 4 (Green assembly)	10/09/2020	19	24	Which of the solutions in the catalogue seem relevant and desirable for that particulate place (to appropriate the ideas from the Mini-catalogue)
Workshop at the Intervention zone 3 – (Aqua vita); Workshop at the Intervention zone 2 – (Health energy)	24/09/2020	24	34	To check what is the understanding and the expectations of the NBSs' impact To understand how the participants envision themselves in the process
Sofia task force interview the Headmistress of 15th school	17/12/2021	2	7	Discussion on the needs of educational facility and its location within the school yard – Sofia Task force meets IAAC team and discusses
Co-design of the educational pavilion in 15th school yard	13/01/2021 04/03/2021	2	7	To generate ideas about the functions and the structure of the Greenhouse in the 15th school yard
Co-design of tasty gardens of learning in kindergarten N90	04/2021	-	3	Meetings and discussions of options for the layout and the technical parameters (Zaedno, UACE, the headmistress)
Super Barrio workshop with pupils from 153 school	05/03/2021	4	2	To collect solutions and ideas for the area around the sports school through gamification
Co-design of the educational pavilion in 15 school yard –	15/03/202	3	4	Co-design of the educational pavilion in the yard of 15th school – agreement on the layout Sofia Task force, the headmistress of the school, and IAAC team

Testing "learn for life – GIS for citizen participation – preparation of the workshop with pupils from 15 <sup>th</sup> school	05/2021	3	2	Discussion on the requirements in the design brief for the educational pavilion in the yard of 15 school
Co-design workshop at the Intervention zone 2 – (Health Energy)	04/06/2021	9	18	Location and content of the functional areas Level of appreciation of the proposed areas and arguments for disagreement What elements can complement the functional areas, are there any missing elements?
Co-design workshop at the Intervention zone 1 – (Co-place)	05/06/2021	2	8	Size, spatial parameters, and characteristics of the proposed NBSs by sub-zone Target groups, materials, elements, safety concerns. Level of appreciation of the Corridor axis, arguments for disagreement, alternative proposals
Co-design workshop at the Intervention zone 3 – (Aqua Vita)	11/06/2021	12	16	Location and content of the functional areas Level of appreciation of the proposed areas and arguments for disagreement What elements can complement the functional areas, are there any missing elements?
Co-design workshop at the Intervention zone 4 – (Green Assembly)	12/06/2021	13	16	Size, spatial parameters, and characteristics of the proposed NBSs by sub-zone Target groups, materials, elements, safety concerns. Level of appreciation of the Corridor axis, arguments for disagreement, alternative proposals
Sharing results of the co-design and prototyping	23/06/2021	6	20	Sharing results on the of the tasty gardens of learning in Kindergarten N 90 among the distric administration, The Mayor of nadezhda, and the Mayor of Sofia
<b>Total</b>		<b>137</b>	<b>246</b>	<b>383</b>

Table 7. NBS Co-creation workshops: Methods, participants, research questions.

Different groups took part in the first phase of the co-design – inhabitants of the blocks in close proximity to the buildings around the four zones of intervention and people usually crossing or walking nearby; representatives of specific interest groups and communities as dog owners, bicycle riders, professionals (as architects, engineers, a medical doctor, a retired journalist, a retired civil worker at the District municipality), and elderly/retired; active citizens that lead the action for cleaning of interblock spaces, initiators of actions for upgrading public space (at Co-place and Aqua vita) managers of the condominium associations (at Co-place and Aqua vita).

Based on the on-site communications, the participatory activities performed outlined several types of inhabitants by attitude to social action for transforming public space: (a) very active ones in addressing certain problems (a rather limited group, most of them already involved in ongoing initiatives); (b) ones ready to join if invited, with further guidance and organization needed; (c) ones reluctant to join as it is considered a responsibility of the municipality; (d) passive ones, unwilling to be bothered; (d) ones providing advice and proposing solutions, yet unwilling to be involved in practical action; (e) ones suspecting a hidden agenda behind the project initiatives; (f) ones easily disappointed when things do not happen fast enough.

## 4.2. The new NBSs and the open Mini Catalogue of Sofia

In the course of the URBiNAT project different new NBSs were and are being integrated in the NBS living catalogue of Sofia. Since the application to March 2021, NBSs were: a) proposed by Sofia as frontrunner city during the application process; b) identified as established cultural practices in the city and in Nadezhda district, c) valorized or in need to be reclaimed and brought back in public space, d) envisioned and appropriated during the co-creation process.

One of the main accents during the URBiNAT project proposal phase (2018) was the availability of thermal water springs. The healing quality of the thermal water has been recognized in the region for centuries in public baths with pools. Swimming has been a compulsory element of school physical education and training in Bulgaria since the mid-1970s, yet only a few large school complexes had functioning swimming pools by the late 1980s. Therefore, the utilization of the healing qualities of the thermal water and integrating it into the swimming pools was initially assumed as possible NBS to be developed in the course of the URBiNAT co-creation process.

The Internationally recognized practices of the “Bread house network” and “The edible organic garden of learning: alternative environmental education for the youngest” (later transformed to “Tasty gardens of learning”) have been included as best practices for Sofia as a front runner city, thus complementing the

already selected NBSs coming from different partners in the first draft of URBiNAT catalogue. Along with the letter of support from the Zaedno foundation, the “Tasty gardens of learning” practices became part of the project application.

The stakeholders’ workshop and the organization of the Consortium meeting in Sofia held in January 2019 brought the “Farmer’s market network” as a social and solidarity NBS. It was conceived along with already developed and experienced agents viewed as potential facilitators of the participatory process in Nadezhda. This NBS is expected to contribute to the restoration of the connection of bigger cities’ inhabitants to land, fresh and good quality food at the fostering of a new and healthier consumer identity, providing a new cultural and social space for encounters and shared identity.

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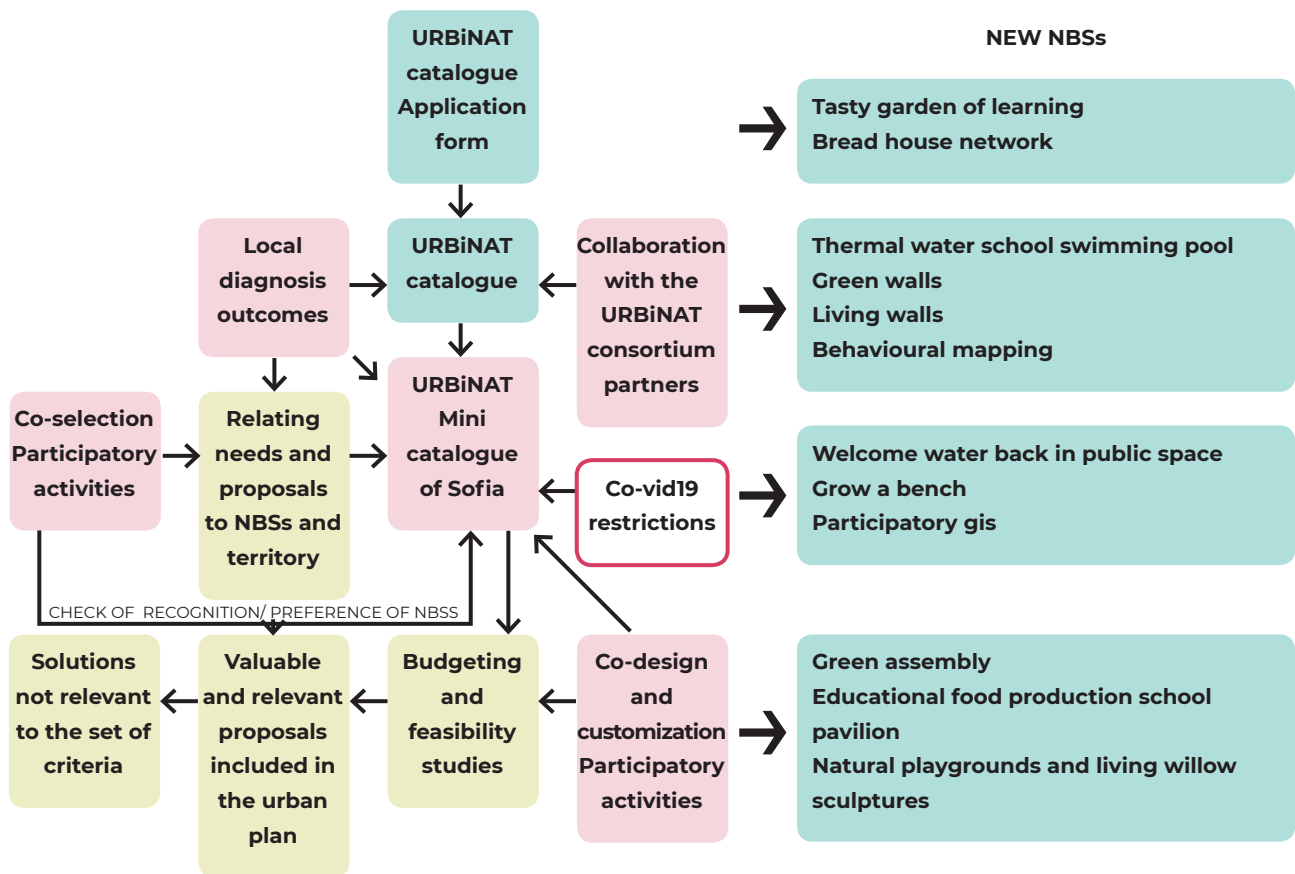


Figure 33. NEW NBSs developed and NEW NBSs under development by Sofia Task Force as of January 2021.

The two-stage process of the local diagnostic gave a good baseline for identifying possible solutions that fit the local natural and social needs. In the course of the local diagnostic, the appropriateness of the territorial (and of some of the technological) NBS was re-considered and aligned with the specific territorial context and needs, as well as with the local strategic agenda and the current political support. The fulfilment of these criteria strengthened the idea of the “Thermal mineral water swimming pool”, built upon the use of local geothermal resources and providing a healthy environment for physical education and training as well as recreational activities for schools’ children.

Another NBS, called “Grow a bench” (Co-creation of neighbors meeting places), has been extensively studied as an existing sustainable practice during the local diagnosis and developed in a preliminary draft, yet not included in Sofia Mini Catalogue. The formulated new NBSs “Welcome water back in public space” was identified and augmented as needed since it was previously existing as a practice in Sofia as well

as a step towards building resilient communities in the process of climate adaptation change. During the co-selection process, the idea of this NBS was also widely supported by the citizens.

The workshop with the municipal technicians and Sofia Task Force carried out in March 2020 brought to the compilation of the first draft of the Sofia Mini Catalogue. It consists of 11 participatory, 9 territorial, 5 technological and 7 social and solidarity NBSs. The compilation process of Sofia Mini Catalogue, prepared for the purposes of the co-selection and co-design, was subjected to the following criteria: a) objective need, cultural traditions and political support to implement the NBS; b) realism; c) potential for clustering and synergetic results; d) availability of agents able to assist the implementation of the NBS. During the co-selection phase, a series of activities influenced the expansion, elimination of solutions, and further diversification of the compiled first draft of Sofia Mini Catalogue thus proving the need of an open and “living” catalogue that serves as an inspiration rather than imposition of ready-made solutions.

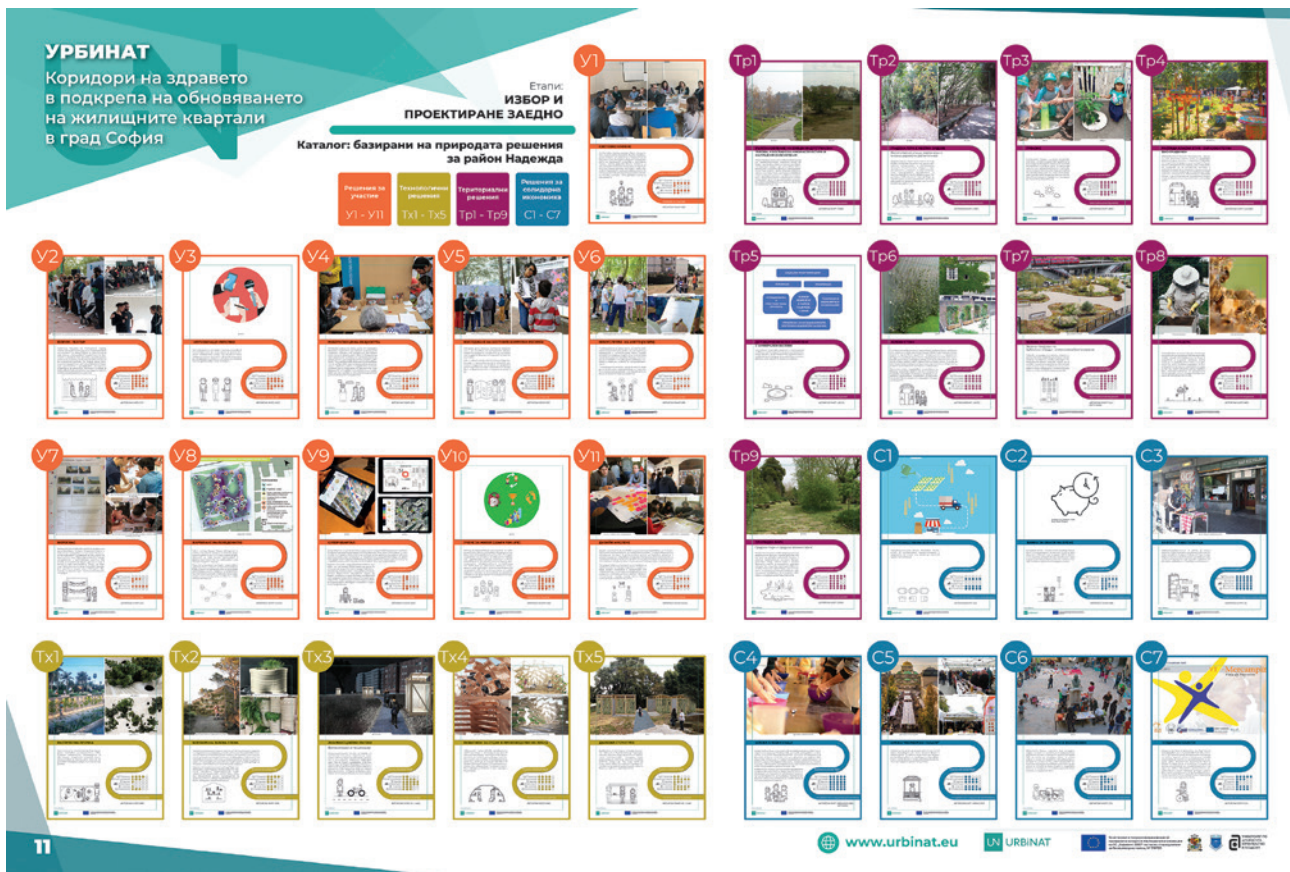
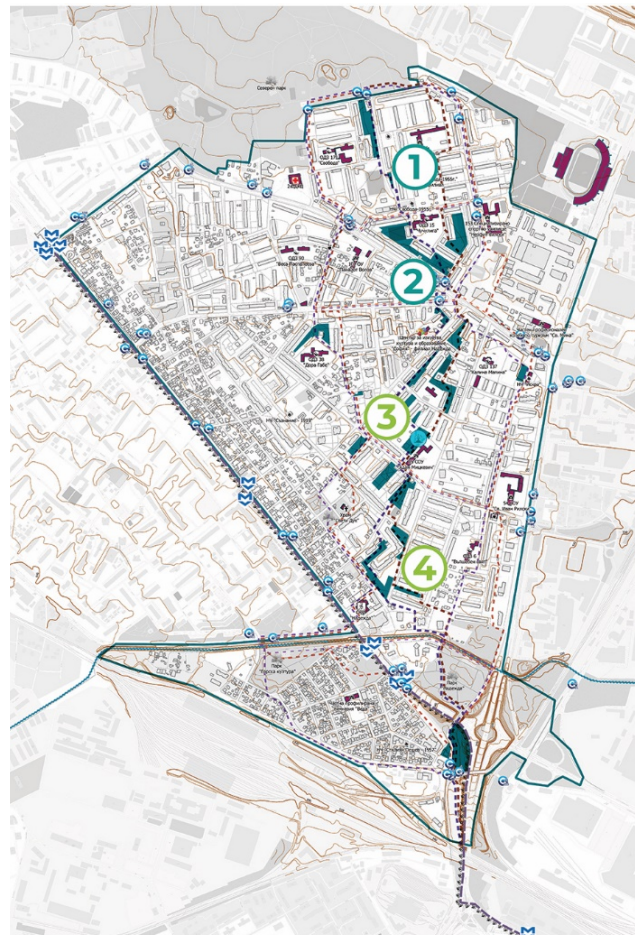


Figure 34. Sofia NBS catalogue as prepared for the purposes of the open-air exhibition and later circulated in Internet (<https://public.3.basecamp.com/p/dPT5RLzECMWqLDNYKihMJsf6>).

The presentation of the local diagnostic results and the two-week exhibition in May 2020 served as an occasion of attracting new participants, hearing new ideas, and testing the appropriation and the perception of the NBSs in the draft catalogue. In August and September 2020 four workshops were organized with the citizens to collect ideas about the four intervention zones within the URBiNAT area.

The zones consist of groups of lots whose size, layout and location provide a promising potential to develop a NBS or a group of complementary NBSs. These four workshops informed the process of collecting ideas and appropriating NBSs in relation to the specific places initially named Intervention zone 1, 2, 3, and 4 and renamed during the elaboration of the Healthy corridor strategy and the Healthy Corridor spatial concept respectfully into Co-place, Health energy, Aqua vita, and green assembly. (Figure 35).





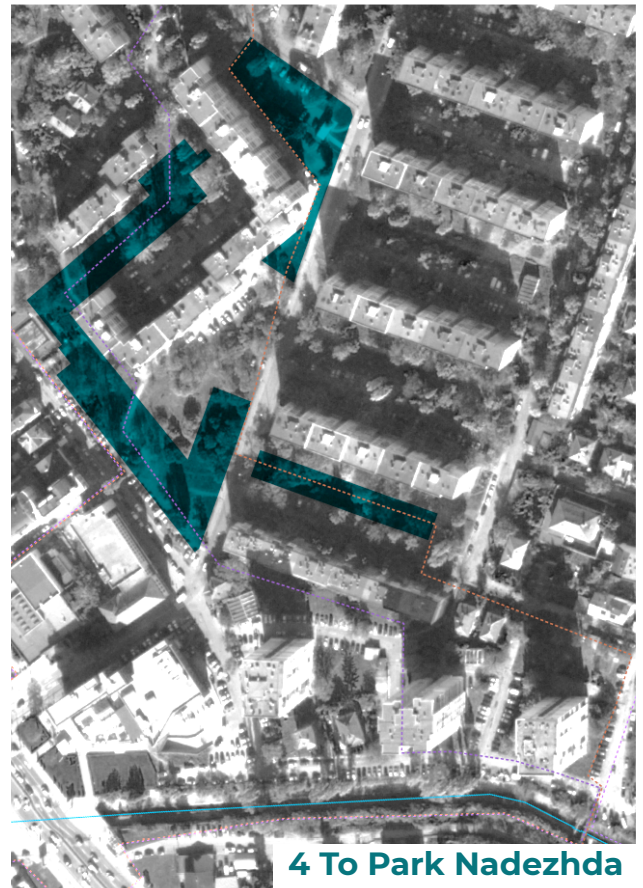
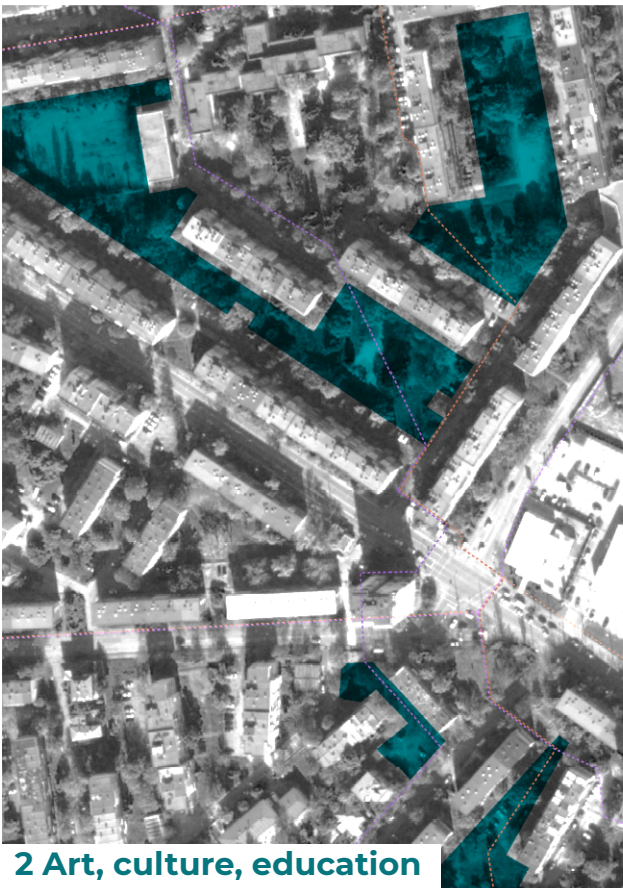
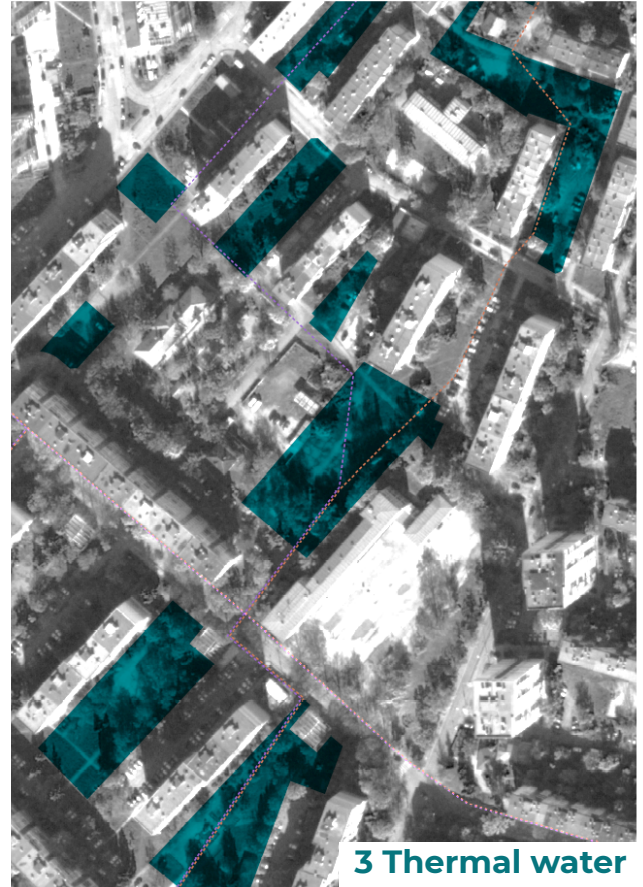


Figure 35. The four groups of plots prepared for the public event on 20.06.2020 and the 4 workshop sites held August and September 2020.

The NBSs included in the draft catalogue were used as reference and best practices as well as a source of inspiration for the generation of the new ideas.

The data collected during the process, and organized in a GIS database, included both the

attributes of the ideas and of the participants who raised them. In the following image, the main processes of discussing citizens' ideas, ideas' spatial reference, using the catalogue as inspiration and appropriation of ideas to the catalogue NBSs during the workshops are shown.



Figure 36. Operationalization of the NBS draft catalogue for the purpose of idea generation and connection to different locations: 1. discussing citizens' ideas, 2. Ideas' spatial reference, 3. using the catalogue as inspiration, 4. appropriation of ideas to the catalogue NBSs.

