

WALKABILITY CONCEPT

Batumi (Old Town)

Final Report

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Batumi (Old Town)

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Promenade at the Black Sea

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INTRODUCTION

Introduction

The Old Town of Batumi is located in the heart of the city right next to the harbour and Black Sea. Derived from different plans/concepts and studies, Batumi City Hall decided with the support of Mobility4Cities (GIZ) to develop a walkability concept for the most historical part of the city. GIZ commissioned Buro Happold (international consultant) and Smart Transportation Solutions (STS) (national partner) to develop the concept. This includes:

- research on walkability
- assessment of current situation
- development of the concept
- workshops
- implementation and communication strategy

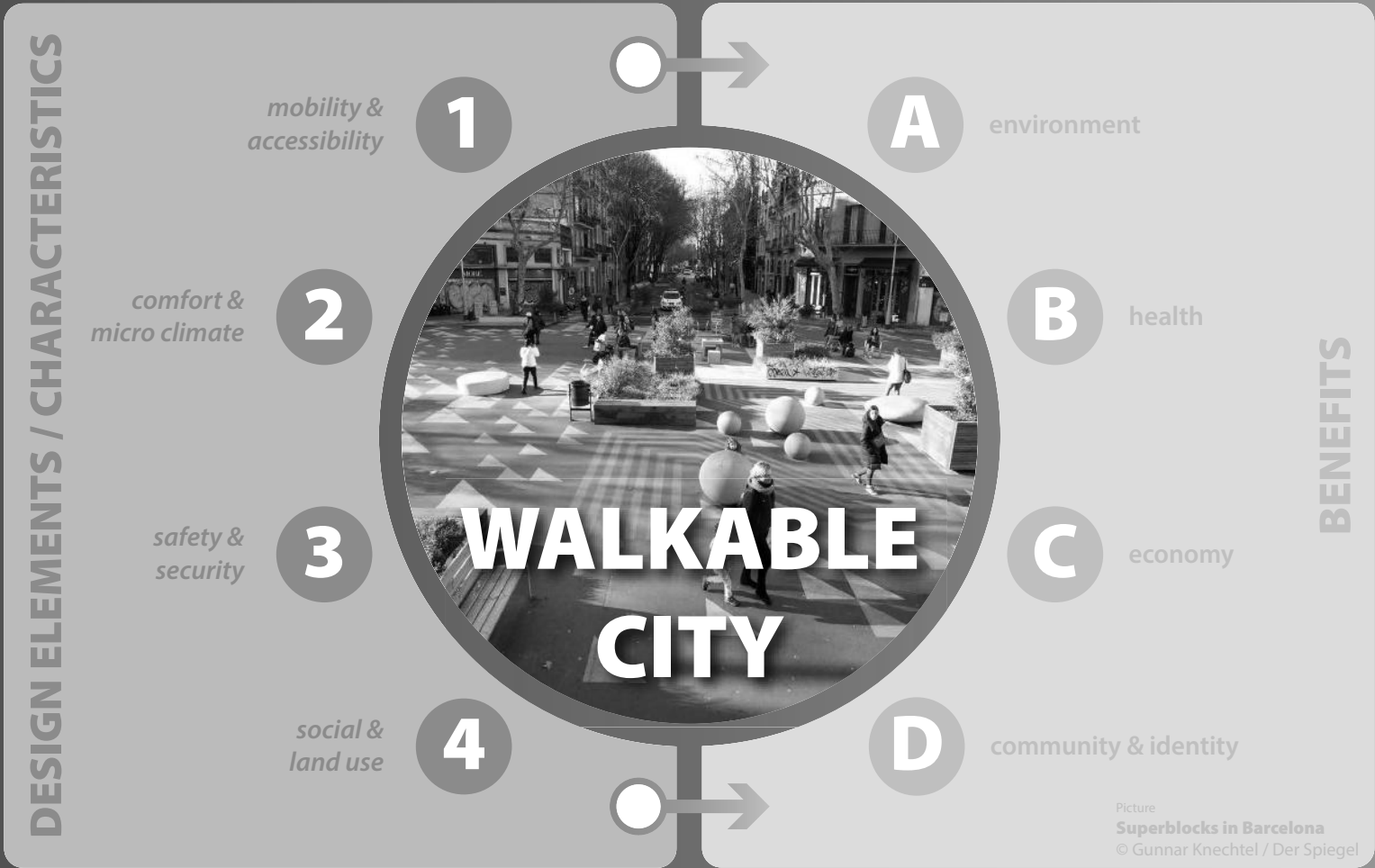
This report presents the final outcomes of the project and describes the final concept. It founds upon a comprehensive analysis which was summarized in a separate analysis report. This builds the basis for the present report.

The analysis report includes a definition of “walkability”. It highlights the importance of walkable designed cities. There is a presentation of the benefits of walkability for the society in the analysis report. Also, the report comprehensively describes the current situation and conditions. Therefore, mobility parameters, climate conditions and stakeholders were analysed. A major part of the analysis is

covering the assessment of the current situation of walkability in the Old Town of Batumi.

Based on these results, the present report starts with a description of different design elements and characteristics. And it refers to the benefits that can be gained from a walkable design of the public space.





The walkability of an area is characterized by different elements. They can be grouped as shown in the image to the left. Not all elements presented on the following pages are needed and/or applicable with every area. Also, not all elements will have the same power of impact. In addition to mobility related aspects there are also elements that are more related to the use of the surrounding spaces. The comfort of the people in the area is mostly connected to the mobility issues since it's about walking.

The benefits that can be gained by a well done walkable area are diverse. This can reach from positive environmental impacts (e.g. reduced air pollution) to economical prosperity (e.g. increase in plot values). One big benefit here is the health of the people using the area. This is a directly connected goal of the development of a better walkability.

The success of a walkability concept in the end is directly connected to the wise combination of the different elements. This highly depends on the local conditions the area is currently facing but also will be facing in the future. An integrated approach that takes into account all different demands is the key to success.

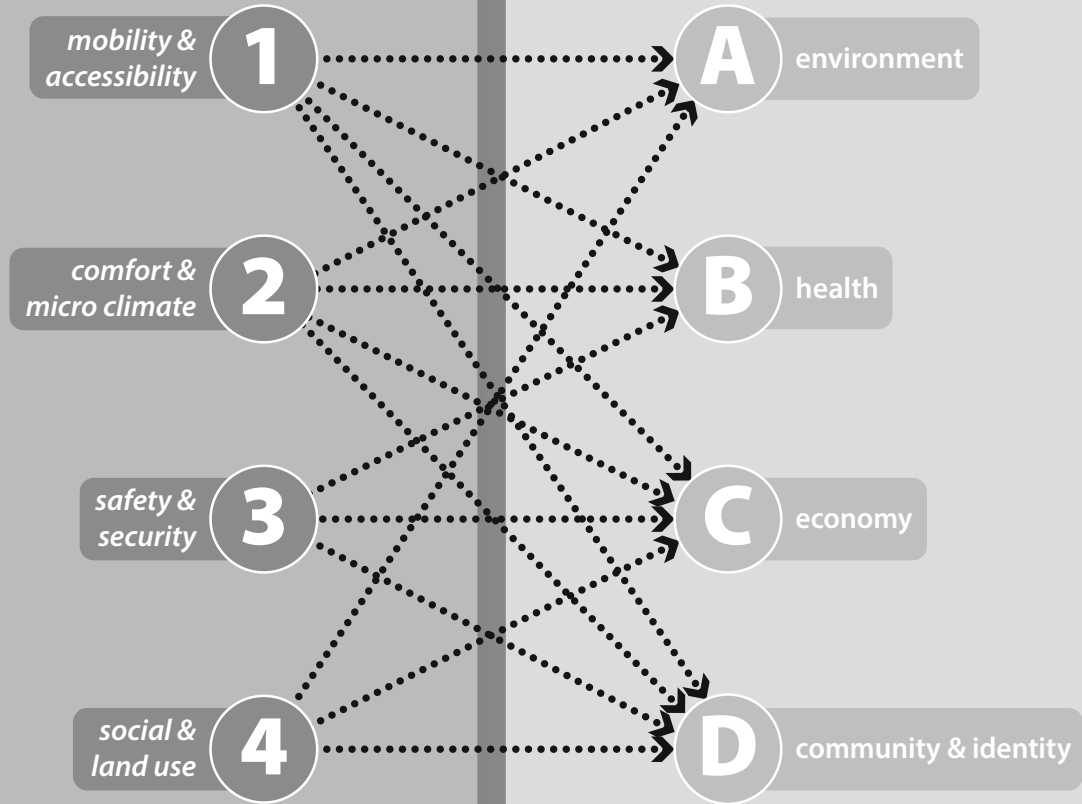
Introduction

The different elements influence the categories of benefits to an individual extend. Not all design elements will have an impact on every category of benefits. The “safety & security” elements will not have a significant impact on the “identity” of an area. Here especially the “social & land use” elements will show an influence.

At the same time the different categories of design elements are linked with each other. Some are more, others are less. For example, the “mobility & accessibility” category is strongly connected to the “social & land use” category. Eventually, a good design with regards to walkability needs to take all the different elements of design in to account to the same extend.

Not all elements presented on the next pages will make sense or are required in all cases. So, the local framing conditions are important. They strongly determine the final design solution. In the end, the inclusion of all relevant stakeholder is crucial for the success of a walkability concept. The local people know the area best and can give beneficial input to the concept.

DESIGN ELEMENTS / CHARACTERISTICS



BENEFITS

ASSESSMENT OF CURRENT SITUATION

Assessment of current situation

Before developing the walkability concept, an assessment of the current situation was carried out. The purpose of this assessment was to analyse the given conditions and identify the demand for improvement.

Based on scientific research¹, an existing methodology was selected by the project team. It measures the walkability using different quantitative and qualitative indicators. The process differentiates between sidewalk segments and entire corridors. For both, an individual score was calculated. Due to some local unique conditions, the methodology had to be adapted.

For the assessment of the current walkability in Batumi, the project area (Old Town of Batumi) was extended in western direction to Melekeshvili Street. This extension came from an initial agreement to include a wider area into the assessment. This allows in particular to get a clearer image regarding certain corridors - in this case in west-east orientation. The assessment bases on a broad range of indicators. This applies to both - segments as well as the corridors.

The analysis report describes the different factors as well as the weighting factors for the segments. The same applies to the presentation of the results of the assessment. This chapter summarizes the

outcome of the assessment. For further and more detailed insights please take a look into the analysis report.

The results of the assessment show relatively good results for certain factors of the segments. This applies in particular to the continuity. There are only few segments that show challenges. The physical conditions and width of the sidewalks show a similar image. The worst results were calculated for shading. The majority of the street segments are in poor condition regarding the provision of trees for shading. This will play an important role in particular in summer time and means a challenge. Taking into consideration global warming lets temperature level rise continuously, the importance of shading will play a more and more important role when it comes to walkability. The average score per street shows significant differences between the individual roads in the extended study area.

Looking at the corridor rating, the results show that topics like seating, shelters, and ramps. Only the crossability of the roadways (in particular at junctions) was assessed with a positive result. This comes from the provision of a large number of zebra crossings. Their individual perceptibility provides potential for optimization in a number of cases.

The next page gives a brief overview of the results for the Old Town of Batumi. Detailed results can be found in the analysis report.

AVERAGE SCORING & WEIGHTING



¹ **Shaaban K:** Assessing sidewalk and corridor walkability in developing countries, Department of Civil Engineering/Qatar Transportation and Trac Safety Center, Qatar University, 2019

Assessment of current situation

The assessment of the current situation in the Old Town of Batumi shows that there are parts/sections with really good conditions. At the same time, in other parts the current conditions have large potential for improvement.

