

Resilient City



A Climate-conscious Action Plan for Urban Space (Re)design in Tartu



I Focus / Vision

The Tartu Integrated Action Plan aims at facilitating public and green space related aspirations of **three** local vision documents: the Tartu Comprehensive Plan, the Climate Action Plan and the Cycling Action Plan. The main goal of the IAP is to improve and promote green spaces, with an emphasis on streets and mobility.



Photo: Kelly Ilves

Tartu Comprehensive Plan lists several objectives that address the issues of public green space. All of these are key in the context of this Action Plan.

- Tartu has a continuous and functional green network. The backbone of the network is the river Emajõgi, its banks and adjacent flood plains, but the network only functions when it is comprehensive, joining not only public green areas, but street greening, private gardens, school yards, cemeteries, wastelands.
- The urban centre is lively and pedestrian-friendly 24/7, it is an attractive environment for living, studying, shopping, business and leisure time. The riverside is walkable and accessible across city borders.
- Tartu holds climate change in mind. Enough green spaces are preserved/redesigned for reducing heat stress, providing flood relief and guaranteeing a healthy and biodiverse living environment for all.

- In order to reach climate goals, our urban planning and building needs to be smart and resource effective.

Tartu Sustainable Energy and Climate Action Plan provides an overview of energy production and consumption in Tartu and sets the goal of making energy use in the city more efficient, increasing the production and consumption of renewable energy. The need to adapt to climate change, develop the city's green network and raise people's awareness are also strongly highlighted in the plan. Within the framework of the Climate Action Plan, the **Tartu Strategic Action Plan for Bicycle Traffic 2020-2040** has also been approved.

The Action Plan will facilitate the execution of our visions using three partly overlapping applications:

- 1) Clustered thematic actions (Chapter III);
- 2) Small-scale actions (Chapter IV);
- 3) The Healthy Street Guidelines (Chapter V);

The lead agency for the majority of the Integrated Action Plan is the newest department at Tartu City Government: the Spatial Planning Department. The competence of the department is divided into three focus areas and the Action Plan thus follows the same classification: Mobility, the Built Environment and Urban Greening.

The Actions chapter (Chapter III) lists a number of clusters of actions, some of them ongoing, some new. The focus areas, priorities and timescales are highlighted for each action or cluster.

The role of our ULG: our key partners through the entire process have been local landscape architects, urban planners and engineers; University of Tartu Research Group of Physical Activity for Health; Tallinn Strategy Centre Space Creation Centre of Excellence; NGO KINO (Curated Biodiversity project for Tartu 2024); Estonian Academy of Arts Architecture students; Milton Consultancy Office; Tartu City Government departments. Different parts of the process have been followed by various combinations of these professionals. Tartu City Government has always had a tradition of involving outside partners, so variations of this group will continue to work on the actions listed in Chapter III.

II City context and Objectives

Tartu is the 2nd largest city in Estonia. It is a university town and the academic centre of Estonia, so smart and state-of-the-art approaches have always been promoted and welcome. For a few years now, Tartu has held the front-runner position in sustainable mobility - a new bus network was established, and an electric bike share system launched in 2019. Good user feedback has challenged the municipality to try even harder to make Tartu more walk- and cycle-friendly with every change we make.

A series of aspects need to be considered when creating good quality outdoor spaces – a balance has to be established between the built environment and urban greening. Tartu, as any other city, needs to keep climate goals in mind. The most acute risks are risks of cold spells, heat waves, strong winds and especially snowstorms. Tartu has faced all of these during the past few years. In the following decades the risk of heat waves will become more prevalent – the number of hot days with temperatures exceeding 27 degrees has increased in Tartu in 1961–2017 from an average of five days to an average of 13, reaching 20 and more hot days during the summer. Weather effects may already have an impact on the residents, urban systems, and infrastructure separately or as interdependent systems at lower risk levels. Primarily, areas at risk and vulnerable sectors or population groups are exposed to climate risks.



Photo: Natali Marie Ernits

Tartu considers climate change adaptation on all spatial levels (the city, district, settlement, block, building) separately and with all levels combined. Urban planning is one of the most important adaptation measures that has the ability to impose change and set long-term goals.

Green networks and landscaping, especially mature trees, play a significant role in preventing and mitigating climate risks. Parks and landscaping regulate temperature and water supply, obstruct heavy winds, and store carbon. In addition, the coherence of the green network should be improved, as the widening of streets and new buildings have reduced the links between core areas or interrupted them in several regions of the city. The green index of each lot will be introduced in Tartu as an innovative planning method.

Tartu lacks municipal land for **adding** considerable new green spaces. Therefore, we are looking for ways to improve our existing qualities (parks, green spaces, streets, parking lots, schoolyards etc.). Our park network is dense and well structured; our current aim is to better connect these green spaces into a continuous network. The network of green spaces and greener streets will also include our lush “garden city” type districts, cemeteries, undermanaged areas and the river with its extensive protected meadows.



Illustration: Tartu urban region and bordering rural areas. Image: Estonian Land Board.

We thus aim at improving the health of our streetscapes, and this strengthens the network. A strong urban green network will also secure new possibilities beyond city borders, with our rural municipalities and further urban forests.

Tartu has a brand-new comprehensive plan that sets priority strategies for meeting our climate goals. Among other topics, establishing a functional green network and healthy walkable-cyclable streets are prioritized. Tartu as a moderately sized town of appr. 100 000 inhabitants is

compact and small enough to favour walking and cycling over owning and driving a private car. Every next step in our urban planning and every road construction keeps this in mind.

Tartu Comprehensive Plan focuses on a series of topics to meet our renewed climate goals. Our team has targeted several actions (listed in Chapter III) that will be prioritized over the following years. In order to ensure meeting our Integrated Action Plan goals best, the Healthy Street guidelines will be followed.