### 4.3. NBSs proposed through the first round of the co-creation workshops

The first round of co-creation workshops was postponed for around 3 months due to the first stage of the Covid-19 pandemic. The warmer season between June and September provided suitable chances for direct contact while keeping the needed sanitary measures at the most relevant level. During the workshops organized around the parallel exhibition in front of the Municipal cultural institute “Nadezhda” there was modest participation which later on increased as citizens gained more confidence.

Some differences in the readiness and depth of participation through proposals and co-selection of NBSs were observed in the various types of workshop sites. In the more transitional but narrow public space at the edge of Park Nadezhda the many people crossing the Suhodolska river bridge were passing, asking and informing themselves but a smaller part of them spent more time looking through, discussing, sharing of impressions, proposing and selecting. Contrary to this, the other transitional site behind the Post office gathered passers-by that were actively proposing ideas rather than selecting from the catalogue. In these cases, there was a more general agreement and even positive emotions and surprise about the good intentions of the project and its innovative, regenerative, green and healthy oriented character.

The other types of places – more semi-public ones around some of the housing groups and their territorial communities, proved to be more

fruitful for intensive discussions and specific interests of the local residents expressed. Some of them were presenting themselves as leaders and certainly seemed to be opinion makers of the neighbourhood. Some of them were well informed about the project and they had very specific attitudes towards the concept, the solutions, the expected impacts from the project and more generally about the public works and the community activities needed at that place. Some of them were sceptical or were addressing issues that are more basic in terms of the physical conditions, parking and other problems of the urban environment and its use, that cannot be resolved solely by the project and its funding. While communicating and realising the opportunities and the constraints of the project many of the participants were readjusting their preferences towards attainable and practical proposals and solutions. Some of them were not always that inclusive and oriented towards other groups of users and uses out of their lifestyles. At some sites there were core groups of interested users and more peripheral ones which outnumber the core groups and they seem to have differing ideas and preferences. The following table makes a summary of the proposed ideas and solutions with reference to the Sofia NBS catalogues and beyond. Some of the proposals without reference to the catalogue can hardly be regarded as NBSs, but many of them can be adapted to or NBSs can be part of their implementation.

## CO-CREATION ZONE 1: TO SEVEREN PARK /LATER REFERRED AS CO-PLACE/

Type of NBS	Proposed ideas and solutions with reference to Sofia NBS Mini catalogue	Proposed ideas and solutions with no reference to Sofia NBS Mini catalogue
Territorial	<ul style="list-style-type: none"> <li>Renaturalization of brownfields and degraded ecosystems</li> <li>Autonomous urban forest</li> <li>Thermal water swimming pool</li> <li>Growing classroom: tasty gardens of learning</li> <li>Groasis</li> <li>Bee hives</li> <li>Green walls</li> </ul>	<ul style="list-style-type: none"> <li>Children natural playgrounds</li> <li>Outdoor fitness</li> <li>Sitting and meeting places next to the public buildings*</li> <li>Skateboard ramps and rails</li> <li>BMX and Downhill MTB Ramp</li> <li>Playing football and basketball devices</li> <li>Sitting and meeting places (benches)</li> <li>Local (Bulgarian) cuisine on the edge of the park*</li> </ul>
Technological	<ul style="list-style-type: none"> <li>Pavillion for food and recreation</li> <li>Wooden multifunctional structure</li> <li>Grow tiles</li> <li>Ceramic green wall</li> <li>Luminescent pathways for people and bicycles</li> </ul>	<ul style="list-style-type: none"> <li>Small animal asylum</li> <li>Small zoo</li> </ul>
SSE	<ul style="list-style-type: none"> <li>Solidarity markets, exhibitions, and fairs</li> <li>Repair cafe</li> <li>Time bank</li> </ul>	
Participatory	<ul style="list-style-type: none"> <li>Forum theatre</li> <li>Cultural mapping</li> <li>Работилници на общността</li> <li>Photovoice</li> <li>SuperBarrio</li> <li>Learn for life</li> </ul>	

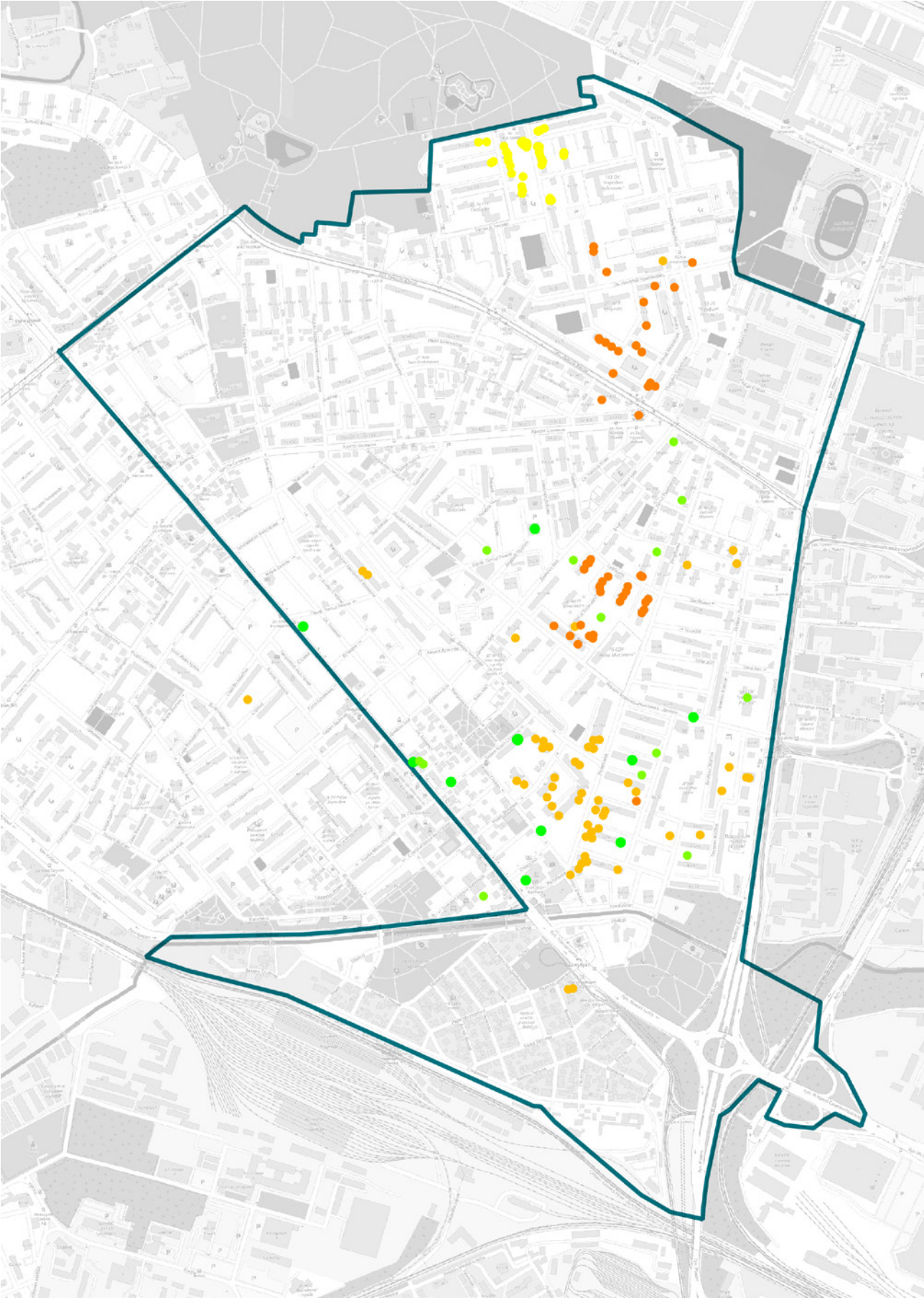
## CO-CREATION ZONE 2 ART, CULTURE, EDUCATION/LATER REFERRED AS HEALTH ENERGY/

Type of NBS	Proposed ideas and solutions with reference to Sofia NBS Mini catalogue	Proposed ideas and solutions with no reference to Sofia NBS Mini catalogue
Territorial	<ul style="list-style-type: none"> <li>Growing classroom: tasty gardens of learning</li> <li>Groasis</li> <li>Bee hives</li> <li>Green walls</li> </ul>	<ul style="list-style-type: none"> <li>Children natural playgrounds</li> <li>Outdoor fitness</li> <li>Solutions that decrease automobile's speed</li> <li>Bike alleys</li> <li>Dog Park</li> </ul>
Technological	<ul style="list-style-type: none"> <li>Pavillion for food and recreation</li> <li>Wooden multifunctional structure</li> <li>Grow tiles</li> </ul>	<ul style="list-style-type: none"> <li>A place for board games for adults</li> <li>Scene</li> <li>Drinking water fountain, music fountains</li> </ul>
SSE	<ul style="list-style-type: none"> <li>Solidarity markets, exhibitions, and fairs</li> <li>Repair cafe</li> <li>Time bank</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration urban agriculture plot</li> <li>Alpine garden</li> <li>Greenhouse for vegetables</li> <li>Multi-level parking with green roof at the top</li> </ul>

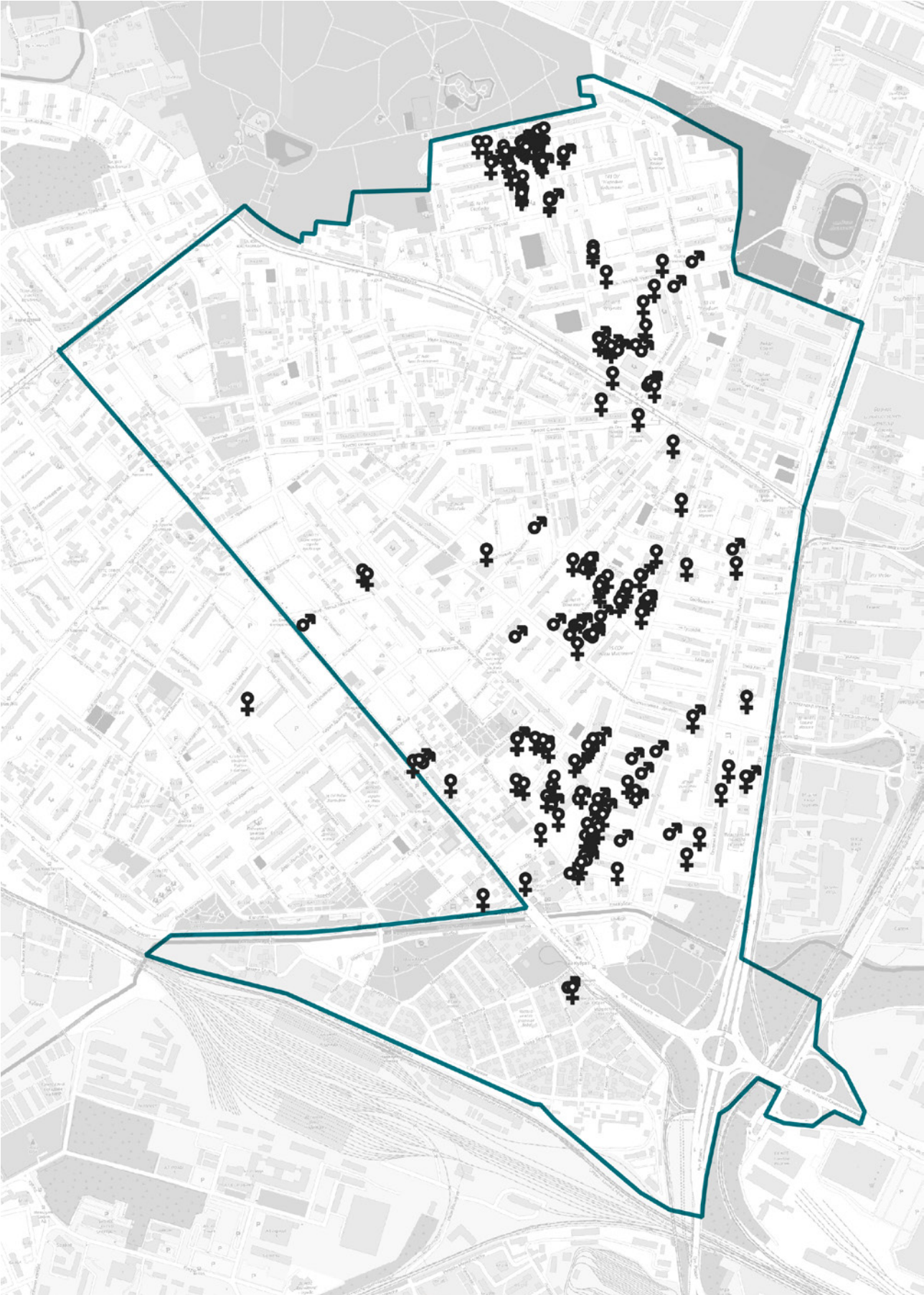
CO-CREATION ZONE 3 THERMAL WATER /LATER REFERRED AS AQUA VITA/		
Type of NBS	Proposed ideas and solutions with reference to Sofia NBS Mini catalogue	Proposed ideas and solutions with no reference to Sofia NBS Mini catalogue
Territorial	Growing classroom: tasty gardens of learning Thermal water swimming pool Green walls Natural Park Autohonous urban forest Groasis	Children natural playgrounds Outdoor fitness Educational open area for children Places for elderly to meet and socialize Dog Park for different breeds Playground, sport court Gazebo
Technological	Pavillion for food and recreation Wooden multifunctional structure Grow tiles Ceramic green wall Luminescent pathways for people and bicycles	Glowing fountains Toilets Spa center Shadow over the children' playgrounds
SSE	Farmers' markets network Production chains Time bank	
Participatory	Forum theatre Interviews Focus groups Photovoice Learn for life	
CO-CREATION ZONE 4 TO PARK NADEZHDA / LATER REFERRED AS GREEN ASSEMBLY		
Type of NBS	Proposed ideas and solutions with reference to Sofia NBS Mini catalogue	Proposed ideas and solutions with no reference to Sofia NBS Mini catalogue
Territorial	Growing classroom: tasty gardens of learning Groasis Autohonous urban forest Bee hives Green walls Renaturalization of brownfields and degraded ecosystems	Children natural playgrounds Outdoor fitness Educational open area for children Bike alleys New bridge over Suhodolska river Exhibitions and events close to the river Dancing scenes Fountains, drinking water fountains
Technological	Ceramic green wall Luminescent pathways for people and bicycles Wooden multifunctional structure Grow tiles Pavillion for food and recreation	Toilets Wetland around a pond Fruit trees grown and kept by the inhabitants Lighted alleys at night Place for picnics Place for events
SSE	Repair cafe Bread House network Farmers' Market network Solidarity markets and exhibitions	
Participatory	Forum theatre SuperBarrio	

Table 8. A summary of the proposed ideas and solutions by co-creation zone. June-september Co-design Workshops results.

**Participants in the 4 workshops  
by zone of intervention**

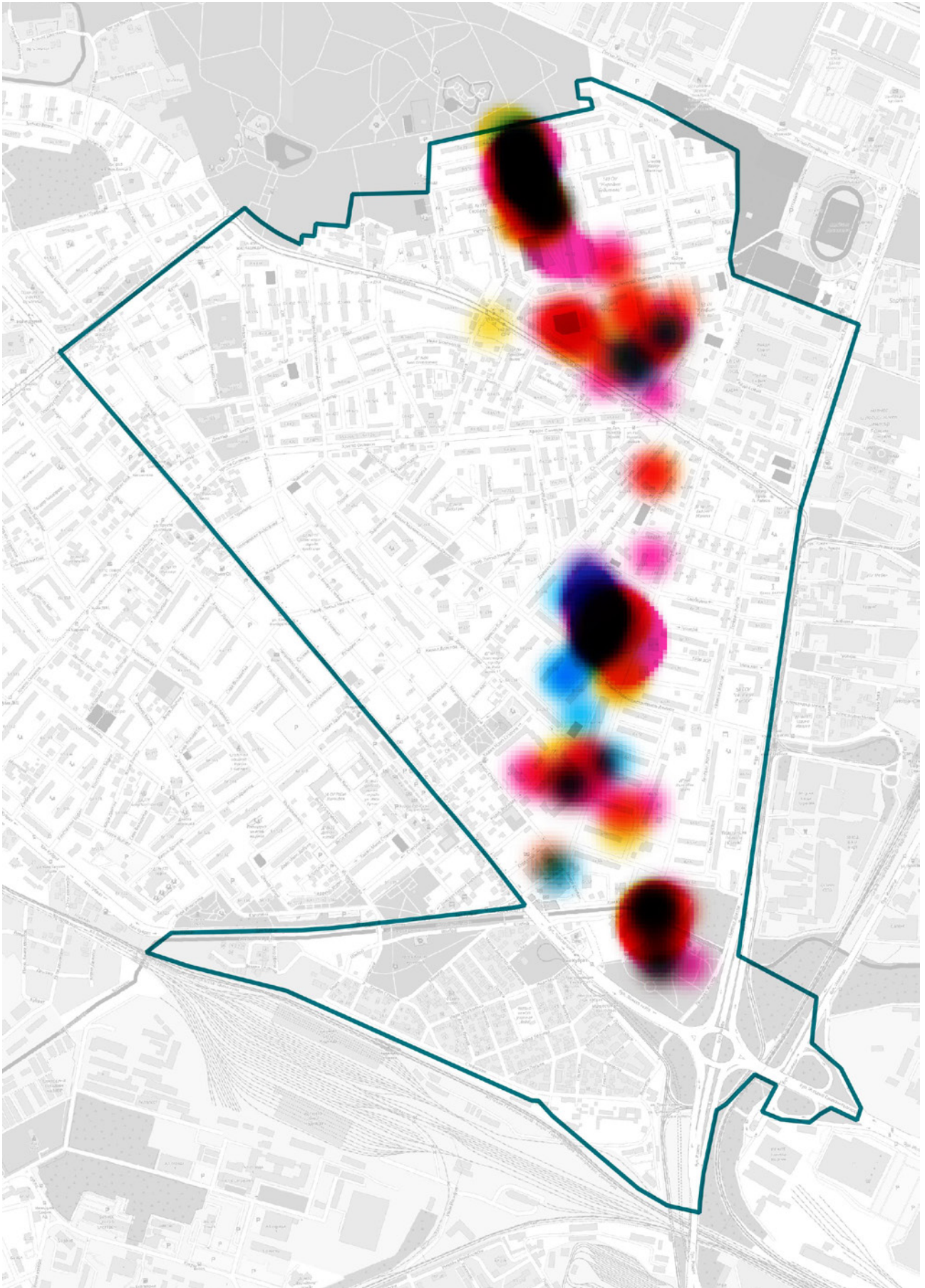


**Spatial distribution of the workshop participants by gender (based on visible attributes)**



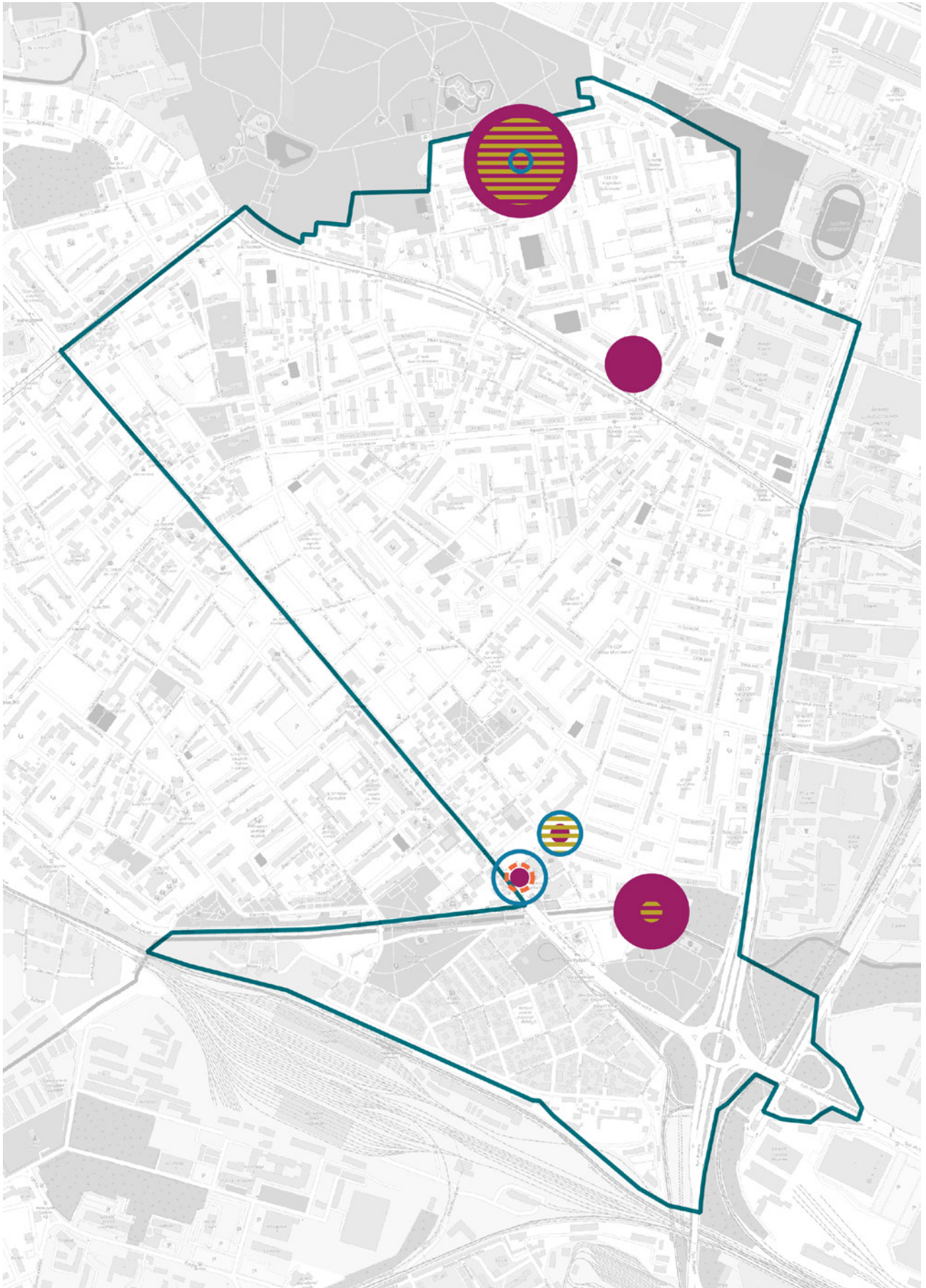
**Spatial distribution of all proposed NBS by type**