The diagram to the right shows the best rated street as well as the one with the worst results. As one can see, both are located right next to each other. This shows a strong inconsistency within the Old Town of Batumi.

In total, the walkability assessment analysed 30 streets. This refers to the extended study area. Within that area, more than 350 segments of roads were analysed and assessed. For detailed info regarding the results of the walkability assessment please view the analysis report.

The different assessment elements build the foundation for the design elements that can improve the walkability of the Old Town of Batumi. They derive from the assessment and the individual criteria. The next chapter will describe the different elements.

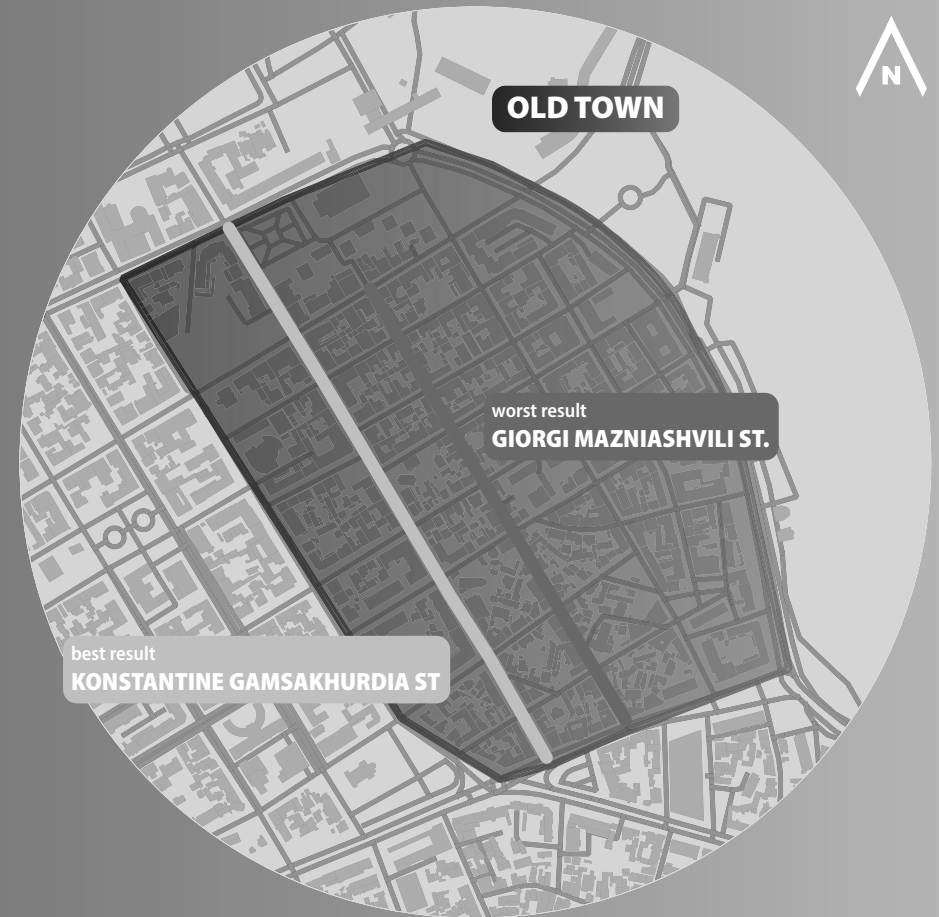
WALKABILITY ASSESSMENT

30 streets
that were
assessed (ext. area)

354 segments
for detailed
analysis

2 assessments
(individual segment +
corridors)

6 criteria
for segment
analysis



DESIGN ELEMENTS / CHARACTERISTICS

Design Elements / Characteristics

On the following pages there will be a description of the different design elements. Each can influence the benefits gained by the (re)design to an individual extend. The success is influenced at the same time by the local conditions. This concerns the weather as well as the availability of spaces, for example.

The improvement of the walkability of an area should be done together with the local society and other relevant stakeholders. They can contribute beneficial input.

A big success factor is the characteristic of the car traffic and the need to integrate it in the concept/area. For example designing a pedestrian zone automatically eases the process since it gives more flexibility and eliminates certain limiting factors. In general, it's not recommended to develop a shared space area for example if there is a high demand for though traffic that can not be diverted. This will cause issues and tensions with other potential users. Through traffic requires higher speeds. In addition, it increases the barrier effect. This contradicts the demands of pedestrians and the needs of local businesses and common spaces.

The possibilities to design a walkable area are manifold. Already small changes can have a large impact. To improve the situation it is not necessarily needed to properly redesign the area. Also temporary measures can be taken into consideration. This can be a good solution to do a first test.

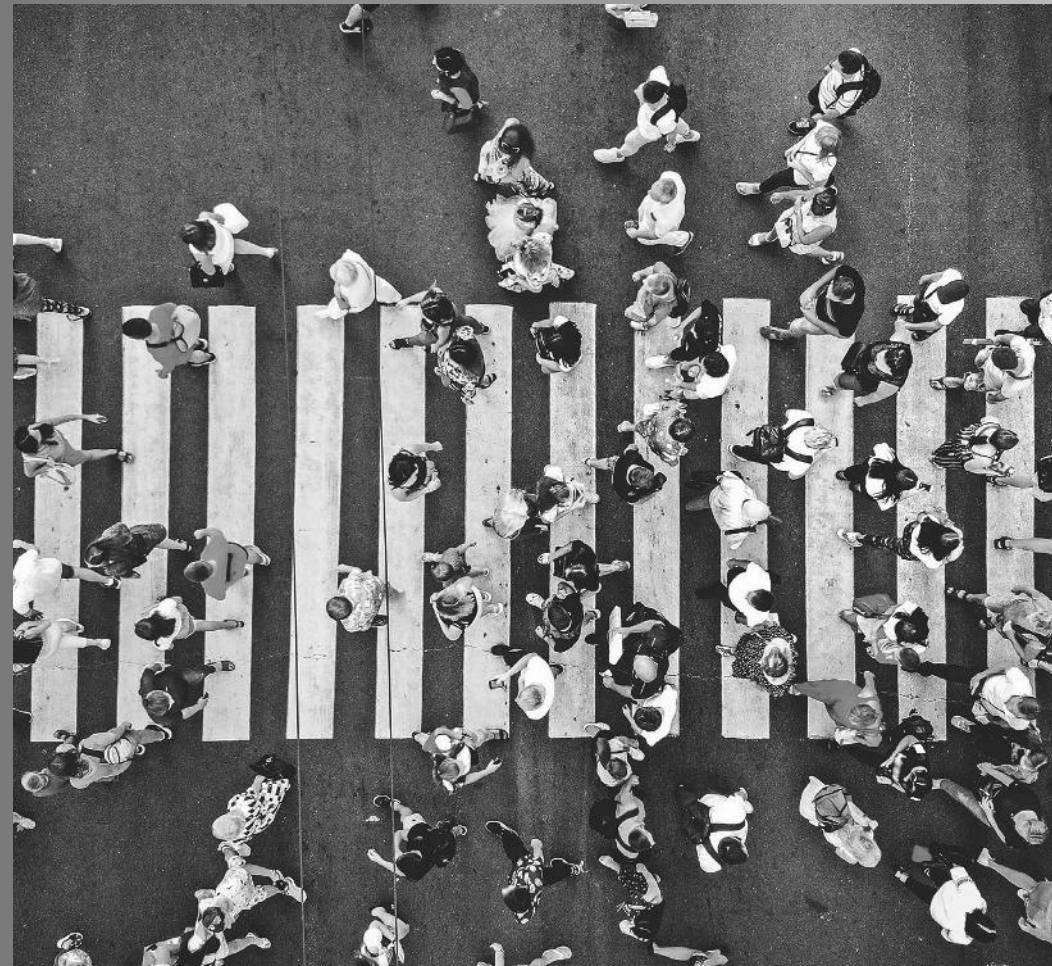
Instead of investing a lot of money and time into properly changing the design of a space, it can be a good approach to first try out temporary measures. If they show the desired results the permanent redesign can be implemented. If not, adjustments can easily be integrated in the temporary redesign. If this helps the proper redesign can be done on that basis.

A good approach in this regards seems to be the shared space concept / encounter zones (German: "Begegnungszone") or pedestrian zones. All of them give the active mobility and common spaces a higher priority. This helps to develop solutions that promote walking.

To develop a public space that promotes walking is in line with the general approach and goal to change the mobility behaviour and shift the modal split more in the direction of sustainable modes of transport. It helps with reducing the energy consumption.

At the same time it is also clear that car traffic will not be fully substituted by active mobility. There will be a certain need for car traffic also in the future. This needs to be considered, too.

Picture
People on a crosswalk
© Adobe Stock 2022



Design Elements / Characteristics

MOBILITY & ACCESSIBILITY

Design Elements / Characteristics

Mobility & Accessibility

To make the space more attractive and usable for pedestrians (increase walkability), one requirement is to **limit the impact of car traffic** to the needed minimum. This precondition also implies that this concept should only be applied to areas with low or no through traffic.

The implementation of different design elements helps to reduce the impact of car traffic. The main idea is to give **more space to active mobility** and reduce the space occupied by private cars. A good accessibility to public transport services is supportive in this regards. It provides an alternative to private cars. The same applies to alternative mobility services (sharing mobility). In summary it's about **shifting the mobility behaviour** from car to sustainable modes.

The idea of shared space is a good example for a development in this direction. Priority is on active mobility. These modes gets promoted throughout the whole design. The main idea behind such concepts like shared space is to include all demands/needs into the design of the space. By **improving the accessibility** (e.g. even surface) it makes the space usable for all people (design for all).

Mobility elements

- infrastructure for active mobility (allocation of spaces)
- bike parking facilities
- access control for (private) car traffic (limitation)
- speed reduction for car traffic
- manage parking in the area (limitation/relocation)
- access to public transport services
- alternative (micro) mobility services (sharing)
- soft separation between modes (if needed)

Accessibility elements

- even surfaces / ramps
- guidance elements
- way-finding / signs
- elimination of obstacles

Design Elements / Characteristics

Mobility & Accessibility

Infrastructure for active mobility

To promote active mobility the relevant infrastructures (sidewalks and cycle paths) are necessary preconditions. They should provide a sufficient width. The surface should be adequate for walking and cycling (non-slip). Also, the infrastructure should be continuously without any interruptions. The best solution here are pedestrian zones or areas without any car traffic. This limits the potential for accidents and injuries.



Pedestrian zone in Alicante (ESP)
© Adobe Stock 2022

Bike parking facilities

To promote cycling, not only the cycle paths are an important element. The parking infrastructure for the bikes plays an important role as well. There are different types of parking facilities in this regards. The easiest solution are standard bike racks. Ideally, the parking infrastructure also provides shelter from rain and protection against theft. For e-mobility there are charging points for the batteries of e-bikes adjacent to the parking spaces.



Simple but effective and safe bike racks
© Adobe Stock 2022

Access control for private cars

To limit the access of private cars there are different options available. The most simple way is to install signs. But that's not a very effective method. The opposite is to install hard barriers like bollards that only allow cars to enter with permit. The most elegant way here is to design the road (network) in a way that cars will only enter the area in urgent cases (e.g. delivery of heavy stuff). Limiting direct connections for cars are a good way to achieve this.