The people of Tartu are gradually admitting the impact of climate change. We have just recently experienced an unusually hot and droughty summer but short showers with extreme rainfall. These are clear reminders of a changed balance and warnings about the seriousness of our daily actions and choices are a vivid reality. It is therefore clear and justified that a change is needed in our consuming and commuting habits.

According to the Cycling Action Plan the proportion of cyclists among daily commuters should rise to at least 26% and the proportion of vehicle commuters dropped to an equal 26%. Today these figures are 8 and 46% accordingly. In order to achieve this, awareness needs to be raised and the infrastructure improved. It is important to emphasize that future solutions need to be based on ambition, not statistics, in order to make change happen.

The Comprehensive Plan of Tartu determines a two-type network for cycling paths - the main (shown in black on the map) and the secondary grid (in blue). Also, a strategic action plan is explained in the document. Applying the grid and the action plan as tools thus requires a shift in the mindset and big changes on the streets.

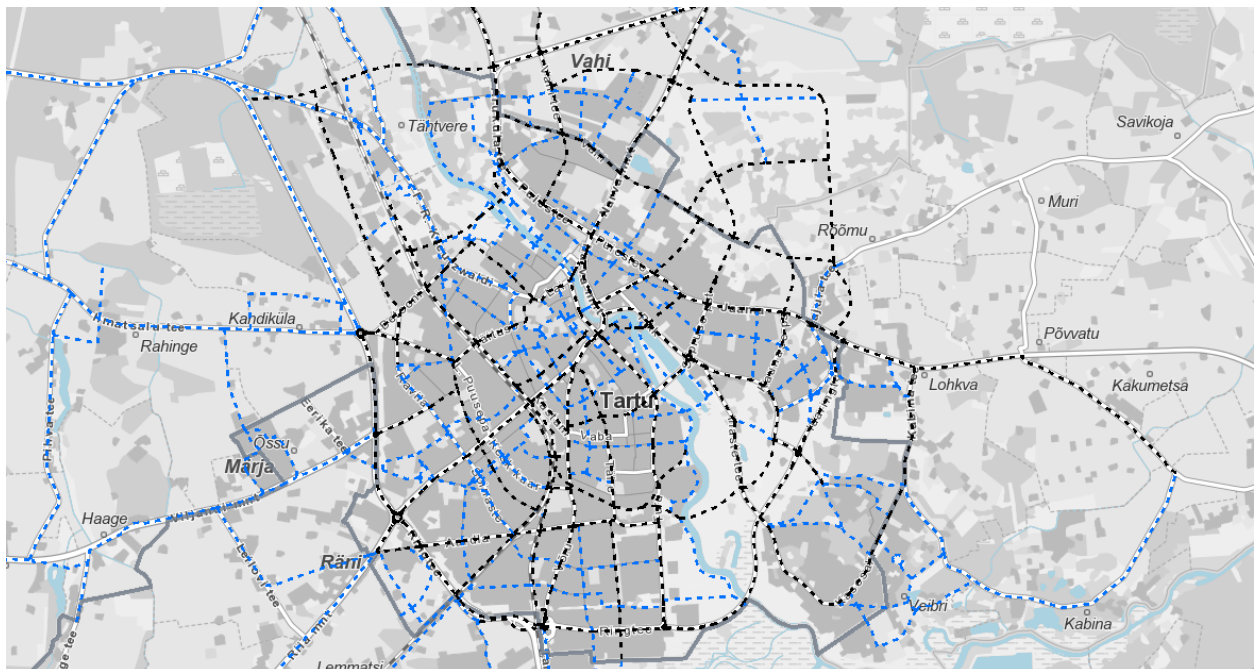


Illustration: the cycle paths network. The comprehensive plan determines a two-type network for cycling paths - the main grid is shown in black, the secondary in blue. The comprehensive plan digital book <https://gis.tartu.ee/yldplaneering2040/> (currently available in Estonian) explains spatial development in 23 chapters and includes a GIS map to explain each topic.

The mindset needs to move towards admitting the impact our mobility choices have on the environment. Walking and cycling are favored by many but are still not options to consider by most. The conditions of our climate and our streets are seen as obstacles, but these are not impossible to conquer. It is clear that the main aims of improving the conditions for walking and cycling are to reduce CO2 emissions, promote climate-conscious choices and co-create a livable urban environment for all.

Our public transportation system was completely renewed in 2019 and the electric bike share system was added as a new service to our public transportation. This shows the importance of providing good quality streetscapes for pedestrians and cyclists.

A well-functioning mobility system works best if it is supported by a healthy green network. The action plan brings all three focus areas (mobility, the built environment, urban greening) together in order to make every little step count.

III Actions

The Spatial Planning Department has chosen to address 12 specific actions that will be prioritized or promoted in the near future.

The department itself neither draws projects nor organizes the building process – we help set overall goals, we consult and bring all stakeholders together. Each action is a part of, or a step in a larger ambition that has been built with the help of many partners and many examples. Tartu takes part in a series of cooperation programmes (e.g. URBACT Zero Carbon Cities; DUT - Horizon: Driving Urban Transition to a Sustainable Future; Programme for the Environment and Climate Action – LIFE; Green Destinations; EC 100 Climate-neutral Cities by 2030) and tries to be a good example for others following similar aims.

The majority of integrated actions improve sustainable mobility; some focus on the built environment and some introduce a new approach in urban greening. The common denominator in all is streetscapes. Therefore, our core URBACT local group consists of activists and professionals who are deeply committed to improving our streets (students, bicycle activists, engineers, planners, landscape architects). Each ULG meeting or input has dealt with a separate topic or timeline regarding our integrated actions, so the certain group of participants has varied according to the agenda of each meeting.