**technological, territorial, participatory, SSE  
Spatial distribution of the proposed NBSs**

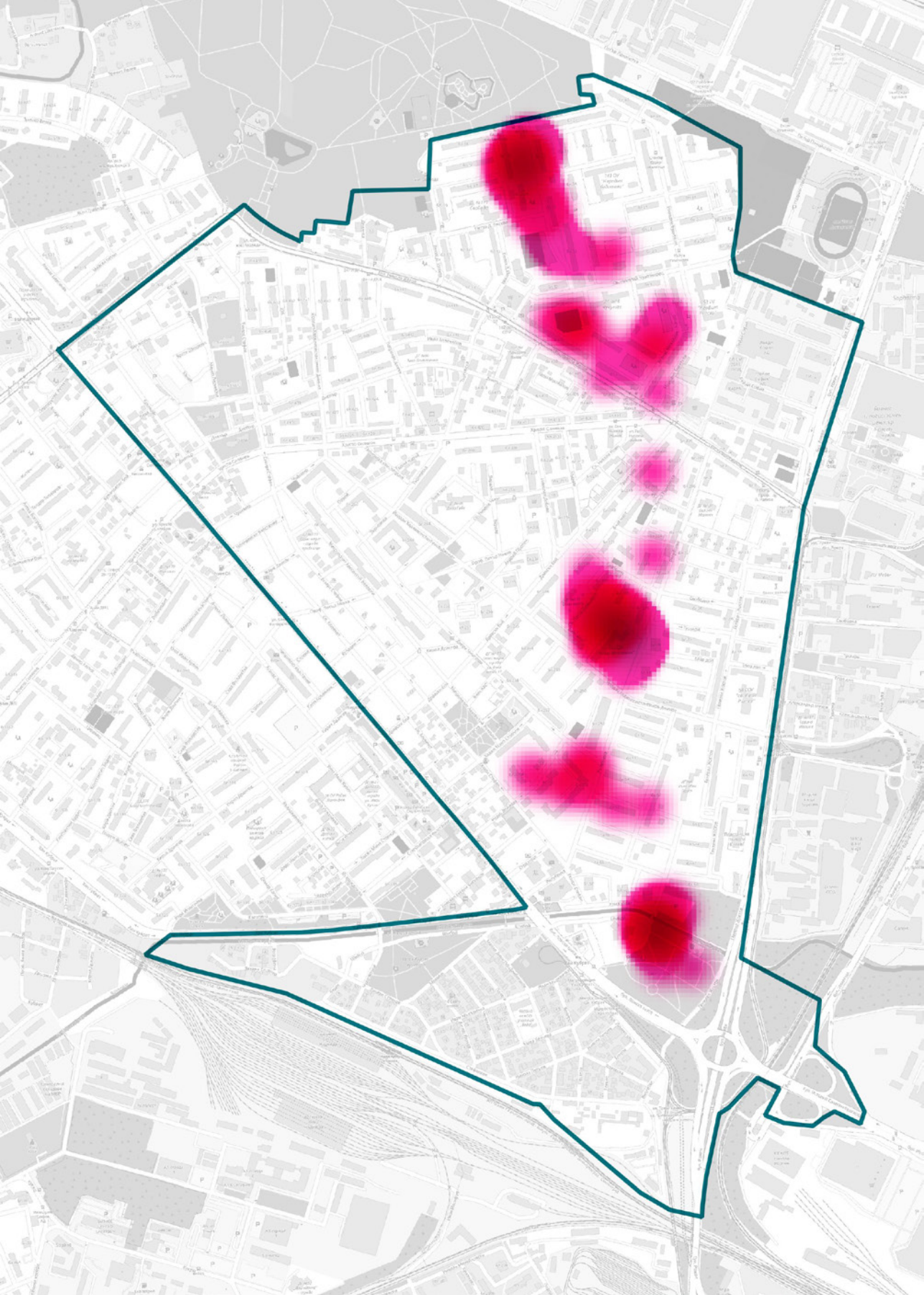




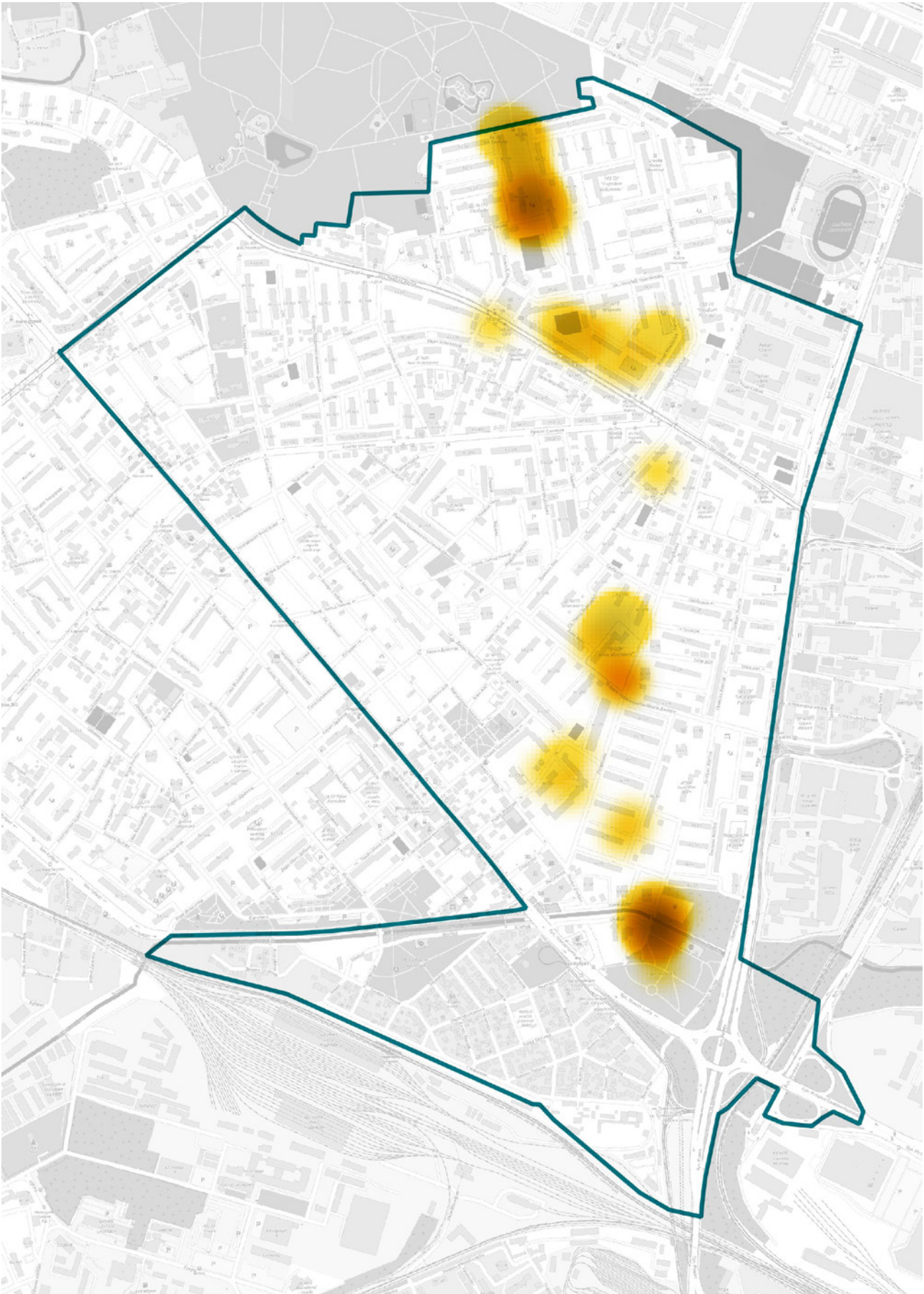
## Major NBSs in the 4 groups



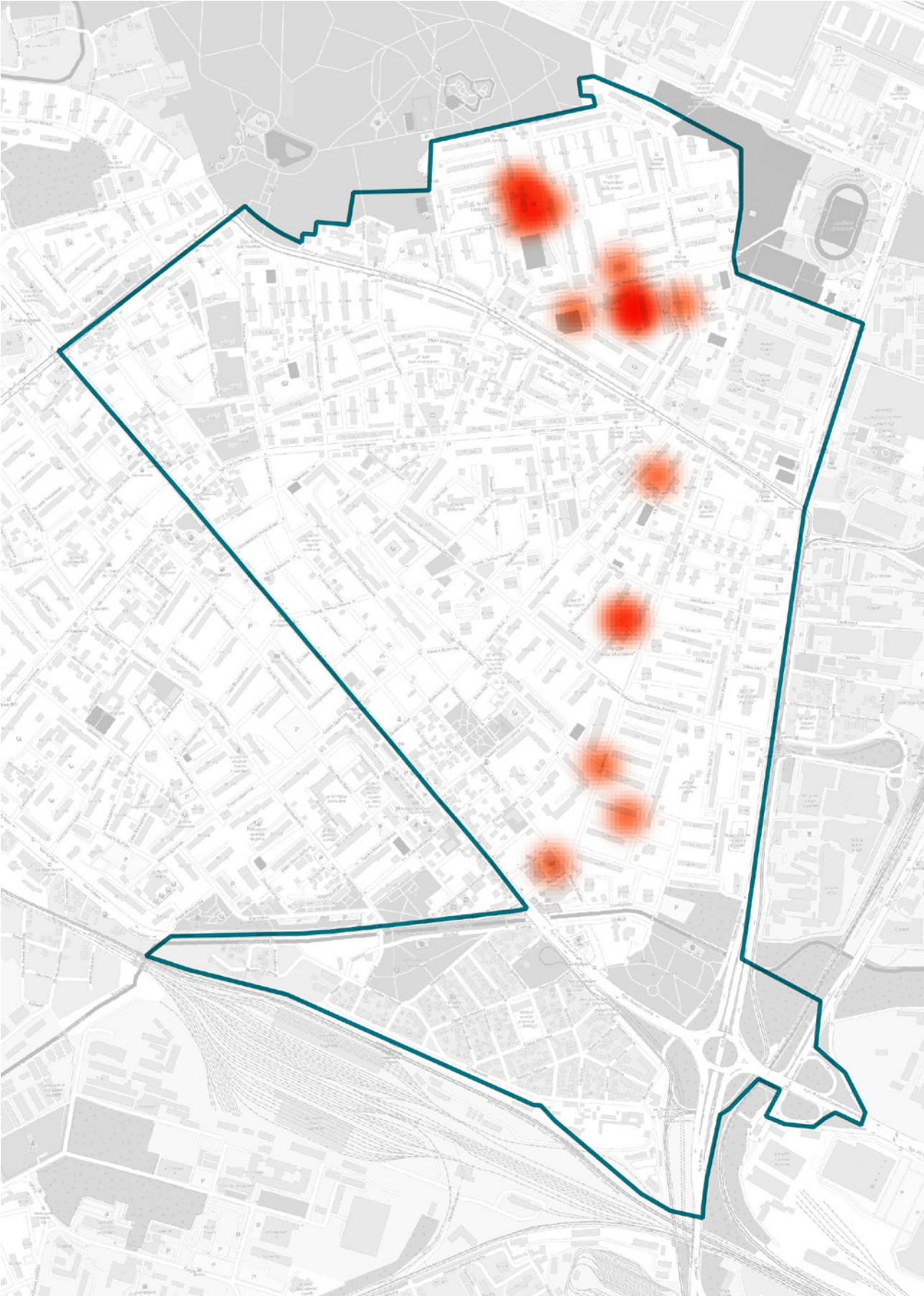
Heatmap of territorial NBSs



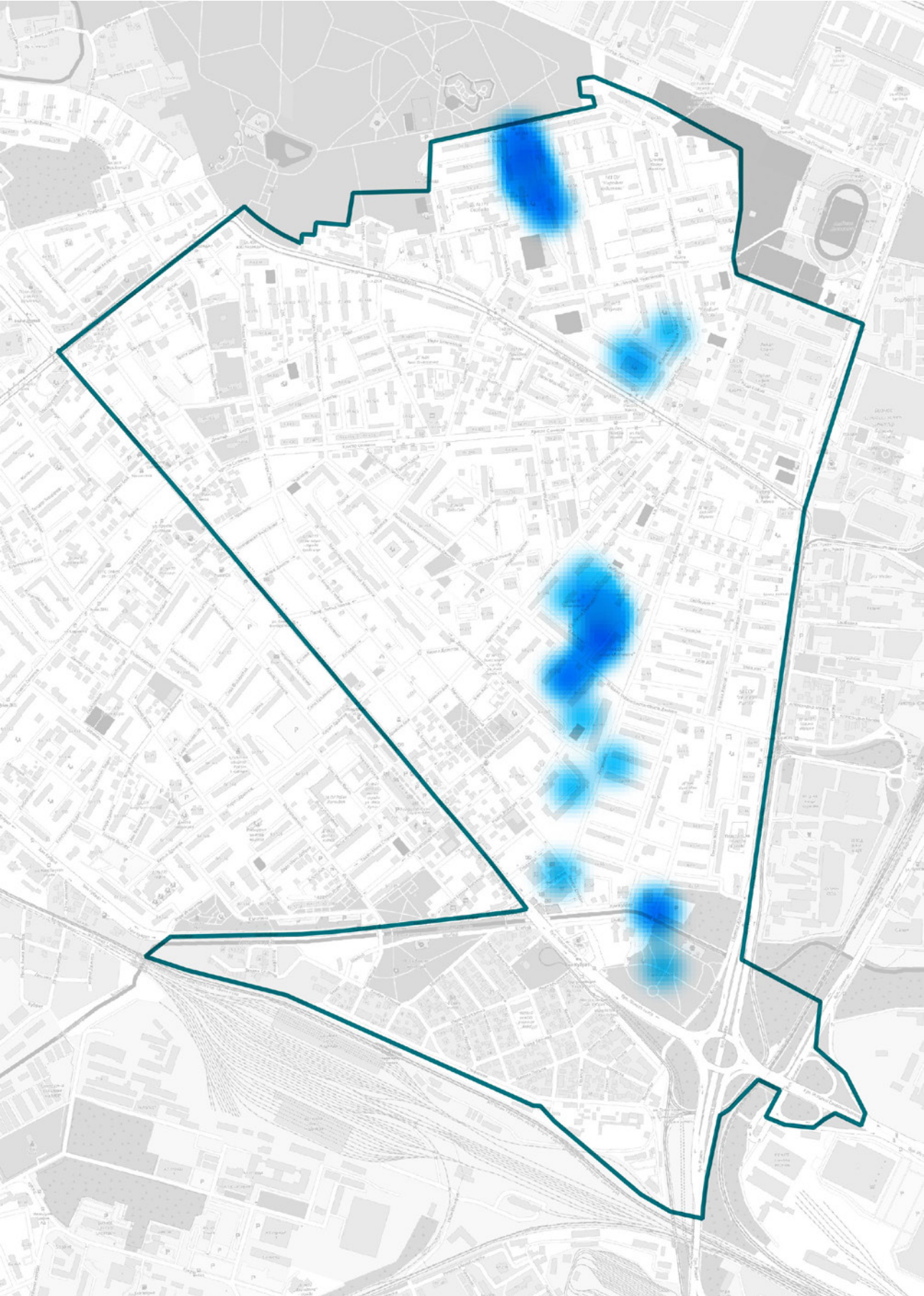
Heatmap of technological NBSs



Heatmap of participatory NBSs



**Heatmap of social and solidarity economy NBSs**

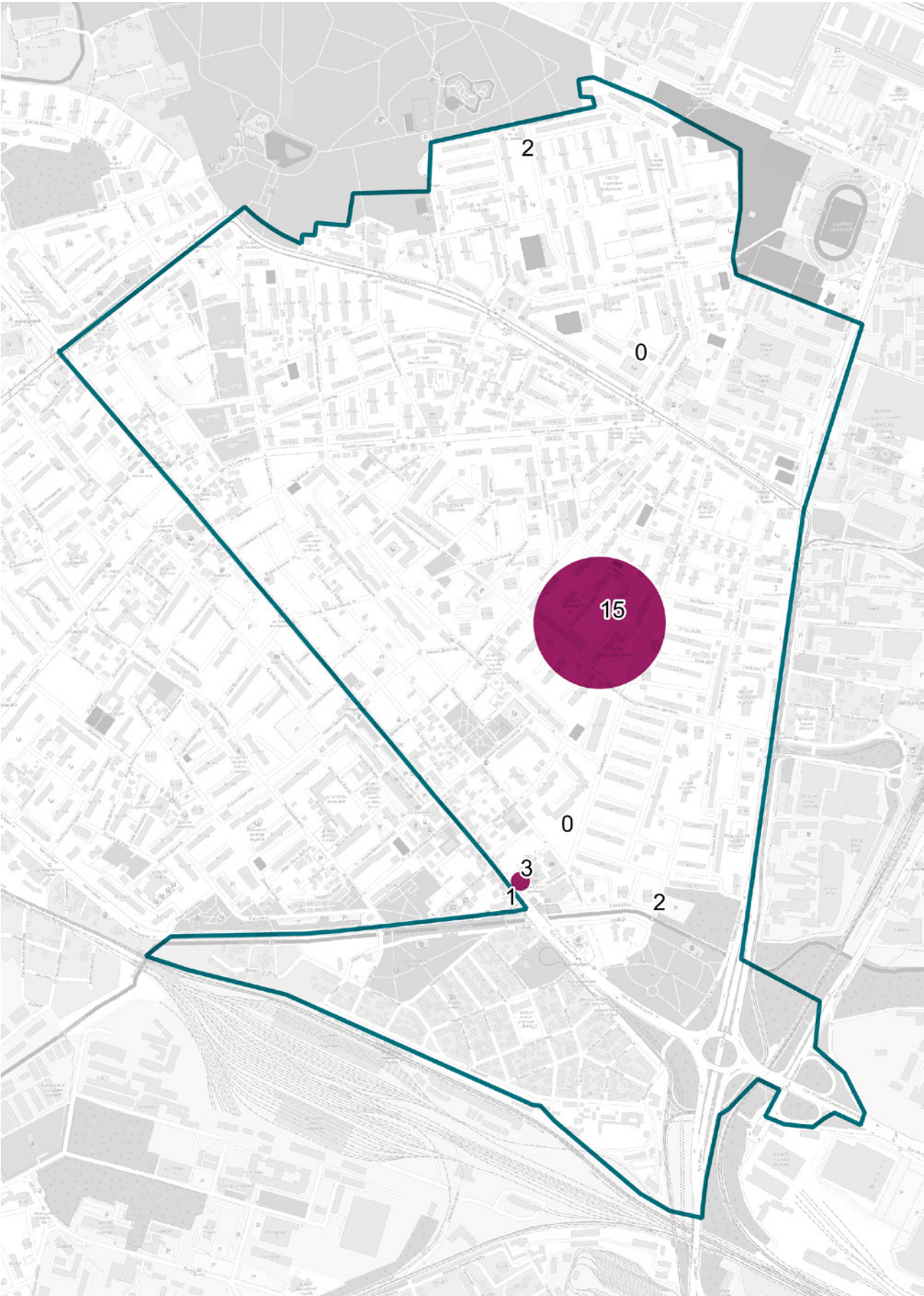


**Number of preferences of selected NBSs by location**

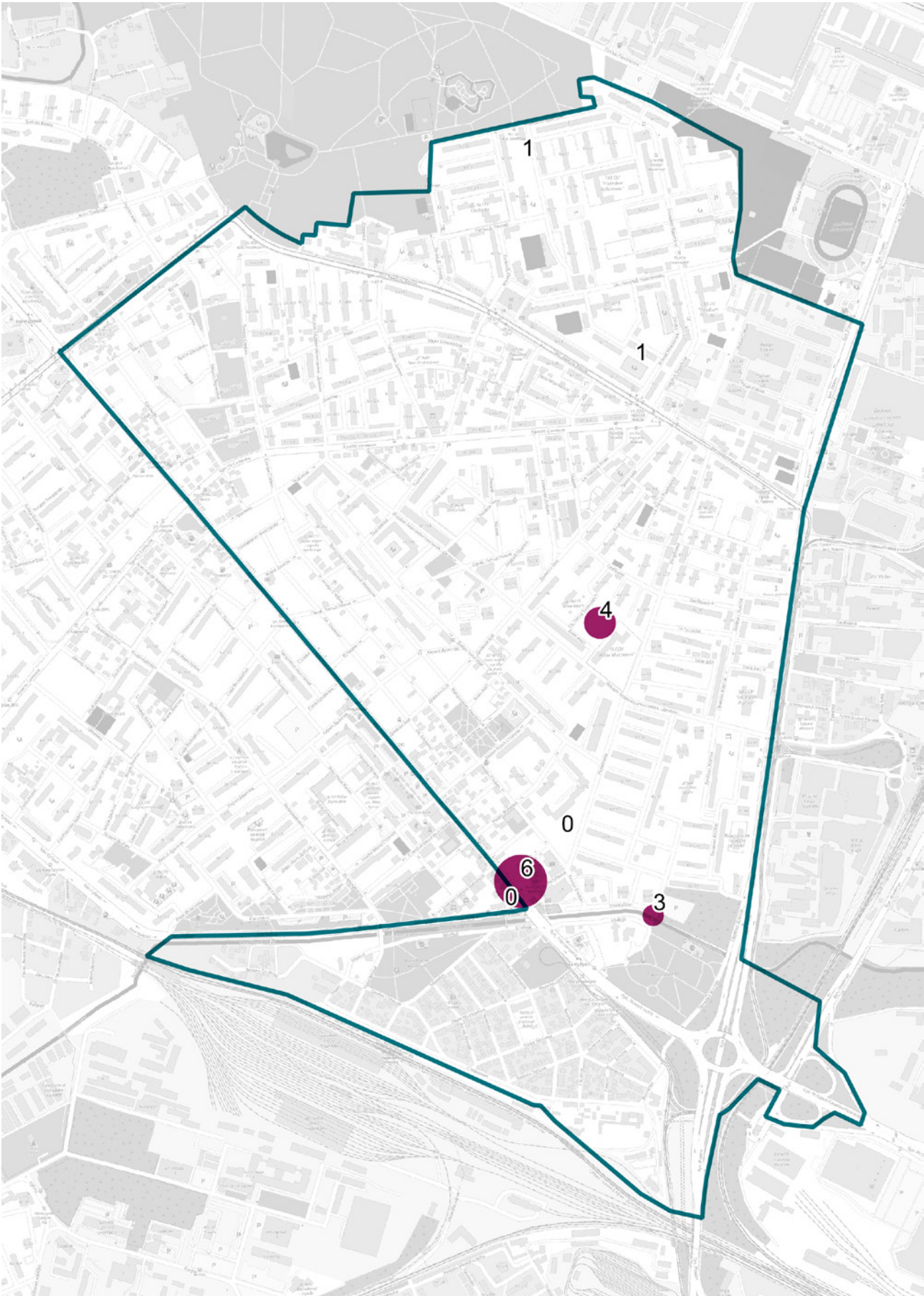
**Territorial NBS – Urban vegetable gardens (Tp4) overall 36 preferences**