Retractable bollards at Laganside Courts, Belfast
© Adobe Stock 2022

Speed reduction for car traffic

For the remaining car traffic the speed should be limited to max. 30km/h - ideally even lower. This reduces the potential for accidents. This allows to have mixed used spaces where all users share the available space. The speed limitation can be achieved by signs. Also here, the best solution is to have a design of the roadway that autocratically limits the speed - e.g. by narrowing the width, lane changes, speed bumps.



Speed limit sign/markings on the road
© Adobe Stock 2022

Design Elements / Characteristics

Parking management

To limit the amount of cars in an area, an effective way is to reduce or even restrict parking. This should be combined with parking management measures. This means to control and enforce the restrictions. To provide substitutions for the reduced parking spaces in the area an effective way is to install district parking facilities or use existing infrastructures. They provide the surrounding uses with parking capacities within walking distance.



Museum Garden district parking in Miami (USA)
© Dezeen 2018

Access to public transport

Having the possibility to get access to public transport within a reasonable walking distance is one key element to shift the mobility behaviour from car traffic to more sustainable modes. The stops should provide enough space for waiting people and circulation of pedestrians/cyclists. Ideally, the stops are equipped with seating and provide shelter from rain. Depending on the size of the stop a certain amount of bike parking facilities can be helpful as well.



Bee-friendly bus stop in Utrecht (NL)
© Barbra Verbij / Clear Channel 2019

Alternative mobility services

In addition to public transport access the provision of micro mobility services in the area can also help to shift the mobility behaviour and reduce car traffic. E-scooter and e-bikes will reduce travel times for pedestrians. Ideally these services will be located in geofenced parking areas. This prevents from having messed parking situations where the parked vehicles act as obstacles to others. To locate these services, existing parking spaces can be used.



Jelbi Station Friedrichstraße in Berlin (GER)
© Tobias Lotz 2022

Soft separation

The more car traffic remains in the area the more important it is to separate the different modes. Besides high-curbs and walls there are also softer ways of separating car traffic and active mobility. Best solutions fulfil multiple purposes - e.g. bike parking facilities, benches, planter, green areas. A more and more popular solution are so called "parklets". They can serve different purposes and be installed easily (also as temporary test environment).



Parklet in Philadelphia (USA)
© Gannett 2022

Design Elements / Characteristics

Even surfaces / ramps

To ease access to the area also for disabled people and those with strollers it is essential to have a flat and even surface with only low inclination. Therefore, high-curbs and stairs should be avoided / removed where ever possible. A good approach is to elevate the roadway to the sidewalk level. This can be done throughout the entire area or at least at those parts where people are crossing the roadway (e.g. junctions).



Tübinger Straße in Stuttgart (GER)
© Mussklprozz / Wikipedia 2013

Guiding elements

People with visual limitations / disabilities depend on guiding elements so they can orientate in the area. This can be achieved by tactile tiles or stones. Also natural guidance can support here. It can be done by placing objects (benches, green areas etc.) in a way that they give guidance by their arrangement. The use of materials with strong contrast in colours can support here, too. The guiding should lead towards the different destinations in the area.



Tactile paving with high contrast
© Adobe Stock 2022

Wayfinding / signs

Wayfinding helps all people in the area to navigate. This applies especially to visitors/tourists. By giving the people advice on the closest connections to their destination this supports the attractiveness of walking. A wayfinding system can also highlight iconic or important locations in the area. This can also support in other regards. The wayfinding can be done by analog signs. An alternative is to install digital information systems who are more flexible.



Digital Touristical Information System Berlin (GER)
© Grün Berlin 2022

Elimination of obstacles

There might be design-driven obstacles like stairs, walls, high inclinations, and guardrails. But also damaged surfaces and waste or other things/objects act as obstacles. Also, a highly occupied roadway and rain water act as obstacles. They all limit the movability of pedestrians and by that reduce the willingness to move by foot. The higher goal should be to have direct and close connections. Everything that limits that should be removed as far as possible.



Damaged bollard
© Adobe Stock 2022

Design Elements / Characteristics

COMFORT & MICROCLIMATE

An aerial photograph of a modern urban walkway. The walkway features a wide, paved path with a green roof section in the center, where various plants and trees are growing. People are seen walking along the path, and a modern building is visible in the background. The overall scene is a blend of nature and urban architecture.

Design Elements / Characteristics

Comfort & Microclimate

Active mobility and walking in particular require **physical energy** from the people to move. With an increasing distance the people will get exhausted. Depending on the individual **physical conditions**, people are able to walk **different distances**. To extend this to the maximum, there is a need for a certain **amount of comfort**. Offering seating can help here. This applies especially to mobility impaired and elderly people. It offers areas to rest. The surface should have ideally no or at least a low inclination. This keeps the energy consumption on a low level. But also providing shelters from rain and sun protection are helpful in this regards. This can have a direct link to the **microclimate**. Trees for example can offer the shade to protect from sun. They also support with cleaning the air and providing oxygen. In general, greening can make the travel more comfortable. It reduces the amount of sealed area. This helps to cool down in hot summer times. That can also be supported by natural or artificial water areas. They deliver humidity and support with cooling down, too. Having permeable or absorbing materials for the surfaces reduces the heating also. It allows rain to seep away in the ground and helps with water management.

BURO HAPPOLD

STS SMART TRANSPORTATION SOLUTIONS

Comfort elements

- seating
- no/less inclination
- shelter from rain
- protection from sun

Microclimate elements

- greening
- trees
- water
- permeable / absorbing surfaces

Design Elements / Characteristics

Seating

Providing seating is one of the key elements for good walkability - especially if it's about longer walking distances. It allows to take a rest and serves also other purposes - like communication. The seating should be protected from sun, too. Otherwise the people will sit in an hot environment. In those areas where the demand tends to be higher the density of seating should be increased so that enough capacity is available for all.



Wooden bench in a public park
© Adobe Stock 2022

No/less inclination

Ideally, the whole walking area is flat and even. This reduces the required energy to the minimum. If there are significant height differences to be overcome the inclination should be at max. 5% for short distances. Over longer distances the inclination should not exceed 3%. The challenge that comes with this is rain water. It requires a powerful drainage to prevent the flat surfaces to be flooded with water.



Park in Bucha (UA) with an even and flat walkway
© Adobe Stock 2022

Shelter from rain

Rain is one of the pain points when talking about active mobility. This can ruin the whole attractiveness of an area for pedestrians if there are no possibilities for shelter. To provide specific infrastructure the build environment can support - e.g. balconies, roofs. But also additional facilities can act as places to find shelter from bad weather conditions. PT stops can be a help, too. Other than that, to a certain extend also trees can provide some shelter.



Buildings with balconies in New Orleans (USA)
© Adobe Stock 2022

Protection from sun

In summer times there is another climate impact that can decrease the attractiveness for people to walk. Hot temperatures can also limit the willingness to move by foot. To increase the comfort, shaded areas are helpful. This can be achieved by build structures (canopies and roofs). But also trees can provide shadow. So they can support in multiple regards.



Shaded sidewalk in Malaga (ESP)
© Adobe Stock 2022

Design Elements / Characteristics

Greening (grass & bushes)

To provide greening serves diverse purposes. It has an positive impact on the climate. The more green areas the less sealing and reflecting surfaces. The positive effect for the well being of the people is proven through multiple studies. It also supports to provide better air quality by filtering pollutants. Even more importantly they provide the habitat for insects and animals, for example.



Greening of the High Line in New York (USA)
© Friends of the High Line 2022

Trees

Trees are part of the greening. They are highlighted to show their highly positive impacts. To plant trees, it does not require a lot of space. Trees also provide shading and to a certain extent shelter from rain. Their leaves produce the oxygen we need for living. Trees also provide habitat for different animals. In situations with higher wind speed, trees can act as wind protection.



Trees at Sydney Olympic Park railway st. (AUS)
© Adobe Stock 2022

Water

Water has not only a negative impact in regards to walkability. In context of microclimate it helps to cool down hot environments. It also contributes to humidity in the adjacent surrounding area. The thermal conditions will also be influenced by the existence of water, too. It can increase the transport speed of air masses by accelerating the air speed. This depends on local conditions.



Fountain and basin at Espace public in Lisboa (P)
© Adobe Stock 2022

Permeable/absorbing surfaces

Sealing the surface by for example tarmac will have negative impacts to the climate in the area. It's not only related to water management. Also the temperature will be impacted by reflection and heating up. There are different materials that provide a pavement that is permeable for water and air. This allows water to seep into the ground. It also helps with reducing the heating of the surfaces.



Water and air permeable pavement LUWADUR
© LUWADUR 2022

Design Elements / Characteristics

SAFETY & SECURITY

Design Elements / Characteristics

Safety & Security

A critical component of walkability is safety and security. If the people do not **feel safe** in an environment they will not use it. This refers to more than just traffic. It is also connected to the issue of crime. From the perspective of transport, the most effective way of reaching a high level of safety is to **design** the space in a **self explaining** way. The shared space concept goes in this direction. Using different materials will explain the different functions of the space. The absence of sign and rules emphasizes the mutual consideration of all people. Lighting at night and in dark areas contributes to a subjective feeling of safety. Where a relatively high amount of car traffic is not avoidable, **protected crossings** for pedestrians are important. In general the **visibility** between all people in the public space is crucial. Supporting this, there should be traffic calming measures be imposed. To provide prevention from any kind of criminal activities it's important to have **surveillance** being carried out. This can be supported by **vibrant public spaces**.

The individual perception of safety & security can differ strongly. It depends on the experiences of the people.

Safety & Security elements

- self explaining design
- lighting
- crossings/crosswalks
- visibility
- traffic calming
- surveillance
- vibrant spaces

Design Elements / Characteristics

Self explaining design

To have a public space where the use of the area is self explained by the design can help a lot. There is no need for a lot of signs to organize the traffic. By using different materials/colours for the surface, it can be indicated for example where cars are allowed and which areas are reserved for pedestrians etc. Narrowing the width and swivel of the roadway will help to reduce the speed level of the cars. The use of traffic lights should be avoided.



Meeting zone Lange Gasse in Vienna (AUT)
© Philipp Böhme 2018

Lighting

In dark environments and at night in particular, it's important to have good lighting. This helps people to see each other and obstacles in the public space which will support preventing accidents. It also supports on preventing criminal activities. But it should also be taken into consideration the light sensitivity of the wild life at night. There should not be any kind of light pollution. Here indirect lighting can contribute and develop a warm atmosphere.



Piotrkowska street at night in Lodz (PL)
© Adobe Stock 2022

Crossings/crosswalks

In areas where the car traffic is still at a significant level (and has to travel with higher speed), it is crucial to have safe possibilities for pedestrians to cross. This can be done by crosswalks or with the help of signalized crossings. Also center islands can support in this regards to make the crossing safe for non motorized traffic. In these areas lighting and visibility in general is very important. Safe crossings might be important especially at the edges of the area.



Family using crasswalk
© Adobe Stock 2022

Visibility

To have interaction between the road users, there is the need for a high level of visibility. This applies in particular to non motorized people. A good visibility can be achieved by prohibiting parking in the area of junctions and at crossings or areas where kids are playing. Also keeping the area free of any other optical obstacle is crucial to limit the potential for accidents. This implies for some areas that they should also be free of trees, for example.