1. The main cycle path network

Focus area: mobility / built environment / urban greening

Key partners: Spatial Planning Department; department of Communal Services; department of Public Relations; cyclists' groups; neighbouring municipalities

Timescale: pop-up / short term / long term

Resources: €15 000 000 – Ministry of Economic Affairs and Communications program for sustainable mobility (70%); Tartu City Government (30%)

The new comprehensive plan shows a strong emphasis on diminishing car dependency. Tartu has set the goal of establishing the main cycling network Phase 1 within the borders of central Tartu initially by 2024 and Phase 2 (the rest of the city) by 2028, but the establishing phases take longer than expected. Currently, the aim for completing Phase 1 is 2028.

The network is planned to extend beyond the city borders to neighbouring municipalities with multimodal hubs on the edge of the city, also contributing to increased cross-border connectivity. The network should cover the entire suburban area, first and foremost connecting existing gaps to ensure a functioning network.

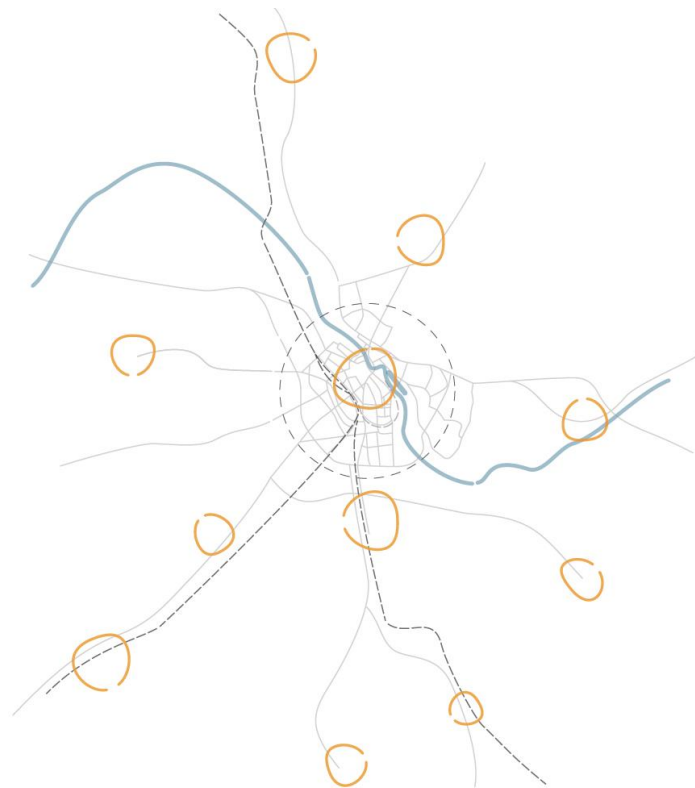


Illustration: Tartu urban centre (dashed circle) and neighbouring municipality centres

Depending on each unique situation, there are strict rules to follow when reconstructing these streets. In order to provide sufficient space for walking, cyclists and greenery, the space for motor vehicles will have to diminish considerably. In many places, this means either narrowing lanes to the minimum or establishing one-way streets and prohibiting parking. The Healthy Street guidelines evaluation and design methodology will provide a straightforward action plan for these changes (explained and demonstrated further below).



Illustration: approximate borders of the central Phase 1 cycling network. The main cycle lanes grid is shown in a brown dash.

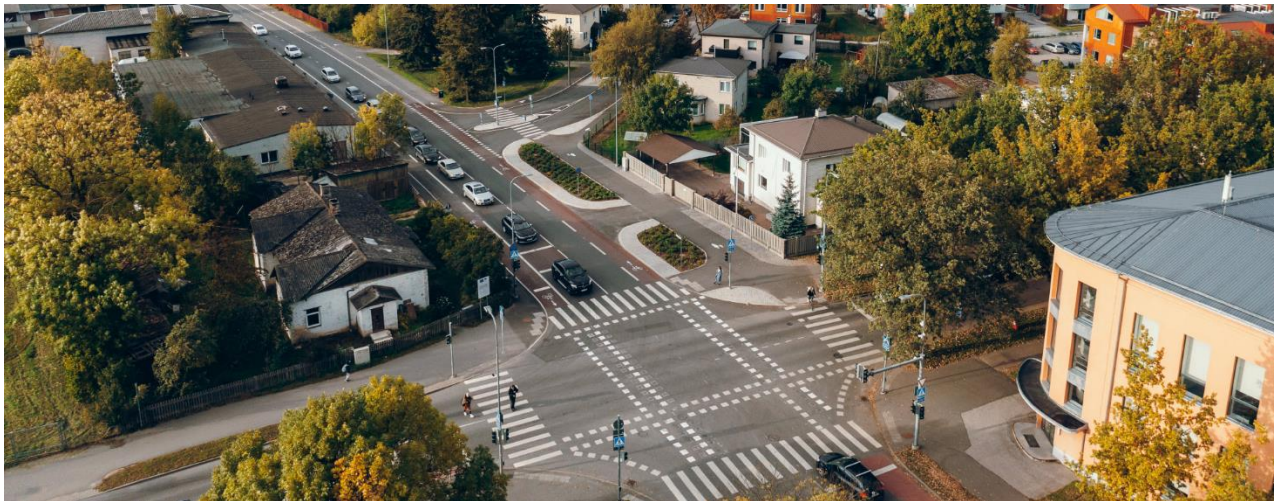


Illustration: a recently built section of the main grid. Photo: Maanus Kullamaa

2. Pop-up cycling paths

Focus area: mobility / urban greening

Key partners: Spatial Planning Department; department of Communal Services; department of Public Relations; cyclists groups; neighbouring municipalities

Timescale: pop-up (May to September 2022) / short term / long term

Resources: €100 000



Illustration: The full stretch of the first pop-up cycling route. The mid-section parallel to the river overlaps with our Car-Free Avenue event site.

In order to ensure a “soft landing” for changing the central traffic situation, we planned not to begin with complete reconstruction immediately, but by marking the main cycling route with pop-up solutions (bollards, paint, etc.). This pilot was thus planned to be a part of our Car-free Avenue event in 2022.