**Territorial NBS – Thermal water swimming pool (Tp5) overall 23 preferences**

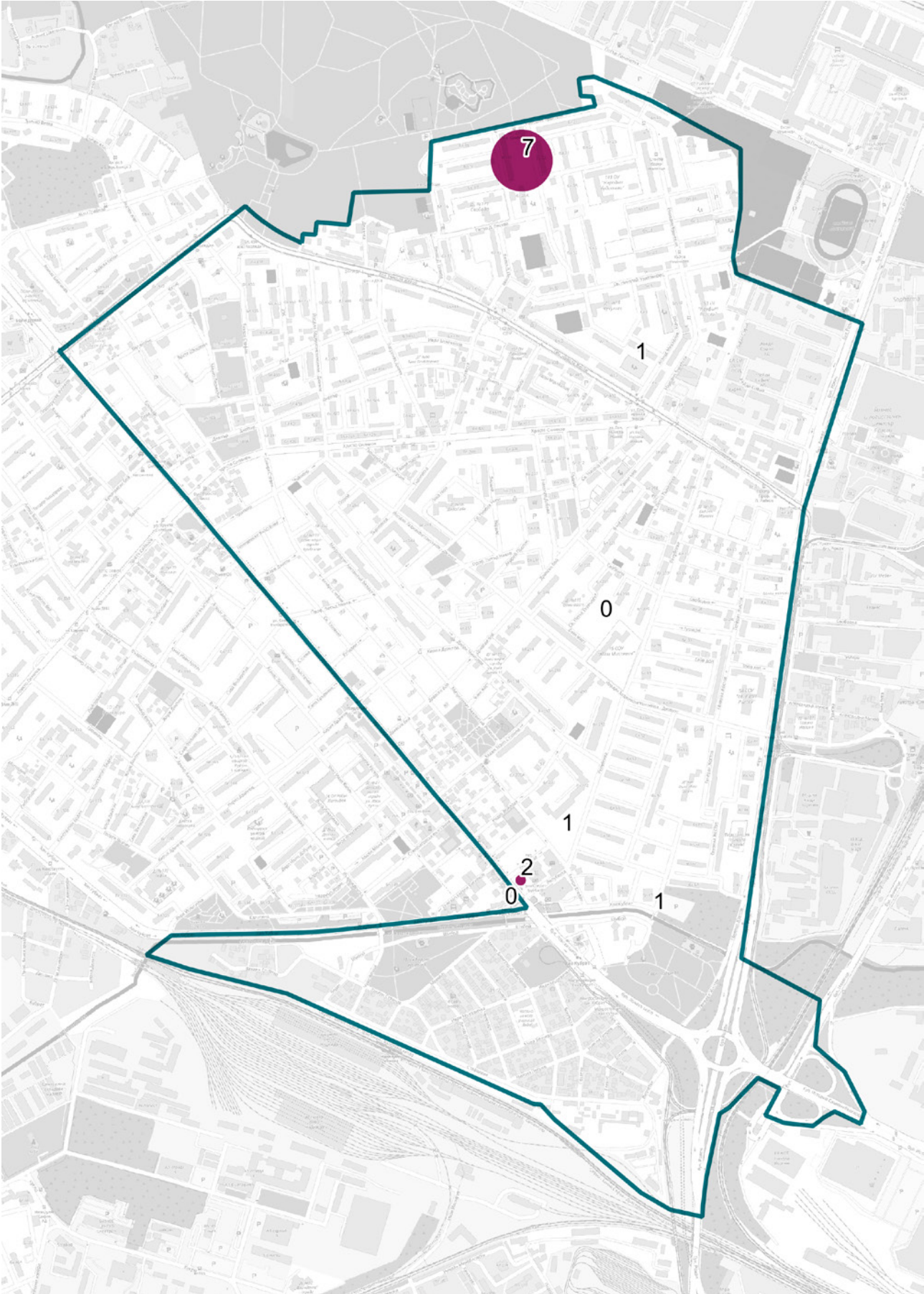


**Territorial NBS – Treeresolution Groasis (Tp3)**  
**overall 15 preferences**

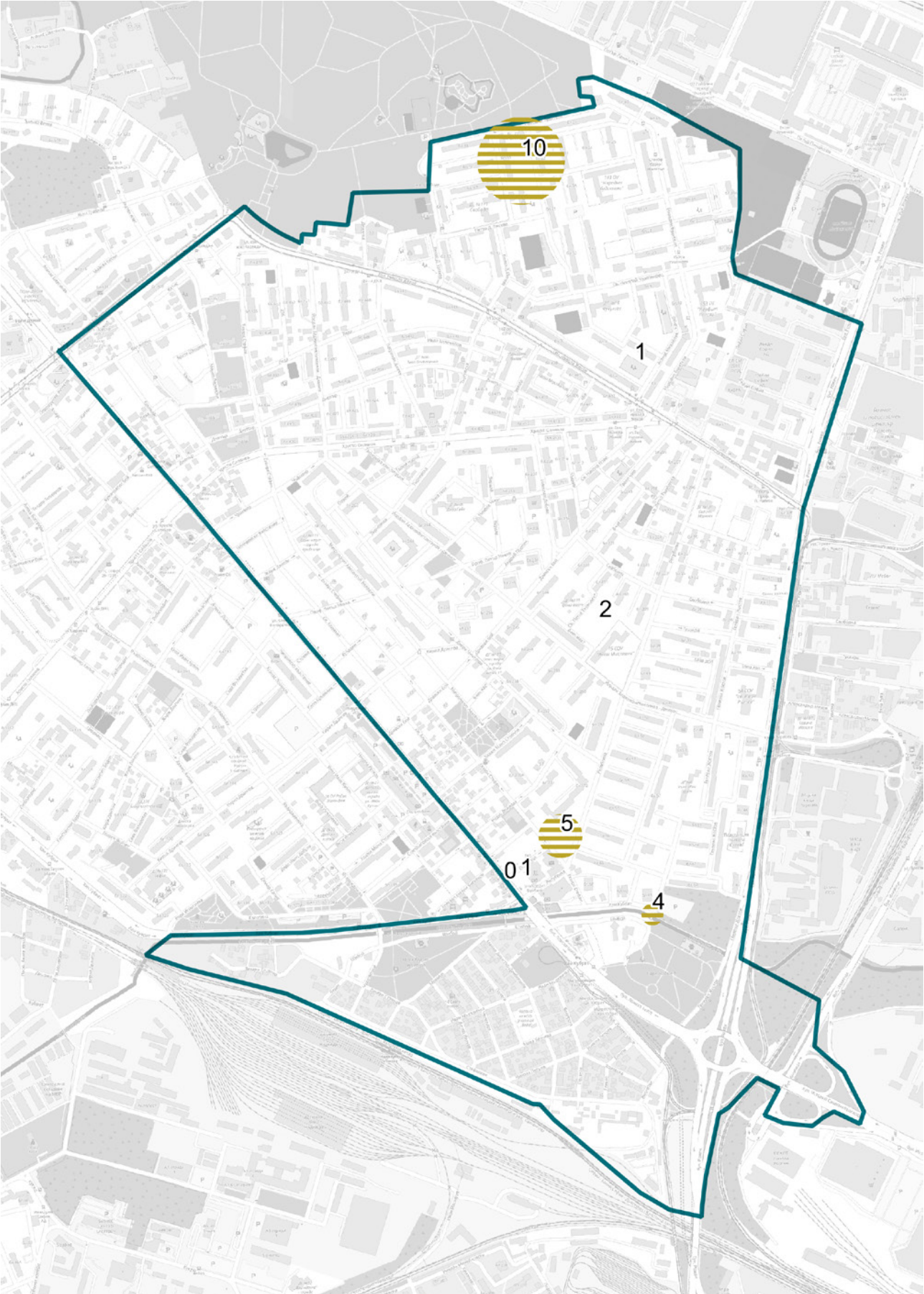




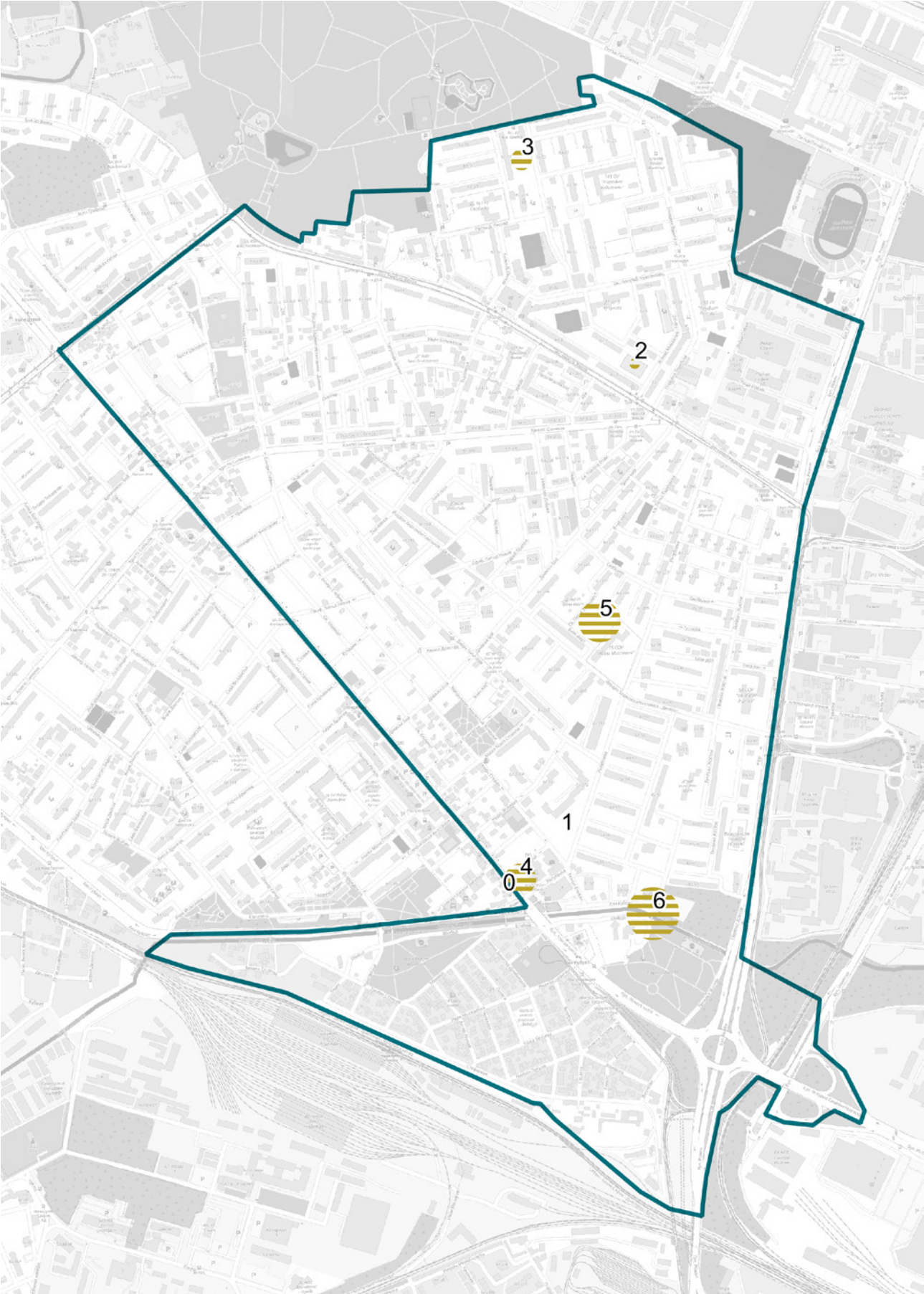
**Territorial NBS – Green Wall and Living Wall  
(Tp6) overall 12 preferences**



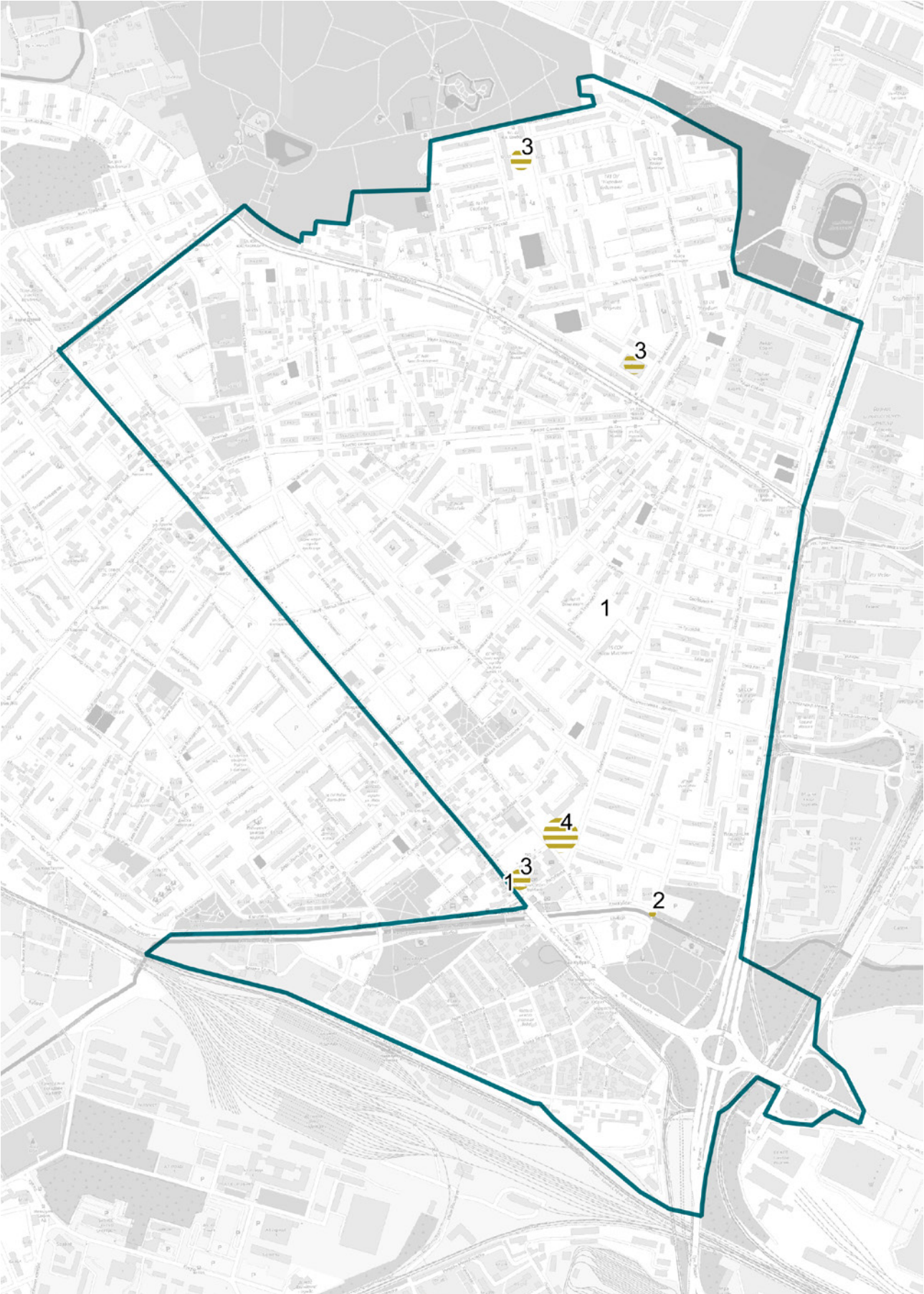
**Technological NBS – Luminescent path (Tx3)**  
**overall 23 preferences**



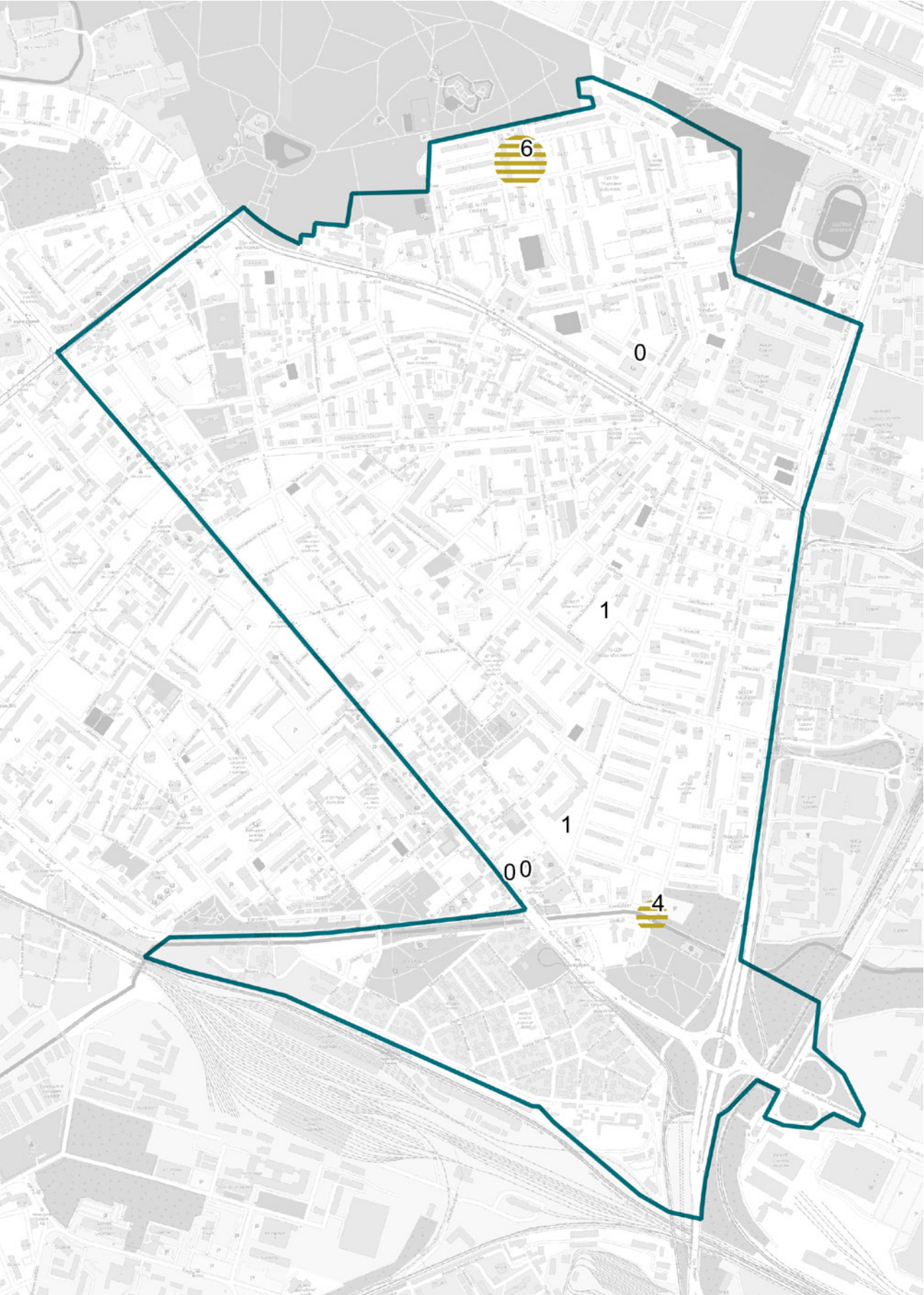
**Technological NBS – Grow tile (Tx1) overall  
21 preferences**



**Technological NBS – Food production and leisure pavillion (Tx4) overall 17 preferences**



**Technological NBS – Ceramic green wall (Tx2)**  
**overall 12 preferences**



The preferences for some of the solutions in the NBS catalogue explicitly were referenced to those in the territorial and technological group in the mini catalogue. The participatory and social and solidarity solutions were less recognized and more rarely proposed, maybe because of lack of awareness and recognition or difficulty to be easily imagined.

The ideas collected were documented in working NBS forms and further co-evaluated in terms of technical and financial feasibility through a collaborative and transparent process with the URBiNAT task force, the municipal technicians and the political representatives. As a result, from this systematic analysis, all proposals were divided into three main categories (Table 1):

- **Category 1)** Proposals to be developed on the Healthy Corridor and that will be further developed as they met financial/technical

feasibility within URBiNAT and are aligned with the project's goals, the project's timeframe, and the municipal priorities;

- **Category 2)** Proposals to be forwarded and channeled to the respective municipal departments to be integrated in ongoing and/or future projects as they do not meet financial/technical feasibility within URBiNAT and/or that are not aligned with the project's goals, but are meeting certain needs of the study area and/or are aligned with the municipal priorities;
- **Category 3)** Proposals not to be forwarded and not further developed/implemented as they do not meet financial/technical feasibility within URBiNAT and are not aligned with the project's goals and the municipal priorities for the study area.

TO BE DEVELOPED ON THE HEALTHY CORRIDOR	FOR FORWARDING	DO NOT MOVE/ FORWARD
Thermal water School Swimming pool Greenhouse classroom Small social spaces Living playgrounds, Children natural playgrounds Children natural playgrounds Outdoor fitness Playground, sport court Places and equipment for sedentary and dynamic games for all ages Basketball and football facilities for beginners Greenhouse for vegetables Educational open area for children Scene for meetings Dancing scenes Gazebo Places for elderly to meet and socialize Place for events Place for picnics Drinking water fountain Glowing fountains, music fountains Education and awareness raising on waste management Shadow at the playgrounds for children New bridge over the river Tasty gardens of learning	Multi-Level parking with green roof Solutions that decrease automobiles' speed Sitting and meeting places next to the public buildings Toilets Waste bins Demonstration urban agriculture plot Shelter for homeless dogs and cats Education for environmental education at school Swimming integrated into school physical education Exhibitions and cultural events close to the river Local Bulgarian cuisine on the edge of the park	Lighted alleys at night (still potential to be integrated) Spa center Bike/scooter extreme park and skate park Dog Park for different breeds Free dancing courses (still potential to be integrated and developed as immaterial NBS) Archery Fruit trees grown and kept by inhabitants (already exist, to be rediscovered – the process supported by new digital enablers) Small urban zoo Wetland around a pond Alpine garden (still potential to be integrated, e.g. with the natural playgrounds)

Table 9. Citizens' proposals summarised: to be developed, for forwarding, and not to be developed within the URBiNAT budget and timeframe.

The summarized in Table 10, proposed citizens' solutions, are evaluated through the prism of the project goals and the realization possibilities and in terms of their functional characteristics and realistic timeframe for their implementation.

The Task force and the expert estimation noted that some of the workshop participants propose solutions, but they do not project themselves neither as users nor as organizers. Their proposals are generally intended for someone else. However, in cases when the proposals addressed an important environmental and community issue, they were considered and included in the URBiNAT plan. Another important consideration when evaluating the proposed solutions was their potential for integration, complementation and expected synergetic results. Therefore, the

immaterial solutions are projected as means for activation of the Healthy Corridor, and the clusters of territorial and technological NBSs will accommodate events, community initiatives, and interactions.

The authentic ideas gathered through the different participatory methods implemented in the Living Lab in Sofia, and used for the definition of the new NBSs, were summarized into six groups: public space, sports and recreation, social economy, education, culture, and climate adaptation measures (climate adapt) (Table 11). These groups represent the main, but not the only one, connection that the generated ideas have with the site. The following table summarizes the ideas collected for the creation of the NEW NBSs in the six groups previously defined.

PUBLIC SPACE	SPORTS AND RECREATION	SOCIAL ECONOMY	EDUCATION	CULTURE	CLIMATE ADAPT
Pedestrian path linking the park with the inter-block space	Children natural playgrounds	Demonstration urban agriculture plot	Children natural playgrounds	Scene for meetings	Drinking water fountain, music fountains
New bridge over the river	Outdoor fitness	Greenhouse for vegetables	Educational open area for children	Dancing scenes	fountains
Bike alleys	Spa center	Fruit trees grown and kept by inhabitants	Small urban zoo	Gazebo	Glowing fountains
Solutions that decrease automobiles' speed	Bike/scooter extreme park and skate park		Education and awareness raising on waste management	Places for elderly to meet and socialize	Multi-level parking with green roof
Lighted alleys at night	Dog Park for different breeds		Education for environmental education at school	Place for events and cultural events close to the river	Wetland around a pond
Sitting and meeting places next to the public buildings	Playground, sport court		Swimming integrated into school physical education	Exhibitions and cultural events close to the river	Shadow at the playgrounds for children
Toilets	Places and equipment for sedentary and dynamic games for all ages			Local Bulgarian cuisine on the edge of the park	Alpine garden
Waste bins	Basketball and football facilities for beginners			Place for picnics	
Place for picnics	Free dancing courses			Shelter for homeless dogs and cats	
Children natural playgrounds	Archery				
Scene for meetings					

Table 10. Authentic NBS ideas collected during the co-design workshops with citizens held at the 4 intervention areas in August – September 2020.

RAW IDEAS	NEW NBS
Thermal water school swimming pool	Thermal water school swimming pool
Greenhouse for vegetables	Greenhouse classroom, (working title 'Educational pavillion')
Educational open area for children	
Environmental education at school	
Playground	Living playgrounds, Children natural playgrounds
Shadow at the playgrounds for children	
Outdoor fitness	Multipurpose Sport Field
Sport court	
Basketball and football facilities for beginners	
Places and equipment for sedentary and dynamic games	
Places and equipment for sedentary and dynamic games	Small social spaces
Places for elderly to meet and socialize	
Place for picnics	
Scene for meetings	Grow a bench\neighbourhood's meeting place
Gazebo	
Places for elderly to meet and socialize	Green Amphitheatre
Place for events	
Scene for meetings	
Dancing scenes	
Drinking water fountain	Welcome water back into public place
	Living Lab – URBiNAT Pavilion
Multilevel parking with green roof	Eco-parking for different kind of vehicles

Table 11. Distinction between the raw ideas and the New NBSs.