Marketplace in Schönebeck (GER)
© Philipp Böhme 2016

Design Elements / Characteristics

Surveillance

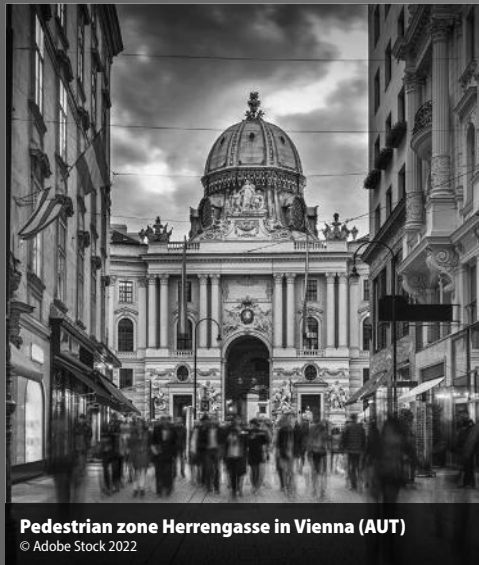
In addition to accidents criminal activities are also a risk to ruin the attractiveness of an area for walkability. In addition to lighting surveillance will be a help. This can be done by personnel or technical equipment like cameras. The downside of the use of cameras is that people might fear of the collected data being missuses. Possibilities for emergency calls might be helpful - also for medical emergencies.



Surveillance cameras
© Adobe Stock 2022

Vibrant spaces

A vibrant space also supports to prevent illegal actions. So this also contributes to provide a feeling of safety and increasing the attractiveness of public spaces. Since the vibrancy in most cases is a desired consequence of concepts like walkability it should be taken into consideration that this will develop over time. It should not be assumed that a vibrant space will be present from the beginning. So further measures are recommended.



Pedestrian zone Herrengasse in Vienna (AUT)
© Adobe Stock 2022

Design Elements / Characteristics

SOCIAL & LAND USE

Design Elements / Characteristics

Social & Land use

The **activities in the area** adjacent to the street/public space or on them will influence the attractiveness for walkability, too. So, providing space for different activities will show positive effects. The availability of spaces for **meeting** with other people and interact with them attracts people from the neighbourhood and tourists/visitors at the same time. Reducing the impact of car traffic gives the opportunity to provide more **public space to local business**. Both vitalize the public space with pedestrians. This then has a positive impact on the business activities in the neighbourhood. Diverse studies and tests have already shown these positive effects/correlations. Especially in areas with limited possibilities of **outdoor movement** on the own plot, its essential to provide appropriate areas in the public space.

Social & land use elements

- cultural events/meeting areas
- entertainment facilities
- sports or activities facilities
- mixed land use

Design Elements / Characteristics

Cultural events & meeting areas

The public space should not only serve transport purposes. Also cultural activities and meeting with other people are functions that should be supported by the design of the space. Bars and restaurants for example act as magnets for people from the neighbourhood as well as visitors. businesses will profit from provision of a certain amount of the public space. This then has positive impacts on the public space again, as studies have shown.



Restaurants and bars in Piestany (SVK)
© Philipp Böhme 2018

Entertainment facilities

To animate people to walk by food through an area and rest in it, it is helpful to provide entertaining elements. This can be monuments/statues for example. Outdoor exhibitions can also act as such entertaining magnets. All of them will attract people that will vitalize the area. This then strengthens the position of pedestrians in the public space. If there are multiple of these locations available in the area it can animate to circulate between them.



George Washington monument in Boston (USA)
© Adobe Stock 2022

Sports & activities facilities

In dense areas the possibilities for movement on the own plot are limited in many cases. The availability of areas with appropriate facilities like sports equipment will be a big support. Playgrounds for children are also very important in this regards. If the space allows for larger sports facilities like a basketball playground for example even better. Since those have a relative large footprint the possibilities for realizing them are limited.



Public children playground
© Adobe Stock 2022

Mixed land use

Having a mixed land use in the surrounding area helps to keep the distances between origin and destination short. This then allows to move most distances by foot and bike and increases the share of active mobility. At the same time the need for car infrastructure will be reduced. Also, a diverse structure of the use of the surrounding buildings increases the bandwidth of offers. This results in an increased amount of pedestrians.



Mixed used buildings in Pforzheim (GER)
© Philipp Böhme 2016

BENEFITS

Benefits

Implementing some or even all of the diverse elements for improving the walkability of an area will impact the local situation in a positive way in different manners. Some elements have multiple positive effects. Others only impact in a single direction. There are 5 dimensions or categories of benefits resulting from a walkable design of the public space.

One of the most obvious is the **environment**. Reducing the need for car traffic can change the environmental pollutions on a local level significantly. This will result in a reduced level of noise and air pollution. The amount of reduction is directly linked to the amount of reduced car traffic. The impact of heavy vehicles is particularly strong. But it's not only the pollution that can be influenced in a positive way. Also the local climate can change significantly. Implementing the right measures, it can have a positive effect on flora as well as on fauna. The more time people spend in the nature supports their well-being in generals and the psychological in particular. This was shown by diverse studies¹. So the impact of more green is not limited to the environment itself. It also directly impacts the **health of the people**.

This leads us to the next pretty obvious positive

¹ **Spiegel:** Waldbaden und Spazierengehen - Ab zwei Stunden pro Woche macht die Natur gesund, sagen Forscher (url: <https://www.spiegel.de/gesundheit/ernaehrung/120-minuten-natur-pro-woche-sind-gesund-a-1272293.html> | last visit: 10/04/22)

impact of promoting walking. If we don't move we will realize a drop in our physical conditions/abilities. This is obvious. Animating the people to move contributes to their fitness. This applies to the physical as well as the mental level. Multiple disease are directly connected with physical activities like walking (or doing sports). That's why it is important for us human beings to actively move. This applies in particular to the younger people.

By protecting the people from experiencing certain diseases the improvement of walkability impacts from the **economical** perspective, too. Less sickness costs less money. This refers to direct costs for medical treatments as well as indirect costs for a loss in productivity due to the shortfall of workforce. But the economical impact reaches even further. By attracting people to walk through a certain area instead of driving with the car, it also strengthens the position of the adjacent businesses. Also, the value of the plots will rise.

But also for the **community and identity** of the area it can be helpful to improve the walkability. If the local society finds places to meet and communicate this strengthens the cohesion. It can contribute to build a strong relationship between the people. They can/will support each other. By giving the area a specific identity, it will also become an attraction for visitors. This will then result again in economical benefits.

To sum it up, the benefits of improved walkability

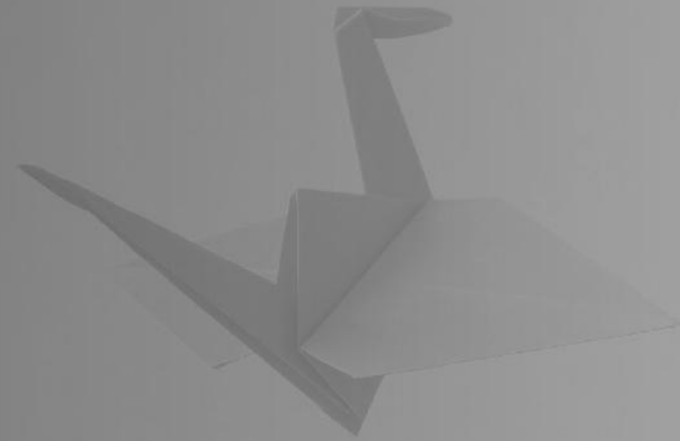
are manifold. An increased amount of people walking will help the area to prosper. This was lately shown for example for the Friedrichstraße in Berlin. Results of a study show that traffic calming has an positive impact. After imposing a ban on car traffic in the core part of the street in the summer of 2020 now first results of an assessment show that the number of visitors rose².

² **Berliner Zeitung:** Überraschende Erkenntnis: Die autofreie Friedrichstraße zieht Besucher an (url: <https://www.berliner-zeitung.de/mensch-metropole/ueberraschende-erkenntnis-die-autofreie-friedrichstrasse-zieht-besucher-an-li.219255?pid=true> | last visit: 10/04/22)



Picture
People taking a drink
© Adobe Stock 2022

FINAL CONCEPT



Final concept

FACTS



total area

43.9 ha



perimeter

2.4 km



accesses/connections

23 roads



car parking

1.3k spaces



The redesign area has a total size of approx. 44 hectares. It is surrounded by a number of main arterial roads. The perimeter has a full length of more than 2 km. There are more than 20 access points to the Old Town spread around the whole boundaries of the area. Currently, there are parking capacities of approx. 1.3k spaces.

As can be seen on the map, the area is densely occupied by built infrastructure. There is only a small share of free space - focused at the northern part.

Inside the Old Town, a dense network of roads makes sure that all plots and buildings are accessible. The largest part of the roads can only be used in one direction. That makes the use of the Old Town for through traffic less attractive. Nevertheless, the parking capacities are currently in use extensively. This limits the usability of public space by other user groups. Also, cars act as obstacles for non-motorized traffic which makes it less attractive for active mobility and other uses.

Final concept

The improvement of the walkability within the Old Town of Batumi aims to make the area more attractive for active mobility. To achieve that the idea is to reduce the (negative) impacts of car traffic.

Since private cars occupy more space than pedestrians and cyclists, a modal shift in the direction of more active mobility will release space. Where currently cars are parked, the area can be used for other purposes.

One of the main ambitions with shifting from individual motorized traffic to active mobility is to support the health and safety of the users of that specific area and its surrounding. But there are also further positive impacts of improving walkability of an area. Studies show that such a development in many cases results in prospering economy. Also, the value of land will be increased.

In the end, this means a win-win situation for all the users of that area. People save money by not using their cars. They spend more time in that area and by doing so often also spend more money in the businesses. Active movements contributes to better physical as well as mental conditions. Less car traffic reduces the well known environmental impacts like noise and air pollution. This contributes to improve the financial value of properties. And finally the available space can be used more efficient.

GOALS



increase
attractiveness
for active mobility



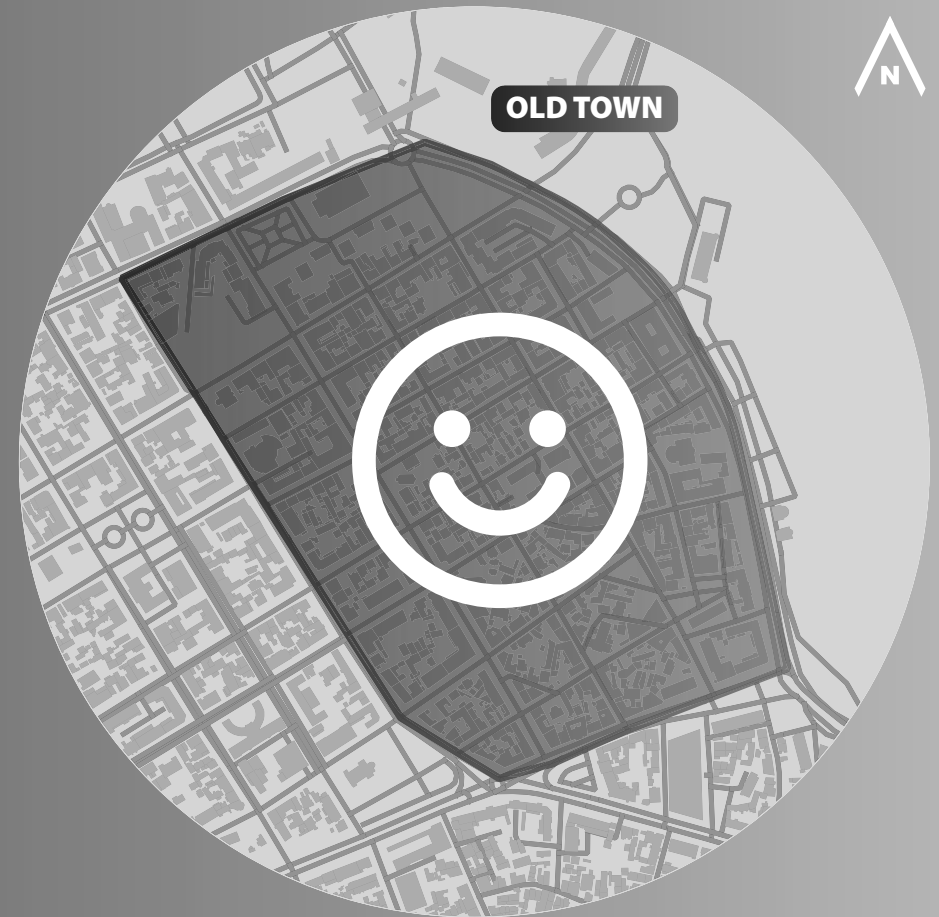
reduce
impact of
car traffic



provide
more space for
other uses



increase
the level of
health & safety



Modes of Transport

The urban public space is used by a diverse set of modes of transport. They all have their individual advantages and disadvantages. Depending on the individual situation and circumstances, people tend to use certain modes more frequently.