When successful, the pop-up solution can easily be established for good, becoming a short-term solution. When similar tests are successful elsewhere, the initial grid becomes a long-term network.



Illustration: Good example – bicycle lane experiment in Riga, Latvia. Photo: Viktors Demidovs via eng.lsm.lv

For various reasons the project was halted at the last minute in June 2022. Next steps are to be taken still.



Illustration: Graphics for public communication explaining 2022 pop-up lanes. The plans got cancelled on the 11th hour.

3. Car-free Avenue

Focus area: mobility / built environment / urban greening

Key partners: mixed team of Tartu City Government departments; Tartu 2024 Foundation

Timescale: July annually

Resources: €100 000 +



Illustration: The location of Car-free Avenue as a section of Freedom Avenue. The event will take place on the central section of the pop-up cycling path

Car-free Avenue is a municipality-initiated action. For the third time now, during July 2022, we are planning to reserve one of our main streets (Freedom Avenue) for pedestrians and cyclists only. It has been a huge success so far, becoming one of the most awaited public events of the year.



Illustration: The overdimensioned street, blocking the river from Central Tartu. Google Streetview image.



Illustration: The Car-Free Avenue has transformed the 20 meters wide street into a vibrant public space for a month in the summers of 2020 and 2021. Photo: Mana Kaasik

Our so far successful small-scale action will have a part in it. In order to promote the positive effects of greener streets, simple mobile solutions are used. We have purchased about 30 large plant containers and are using them in various urban situations where fast temporary changes are needed. This demonstrates an instant effect - everyone can estimate the difference that adding greenery can make. The containers have been used in different locations and situations. The small-scale actions are further described in chapter IV.



Illustration: An example of the ambience with plant containers and other equipment at a street concert. Photo: Mana Kaasik



Illustration: An example of the containers as an effective street attraction. Photos: Rein Leib

4. Mobility Hubs

Focus area: mobility / built environment / urban greening

Key partners: Spatial Planning Department; department of Communal Services; department of Public Relations; neighbouring municipalities; private sector – shared mobility operators etc.

Timescale: short term (first two completed by 2024) / long term

Resources: Ministry of Economic Affairs and Communications; Tartu City Government; rural municipalities; private investors.



Illustration: mobility hubs on city borders, connecting towards rural municipality centres. Additional nodes will be added to central rail and bus stations.

Our residential areas on the outskirts and at bordering municipalities keep growing and in order to meet our climate goals, good connections for daily commuting are necessary. Tartu plans to establish Mobility Hubs in our main traffic centres (central rail station and bus station) and along the city border at main crossroads/roundabouts. The hubs will enable switching transport modes: private cars can be left at parking lots / parking houses, to connect easily to public transport / bikes / bike sharing. The hubs will combine functionality and aesthetics to add to the network of healthy streets.

5. The Harbour Railway (Sadamaraudtee) Linear Park

Focus area: mobility / built environment / urban greening

Key partners: Spatial Planning Department; department of Communal Services

Timescale: pop-up / short term / long term

Resources: €100 000 +



Illustration: The Sadamaraudtee linear park maximum reach. The line used to be a part of the railway system (the functioning directions are depicted with a dash), connecting the central station with the river.

The former Harbour Railway was established exactly a century ago – we will be celebrating its 100th anniversary in the summer of 2022 with opening a new linear park in its corridor.

The railway line was initially built to connect the riverside industrial district with the existing railroad. The industrial district and river port have been gradually moved out of the centre of the city; therefore, the railway line has also gradually become unnecessary.

The line was closed for good only a few years ago and discussions began about its future use. First, the line was modelled and reserved for an inner-city main street that would keep traffic away from the city centre. The reality is that the plan is over-dimensioned for Tartu. As the

railway has been out of use for years, it is overgrown and already looks and functions as a linear park. Intense discussions have resulted in designating this land as a linear park in the comprehensive plan.



Illustration: The line in late summer in 2020. Photo: Mana Kaasik

Applying a pop-up toolkit for improving the walkability of the line was one of the winning entries of the 2021 Participatory Budget programme and was thus improved within the fixed programme budget of €100 000. This will be the first boost towards becoming a linear park.



Illustration: The line in late summer in 2020. Photo: Mana Kaasik

During the winter season of 2021/2022 the initial works were planned and budgeted; followed by simple construction works in spring/summer 2022. The first improvements included covering the surface with recycled asphalt, redesigning three main street crossings, establishing little

pockets with benches and other simple equipment, establishing initial connections with existing paths, lighting and greening.



Illustration: The line in spring 2022 after installing new pavement. Photo: Ketlin Lääts

The pop-up solution will then be analysed in order to apply user feedback for future improvements. Currently, the eventual programme for the linear park includes even more substantial investments for pedestrian and cycle traffic and urban greening as well as sections of streets to enable accessibility for plots that have no other connection with existing streets. The first user experience will help setting further actual goals.

6. Sõpruse bridge Linear Park

Focus area: mobility / built environment / urban greening

Key partners: Spatial Planning Department; department of Communal Services

Timescale: short term (plans and drawings within 2022) / long term (funding applications 2023)

Resources: state + local + programmes. To be announced



Illustration: the location and reach of the bridge

Our largest prefab housing district (Annelinn) accommodates about one third of Tartu's residents. When the houses were built, a new connection with the rest of the town was established – the Sõpruse (Friendship) bridge, stretching appr. 500m over the river and the canal. Having been completed in the 1980s, it has severely deteriorated today and is in serious need of reconstruction. With a width of almost 30 meters, it is strongly over dimensioned for the actual traffic intensity. With smart reconstruction it is possible to rearrange the layout so that a considerable proportion of it would be reserved for pedestrians and cyclists as a linear park.