# 5. The Healthy Corridor Spatial Concept

## 5.1. The Healthy Corridor Spatial Strategy

The aim of the **Green Healthy Corridor** in Sofia is to provide connection between two urban parks – Nadezhda and Severen, to make connections between different NBSs and to act as an alternative path between different parts of the neighbourhood. At a larger scale it outlines the connections of the Nadezhda district with the city center and with major transport hubs like railway stations Sofia-North and Central railway station, links the main pedestrian and bicycle routes with the public transport hubs.

In support of the area-based approach to urban regeneration, two main principles are applied:

a) to provide actions that are expected to bring about a lasting improvement in the economic, physical, socio-cultural and environmental conditions of the area within; b) to combine diverse complementary NBSs in order to obtain synergetic effect and added-value within the defined timeframe and spatial planning framework. The concept integrates territorial and thematic approaches by introducing interventions to the four focus areas outlined by the findings from the multicriterial analysis performed during the local diagnostics stage. The four themes Co-place, Health Energy, Aqua Vita, and Green Assembly address the topics of the URBiNAT project and brand the uniqueness of each one of them.

Each focus area is also supposed to act as a connecting hub for the thematically related urban elements as follows:

- the Aqua Vita area with the open classroom and the swimming pool will attract and

- connect the schools and kindergartens located near the Green Healthy Corridor,
- the Green Assembly area will be a connector for the cultural and solidarity institutions and initiatives,
- the Health Energy area will be the focal point of the outdoor sports and recreation activities connecting young generations,
- the Co-Place area will connect the neighbours to the place they see from their windows and focus on the social engagement and connectedness.

### The integration of NBS on the Healthy Corridor

Spatially, the route of the Healthy Corridor in Sofia forms a strategic pedestrian link between two of the dominant features in the local green infrastructure – Nadezhda Park and Northern Park. The Healthy Corridor is a vital first step towards the long-term improvement of the pedestrian connectivity within the district of Nadezhda and highlights the potential for further expansion of the network of walkable routes. The Healthy Corridor itself represents a linear park that can be regarded as a complex nature-based solution. Its impact will be most evident in the four main areas of intervention along its length. Thematically, the four areas of intervention are dedicated to four main topics and each area of intervention integrates several individual nature-based solutions that are currently under development through collaborative practices (see part 1 – introduction).

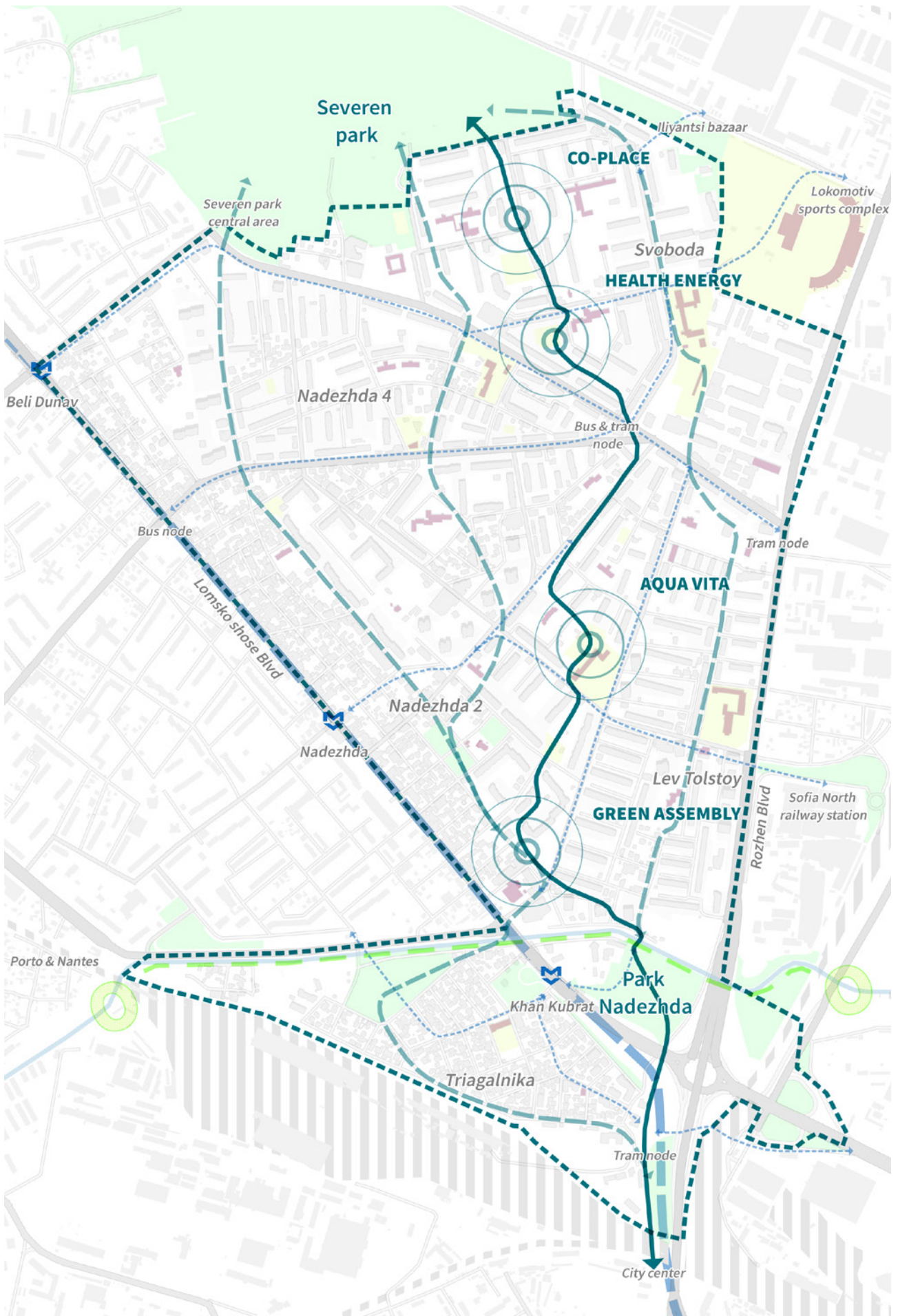
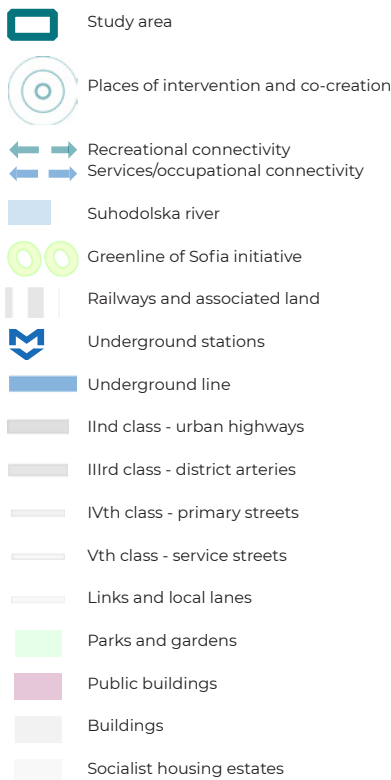


Figure 37. The urban concept for Sofia Green Corridor.



## 5.2. Preliminary urban project for the intervention area

### 5.2.1. The concept

The urban project of the Sofia Healthy Corridor focuses on building green connections, understandings, co-implementation and use of public spaces. The involvement of citizens in the creation of living public spaces is expected to contribute to overcoming urban fragmentation by removing physical and symbolic barriers to their use, protection of the environment and maintenance of inter-block spaces.

The Healthy Corridor in Sofia is a “green connection” designed as a pedestrian path in the public urban space, that connects the neighborhoods between themselves and the surrounding urban environment. It connects different NBSs developed through collaborative practices and included in the catalog, as well as solutions proposed by the citizens in the co-selection process. In this way, the focus is on the quality of life of citizens in relation to energy, water, food, nature, mobility, participation, behavior change, digital democracy, social cohesion and the solidarity economy. The Healthy Corridor (HC) is planned and will be built by testing an innovative and inclusive methodology for renovation of the selected peripheral neighborhoods in seven European cities. The creation of the HC in Sofia through NBSs implementation will take place through creative thinking.

In order to start URBINAT in Sofia with the “Living Laboratory” and the research, design and then construction works for the implementation of the infrastructural elements of the Sofia HC, it was necessary to specify the main environmentally friendly solutions that will be implemented. This “green corridor of health” will be an urban environment of new quality, created through the implementation of environmentally friendly solutions, which will become “living laboratories” for testing and developing new urban solutions.

The preliminary urban project is not statutory, but clarifies the spatial parameters of the long-term district vision, aimed at improving the quality of the urban environment and creating better conditions for active movement and daily physical activity of all members of the local community. It also provides the appropriate activities for different target groups and balances the compatibility of the various events, traditional

and new activities carried out in the inter-block spaces of the residential complexes.

Along with the proposed opportunities for implementation of the main route and its connection with the green system, and the street network and public spaces on the territory, the preliminary urban project will be open and will be able to flexibly respond to changing natural and socio-economic conditions and community needs, as well as emerging ideas and innovative solutions, through changes in the set of functions, physical elements and modes of use.

The project team organized and held eight workshops for four intervention areas with residents of Nadezhda district, dedicated to the possibilities of using NBSs in the implementation of the Healthy Corridor (HC). As a result of the active participation of the citizens, the main ideas of the preliminary urban project for four zones of interventions were formulated.

A place for meetings and events shaped as a green amphitheater will be created in the area called "the Green Assembly". There will be placed the "information point" of the project, where local residents will be able to get acquainted with the upcoming initiatives.

The area of intervention named "Aqva vita" will accommodate a place for social activities and a sport playground made by natural materials. One of the technological solutions of the set of projects will be the educational pavilion – an open classroom with a greenhouse in the school yard of 15<sup>th</sup> School. The greenhouse is an innovative project developed by the URBiNAT partner IAAC (Barcelona), responsible for the technological NBSs. The open classroom will contribute to the application of modern educational approaches and training in the conditions of physical distance imposed by the measures against the spread of COVID-19. In this greenhouse pupils will have the opportunity to participate in cultivation and observing the development of different plant species. An innovative concept, design brief and a detailed project for construction of a thermal water swimming pool in the same intervention area will be developed based on the desires of the citizens and with their active participation. The innovative project will also seek to create a new functional and business model for cooperation between citizens, municipality and business. As a result, the project will create a social and technological innovation by using the qualities of the existing mineral water with emphasis on the physiological health of the children and pupils.

The preliminary project provides a multifunctional sport field, a children's playground, places to play and expression of masterful skills for children and adults for the other two intervention areas called "Energy for life" and "Co-place".

The implementation of the HC in Sofia will focus mainly on public works, placing movable objects in public space and the development of green areas along the corridor – planting of new vegetation and care for the soil and grass cover is foreseen.

## 5.2.2. The vision

THE GREEN CORRIDOR FOR HEALTH is a linear urban park with four areas of focused and thematic interventions and co-creation related to the URBiNAT thematic areas and a sequence of green spaces for active and passive recreation. The Healthy Corridor is a convenient, illuminated and a high quality urban green infrastructure that serves as a pedestrian connection between the two parks and stops of public transport, and is accessible to all groups of residents (children, adults, pensioners, people with disability, etc.).

The main concept of the interventions in the municipal plots is to create four different types of zones corresponding to the four main clusters of the NBS. Each of the zones is characterized by a passive and active subzone modeled after NBS – Urban Park. The passive zones are intended for family gatherings and recreation, and the active ones for outdoor games for all ages, sports activities and public events.

Among the positive results that the project would like to achieve is the renovation of unused/empty public spaces through the involvement of the local community, creating an interesting, accessible and diverse urban environment for sports, communications, knowledge exchange and entertainment of the local community.

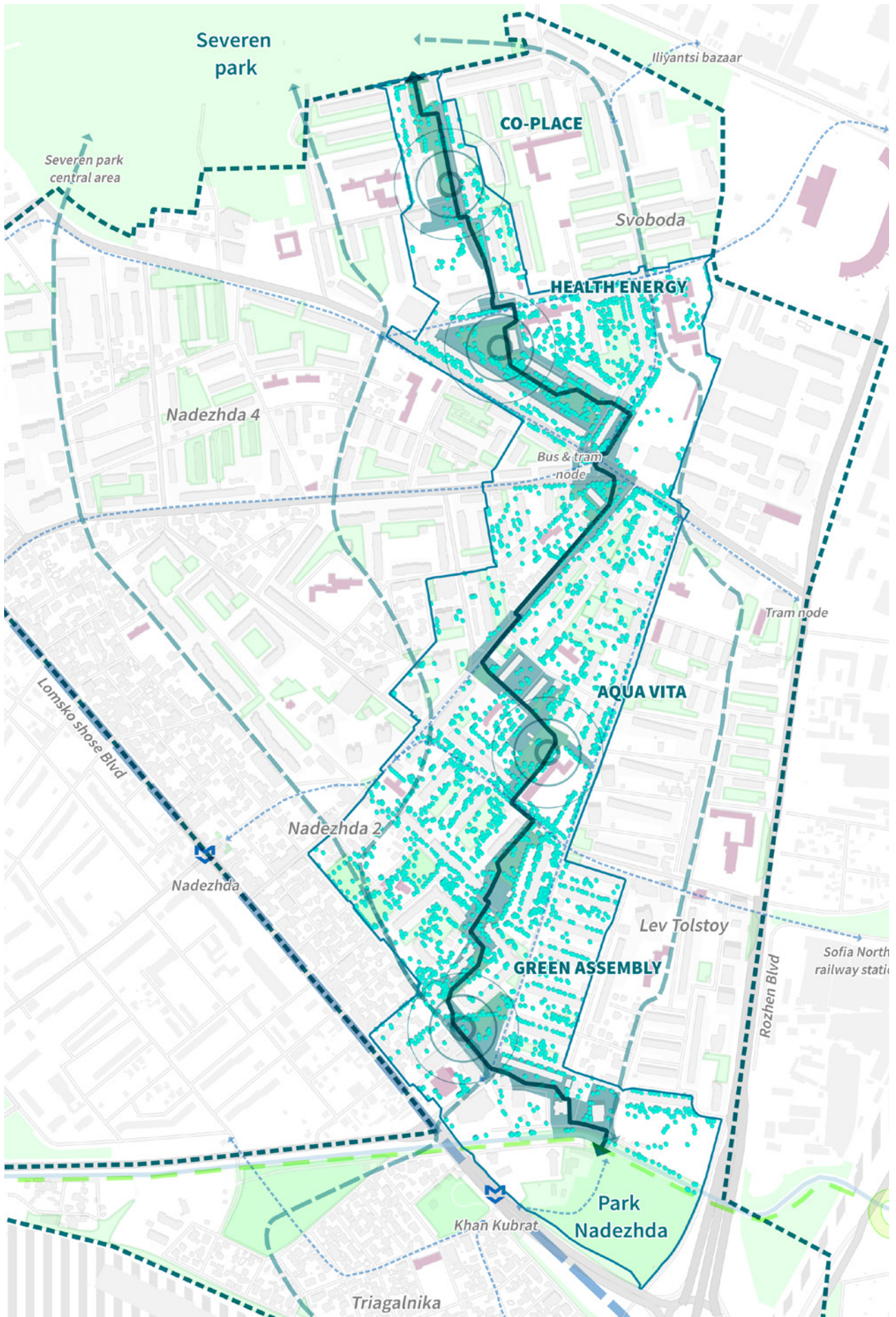








Figure 38. Sofia Green Corridor – territorial scope.

-  Healthy corridor
-  Study area
-  Corridor integration area
-  Intervention lots
-  Places of intervention and co-creation
-  Recreational connectivity
-  Services/occupational connectivity
-  Trees
-  Suhodolska river
-  Greenline of Sofia initiative
-  Railways and associated land
-  Underground stations
-  Underground line
-  IInd class - urban highways
-  IIIRD class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Parks and gardens
-  Public buildings
-  Buildings
-  Socialist housing estates

-  Healthy corridor
-  Study area
-  Corridor integration area
-  Intervention lots
-  Places of intervention and co-creation
-  Recreational connectivity
-  Services/occupational connectivity
-  Designated green/sports areas
-  Suhodolska river
-  Greenline of Sofia initiative
-  Railways and associated land
-  Underground stations
-  Underground line
-  Pedestrian network
-  IInd class - urban highways
-  IIIRD class - district arteries
-  IVth class - primary streets
-  Vth class - service streets
-  Links and local lanes
-  Playground facilities
-  Parks and gardens
-  Public buildings
-  Buildings
-  Socialist housing estates

Designation of intervention lots

-  For (underground) parking and/or garage (and greenery)
-  For commerce
-  For housing (and services, parking, etc.)
-  For local urban green area
-  For sports (field, playground or hall and electric substation, swimming pool or greenery)

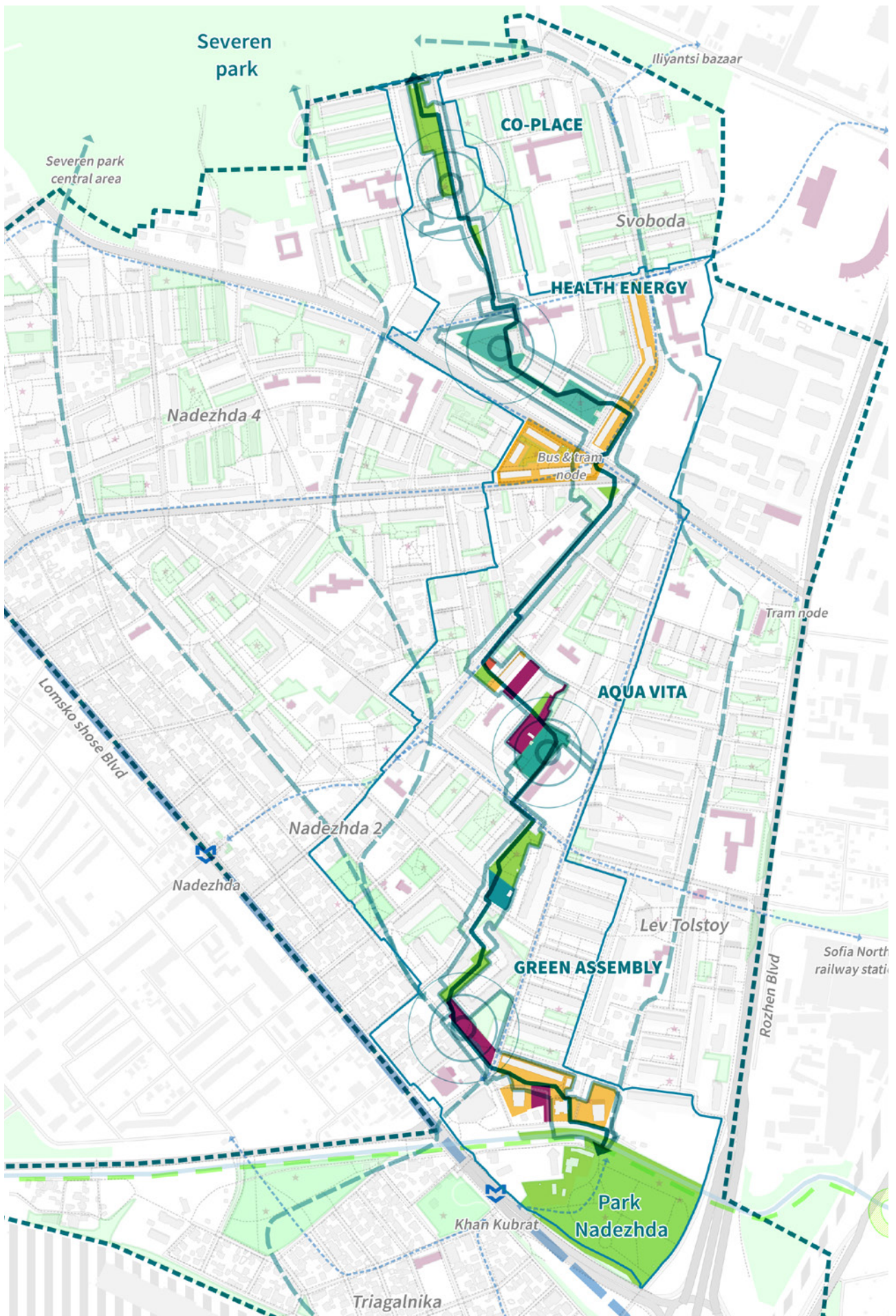


Figure 39. Land use provisions for the municipal plots along the Sofia Healthy Corridor.

### 5.2.3. Zones of intervention

#### The first zone of intervention – Co-Place

**Co-Place** is an open space between the apartment buildings, recognized and appreciated by the local community. The aim of intervention is to strengthen the existing community and to activate participatory behavior through the proposed new uses and facilities.

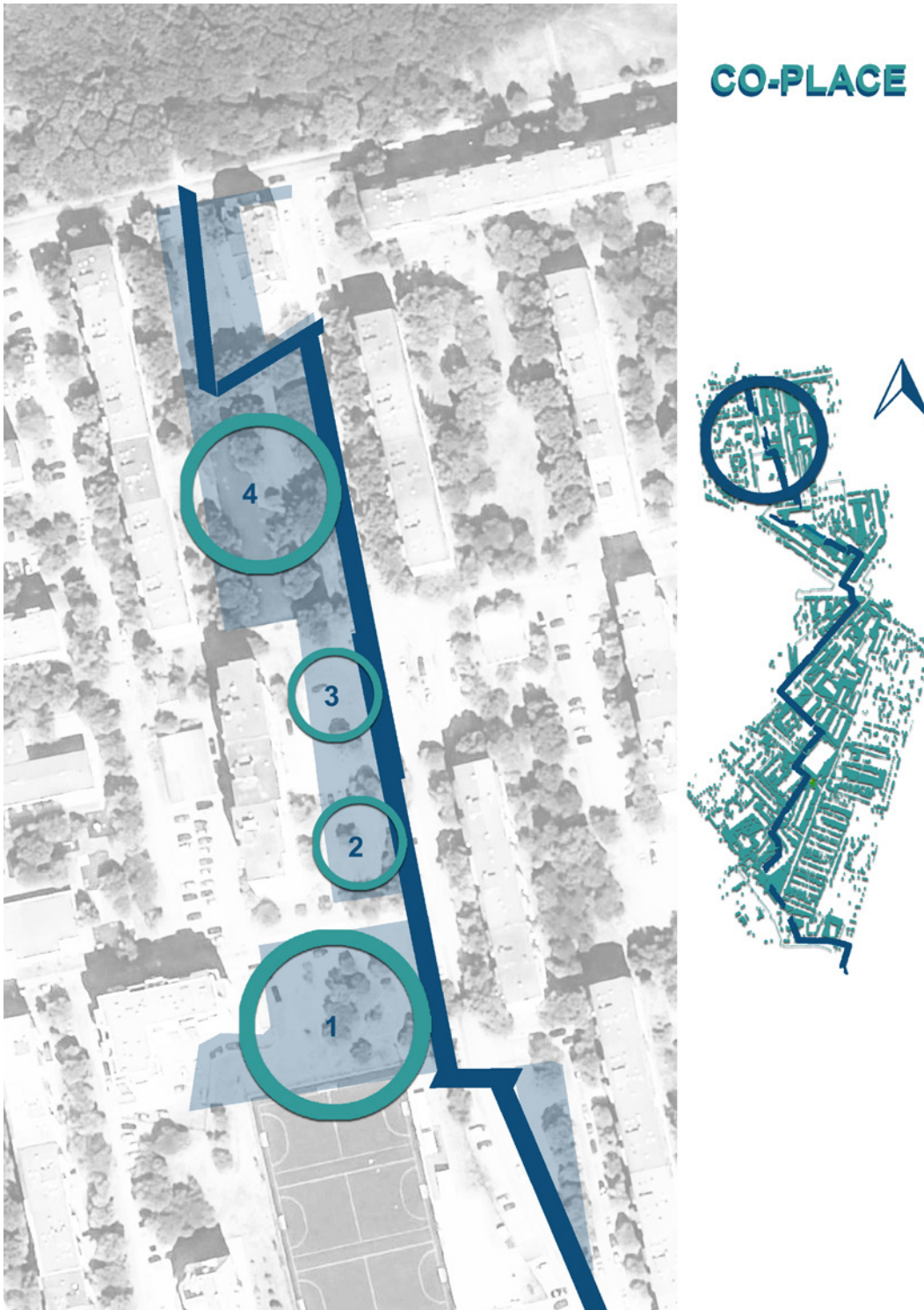


Figure 40. The first zone of intervention – Co-Place.