For the walkability of the Old Town of Batumi, there are 4 modes of transport that have a certain relevance. Not all of them are represented within the Old Town directly. The public transport only operates at the boundaries of the area. But still it is important for the concept since only active mobility cannot compete with car traffic entirely. The combination of both is a key element to really reduce car traffic.

Logistics should also be considered in the concept. The buildings within an area that was designed to provide a good walkability experience will require certain logistics, too. Lighter and smaller parts of it can be covered by environmental friendly solutions. But there will also be a demand for transportation of heavy and large goods. That needs to be done by logistics vehicles. They will generate conflicts with active mobility. These conflicts need to be analysed, assessed and reduced to the absolute minimum. Otherwise the walkability concept will not unfold it's max. potential.

overview of
MODES OF TRANSPORT



active
mobility



public
transport



private
cars



logistics
waste



Final concept

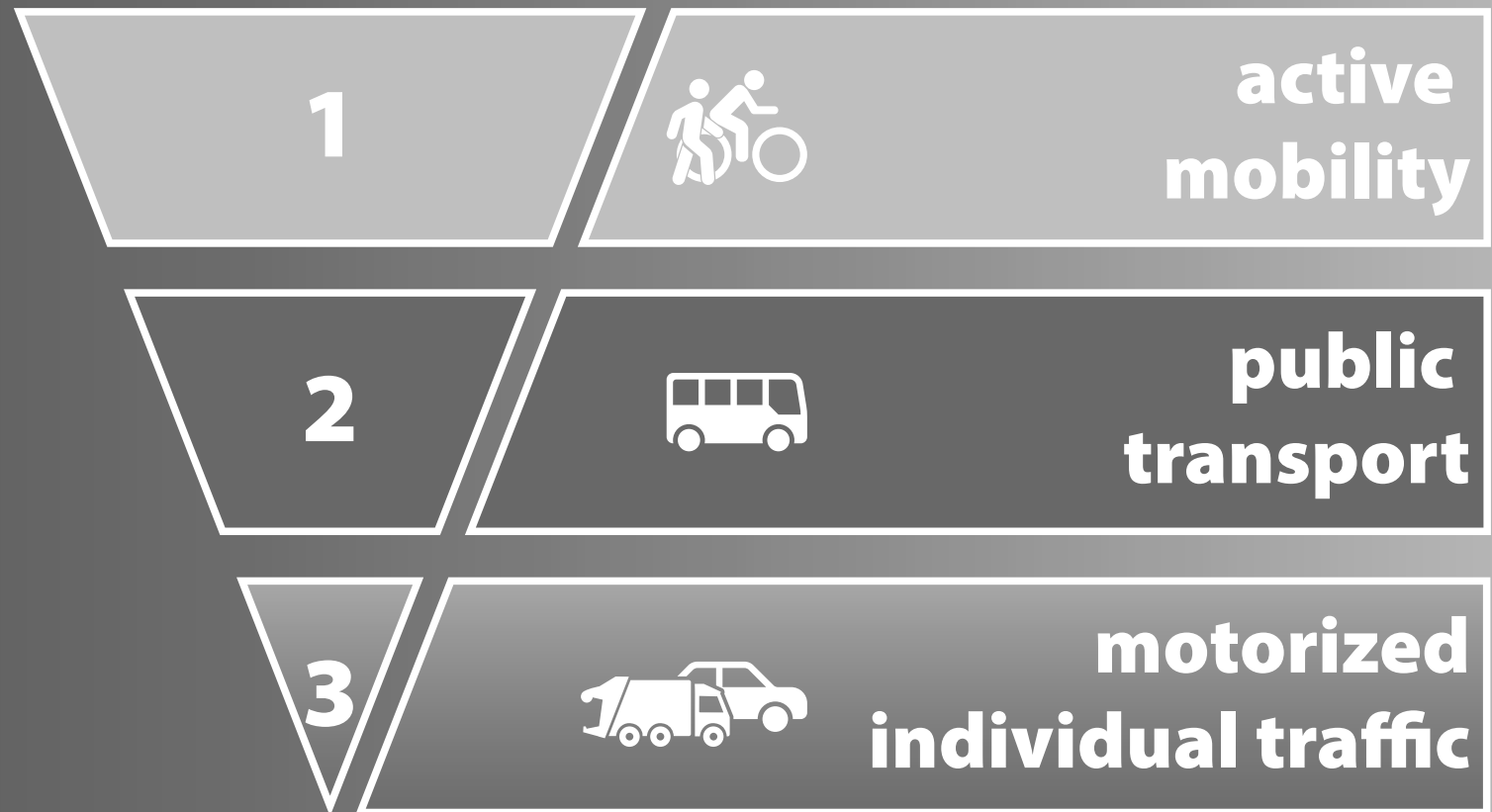
Hierarchies

When improving the walkability of a certain area, it is important to set corresponding priorities to the relevant modes of transport. If the goal have a high share of active mobility than these modes should also be prioritized. This does not only apply to the planning process. Also for the usage of the public space this is very important. The design supports here. But there should also be corresponding framing conditions.

Parts of this is a hierarchy shown in the diagram to the right. First, there should be active mobility. Pedestrians and cyclist should have highest priority. Next, there should be public transport. At the end, there should come motorized individual traffic. Also this rule set of priorities reduces the attractiveness of car traffic and strengthens the environmental friendly modes.

Principle of

HIERARCHIES



Final concept

Overview

To the right, there is an comprehensive overview of the whole walkability concept for the Old Town of Batumi. It contains different measures for all 4 modes of transport mentioned before.

For active mobility, things like safe crossings, bike parking, and sharing services are important factors of success. Stops for public transport will provide the connection to alternatives to car traffic and increase the attractiveness of this mode. District parking facilities for private cars will contribute to bundle the parking demand to certain locations and direct it to locations where it is compatible. These facilities can also act as mobility hubs and bring together all the different mobility services. Located outside of the Old Town of Batumi, this helps to keep cars out of that area. By the use of access management car traffic within the area of the Old Town will be limited to the minimum needed amount. A large share of the distribution of goods can be done by environmental friendly transport systems like cargo bikes. For the remaining logistics vehicles it makes sense to define dedicated routes to bundle this traffic and concentrate those vehicles on compatible roads.

OVERVIEW



active mobility

- △ safe crossings (zebra/traffic lights) (existing)
- ▲ safe crossings (zebra/traffic lights) (additional)
- bike parking (bike racks/double parker)
- ⬡ micro sharing service (bike/scooter sharing)
- routes for cycling + pedestrians
- ... routes for pedestrians

public transport

- bus stop (existing)
- ⬡ autonomous mini bus stop
- routes normal buses
- routes autonomous mini buses



- △ district parking (above ground)
- ▽ district parking (underground)
- routes



Logistics/waste management

- ⬡ micro logistics hub
- routes heavy logistics



Final concept

ACTIVE MOBILITY

Final concept

Active Mobility

Active mobility

The walkability concept envisions a dense network of connections for active mobility throughout the entire area. Since cyclist and pedestrians can also cause challenges and frictions when using the same space/road, it makes sense to concentrate the cycling traffic on certain connections. The proposal in the concept connects the cycle routes inside the Old Town with connections outside of it. This ensures a continuous route for cyclists that want or have to cross the area. At the edges of the Old Town, there will be the need for active mobility to cross main road connections with high volumes of car traffic. A good solution for crossing these roads is essential for the success of the walkability concept. There will not only be active mobility within the Old Town. The concept also needs to consider the connection with the direct neighbourhoods. There are certain crossings already in place. They should at least be checked. If the current solution shows potential for improvement or is even not suitable anymore it should be considered to update/improve them. For cycling, there should be offers for bike parking. The concept includes this at the junctions along the cycling routes. To reduce the need of car traffic it makes sense to provide alternative services to compensate. The concept includes location for micro mobility sharing.

OVERVIEW



active mobility

- ▲ safe crossings (zebra/traffic lights) (existing)
- ▲ safe crossings (zebra/traffic lights) (additional)
- bike parking (bike racks/double parker)
- ⬡ micro sharing service (bike/scooter sharing)
- routes for cycling + pedestrians
- ... routes for pedestrians



Final concept

Active Mobility

Crossings

Regarding the crossings of main roads at the boundaries of the Old Town, there are currently some locations that provide zebra crossings (see left image). But the conditions at the moment make it difficult to easily identify these crossings. This increases the potential for accidents. Ideally, a safe solution can look like the situation in the right image. Zebra crossing is highlighted by high contrast of the marking and pavement below. The raised roadway level supports, too. It supports to decrease the speed of the vehicles and allows the pedestrians to cross on one level (without any obstacles/high differences).

The existing crossings should be analysed and assessed. If they have potential for improvement, they should be upgraded incrementally.

In Rustavelli Avenue, there could be further crossings added. This would improve the connection between the Old Town and the northern neighbourhood.

ACTIVE MOBILITY



existing zebra crossing

Rustavelli Ave / K. Gamsakhurdia St
Batumi



raised zebra crossing

Willoughby Council | Sydney
Australia

Final concept

Active Mobility

Bike parking

There are different options for the provision of bike parking. The most common and simple one is to provide standard bike racks. An example is shown on the left image to the right. This is a relatively cheap and robust solution. If space for parking is not very limited and there is not a huge demand for it this can will be the ideal solution in most cases.

Alternatively double decker parking can also be considered. This has the advantage that it provides high capacities for bike parking with a relatively small footprint. The downside of that concept is the price. Compared to standard bike racks, the double decker solution is more expensive. It makes sense to think about such a solution at locations where a high demand is anticipated. An example could be for example a bigger public transport hub like a central train station or a bigger office building.

Both solutions can be constructed with or without a roof. The roof protects from bad weather conditions like rain and hail. But it also makes the implementation more expensive.

Both solutions can be implemented in a modular way. That means that they can react to the development of demand. The capacity can grow or shrink over the time incrementally.

ACTIVE MOBILITY



standard
bike racks



efficient
double parker
Rotterdam

Final concept

Active Mobility

Micro mobility sharing

Micro mobility sharing offers will help to compensate the use of cars within the Old Town of Batumi. Especially longer distances will be easier to travel by using (e-)bikes or (e-)scooters. For both, bike as well as scooter sharing, there are services available in Batumi already. So, such systems don't need to be introduced entirely new. Moreover, the existing network can be extended and introduced in the Old Town, too.