Illustration: a historical image of the completed bridge and its signs of amortization



Illustration: The bridge crossing the canal (left) and the river (right). Photo: Ragnar Vutt, kaader.ee

During 2021 all possibilities for the main design concept were discussed. Multiple versions were chosen for comparison: demolishing the bridge and building a new one; demolishing one side of the bridge (it is originally built as two independent bridges side by side) to build a new half following contemporary needs and possibilities and keeping the old half as a linear park; reconstructing the old bridge, keeping one half for traffic and establishing a linear park on the other or otherwise improving the layout along the existing structure. At the moment no final spatial decisions, timeline or actual resources have been decided.

Today it is possible to guide the design task to follow our Health&Greenspace goals. Our Healthy Street guidelines evaluation method will not directly apply in this case, because the bridge clearly lacks traditional street qualities like active continuous facades etc., but the guideline suggestions nevertheless provide clear goals to reach.

7. Parking lot redesign

Focus area: built environment / urban greening

Key partners: Spatial Planning department; department of Communal Services; department of Municipal Property

Timescale: short term / long term

Resources: minimal input as salary for design; building resources will be integrated into overall street building budgets

Extensive paved parking lots play a strong role in creating heat islands and making stormwater management difficult. Tartu aims at showing strong will and good example with the best possible parking lot (re)designs. We will issue a set of exemplary guidelines for parking lots, keeping paving to a minimum, establishing good and safe spaces for pedestrians and adding vegetation as much as possible. It is a common mistake to forget pedestrians at parking lots – the area is calculated as parking places and maneuver space. Nevertheless, once exiting the car, every driver becomes a pedestrian and needs designated safe walkways. Also, shade needs to be provided at all possible cases to avoid overheating. Additionally, green pockets help stormwater management.

The examples for redesigns will be worked out by the Spatial Planning department during the following years and used as a part of street project tasks by the department of Communal Services, who commission drawing and (re)building new streets but also the department of Municipal Property who manage schools, kindergartens and sport facilities. Therefore, the action is both short and long term – the examples are planned to be reused for as long as necessary.



Photo: Maanus Kullamaa

8. Green Index

Focus area: built environment / urban greening

Key partners: Spatial Planning department; private sector

Timescale: long term

Resources: private sector

Our new comprehensive plan describes a green space evaluation method that extends our aims towards becoming climate-considerate with the help of the private sector. The method is designated for private/commercial use: every time private land is developed (buildings reconstructed, new parts added, or new buildings built) it is obligatory to follow the rules of the index.

The Green Index was developed as a part of the Interreg Central Baltic project iWater (<http://www.integratedstormwater.eu/>). The aim of evaluating and improving green values is to relieve the negative effect of the built environment. When cities become more compact to optimize mobility, it becomes equally important to pay attention to urban greening. The green index method gives a basis for good results by setting necessary ground rules to follow.

The method is technically simple (so far it is an excel work sheet but will become a more user-friendly interface or app) - all possible green values are listed in order to evaluate the quantity and quality of the site. The indicators are linked to the maximum volumes of proposed houses and paved areas. In order to build more, the developer has to prove a strong will to improve green values by adding trees, undergrowth, ditches and ponds, habitats etc.



Photo: Gabriela Liivamägi

9. Active School Yards

Focus area: mobility / built environment / urban greening

Key partners: Spatial Planning department; department of Municipal Property; The University of Tartu Research Group of Physical Activity for Health; Estonian Academy of Arts department of Architecture; Tartu schools; active parents at school boards; active students

Timescale: short term / long term

Resources: municipal budget + donations

Tartu City Government in cooperation with The University of Tartu Research Group of Physical Activity for Health has successfully promoted the Active school yards project. The project redesigns both the programmes and physical spaces inside and outside schools to encourage students to be more active.

The programme already has great outcomes to present as examples. Three (and counting!) schoolyards have been promoted by the local community and they have been the winners of our participatory budget campaign and thus rebuilt to follow the Active School Yards brand. The redesigns consider a daily safe and healthy commute, present simple universal equipment that inspire play and movement rather than suggest certain use, add seating and greenery to promote time spent outdoors. The main aim is not so much to provide places for sports but allow for a variety of outdoor spaces for all types and ages of students, including quiet places for observing and contemplating. The goal is to get students outdoors.



Illustration: a redesigned school yard at Reiniku school. The project was one of the winning entries of Tartu 2019 Participatory Budget programme

10. Curated Biodiversity

Focus area: urban greening

Key partners: Curated Biodiversity team; Spatial Planning department; department of Municipal Property; department of Communal Services; Tartu 2024 Foundation; Estonian Academy of Arts department of Architecture; Tartu University; Estonian University of Life Sciences.

Timescale: short term / long term

Resources: municipal budget; project applications (e.g Programme for the Environment and Climate Action – LIFE)

Tartu has defined a new focus in green space management and (re)design. Wherever possible, urban greening will mimic natural plant communities and their semi-natural life cycles.



Illustration: one of the redesign methods in central Tartu – the urban meadow. Photo: Mana Kaasik

Curated Biodiversity is a trademark that promotes Tartu's environment in our Capital of Culture 2024 programme by raising biodiversity in parks and green spaces and providing more activities in them for different generations. The planned updating of parks, along with a culture and education programme, ties together different subject matters and groups.