**Includes:**

- An eco-parking for different kinds of vehicles;
- Two areas for open-air family games;
- A space for leisure with a flower garden and a picnic and social zone.



**1. ECOPARKING**



**2. + 3. SPACE FOR FAMILY GAMES**



**4. RECREATION AREA**



Figure 41. The first zone of intervention – Co-Place: NBSs to be further co-designed.

## The second zone of intervention – Health Energy

**Health Energy** is a wide green space enclosed between high-rise apartment buildings where a degraded savage playground and an abandoned building go along with social problems and crime. The aim of the intervention is to fight both physical and social degradation by attracting young and active people and engaging their energy in sports and encouraging healthy lifestyles.



Figure 42. The second zone of intervention – Health Energy

**Includes:**

- A new interactive playground facility employing natural materials;
- The restoration of a multipurpose sports field;
- The elimination of existing privately-owned garages built illegally on municipal land.



**1. PLAYGROUND AREA**



**2. MULTIPURPOSE SPORTS FIELD**



**3. REMOVAL OF ILLEGAL GARAGES**



Figure 43. The second zone of intervention – Health Energy – three subzones

### Third zone of intervention – Aqua Vita

**Aqua Vita** or (living water) is an underused space between a kindergarten and one of the largest schools in the district of Nadezhda where a natural source of underground thermal mineral water exists. Therefore, the intervention is thematically dedicated to the water. It will include three main spatial elements – an open classroom with a greenhouse in the schoolyard, a project for a public swimming pool with mineral water, and an open public space in between.



Figure 44. The third zone of intervention – Aqua Vita.

**Includes:**

- An innovative project of a public swimming pool with mineral water inspired by the ideas of the citizens and students;
- A school greenhouse supplied by mineral water for heating and watering;
- Active sport zone with an outdoor fitness, social place and a square.



**1. THERMAL SWIMMING POOL**



**2. OUTDOOR GYM**



**3. SCHOOL GREENHOUSE + CLASSROOM**



Figure 45. The third zone of intervention – Aqua Vita – three subzones

## The fourth zone of intervention – Green Assembly

**Green Assembly** is an underdeveloped and underused open public green space, located near some of the important pedestrian paths, public transport nodes, commercial, service and public buildings. It will be designed as an open green place welcoming formal and informal public events and activities, hosting the URBiNAT pavilion, social and solidarity economy events, and will demonstrate nature-based approaches towards design and maintenance of urban greenery.



Figure 46. The fourth zone of intervention – Green Assembly

**Includes:**

- An open-air green amphitheater;
- A flexible recreation area;
- An urban forest;
- A workshop/cafe/infopoint the URBiNAT pavilion



**1. GREEN AMPHITHEATRE**



**2. RECREATION AREA**



**3. URBAN FOREST**



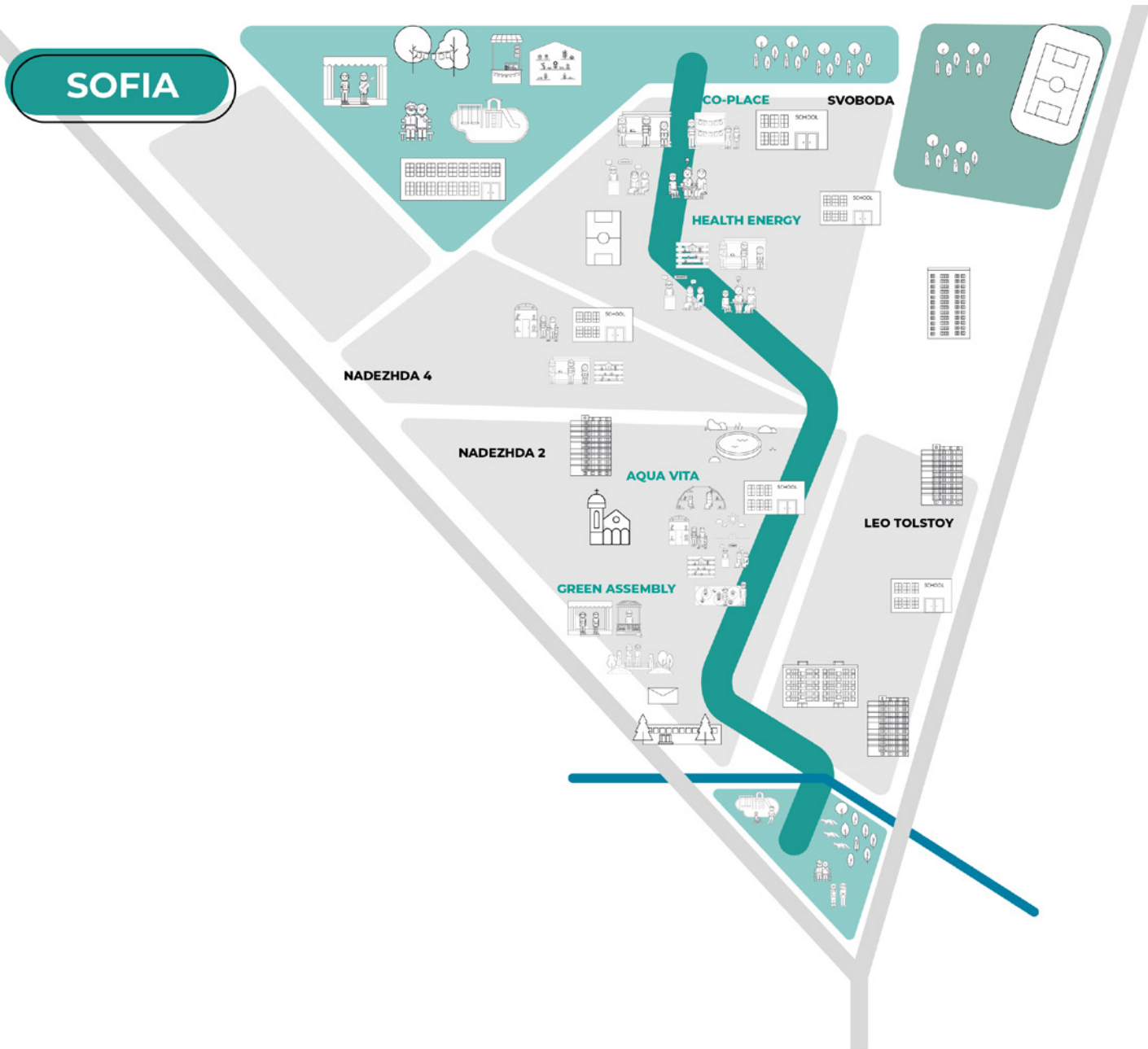
**4. URBiNAT PAVILION**



Figure 47. The fourth zone of intervention – Green Assembly – four sub areas

# 6. Sofia Healthy Corridor

## 6.1. Healthy corridor concept diagram





## 6.2. Main achievements and next steps

Based on the important steps taken so far by the URBiNAT project, the main achievements are hereby resumed, followed by the steps that will compose the next phases – co-implementation and co-monitoring:

- Clear definition of the correlation between identified needs and the co-design proposals;
- Engagement of 383 adults and pupils during co-selection and co-design activities in schools, public spaces and online workshops, and another 554 during the co-analysis;
- Systematization of proposals into operative categories, with the involvement of all actors – citizens, local associations, schools, municipal technicians, political representatives and URBiNAT technical team;
- Formulation of a global strategy for the Healthy Corridor that fits into the strategic and spatial development agenda for the city and the URBiNAT area;
- Organization of the 43 proposals in 3 categories: 23 NBS proposals that will be integrated in the Healthy Corridor plan; 11 NBSs channelled to other municipal projects; and 10 NBSs that will not be developed. In this sense, URBiNAT will develop 52% of the proposed NBSs, while 25% will (potentially) be considered for implementation in future projects;
- Acquisition of key diagnostic data focused on the intervention area and based on the integrated approach and expectations for synergy during the Healthy Corridor implementation, activation and functioning
- Stabilization of a Preliminary urban project that summarizes proposals in 16 subzones of territorial and technological NBS clusters, all of them organized into 4 main zones of intervention (Co-place, Health Energy, Aqua Vita, and Green Assembly) and 2 minor zones of intervention (Kindergarten N90 and the bridge over Suhodolska river);
- The Preliminary urban project for the Healthy Corridor is discussed by all the involved actors and validated by The Municipal council;
- Establishment of the Advisory board as main corrective and tool for inclusive participation in the course of the Implementation and management of the Healthy Corridor;
- The Preliminary urban project for the Healthy Corridor contains 4 groups of NBSs (public space, culture, education, and sports and

recreation located in 20 vacant plots along a 2,5 km long axis provisioned by the plans as part of the green infrastructure and public spaces in the four residential estates (Nadezhda 2, Nadezhda 4, Tolstoy and Svoboda) thus covering an area of 138,1 ha (defined as a buffer area of the primary and secondary axes of the corridor);

- Establishment of important synergies with other municipal departments and projects for further integration of the co-created NBSs;
- Establishment of an effective communication within the Municipality and operative unit within the local Task Force, and recognition of commitment to the implementation of the Healthy Corridor Concept URBiNAT beyond its lifetime;

The Next steps are focused on the implementation, with the main stages: finalization of the public procurement for the realization of the project events, finalization of the engineering public procurement and the subsequent detailed design and licencing, beginning of the construction (march 2022) and opening of the Healthy Corridor (end of 2022).

The implementation of the planned co-creation activities and steps for Sofia Healthy Corridor will seek to achieve the following results:

- A functional spatial link between Park Nadezhda and Severen Park connecting a network of various NBSs, a socio-economic network uniting different communities and different possibilities for implementation of market-based potentials and synergies resulting from the application of the NBSs, an arena to change perceptions, attitudes, behavior, lifestyle and philosophy of life;
- Upgrading and achieving synergy with the activities already set in a number of planning documents, and expanding the territorial scope of the already started process of promoting the city as a “City for people” taking into account the investment initiatives implemented by Sofia Municipality;
- Reaching consensus and implementing innovations in public space management policy in the complex range of interests of different users and stakeholders;
- Establishing a process of inclusion of local communities in identifying and finding solutions to meet the diverse needs of

communities and specific target groups in the neighborhoods of Triygylnika, Nadezhda 1, Nadezhda 2, Tolstoy and Svoboda through close cooperation with the local municipal authorities;

- Activating the pedestrian mobility as a key driver for urban regeneration;
- Improving the quality of public space, including development, maintenance, better accessibility for all citizens and providing opportunities for multifunctionality through tools offered by urban design, landscape architecture and architectural design;
- Development and establishment of a common, integrated and systematic model, which includes local actors and stakeholders from the city (NGOs, institutions, networks) in the process of co-creation of the Healthy Corridor in Sofia and implementation of the NBSs;
- integrating new (business) models that make the active population, public goods and local capital sectors profitable.

## **Public Space**

**Eco-parking for different kind of vehicles**

**Place for leisure with a flower garden and a picnic and social zone**

**Neighbourhood meeting place / Grow a bench / a neighbourhood open space for social sitting and meeting space**

**Bridge over the Suhodolska River**

**Bring water back in public space (water fountains)**

**Living lab – Urbinat pavillion**

## **Culture**

**Green amphitheatre**

**Dancing classes**

## **Education**

**Open green classrom – school greenhouse**

**Tasty garden of learning – Kindergarten N 90 in Nadezhda 4**

**“Make a game yourself” – a place for expression of master skills; family outdoor games for children and adults**

**Forum theatre**

## **Sports and Recreation**

**Innovative project of public swimming pool with mineral water**

**New interactive playground facilities employing natural materials**

**Restoration of a multipurpose sports field**

**Outdoor gym / Sport activities, a neighborhood open space for social and sport activities**

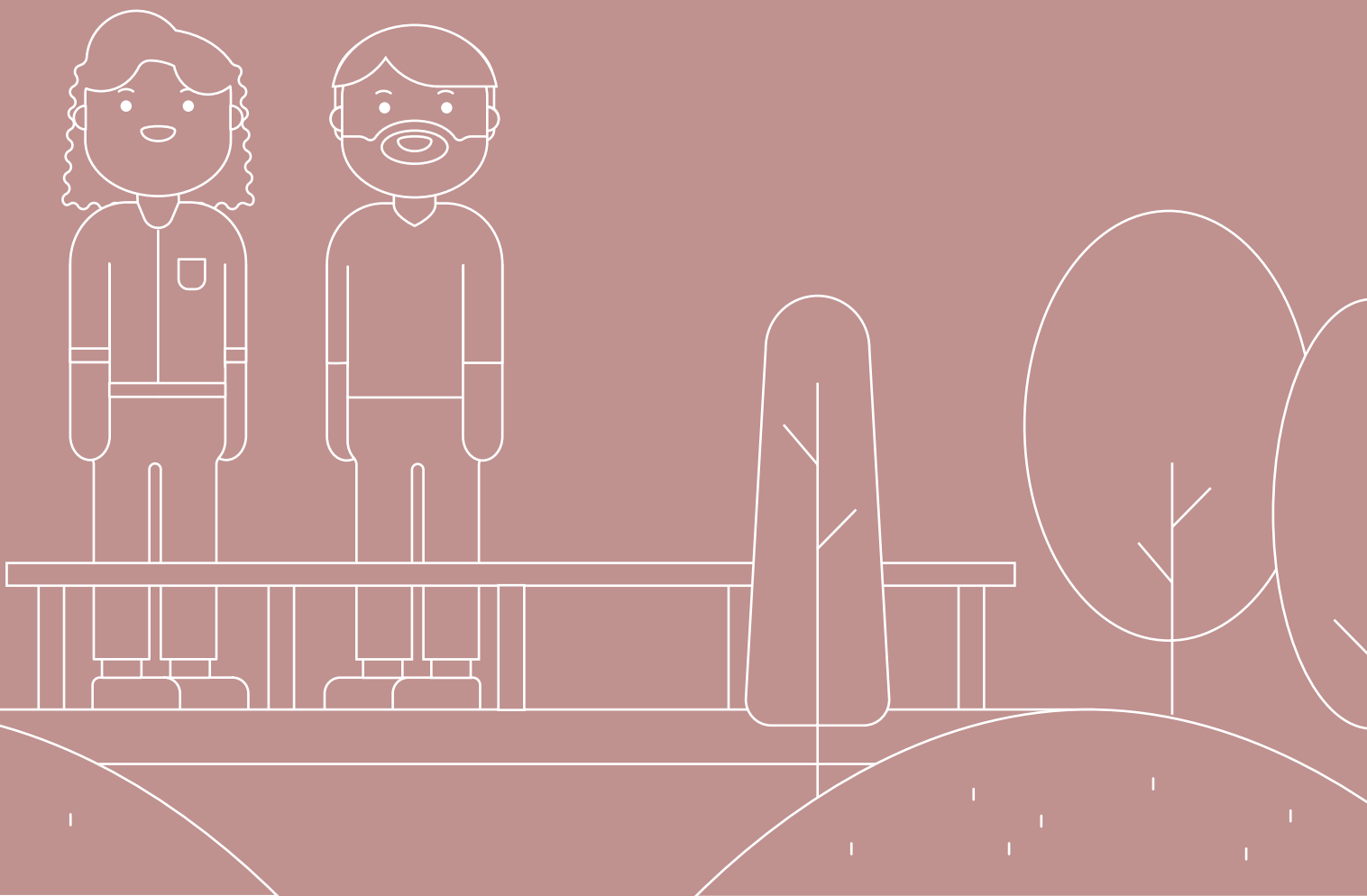
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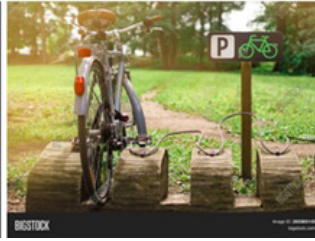
# Public Space

The category “public space” comprises all co-selected and co-designed solutions fitting in the territorial context of the areas of intervention and aiming at the improved quality of the public space in terms of accessibility and mobility, liveability and diversity of activities, and greenery and vegetation.

It is expected that some of these “material solutions”, implemented as investment projects in the proposed intervention areas, will be in direct relation with the immaterial solutions, and will contribute to an expected synergetic impact.

This **table** represents the decisions taken on the development of NBS, according to the analyses of the NBS developed by the task force, the municipality and the inhabitants.





# Eco-parking for different kind of vehicles

Zone CO-PLACE, subzone 1

## CHALLENGES

- To provide a parking that will be used by all residents especially those who live no so near to the new parking area;
- To address tensions and opposition among residents on the prohibition of the parking zones along some streets.
- To protect parked bicycles and other micro-vehicles from theft or vandalism.
- To maintain the eco parking

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

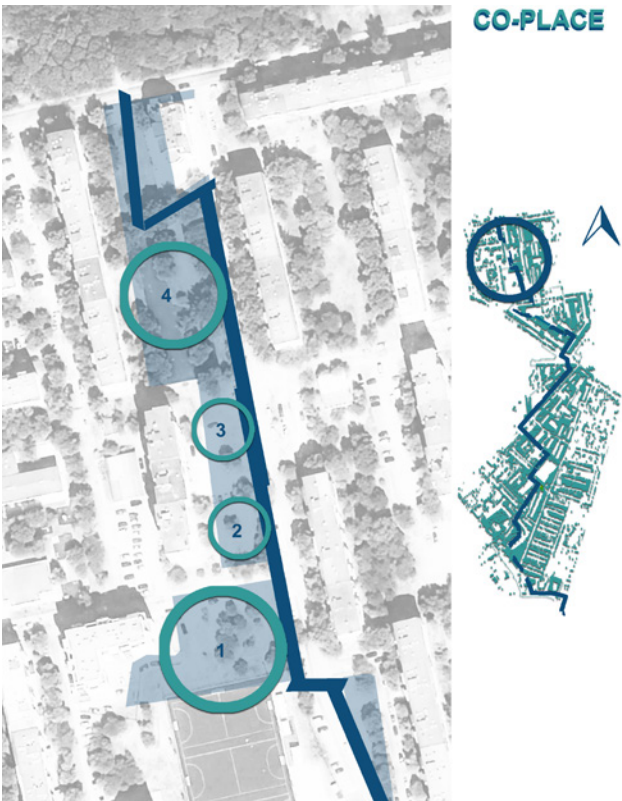
The problem with car parking, typical for Sofia and the big cities, is also typical for the study area. This was established through Expert observations, BM, Walkthrough, Culture mapping and confirmed as a problem for citizens in Interviews, Focus groups and Workshops. Cars are parked on green areas, sidewalks, and streets in violation of the traffic rules. They limit the freeway of the pedestrians, destroy pavements, contribute to air pollution, and worsen the micro-climate characteristics.

The study also found out that there is no public parking for bicycles and scooters within the URBiNAT study area.

### CO-SELECTION & CO-DESIGN

Parking was persistently mentioned as a problem during the workshops in the Co-selection & Co-design process. Participants expressed their concern about the lack of enough parking spaces, the loss of green spaces and the replacement of already established functions by unregulated parking. Citizens' opinions regarding the introduction of short-term paid parking zones and the construction of underground and above-ground multi-story car parks are contradictory. Still, most of them insist on the introduction of local/on-site parking regulations as green zones. People consider that expensive technological solution will make parking inaccessible for most of them.

That is why the proposal focuses on a solution based on natural materials, implemented on the ground level, and providing opportunities for parking of several types of vehicles.



## Description

Environmentally friendly parking for cars, bicycles and other vehicles will provide the much-needed parking spaces and free up area for development and accessibility of the Healthy Corridor while avoiding future conflicts between different users. In the process of joint co-creation of the Corridor, places for recreation and social contacts could be added to this area.

## Positive aspects/challenges

### POSITIVE

- Freeing up the inter-bloc spaces from parked cars and allow for car parked free area along some streets around the intervention areas and the route of the Corridor;
- Creating a space that will support the functioning of the existing sport playground;
- Separating the parking zone from the zones for playing and leisure and reduce the conflict between the users.

## Best Practices and References

- <http://new.acera-bg.com/parking-element/>
- <https://www.pinterest.com/>

# Place for leisure with a flower garden and a picnic and social zone

zone CO-PLACE, subzone 4



## Description

The idea is to diversify this inter-bloc space and create opportunities for social contacts and joint community activities for both children and adults. It is also envisaged that the pavement of the Corridor in this part will be made of luminescent coating to make the environment suitable for use as many hours a day as possible, but also to avoid light pollution and unpleasant feelings of the residents of the surrounding blocks.

Located at a close proximity to the Severn park, the Co-place area will host activities for the residents to create a flower garden, a zone for picnic and social interaction where they can put a hammock or to hold a NBS – photovoice, world café, etc.

The proposal will be further developed in the process of joint co-creation of the Corridor.

## Positive aspects/challenges

### POSITIVE

- Enrich the recently renovated space with different activities and create a zone for social communication and leisure;
- Create more possibilities to spend time outside especially in Covid-19 situation;
- Make an urban area look like a park and create a natural link with the entrance of the existing park.

### CHALLENGES

- To avoid conflict between the users of this space and people that live in the buildings around the area;
- To encourage people to use this place with respect for nature and make a society aware of its responsibility for guarding and keeping it clean.
- To keep the place clean
- To involve adults in the games and dynamic activities

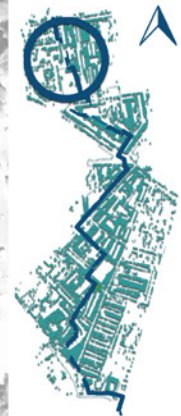
## Describe participation process to use the NBS

### CO-DIAGNOSTIC

The interaction with citizens during Cultural Mapping, Walkthrough, Photovoice, revealed the



CO-PLACE



importance of the place and the practise which already proved its sustainability – the maintenance of the space in front of the blocks entrances. Moreover, people shared the expectation of a better-maintained public space. Special attention was drawn on the small and large flower gardens. This diagnosis was further confirmed in the course of the conducted Territorial analysis and Expert observations.