The walkability concept includes a number of locations. There is the demand further analysis and a proper planning of the micro sharing solution. The final solution can differ from the proposal of the walkability concept. Since the parking of micro mobility systems does not require a lot of space, the implementation of locations for these services is flexible and can easily be adapted. This applies to sizing as well as the location. Even after implementation the service can be adapted to changes in demand quickly. The parking solution for these services usually are very flexible. If one location after implementation shows that the real demand is not as high as forecasted this can easily be relocated to those areas where the demand in reality is higher. That allows also to test such solutions, evaluate the results and adapt if needed.

ACTIVE MOBILITY



existing
bike sharing
beach promenade | Batumi



existing
scooter sharing
beach promenade | Batumi

Final concept

Active Mobility

Design of public space

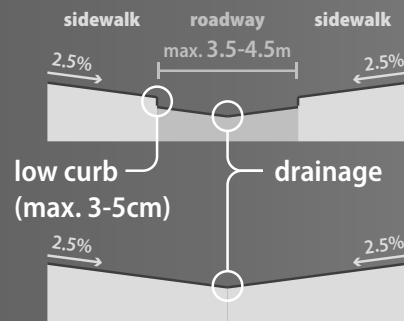
The public space within the Old Town should be designed in a way that it meets the demand of active mobility. This means that obstacles like high curb. Ideally, the entire public space would be designed in a way that there is a flat and even. That would allow pedestrians and cyclists to use the entire space.

to also include a certain guidance/orientation for visually impaired people, in those sections where car traffic will still be allowed, the installation of low curbs should be considered. Khulo street is a good example here.

Since the cross-sections of the roads in the Old Town are not very wide, the drainage system should be positioned in the center of them. This implies a v-shaped profile for the cross-sections.

There is a need to update the existing drainage solution since it is not properly working. This gives a good opportunity to combine both topics and develop a design for the public space that provides sufficient drainage and a surface that meets the requirements of active mobility. To achieve that, the easiest solution is to raise the roadway level to the one of the sidewalks. To start and test this concept, it could be implemented at the junctions first. If this shows the desired effects/results, it can be extended. This requires a proper/detailed planning.

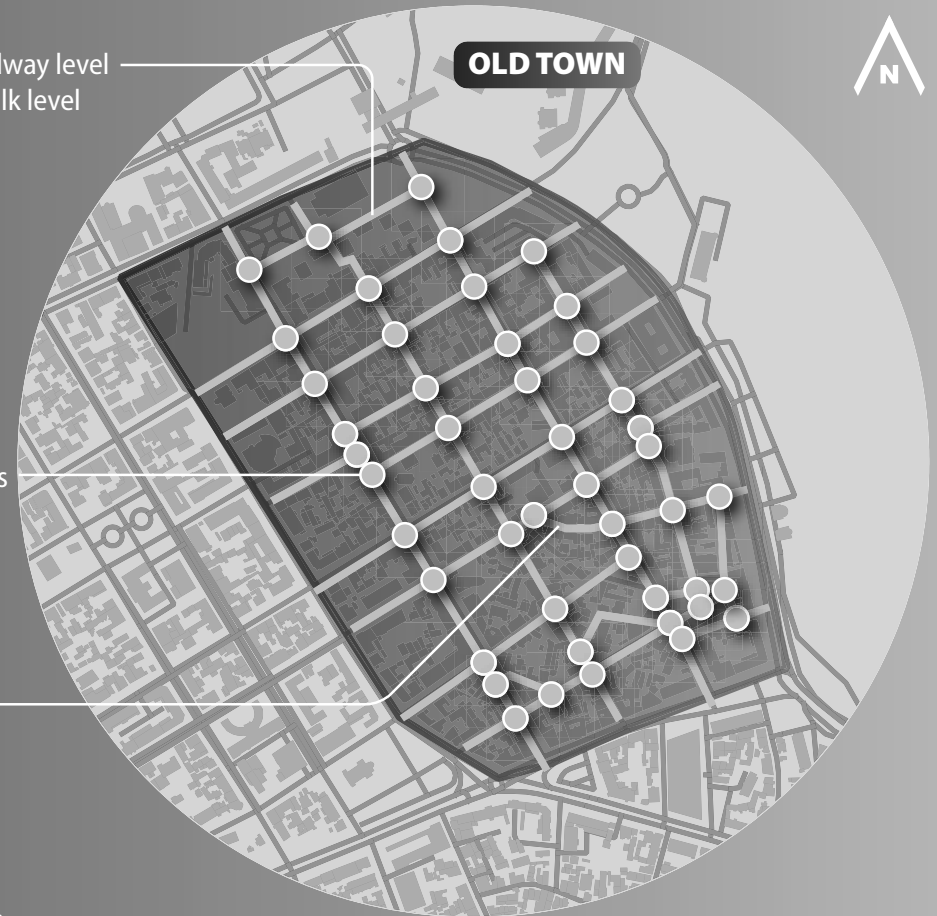
ACTIVE MOBILITY



raise roadway level
to sidewalk level

junctions
as a
starting
point

example
Khulo St.



Final concept

PUBLIC TRANSPORT

Final concept

Public Transport

There are different public transport services available at the moment already. The existing bus lines run around the boundaries of the Old Town. There is a number of bus stops available.

The current services would be sufficient to provide alternatives to the use of cars. Nevertheless, if there is the demand to have additional service within the Old Town, the implementation of a (autonomous) mini-bus service could be a solution. Diverting or routing one of the existing bus lines through one of the streets in the Old Town will be challenging since the available width of the streets is limited. It will only allow mini-buses operating in it.

Considering a mini-bus solution could open the opportunity to think about an autonomous solution. If the Old Town would be (almost) car-free this would allow for using that area as a test field for autonomous vehicles and test them.

OVERVIEW

Public transport

- bus stop (existing)
- ⬡ autonomous mini bus stop
- routes normal buses
- routes autonomous mini buses



Final concept

Public Transport

Catchment of stops

The catchment of the existing bus stops around the Old Town of Batumi can be seen to the right. The diagram shows that the whole area is covered by the currently available stops and their catchment area (radius of 300 m). From that perspective, there is no need for further services inside the Old Town.

The additional internal mini-bus service could make sense to assist elderly people or people in bad physical conditions to move around in the Old Town. The course of it and the stops are defined in a way that they cover almost the entire area (catchment has a radius of 150m). Also, the stops are positioned close to the existing stops of the surrounding bus lines.

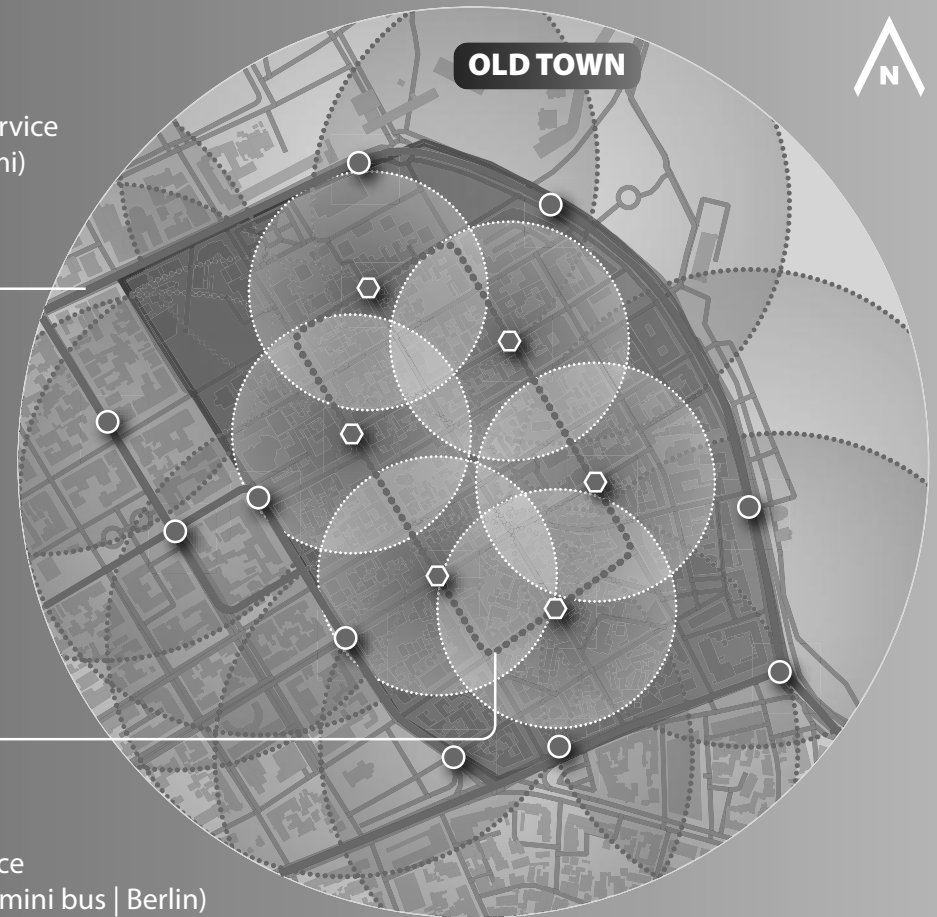
If the mini-bus service will be considered as an autonomous solution the stops can also be flexible so that there will be no fixed position for them. The vehicles will stop then on demand.



normal bus service
(e- bus | Batumi)



mini bus service
(autonomous mini bus | Berlin)



Final concept

Public Transport

Connection between internal and external services

The proposed route of the optional mini-bus service inside the Old Town has a length of approx. 1.4km. For one round-trip it would take the bus approx. 12-15 min. (depending on the waiting time per stop) with an average speed of 10km/h. So, for a frequency of 10 min., this would require 2 buses. If the frequency would be at 20min. it needs only 1 bus.

The distance between a stop of the internal mini-bus and the stops of the external lines will be below 200m. The proposed internal route includes 6 stops. With a catchment area with a radius of 150m approx. 70-80% of the whole Old Town will be covered.

PUBLIC TRANSPORT

length of the route

1.4 km

distance to normal bus service

200 m (max.)

frequency

10/20 min

number of bus stops

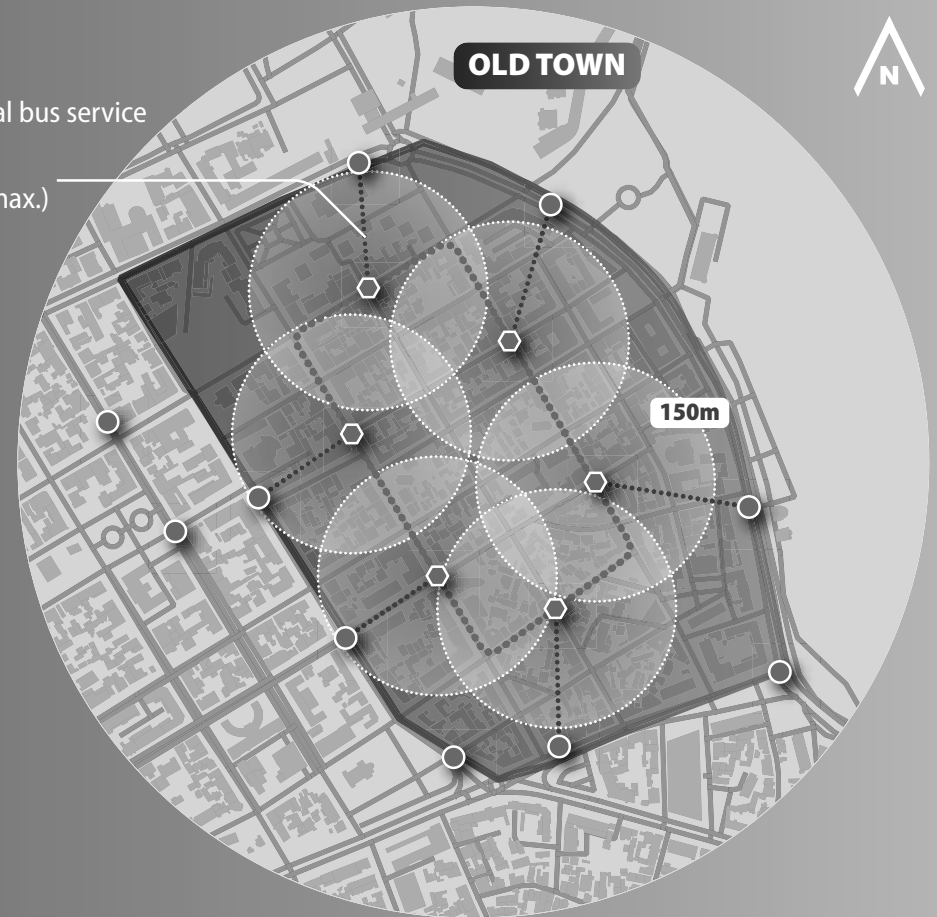
6

Catchment of mini bus stops

150 m

coverage of the Old Town

70-80 %



Final concept

PRIVATE CARS

Final concept

Private Cars

The walkability concept aims to have (almost) no cars in the Old Town of Batumi. This is a precondition for the success of the concept. A lot of car traffic comes with a high number of challenges for other users.