The changes include different management techniques (mowing less, leaving leaves, branches and trunks to compost on site), sowing, (re)planting and implanting (adding wildflowers and undergrowth). The changes are documented and analyzed by partners at universities in order to provide academic support. A big part of the project is communication and education – these greening methods are becoming more and more crucial to reach our climate goals, but wild urban environments have sometimes proven to be extraordinary, too extravagant. The Curated

Biodiversity project thus picks very visible central locations for piloting and pays strong attention to promotion.

https://www.instagram.com/kureeritud_elurikkus/



Illustration: one of the redesign methods in central Tartu – a wooden installation designed by the Estonian Academy of Arts.
Photo: Tiina Pitk

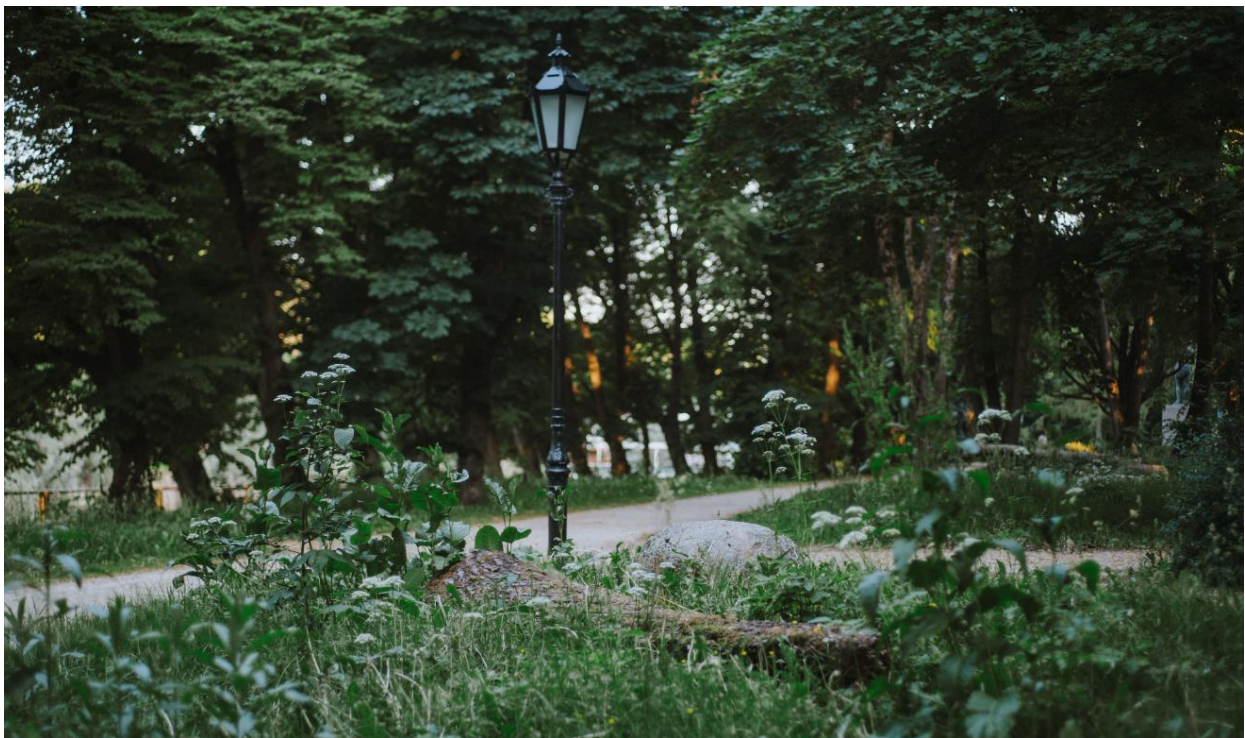


Illustration: one of the redesign methods in central Tartu – the urban grove. Photo: Mana Kaasik

11. Walk & Talk sessions for the elderly

Focus area: mobility

Key partners: department of Social Welfare and Health Care; active citizens

Timescale: long term

Resources: municipal budget

The City of Tartu launched walking groups for the elderly at the end of 2020, and their original goal was to reduce people's sense of loneliness during the holiday season. The walking tours are free for participants and will take place as scheduled on all working days through the warm season. The schedule is kept regular to avoid announcements, but information is always available in the information centre and municipal channels (website etc.)

The trails are approx. 3-4 km long and the walking pace is more on the slow side. When coming to the walking path, participants are asked to dress according to the weather. The group is always accompanied by two track escorts and sometimes an invited guest / tour guide.



Illustration: A 2020 May thematic walk – Urban Greening.

12. An all-accessible information boards system for outdoor gyms

Focus area: mobility

Key partners: department of Social Welfare and Health Care; Estonian Design Centre

Timescale: short term / long term

Resources: municipal budget; project applications. Prototyping costs, including consultation with the Estonian Design Centre, physiotherapists, design and mobility experts; design competition, product and graphic design process and prototype testing: €40 000. Prototype building: N/A

The City of Tartu will install all-accessible information boards next to outdoor gyms. The project began with a designers' competition in 2021, aiming at finding the best product and graphic design for the most universally accessible system. The boards will be legible with the help of clear contents and good contrast plus an audio guide. The boards are accessible by wheelchair. The series of infographics explain the purpose of each piece of equipment and suggest combinations of exercises for various levels/abilities.

The information is supported by our outdoor gyms' mobile app www.tartu.ee/valijousaalide-rakendus and our GIS platform with all sporting, leisure and playgrounds in Tartu <https://gis.tartu.lv.ee/vabaajavaljakud>. The infographics are designed to be legible for all: there is an introduction given in Braille that links the reader to the audio guide. The rest of the graphics are given in high contrast and coupled with an emboss. A prototype is built to accompany an outdoor gym at a refurbished public beach; next items will follow wherever necessary.