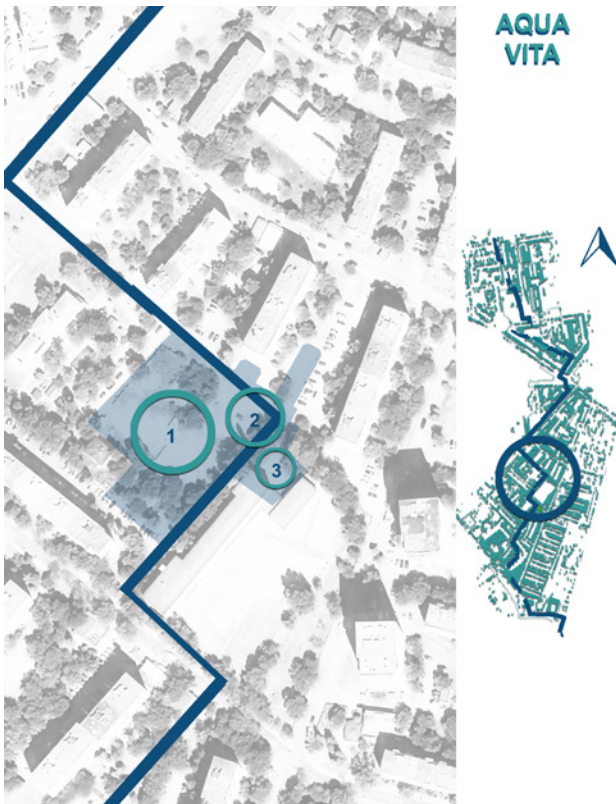
### CO-SELECTION & CO-DESIGN

The Walkthrough, Photovoice, Behavioural Mapping and Community workshops confirmed the hypothesis that young people seek and use spaces that differ from these preferred by the elderly inhabitants. Youngers and teenagers are attracted by the urban environments and practices typical for the Sofia central parks and places. Therefore, the proposed NBS enables different groups of citizens to design spaces according to their specific needs.



# Neighbourhood meeting place / Grow a bench / a neighbourhood open space for social sitting and meeting space

Zone AQUA VITA, subzone 2



- Increasing the built environment aesthetic value
- Supporting the revival of tradition tested through the last 6 decades

## CHALLENGES

- Use of the furniture without restrictions for residents and external users
- Maintenance, especially the furniture and surrounding area in public spaces and around public buildings
- Protection from vandalism

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

Through Territorial analysis and Expert observation, Walkthrough and Cultural mapping was found that neighbours' meeting places are a common phenomenon in the neighbourhoods of "Svoboda", "Tolstoy", "Nadezhda 2" and "Nadezhda 4". They vary from a bench in front of the entrance, through a gazebo to multifunctional places with separate corners.

Over the years, citizens have developed these neighbours' meeting places. Numerous interventions can be traced chronologically to add and/or change, expand, create conditions for the inclusion of new functions.

The interventions are expressed in hand-made tables and chairs or benches, alone or in combination with living room or kitchen furniture reused outdoors. Such furniture is found in closed or semi-closed pavilions or shelters. There is no evidence that these interventions were the result of a community decision.

### CO-SELECTION & CO-DESIGN

During the Community Workshops, Face-to-face interviews, and the focus-groups, the need for more equipped places with furniture to sit, rest and meet was repeatedly mentioned. Citizens expect the increased number of such places in the parks, the green areas, and in front of the public buildings. The participants in two of the focus-groups commented on the aesthetic value of the available public urban furniture and the one created and maintained by the

## Description

The detailed design(s) of the Neighbours' meeting places or social sitting spaces will be elaborated together with local communities. However, most probably they will incorporate a variation of a bench, lounge chair and/or chairs, table, space for plants and other furniture that is perceived as important by the locals. Aforementioned elements will be developed from natural materials by architects and urbanist with rich hands-on experience, together with local communities.

Materials that will be used are: high quality wood and metals, stones, eventually concrete, plants and various tools.

Urban design elements that will be designed and installed have to be approved by certified architects and constructors.

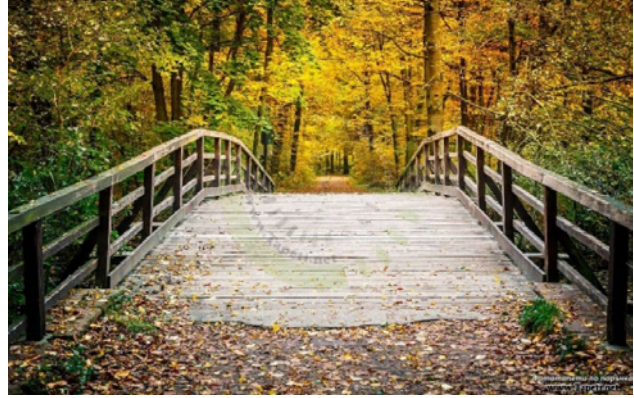
## Positive aspects/challenges

### POSITIVE

- Creation of new and renovation of existing places for communication, exchange and recreation
- Creating equal rights of use through activating new participants among the inhabitants

# Bridge over the Suhodolska River

Zone GREEN ASSEMBLY, (not numbered in the schemes)



## Description

A bridge with a wooden structure is a natural solution for overcoming the canal of the Suhodolska River and connecting the Tolstoy neighborhood and Nadezhda Park. The new bridge must allow a comfortable passage in both directions. The bridge should be having a suitable pavement for the passage of prams and wheelchairs, scooters, and bicycles without risk in all seasons. The current bridge is narrow with metal decking, which implies an increased risk of slipping on wet, rainy and foggy days.

During the recovery from the Covid 19 pandemic, it is important to improve access to parks and other public green spaces. Providing a safe bridge and enough space for crossing directions at a safe distance is also a reasonable health protection measure.

## Positive aspects/challenges

### POSITIVE

- Increased safety when crossing regardless of weather conditions
- Simultaneous and safe passing of an increased flow of people and cyclists in both directions

### CHALLENGES

- Difficult communication with authorities in charge of critical infrastructure
- Risk to the facility longevity due to the need for wooden structure permanent maintenance and seasonal care

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

During the Expert observation and Behavioural mapping, a lot of people crossing over the river were observed, most often stopping and waiting as the one-way movement only is possible due to the narrowness of the bridge – about a meter width. Despite this, it is a preferred entrance for Nadezhda Park by people living in Tolstoy and Nadezhda 2 neighbourhoods. The other entrances of the park are too far from the residential area.



### CO-SELECTION & CO-DESIGN

During the interaction with citizens within the Co-selection and Co-design workshops, they share the experience of discomfort in situations when many people gather on one or both sides of the bridge as sometimes waiting takes longer. They also share concerns about the people accompanied by their dogs. In connection with these daily difficulties and the discomfort associated with them, citizens expect improvements of access to the park over the Suhodolska River to be improved. This new NBS includes a wider bridge with non-slip decking build by nature-based materials.





## Bring water back in public space (water fountains)

Zone HEALTH ENERGY, Subzone 1



### Description

Drinking water fountains in Bulgarian public spaces are a tradition that has been lost in the recent 30 decades. Water fountains in South-Eastern and Southern Europe are also a tradition that facilitates climate change adaptation as they provide fresh drinking water in periods of high temperatures and improve microclimate in cases of running fountains. Despite overcoming seasonal stress, water is essential and valuable for human health.

Drinking tap water was commonly used before the spread of the bottled mineral and its dominance in the lifestyle of the average Bulgarian. In the process of endorsement of bottled water, trust in the tap water qualities was undermined. Today, when the quality of tap water is proven to be good, and the daily consumption of bottled water generates large amounts of non-degradable waste, it is important to restore the tradition of taps in public places.

Drinking water fountains can be equipped with water-saving technical and/or technological

solutions. They could be integrated into a sole system for grey water discharge and use for plants watering.

### Positive aspects/challenges

#### POSITIVE

- Provide access to clean drinking water in public spaces
- On hot days, access to water helps to adapt to rising temperatures and their impact on human health.
- Reduce the use of bottled water, and hence the generated waste
- Water in public spaces is an attractive element for children and is often the basis of many summer parties, encourages interaction between children and their parents

#### CHALLENGES

- To Implement a proper drinking water fountain management and maintenance model
- To prevent uncontrolled and unnecessary water consumption
- Misuse of public resources
- To protect the fountain and the technological innovations implemented (e.g. sensors) against vandalism

### Describe participation process to use the NBS

#### CO-DIAGNOSTIC

During the expert observation of the study area, it was concluded that drinking water the few fountains operate in the yard of the Sveti duh Church, in the contact area: one in North Park and at two at the metro stations along Lomsko Shosse Blvd. There are no fountains in the schoolyards, the wide inter-block spaces, the sports and playgrounds.

During the Behavioural mapping (may-june), a game of young people with water bombs was observed in the yard of 141 school. An hour-long refreshing game ("water battle") was observed, for the purpose of which the children had previously filled the balloons with water at home and brought them to the yard. This proved that water could serve multiple purposes – from being **essential for climate change adaptation to serving as means for recreation and fun.**

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# Living lab – URBiNAT pavillion

Zone GREEN ASSEMBLY, subzone 2

## Description

The structure will provide an indoor space that can serve multiple functions. It will act as an information point for the project, as well as a workshop space and/or café. Here, the citizens will be able to find information about the activities of the project and after it and allow each representative of residents, local communities, NGOs, and businesses to express their interest and willingness to participate. The pavillion will serve as one of the main venues for the implementation of the participatory NBSs. The chosen location is at the very beginning of the Corridor and is among the main activities along it.

The URBiNAT pavillion is designed as a hot spot in the corridor and will be externally branded, in order to increase awareness about the project within the local community. Previously used for other purposes, the pavillion will be adapted for the purposes of URBiNAT in line with the concept of Recycle and Reuse. There is a possibility to integrate vertical greenery on one of the façades or on the railings of the terrace on the roof.

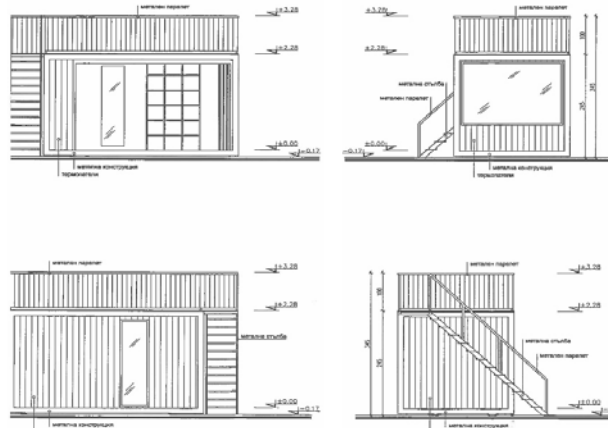
## Positive aspects/challenges

### POSITIVE

- Raising citizens' awareness of the project.
- Raising citizens' awareness of the role of nature in the urban environment and its importance for human health, of the effect of the shared economy.
- Close contact with residents, communities, and businesses through related participation NBSs.
- Share project progress and upcoming events in real-time
- Allows flexibility of uses
- Provides an opportunity for future revenue streams from the workshop/cafe that can be channelled back into maintaining the structure and the intervention zone;
- Complements the rest of the outdoor facilities in the intervention zone by adding indoor space.

### CHALLENGES

- Maintaining up-to-date information about the project, both in digital and analogue format



- Creating a work schedule suitable for the rhythm of the residents
- To provide proper upkeep and maintenance to the structure;
- To involve local grassroots community organisations in the running of the pavillion on a non-for-profit basis.

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

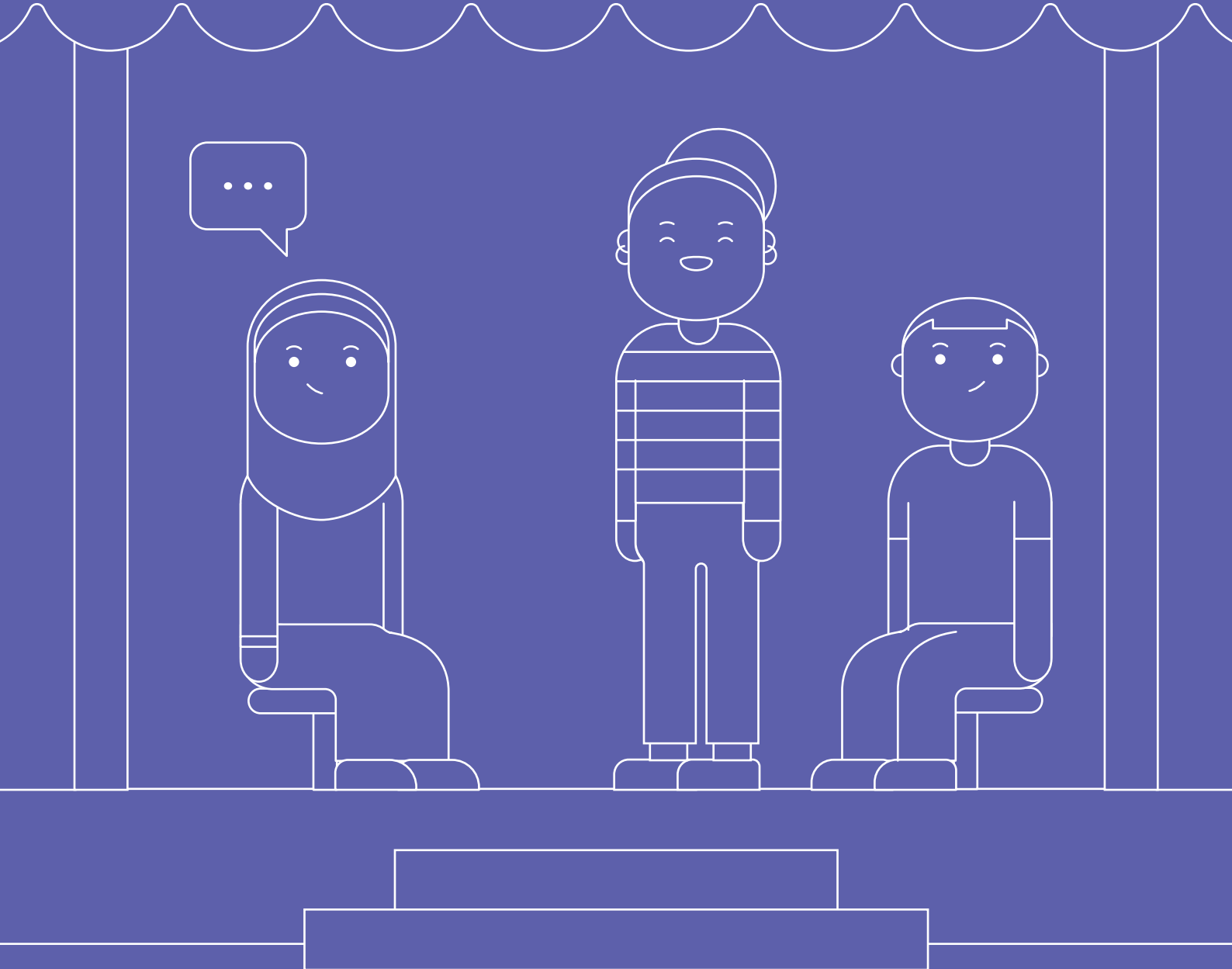
In search of a suitable communicative place for Living Lab through the Territorial analysis and Expert observation, a shortage of a suitable premises and locations on municipal plots was identified. The existing local cultural centres (chitalishte) are located at the periphery of the Healthy Corridor area of influence and they, along with the other cultural institutes are full of regular events and activities. Public buildings have limited and controlled access, which makes them **unsuitable for this purpose. Finding the appropriate location for the URBiNAT pavillion is the key factor to make the URBiNAT Living lab visible and sustainable.**

# Culture

The category “culture” organizes all co-designed solutions related to culture in the **Campanhã** region and will contribute to improve the cultural communication and boost the number and quality of cultural events in terms of music, theatre, cultural and natural heritage, among others.

## Analyses and decision on the development of the New NBS

This **table** represents the decisions taken on the development of NBS, according to the analyses of the NBS developed by the task force, the municipality and the citizen



# Green amphitheatre

Zone GREEN ASSEMBLY, subarea 1

## Description

The main focal point of the GREEN ASSEMBLY intervention zone will be the green amphitheatre. The idea is to create a flexible outdoor space that will function as an informal social area, an event venue for performances such as concerts and performances, dance and music events, exhibitions, literary readings as well as a gathering spot for the citizens of Nadezhda. The amphitheater will act as a landmark and provide a distinctive character to the intervention zone, increasing its attractiveness for new users.

The Green Amphitheater is a shared open space skillfully inscribed in the urban landscape. The creation of such a place clearly indicates the intention to hold larger community events and initiatives, including the URBiNAT participatory NBSs. Discussing issues important to communities and citizens through the Forum Theater, Word Café, Focus Groups in Situ, Community workshops will help the Green Amphitheater to establish itself as the Corridor landmark. The Green Amphitheater should be a hospitable place for residents of the study area.

## Positive aspects/challenges

### POSITIVE

- To bring together communities
- To share common problems and make decisions together
- To integrate the culture into urban environment
- To have new community space to play
- Creates a local landmark suitable for a multitude of different users;
- Provides a much-needed comfortable outdoor event venue to Nadezhda;
- Employs natural materials to increase local citizens' awareness of alternative construction techniques and their beneficial impact on the environment.

### CHALLENGES

- To keep place safe and to ensure its protection against potential vandalism
- To be properly maintained
- To ensure that the amphitheatre serves both informal social purposes and more formal events by setting up a model for its future operation in accordance with the needs of the local community



- To find a business model for the post URBiNAT future

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

The Local Diagnostic outlined that the only place recognized for organized outdoor events is the North Park. These are usually events addressed to all residents of the Nadezhda district – significantly larger in area and in number of population than the URBiNAT study area. In this sense, these events cannot be called community. The green amphitheatre comes to fill the gap of small public space for events and informal cultural activities.

### CO-SELECTION & CO-DESIGN

Modelled as a green amphitheatre, such open space is not in itself an innovation. Still, the functions it can perform and community events to be sheltered can bring innovation to community interactions and relations. During the workshops, interviews, and focus groups, it was found that there are inhabitants who are ready and willing to participate and provide dance classes or other educational or cultural activities for free.



## Dancing classes

Zone GREEN ASSEMBLY, subzone 1

Zone HEALTH ENERGY, subzone 2

in Sofia, dance classes can take their place in open public places almost 9 months – from early spring until late autumn.

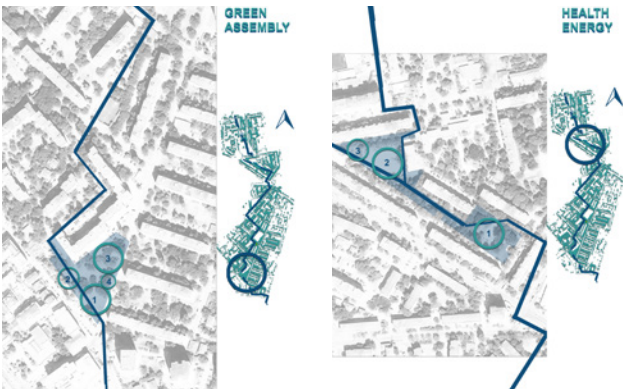
### Positive aspects/challenges

#### POSITIVE

- Encouraging activities in the urban environment for groups that are not traditionally active – e. g. women.
- Bringing different dances closer to a wider range of people
- Building a dance culture among young people

#### CHALLENGES

- Activities depend on weather conditions
- Involvement of residents in such an initiative
- Finding a suitable business model, so dancing classes to be accessible to disadvantaged groups
- Concern among participants about outdoor training



### Description

Dancing in public space is a well-known tradition in Sofia and in the country. Along with the Bulgarian folk dancing in the squares on holidays, one can add classical and sport dances on special platforms or separate places in parks and gardens, and examples of street dance art. Apart from the active lifestyle, the benefits of dancing are numerous, especially when dancing takes place in open space and in close connection to nature.

In spatial terms, the NBS can be a space or platform with dance flooring. It can be combined and practiced in the Green Amphitheatre, in the restored sports playground in Zone Health Energy, subzone 2, in North Park and Nadezhda Park. Apart from being a solution in the fields of culture and education, the NBS can also be implemented as a social and solidarity economy solution.

In the context of the challenges facing Covid 19 around the world, it is important to look for opportunities for more collective activities outdoors. According to the continental climate

### Describe participation process to use the NBS

#### CO-DIAGNOSTIC

During the time of Expert observation, Behavioural mapping, Face-to-face interviews and focus-groups it was found that various dance lessons are held in all cultural institutes and some of the schools. In combination with the tradition of dancing outdoors, this NBS has a strong potential to be realized successfully.

#### CO-SELECTION & CO-DESIGN

During the workshops, one of the participants shared his willingness to conduct outdoor dance lessons.

### Best Practices and References

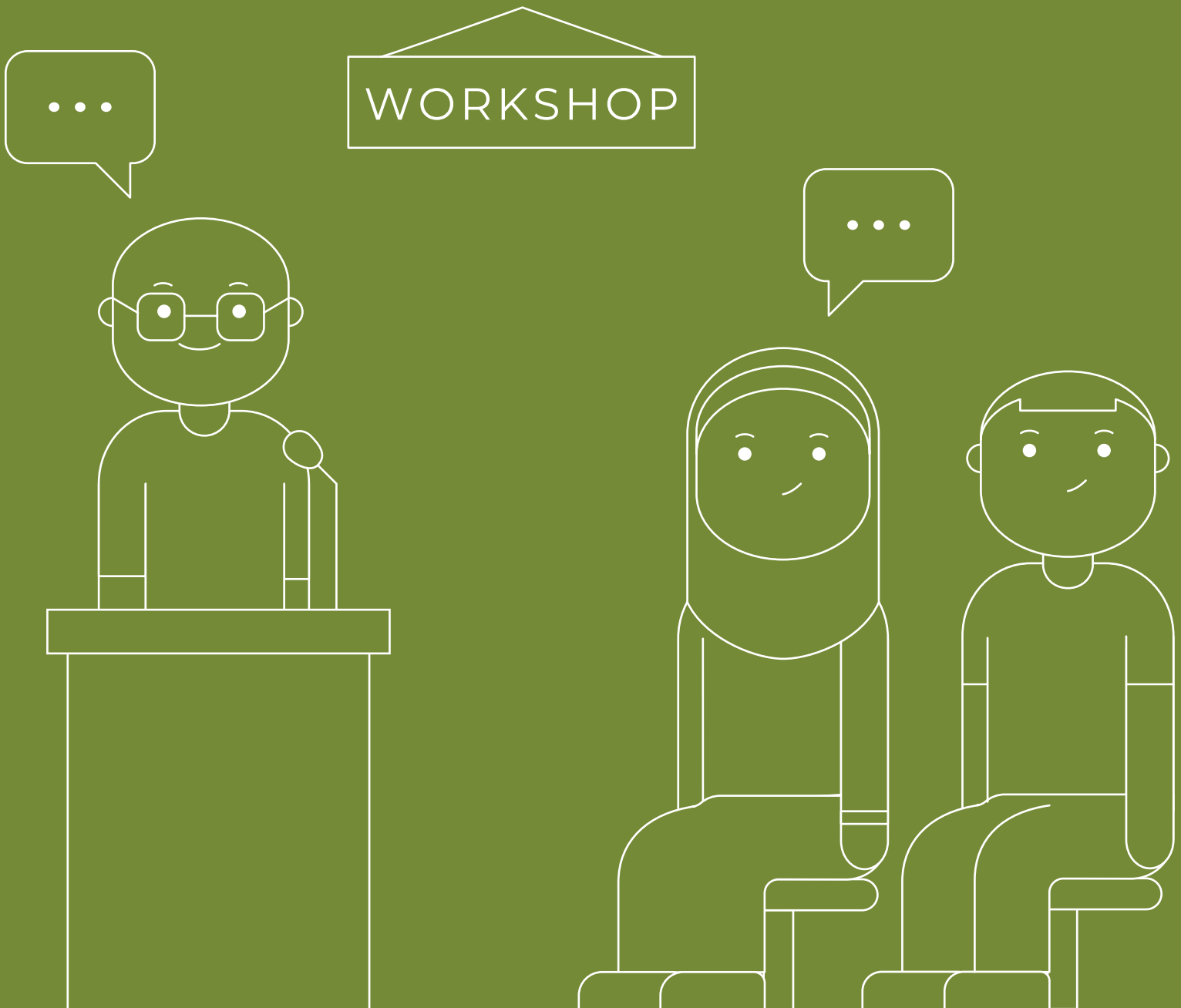
<https://www.youtube.com/watch?v=dYtJq5XNjaU>

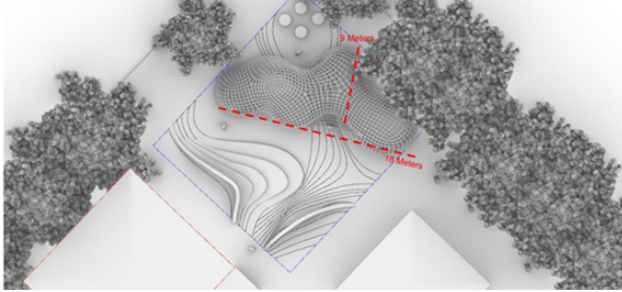
# Education

The category “education” organizes all the solutions co-designed with citizens that are related with recreational and educational activities and will contribute to improve a set of recreational and pedagogical activities that promote the relationship with space and the sense of belonging at the community level in conjunction with the region’s school community.