General car traffic will be excluded in the concept area. To make sure that no cars go into the Old Town, an access management will be in place. That allows to have only those cars in the area that are necessarily needed (e.g. heavy logistics and waste management).

To provide alternatives for the car traffic to find parking capacities, there are three proposed locations near the Old Town. These locations should be ideally positioned further away from the users in the concept area than alternative services like public transport or micro mobility sharing. This supports to make the alternative services more attractive than using a car. At the same time, these alternative district parking locations make sure that the cars do not occupy the whole surrounding neighbourhoods. They can even contribute to also improve the situation in the areas around the Old Town. By providing capacities for parking this can also free the public spaces around those district parking facilities. Therefore, a proper detailed planning will be required.

OVERVIEW

-  private cars
-  district parking (above ground)
-  district parking (underground)
-  routes



Final concept

Private Cars

Access management

The management of access for cars to the Old Town of Batumi can be realized by different means. One option can be to install retractable bollards. Another option would be to position boom gates at the entrances of the concept area. Other alternatives like manual parking/access management are not recommended. They require human resources and cannot make sure that the Old Town will really be free of cars.

The access management should include all access points to the Old Town. If parts of it are excluded, this will end up with having the cars back in there. Parts of the existing roads that lead into the Old Town can also be permanently closed for car circulation. As long as the access to all the plots is ensured for rescue vehicles and logistics as well as waste management can be provided.

The dimensions of the Old Town are relatively small. Even the longest distances can be covered by walking.

The narrow cross-sections of most of the streets foster the idea of a car-free Old Town. When parking cars in them and having one additional lane for the circulation of the vehicles, this allows for almost no other use.

PRIVATE CARS

max. walking distance

400_m
to get in/out

narrow cross sections

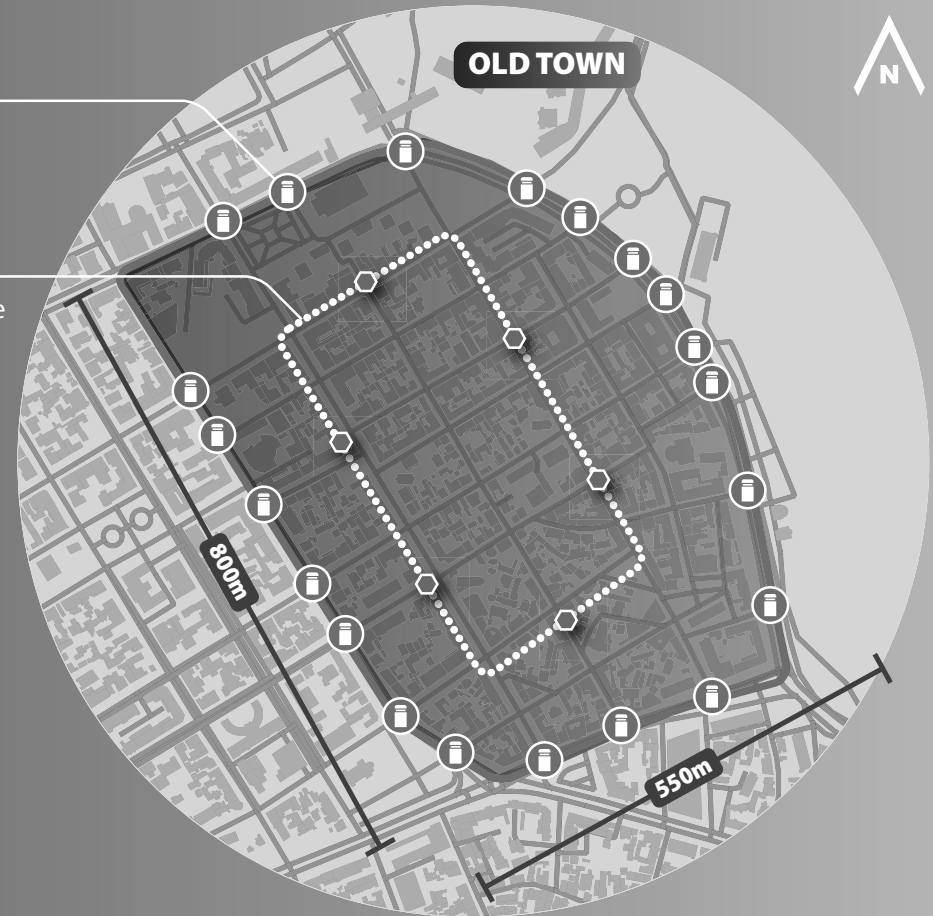
10_{m (max.)}
in many cases

improvement of

traffic flow
on surrounding main roads

gates/bollards
to control access

supported by
inner mini bus route



Final concept

Private Cars

Access control

To provide an efficient access management, an automated access control system is a good solution. It reduces the demand for human resources and can operate 27/4.

There are different systems available. A high degree of flexibility is allowed by the use of automated number plate recognition (ANPR) with cameras. For such systems, there are for example solutions that work with boom gates or retractable bollards. In both cases, the camera analyses the license plate. If the car is allowed to enter, the system opens the gate/bollard. If not, the car has to stay out. Such a solution requires to have a well maintained database. The waiting time with such solutions is less than 5 seconds. Ideally, the cars can even enter/leave without stopping.

PRIVATE CARS



boom gate with automated
number plate recognition (**ANPR**)



retractable electric
bollards

Final concept

Private Cars

Private Cars - district parking facilities

Currently, the Old Town of Batumi provides parking capacities for around 1.3k vehicles. Only prohibiting the parking in that area will result in a lot of pressure in the surrounding neighborhoods. That applies especially to the time immediately after the implementation of the concept. To avoid frustration and anger among the people, it is essential to provide alternative parking locations.

The concept includes three potential district parking facilities. Each of them is located in a distance of not more than 500 m from the Old Town. That makes sure that they can be reached by foot from all locations within the concept area.

for the capacity of each of them, the specific location was analysed and a footprint (dimensions) was defined that allows to have an efficient use.

All three locations together provide a capacity of 1k parking spaces. This is less than the current capacity of the Old Town. The idea behind this is to provide less parking spaces due to the fact that the importance/need of car usage should be reduced by the walkability concept. So ideally, in the future, there will be less car traffic and this results in a lower demand for car parking. This development in mind, it makes also sense to develop designs for the district parking facilities that allow for flexible use of them.

giz

PRIVATE CARS

underground parking

480 spaces
close to Chacha Tower

underground parking

320 spaces
at Square of Roses

above ground parking

200 spaces
at Chavchavadze St.



Final concept

Private Cars

Underground parking

Two of the proposed district parking facilities are located at public squares. This makes an above ground solution unrealistic. Therefore, both location will be located below ground. This comes with less potential for conflicts with the surrounding neighbourhood because the parked cars will not be immediately visible. At the same time, this represents a very costly solution.

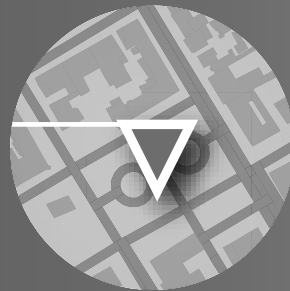
The price per parking space can will be at approx. 40k GEL. With a total of 800 spaces for both facilities together, this results in costs for their construction of more than 30 M GEL.

With the individual dimensions and number of parking spaces, the facility at Chacha Tower will need to have 4 underground levels to house more than 300 cars. The facility at the Square of Roses could provide almost 500 spaces distributed within one level.

PRIVATE CARS

underground parking

40 k GEL
per parking space



800 spaces
in total

Chacha Tower

320 spaces
75 x 40 m = 3k sqm
35 sqm/space
80 spaces/level
4 levels



Square of Roses

480 spaces
140 x 120 m = 16.8k sqm
35 sqm/space
480 spaces/level
1 level



total costs

32 M GEL

Final concept

Private Cars

Above ground parking

At the junction of Chavchavadze Street and Mayakovsky Street, there is the Tbilisi Square. It is a plot that currently already is used as a small parking space.

With a floor area of 1k sqm and 5 levels, this facility could house potentially 500 cars. The area needed for one car will be the lower for above ground solutions than for facilities below ground.

The costs per parking space are at approx. 25k GEL. With a total of 200 spaces, this results in roughly 5 M GEL. So for all the district parking facilities, the cost for construction will be at 37 M GEL.

To integrate the building into the surrounding area in a good way, it is recommended to design the facade in an attractive way. Greening for example could help to improve the micro-climate. And PV modules can support with energy production. They can be positioned on the roof or be hung on the facade. In the end, this allows to program the district parking facilities in a multi-functional way. This applies in particular to the facility above ground.

PRIVATE CAR

above ground parking

25 k GEL
per parking space

200 spaces
in total



Chavchavadze St.

200 spaces
 $50 \times 40 \text{ m} / 2 = 1 \text{ k sqm}$
25 sqm/space
40 spaces/level
5 levels



total costs

5 M GEL

Final concept

Private Cars

Automated parking

To increase the efficiency of land use, automated parking systems can be a good solution. They reduce the required area for parking. Also, they can make the parking process easier since the driver don't need to search for a space.

The downside of these solutions is that they require higher operational costs (energy). The maintenance effort will be higher, too. The engines and mechanical (moving) parts will need to be maintained constantly.

In general, there are two approaches:

- fully automated solutions
- double parking solutions (semi-automatic)

Both have certain advantages and disadvantages when comparing them with each other. For the planning of such solutions it requires more detailed analysis and assessment. Based on that a detailed planning of the optimal parking solution can be done.

PRIVATE CAR



automated parking solution
above and underground



double parking solution
underground

Final concept

LOGISTICS & WASTE

Final concept

Logistics & Waste

For the management of waste and logistics, it is essential that there will be a certain share of the roads remain available for larger logistics and waste vehicles. Some goods with big sizes or heavy weight need to be transported with such vehicles. Also, for waste management this will be needed. There are in general concepts available that allow for not having large logistics trucks in the area. But since there is the need to have some roads open for heavy logistics, this can be used for waste management, too.