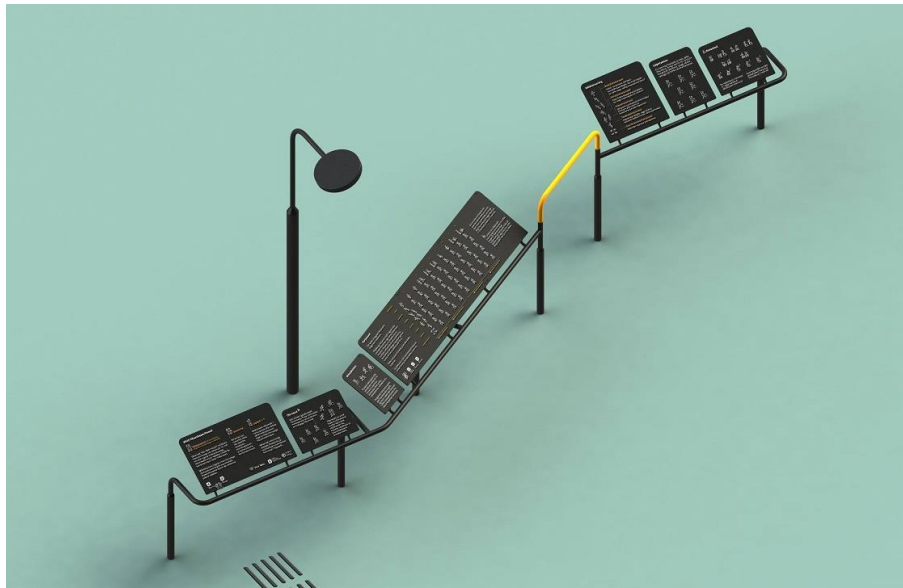


Illustration: the winning proposal for the boards in cooperation with Ü Iseasi designers, disabilities consultants and physiotherapists.

IV Small-scale Actions

As a quick practical interaction, we have tested changes on our streets by adding bits of greenery.

Our design concept for the 2020 Car-free Avenue included two types of temporary street greening solutions – low wooden platforms with meadow plants growing in the middle and multicolor plastic plant containers that resemble oversized classical terracotta flowerpots. The solution worked incredibly well for various reasons: the colours of the containers lit up the asphalt-dominated space; the spatial arrangement created cozy outdoor event spaces and the plants balanced the ambience. After the event the containers were free to be used elsewhere. The wooden elements were stored for winter, but the big plastic containers (7 pieces) were given different roles and locations during the rest of the year.

The first experiment gave us the impulse to test the containers further, in the context of our Health&Greenspace goals.

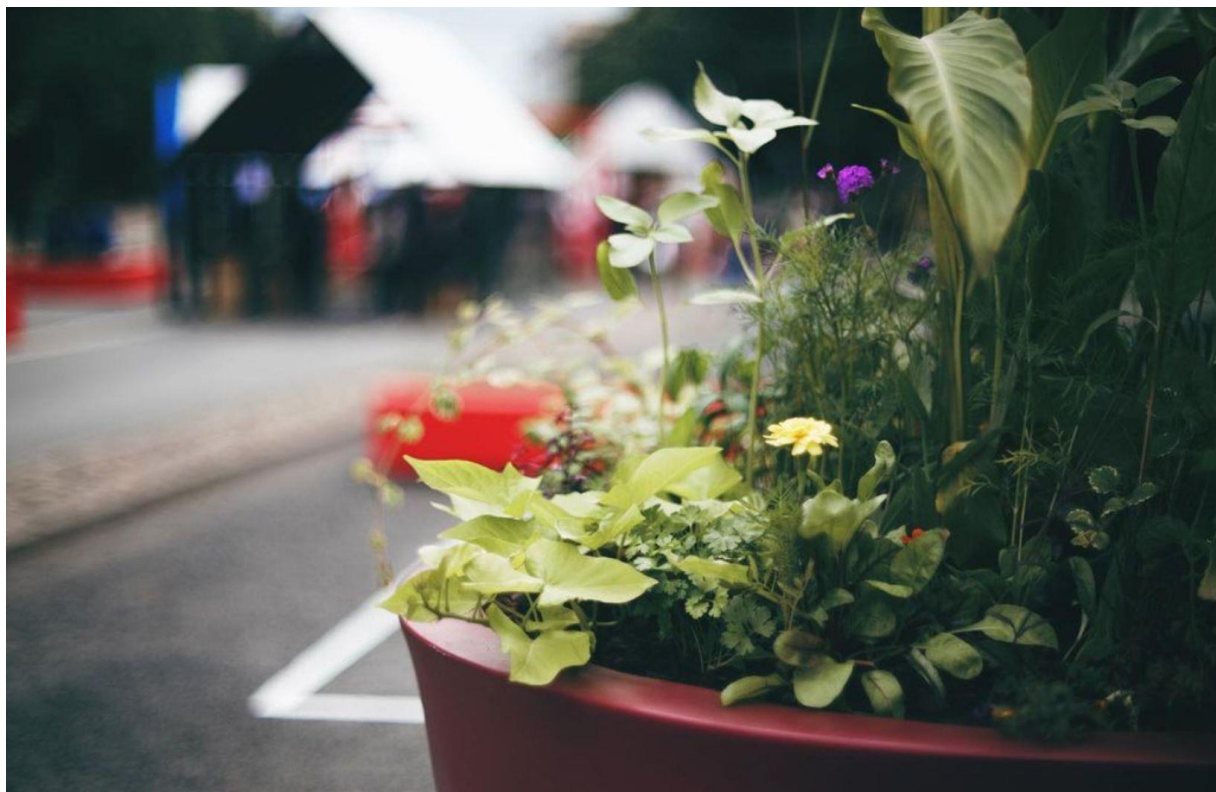


Illustration: the red containers at 2020 Car-free Avenue

13 containers were then added to the fleet in 2021 to test them as a Small-scale Action. They were first added to our 2021 Car-free Avenue layout, and it worked incredibly well. From mid-August some containers were moved to a recently renovated street in the old town that has no greenery, to prevent cars from parking on the wide sidewalks. Some containers were placed in Central Park to replace old equipment and two were taken to block parking at another park. In

winter, the containers were collected from streetscape to allow snow plowing and moved, again, to block parking from another sidewalk space.



Illustration: the red containers at 2021 Car-free Avenue. Photos: Evelin Lumi

We added 7 more containers in 2022 as part of plan for our pop-up cycling paths. The idea was to mark temporary cycling lanes to connect our two main streets. As temporary marking is done in yellow, the new containers and other furniture were also planned in yellow, to function as one design unit. The pop-up project was cancelled, but the containers are integrated to our 2022 Car-free Avenue layout.