## Analyses and decision on the development of the New NBS

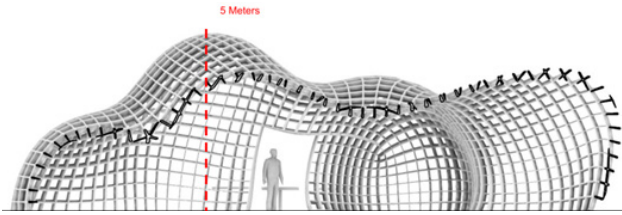
This **table** represents the decisions taken on the development of NBS, according to the analyses of the NBS developed by the task force, the municipality and the citizens





# Open green classroom – school greenhouse

Zone AQUA VITA, subzone 3



- Increase the awareness of the students for the nature and the food production;
- Create knowledge about the qualities and the value for the human health of the mineral water;
- Creation of the students own community place where they can exchange knowledge but also communicate with each other without the need of social medias;
- Bring back a tradition of constructing greenhouse with the usage of the mineral water for heating and watering – in this school on the same place there was constructed a greenhouse many years before.

## CHALLENGES

- To provide properly the mineral water to the greenhouse;
- To create a comfortable and appropriate innovative construction of the greenhouse for the students;
- Create a working mechanism to activate the students to participate in the co-creation and maintenance of this place.

## Description

Creating an interesting school space for learning and recreation by the combination of the two NBS – leisure pavilion and the tasty garden and using the existing mineral water. The main aim of this NBS is to familiarize the student with the way of food production and the qualities of the mineral water, also to make a place where they can spend their free time and organize different school activities for the community.

Another aim of the NBS is to provide an open space classroom for the students where they can spend some of the classes in a natural environment and learn about its functioning easily.

The innovative construction of the greenhouse will be created by IAAC.

## Positive aspects/challenges

POSITIVE

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

Through territorial analysis, expert observation, face-to-face interviews, and focus groups, it was identified that education is occupying only the school buildings, thus being fully “closed”. Natural sciences are taught by means of long-established out-of-date approaches. The schoolyards are partially used for physical education and sports classes, and for this purpose, their outdoor surface is impermeable, and the soils are sealed.

The need for environmental education and human health was emphasized during the meetings and interactions of the working group with the educational institutions in the URBiNAT study area.

### CO-SELECTION & CO-DESIGN

The Food Production and Leisure Pavilion from the Sofia Mini Catalogue were recognized as a desired solution for the public space during the opening event and the four local workshops. The opportunity to combine the attractive structure of the pavilion and the educational component of the Tasty Garden was recognized by the school management of 15 high schools as a suitable NBS with potential to be integrated into

# Tasty garden of learning – Kindergarten N 90 in Nadezhda 4

## Description

The Tasty Garden of Learning is a green “growing classroom” situated in the yard of the kindergarten or the school where children, teachers and parents unite their efforts and vision to grow together herbs, vegetables and fruits and they all receive valuable lessons and inspiration directly from their own experience with Nature. The Tasty Garden of Learning is also a rich multi-dimensional educational tool with a great potential to unite school subjects to real life challenges and provide inclusive educational activities in a very easy and inspiring way.

In a very natural way, the Edible Garden of Learning brings together all participants in the educational process (children, teachers, parents and local community friends) in a life-enriching relationship and leads them to a deep creative process of learning by experiencing that supports the development of the physical, intellectual, emotional and social intelligence of the pupils, and also unites and supports the sustainable development of local communities.

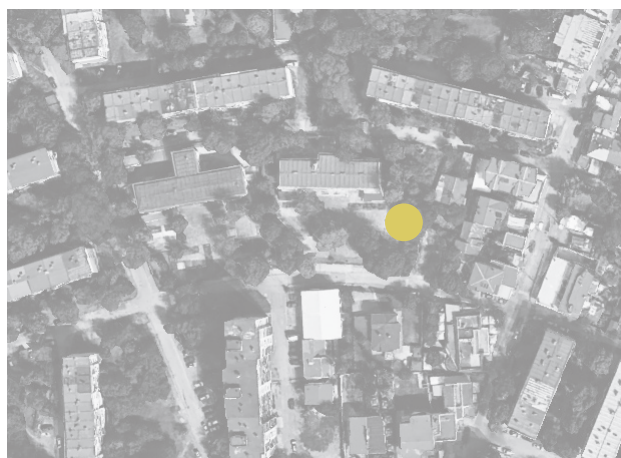
## Positive aspects/challenges

### POSITIVE

- Positive integration and shared responsibility of the parents and the local community in the educational process aimed at children in their early years;
- Upgrading of the educational system through the usage of the innovative methods for inclusive and experiential learning that helps children to develop multiple intelligences and build the basic competences needed for the 21<sup>st</sup> century such as creativity, flexibility, team working and risk management.
- Developing lasting skills and attitudes for healthy living in harmony with oneself, other people around and Nature as a whole.

### CHALLENGES

- The delicious garden is a living ecosystem, and the main challenges are the need for constant care – watering, weeding and plant care, lawn mowing, and the purely environmental challenges of pests and climate disasters.
- Summer vacation is the time when the garden is most in need of watering, and staff and



volunteers are the least

- Maintenance of wooden planter boxes

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

During the co-selection and the co-design workshops the staff from other kindergartens expressed interest to develop vegetable and herb gardens thus integrating them with different educational activities. Interviews and focus groups parents, elderly and even young people also proved the interest in urban agriculture as an educational tool and a means to utilize the space in the kindergartens. It has been realized that such practices may have a positive impact on community and social cohesion, and could influence human health and well-being by encouraging physical activity, providing healthy eating lifestyle and encouraging children and families to spend more time outdoor while working in the garden with a direct contact to the living Nature.

### CO-SELECTION & CO-DESIGN

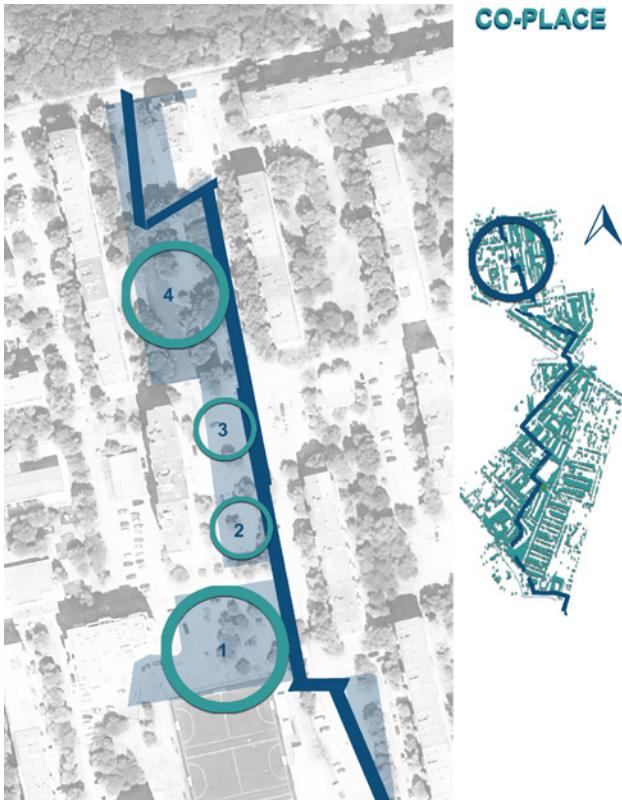
In July 2020, a presentation of the philosophy and the implementation steps was delivered for all headmasters and staff from Nadezhda district. The meetings with the headmasters of the





## “Make a game yourself” – a place for expression of master skills; family outdoor games for children and adults

Zone CO-PLACE, subzones 2 & 3: Two-part place for open-air family games



### Description

This NBSs have to separate the place into two zones: Subzone 1 – “Make a game yourself” – a place for expression of master skills and Subzone 2 – family outdoor games for children and adults. In Subzone 2 children and adults will be able to develop and demonstrate their skills in making various games and/or other items out of recycled materials. Campaign events for the collection and recovery of recyclable items can also be held at this location.

A new kind of space for outdoor activities that will foster the transition from the sedentary lifestyle of children and adults, and overcome the consequences around Covid-19 restrictions and measures. In this area there will be an information board with suggestions for various family games that people can make out of the materials at hand. The proposal will be further developed in the process of joint co-creation of the Corridor.

### Positive aspects/challenges

POSITIVE

- Expand the diversity of options for entertainment of the residents and also to encourage the interaction between people of different ages;
- Make suitable conditions for development of the abilities of the people in handy works and exchange knowledge.
- Transform an empty zone that is used as a parking zone in a place where people can play and learn interesting things.

### CHALLENGES

- Attract people to participate in co-design and co-creation of this zone;
- Convince the residents not to park in the area with restrictions.

### Describe participation process to use the NBS

#### CO-DIAGNOSTIC

The expert observation and the conducted interviews, brought to the conclusion that the adult’s activity and the active, creative interactions between children and adults are limited. To some extent this is due to the adults’ attitudes towards children and their main responsibility to safeguard children, which do not necessarily include the active involvement in everyday games. Exceptions are observed when children are small and need constant care or when the relatives help the children to learn a specific skill: cycling, rollerblading or scooting, playing football or basketball, badminton.

In general, there are no conditions for creative activities in neighbourhoods open space. Suitable places providing the opportunity for adults and children to play together is limited.

#### CO-SELECTION & CO-DESIGN

During the Co-selection & Co-design workshops, the need for small nonstandard playgrounds and multifunctional places for interaction was identified.

### Best Practices and References

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<http://online.fliphtml5.com/vwkc/jpsw/#p=52>  
<http://dev>

# Forum theatre

Zone GREEN ASSEMBLY, subzone 1

Zone CO-PLACE, subzone 1

## Description

A participatory method based on theatre techniques, games and exercises, involving the community in analyzing and discussing problems, provoking awareness and citizen participation. Particularly relevant in the co-implementation of the Green Corridor and its activation. Valuable for finding collective arrangements of co-maintenance and co-production.

## Positive aspects/challenges

### POSITIVE

- Brings together individual and social dimensions, enhancing cohesion, commonality, and sense of identity;
- Using the performing arts techniques that allow addressing complex and symbolic dimensions of urban development and rehabilitation,
- Optimizing public discussion on collective issues and catalysing action on alternative local actions and interventions according to the available resources.

### CHALLENGES

- To address and involve diverse groups of inhabitants;
- To establish a sustainable practice in communicating and discussing different problems;
- Create a working mechanism to activate larger groups of inhabitants and sustain thrust and commitment among them;
- Needs a flexible space to serve as a scene, which should allow hosting from few to many participants and audiences.

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

During the focus groups and interviews, it was identified that forum theatre has a great potential for awareness rising, non-formal education, and promotion of healthy lifestyles and activities that would transform the urban environment.

### CO-SELECTION & CO-DESIGN

The Forum Theatre from the Sofia Mini Catalogue was recognized as a desired solution for the public space during the opening event of the



Co-design process and the eight local workshops. The opportunities to combine another NBSs and use them as a scene were recognized by citizens and professionals employed at the cultural institutions located in the URBiNAT study area. Several citizens with expertise in participation in Forum theatre events expressed their interest to participate in the organization of such events during the activation of the Healthy Corridor. A proposal for organizing an event focused on waste management in the inter-block spaces was raised.

## Best Practices and References

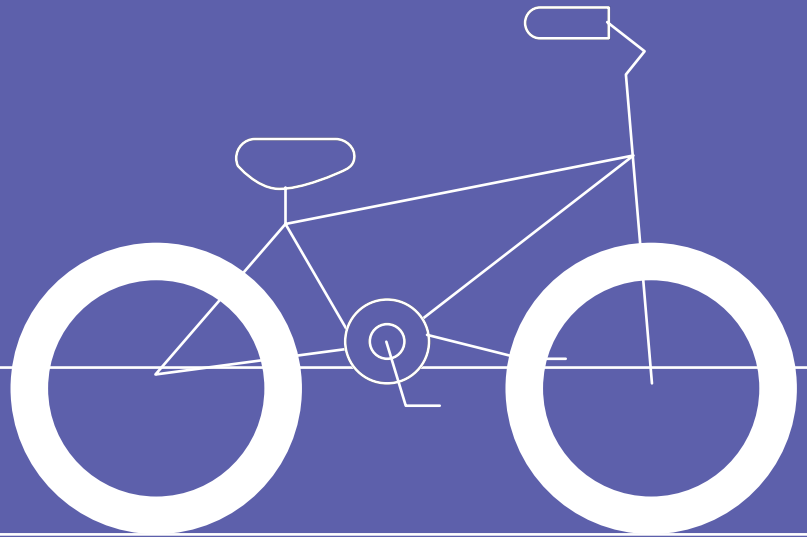
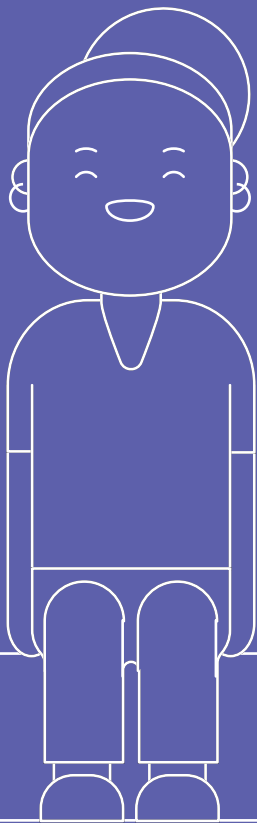
'Forum Theatre' is one of the techniques and tools used by the 'Ideas Factory Sofia' – local NGO that actively explores how to catalyze a positive change in attitudes in Bulgarian society towards inclusion in decision-making, social entrepreneurship, civic education and innovative solutions to critical issues. Forum Theatre, Source: <https://ideasfactorybg.org>

# Sports and Recreation

The category “sport and recreation” combines all the solutions co-designed with citizens that are related with recreational and educational activities. These NBSs, used individually or in groups, will contribute to active movement and healthy lifestyles.

## Analyses and decision on the development of the New NBS

This **table** represents the decisions taken on the development of NBS, according to the analyses of the NBS developed by the task force, the municipality and the citizens.



# Innovative project of public swimming pool with mineral water

Zone AQUA VITA, subzone 1

## Description

The thermal mineral water swimming pool relies on the use of a local geothermal resource – mineral water, to provide healthy environment for physical education and training as well as recreational activities of school children. It also aims at the revival of the millennia-long regional cultural tradition of living in close contact with mineral water.

The nature-based concept for the geothermal swimming pool aims at the development and practical implementation of complex socio-cultural and technological innovation.

Within the URBiNAT project framework, an innovative project for a public mineral water swimming pool based on the desires of the citizens and with their active participation will be delivered. The aim of the project will be to propose a new functional and business model for cooperation between citizens, municipality and business.

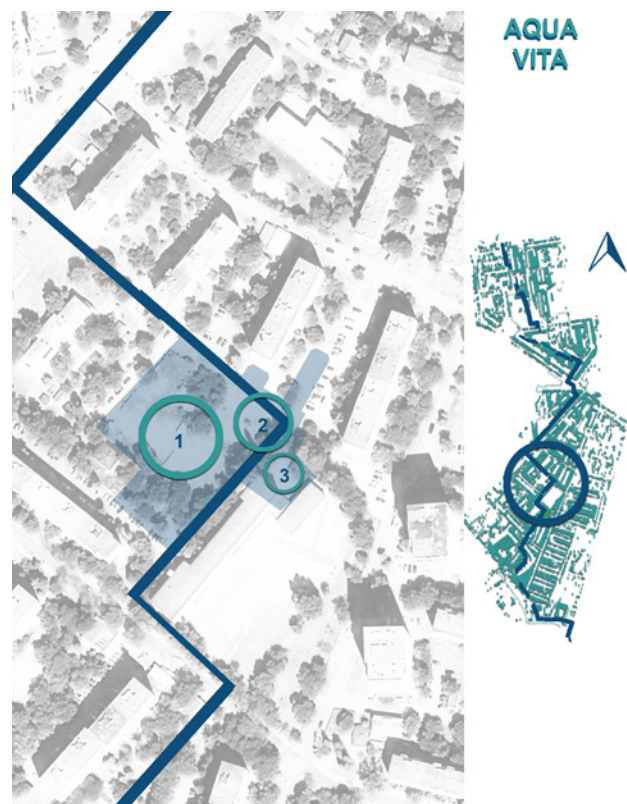
Nowadays part of the territory that will be occupied by the swimming pool is an empty and not well-maintained place. During the project elaboration this area will be promoted and used for exhibitions and information of the qualities and composition of the mineral water and its benefits for human health. It could be also used for demonstrating the swimming pool project progress and for organization of public discussions.

## Positive aspects/challenges

### POSITIVE

- Provision of a new accessible educational, recreational and sports facility for the communities
- Base on cost-efficient solutions (water as main resource and for heating)
- High ecological benefits
- Contributes to human health, wellness, and wellbeing
- Possibility to integrate swimming into school physical education
- Straighten the relationship and communication between different stakeholders concerning the urban environment and its use by opening a dialogue on the utilization of the thermal water as a public good;

## A community swimming complex in Nadezhda District: Methodological guidelines



- Efficient and effective use of the existing mineral water resources.

### CHALLENGES

- To create and implement a proper swimming pool maintenance business model
- To attract investors for implementation of the project
- To protect community right for fair access to the swimming pool

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

The swimming pool is provided in the Nadezhda 2 ~~original detailed development plan, which is still relevant today. This idea was approved by both Nadezhda 2 residents and the residents of the nearby neighbourhoods. During all community~~



## New interactive playground facilities employing natural materials

Zone HEALTH ENERGY, Subzone 1

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### Description

The existing playground is a popular spot for local families with children who are its main users. Nevertheless, the current facilities can benefit tremendously from an upgrade that will focus on creative spatial solutions to inspire children to develop a sense of care for the environment through interaction with natural materials.

### Positive aspects/challenges

#### POSITIVE

- Increase the children's awareness of nature-based solutions via a playful interactive approach;
- Improve the playground by challenging the current paradigm that relies on facilities constructed from plastic materials;

### CHALLENGES

- To provide proper maintenance to the facilities;
- To demonstrate successfully the potential of natural materials in the construction of new playgrounds and to address any public safety concerns that might arise in the process;
- To create a model suitable for replication in other places, whether its modularity of design or streamlining the creation process

### Describe participation process to use the NBS

#### CO-DIAGNOSTIC

During the Walkthrough, Cultural mapping, Face-to-face interviews, Focus-groups it was observed that the playgrounds are an essential public element for the citizens. In most cases, playgrounds are more than places for children to play. They bring together representatives of broader community groups, such as adolescents and teenagers, adults, and the elderly. Nevertheless, the liveable the sites used by different groups are usually arenas for conflicts.

#### CO-SELECTION & CO-DESIGN

Playgrounds are among the most mentioned proposals during the co-selection and co-diagnosis. At the same time, the need for nature-based solutions for the facilities and the pavements was emphasised. Expectations for different design for the newly built playgrounds were identified. Parents expressed their wishes to have new playgrounds that promote innovation, allow creativity through games, and combine playing and learning. Some citizens suggest a more precise separation of user groups through organizing different subzones.

### Best Practices and References

City Park Dobrich, Danube Garden, Silistra  
Soul Park, Sofia, Musical outdoor playground,  
Geo Milev park, Sofia

# Restoration of a multipurpose sports field

Zone HEALTH ENERGY, Subzone 2

## Description

The other major addition in this area of intervention will be a sports field suitable for different kinds of games. There is a pre-existing footprint that will be utilised as a starting point of the design. Unlike the playground, the field is currently out of use and is plagued by public perceptions of danger and criminal activities. The reintegration of the sports field in the urban fabric will benefit mostly the young adults in the vicinity and will enrich the spectrum of local users of the space via the addition of communal activities oriented around healthy outdoor pursuits.

## Positive aspects/challenges

### POSITIVE

- Provides new opportunities for healthy outdoor social activities;
- Motivates citizens to develop a connection with the site and challenge the public perceptions of danger;
- Enriches the spectrum of citizen involvement through proactive participation in local sports events;

### CHALLENGES

- Maintenance of equipment and flooring
- Protection against vandalism
- Conflict management
- Creating a community order for the facilities use

## Describe participation process to use the NBS

### CO-DIAGNOSTIC

In Walkthrough, Cultural mapping, Face-to-face interviews, Focus-groups and Workshops, the unmaintained playground and the adjoining abandoned building were pointed out as an unpleasant and dangerous spot in the neighbourhood. All participants agreed on the need to take action to renovate both the playground and the building.



## CO-SELECTION & CO-DESIGN

Participants in the Co-selection and Co-design Workshops in Svoboda shared their desire to see the playground restored accessible for everyone. They outlined that the other sports facilities nearby, including the newly built ones, are only available for a fee. They also suggested a more flexible organization of multifunctional sport courts that allows the practice of different sports. Adolescents and teenagers suggested a skate park and down-hill facility.

## Best Practices and References

Danube garden, Silistra Дунавска градина, град Силистра,  
Knyazhevska garden, Sofia



## Outdoor gym / Sport activities, a neighborhood open space for social and sport activities

Zone AQUA VITA, subzone 2



### Description

The creation of that kind of place aims to provide a diversity of activities for the leisure time of the residents. Natural materials or recycled ones will be used for the constructions of these new structures as open-air fitness, new social place with some games that could be played outdoors, etc. The idea is to form a small square, suitable for social NBS and other cultural events that will take place in the neighbourhood. These proposals have occurred after the workshops with the citizens and the main goal is to revive this place and make it comfortable for people of different ages.

### Positive aspects/challenges

#### POSITIVE

- More possibilities for sport outdoors thus promoting active and healthy lifestyles;

- A place for people socialization in the neighbourhood by creating a pleasant open-air area;
- Renovation of an abandoned space that many people pass through but don't occupy.

#### CHALLENGES

- To protect the fitness equipment from vandalism and fire;
- To create a place that the residents will recognize as their own and will use and keep it.

### Describe participation process to use the NBS

#### CO-DIAGNOSTIC

The citizens, who participated in face-to-face interviews, focus groups, workshops often required from the municipal authority to build additional sports facilities. On one hand, need for such facilities is proved by the survey results reporting a large share of respondents performing heavy and medium-heavy activities, which do not happen outdoors. On the other hand, during the Expert observation and the Behavioural mapping, the use of outdoor gyms and open air school sports facilities was observed.

#### CO-SELECTION & CO-DESIGN

Groups of young people are systematically using outdoor fitness equipment in the Park Gorska kultura. Some of these facilities are self-made by the groups mentioned. During the Behavioural mapping, some of these youngsters declared their readiness to participate in creating such facilities in public places. Involving their energy in the co-design process would positively affect community development and provoke more people to be active in co-creating urban open space.

### Best Practices and References

Borisova garden – urban forest part

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