Illustration: the yellow setting at 2022 Car-free Avenue. Photo: Ketlin Lääts

V The Healthy Street guidelines document

The Healthy Street guidelines promote:

- the development of street greening with an aim to provide healthier streetscapes;
- improved social interactions in urban green spaces;
- the installation of nature-based solutions for absorbing excess water from rainfall;
- the installation of nature-based solutions to improve the cooling capacity of the urban environment;
- the use of street greenery for locally improving air quality and reducing noise.

The key outcome of the Healthy Street guidelines is defining and integrating a new practical street evaluation and design strategy when constructing or renovating our streets. The guidelines document will function as a link between our strategic vision documents and actions in practice.

The guidelines are compiled by a mixed team of landscape architects (offices KINO and Artes Terrae) and technical consultants. The process included a series of ULG meetings that brought together the expertise of architects, planners, landscapers and technical infrastructure engineers. The document:

- addresses the main problem and sets its primary goals;
- presents an overview of similar good practices;
- presents the main topical research;
- synthesizes the baseline survey into a unique street quality evaluation method;
- demonstrates the method with the example of Kastani street in Tartu.
- presents street redesigns for Kastani street and Vabaduse boulevard according to the results.

The evaluation method consists of four chapters – walkability, bicycles, biodiversity and continuity. All four chapters are divided into series of different qualities that indicate the overall condition of the street. The qualities are measured on a scale from 0 to 3, first evaluating the current situation and also proposing the desired score for reconstruction. Below, an example of the Walkability chapter is shown. The table illustrates the scores for the Safety and Convenience qualities at Kastani street: the intensity of traffic (nr 14 scoring 3), the measured speed of vehicles (nr 15 scoring 1) and the noise level on rush hour (nr 16 scoring 2). The “Project” column on the right will hold desired scores for future redesign.

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TURVALISUS / MUGAVUS		3	2	1	0	OLEV	PROJEKT
14	Kahesuunalise liikluse hulk	alla 500 sõiduki/tippunnil	500-1000 sõiduki/tippunnil	üle 1000 sõiduki/tippunnil ja rattatee on eraldatud	üle 1000 sõiduki/tippunnil rattad muu liiklusega koos	3	
15	Sõidukite moodustatud kiirus	85 % kiirus on kas: a) vähem kui 30km/h b) 30-40 km/h aga PROJEKTIS on meetmeid kiiruse alandamiseks c) rohkem kui 40km/h aga PROJEKTIS on meetmete tulemusel alaneb alla 30km/h	85 % kiirus on: a) 30-40 km/h b) 40-50 km/h aga PROJEKTIS on meetmeid kiiruse alandamiseks	85 % kiirus on: a) 40-50 km/h b) üle 50km/h aga PROJEKTIS on meetmeid kiiruse alandamiseks	85 % kiirus on: a) üle 50 km/h b) üle 50 km/h ja PROJEKTIS pole meetmeid kiiruse alandamiseks	1	
16	Tippunni liiklusemüra sõidukite hulgaga järgi	alla 55 sõiduki/tippunnil (vähem kui 56 DB)	55-450 sõiduki/tippunnil (55-70 DB)	üle 450 sõiduki/tippunnil (üle 70 DB)	-	2	

As a practical tool the guidelines document also critically addresses current normative requirements for building and reconstructing streets. The normative documents are legislative, but legally they suggest rather than demand. Nevertheless, street projects consider these normatives (that clearly favour vehicular traffic) as a rule, not a suggestion, and this leaves scarce or no satisfactory space for cycling or walking. As an additional challenge, underground infrastructure is owned by separate establishments and cooperation is difficult. In order to enable sufficient space for trees, the pipelines would need to be rearranged as a compact system rather than separate and sparse entities. The Healthy Street guidelines demonstrate progressive and realistic examples in this realm.

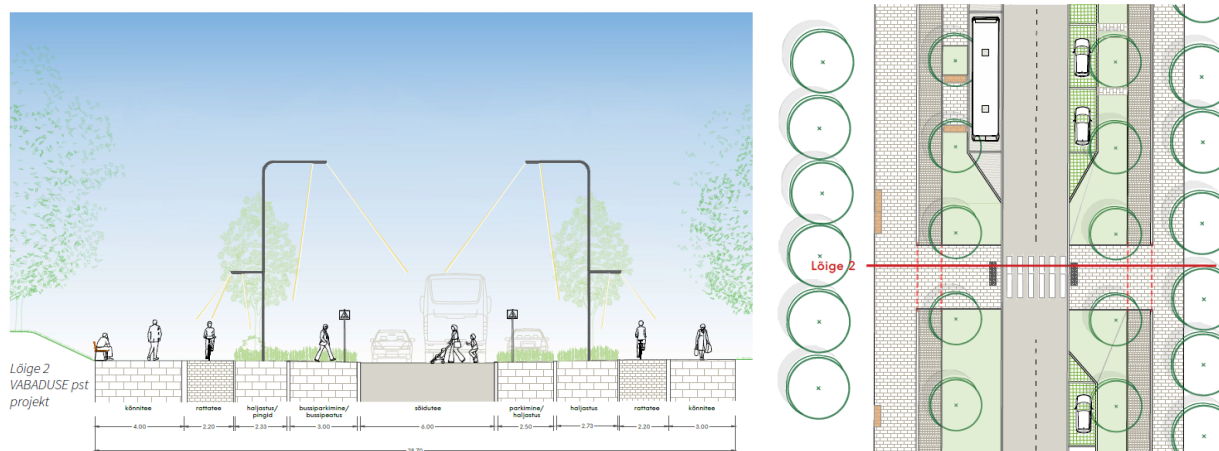


Illustration: Redesign example for Vabaduse boulevard. The street width is 29 meters; today it is entirely covered with asphalt. The proposition divides the space between different modes of transportation, organises parking and street greenery.

See the guidelines document in the Appendices of the Tartu Integrated Action Plan.