The walkability concept for the Old Town of Batumi envisions to keep the following roads open for logistics and waste management:

- Memed Abashidze Avenue
- Parnavaz Mepe Street
- Zubalashvili Street
- Konstantine Gamsakhurdia Street
- Zviad Gamsakhurdia Street

The access control system (ANPR cameras + bollards/gates) will make sure that only vehicles with permission can enter the Old Town. Due to the width of the public space in all of these roads, the concept allows only one-way traffic. This is organized in a way that there will be a kind of internal loop. It follows the route of the proposed internal mini-bus route. Additionally, there will be a logistics hub at Square of Roses.

OVERVIEW



Logistics/waste management

○ micro logistics hub

.... routes heavy logistics



Final concept

Logistics & Waste

Logistics Hub

For the last mile distribution, the plan is to have a logistics hub close to the Old Town of Batumi at the Square of Roses. The bigger logistics cars will deliver those goods to that hub that can be further distributed (last mile) by more sustainable means of transport.

The location of the logistics hub allows to cover the whole Old Town within a catchment area of 1km. This is an operational area that can be managed by cargo bikes for example. At the logistics hub the goods will be reorganized and delivered by smaller transport means.

This logistics hub concept can, of course, also be used for the other areas located within the catchment area of it. That strengthens the function of it and increases the benefits.

Positioning it to the west of the Old Town will be a good choice since further uses are located there. Also, a location more to the south(west) could work well. For the exact location as well as the design of the logistics hub, there is the need for further analysis and planning.

LOGISTICS

catchment area 2

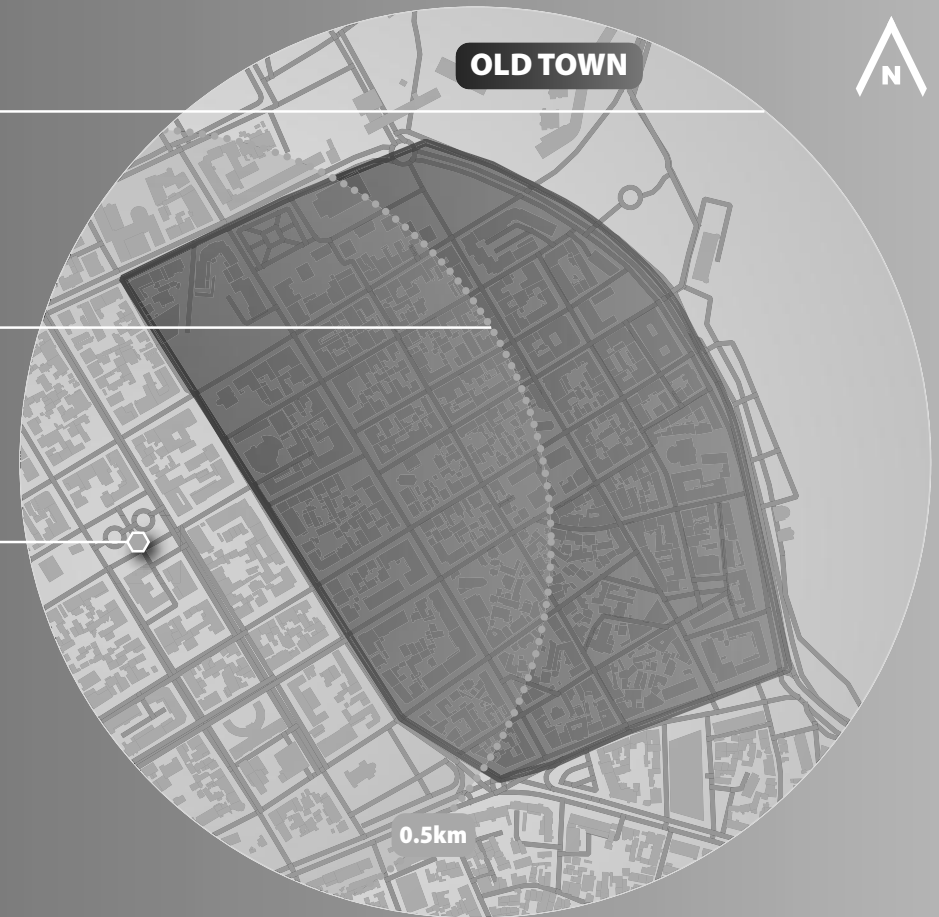
1 km radius

catchment area 1

0.5 km radius

micro logistics hub at

**Square of
Roses**



Final concept

Logistics & Waste

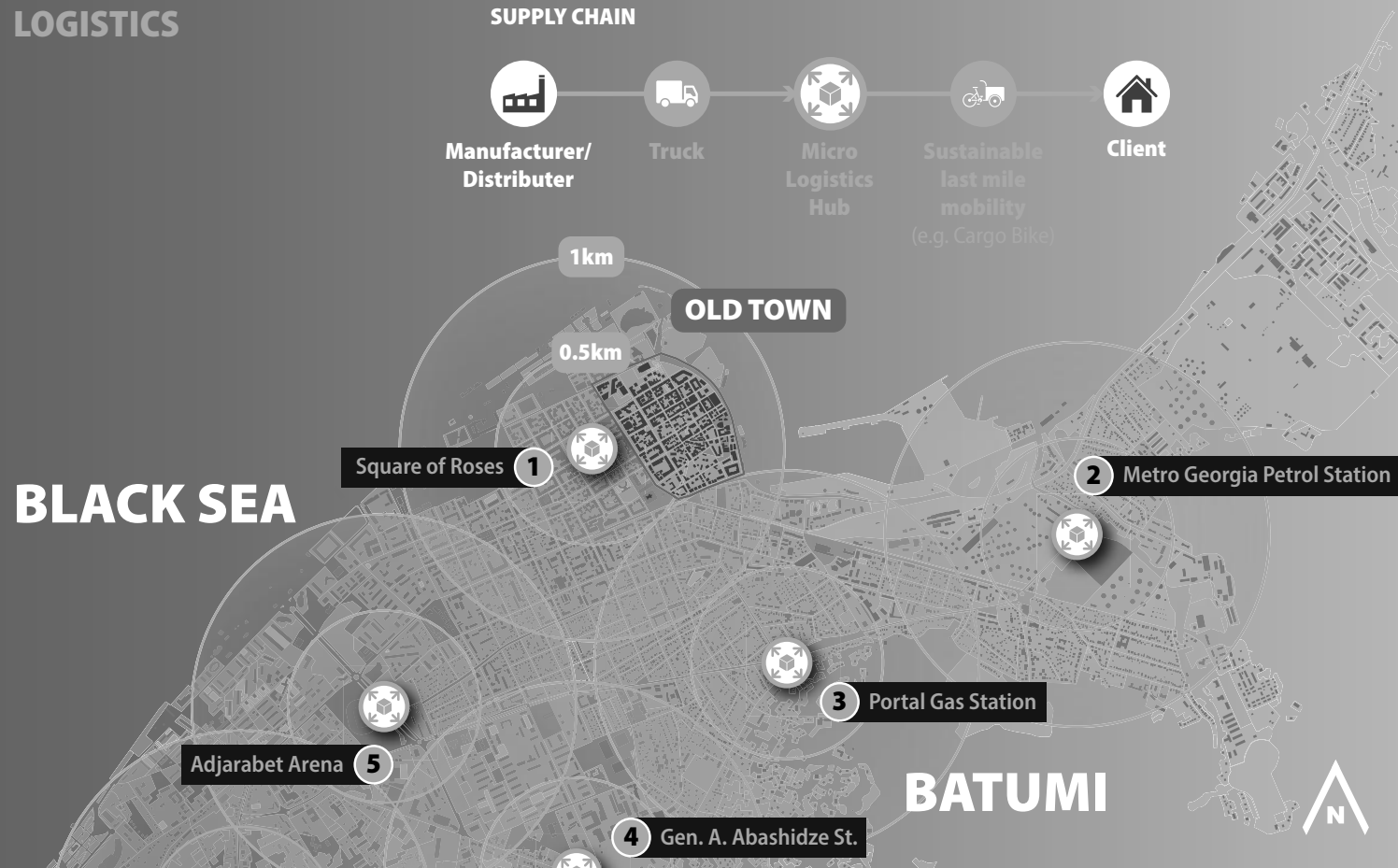
Logistics Hub network

The idea of a logistics hub can and should be extended to the surrounding areas, too. That increases the potential of that concept and brings the concept to the whole city. The map to the right shows potentially suitable locations for the extension. For the beginning, the single location at Square of Roses can be used for an initial test phase. Once this was evaluated and shows positive impacts, it can be extended to the rest of the city. Such an approach also gives the opportunity to gather first experiences, adapt the concept in small scale and introduce it to the rest of the city once a robust and stable solution has been found.

All the locations shown in the map to the right are initial proposals. They have not been properly selected based on certain assessment. This is still needed. The same applies to the design/planning of each location.

For the initial test phase, it can be a good approach to use either empty ground floor units in the buildings or find area in the public space that could house a standard container.

LOGISTICS



Sustainable logistics vehicles

In addition to the common logistics vehicles, there are more and more sustainable alternatives to classic fossil fuel driven vehicles. This reaches from smaller cargo units like cargo bikes and goes up to smaller trucks (e.g. Einride). To the right, there are two examples. They show in which direction these alternatives can go.

There is currently a lot of development going on with electric transporters and even trucks. The range of these vehicles is not at the same level compared to normal vans/trucks. But for urban distribution (in particular last mile) this is not necessarily needed. Brightdrop (a subsidiary of General Motors) with its model Zevo for example is successful in the US market¹.

Another very successful concept are cargo bikes. In Europe they are well established already - at least in larger cities/metropolitan regions. There are concepts like Ono (Berlin) where the cargo bike is carrying a sort of container. that makes it easy to load and unload the bikes. Equipped with electric engine to support the drivers, this allows to carry even bigger /more heavy goods.

LOGISTICS



last mile delivery

Zevo
Brightdrop



last mile delivery

Ono
Ono Motion

¹ **Retail Brew:** Walmart and Amazon sign deals to add new EVs to their fleets | 06/01/2022 | source: <https://www.retailbrew.com/stories/2022/01/06/walmart-and-amazon-sign-deals-to-add-new-evs-to-their-fleets> (last visited: 24/11/2022)



Further logistics transport means

Vehicles and cargo bikes are well known. In addition, there are further transport means that support with the delivery of goods. To the right, there are two examples shown.

Brightdrop developed in addition to the EV vans/trucks an electric-propelled cart that assists the delivery staff. If for example, the use of cargo bikes might not be the best idea or not feasible these carts can potentially be an alternative. They have a better manoeuvrability than cargo bikes and can manage to be operated in narrow areas, too.

Autonomous robot delivery units are currently also in test phase globally. One prominent example here is Starship (Estonia) with its delivery robot. These robots do only provide very limited transport capacities (e.g. pizza). But they demonstrate what might be doable in the future by autonomous delivery.

LOGISTICS



last mile delivery
Trace
Brightdrop



last mile delivery
Delivery Robot
Starship

Logistics Hubs

For logistics hubs, there are different examples where for the initial (test) phase the use of standard containers was a good choice. In some cases these containers are covered by a nice/well designed facade. A good example in this regard is the micro logistics hub at the Tempelhofer Damm in Berlin (see left image to the right). There, multiple containers together form the logistics hub.

Especially if there is not so much confidence in the concept of logistics hubs and not much experience with them, it can be reasonable to use a standard container without any design upgrade and gain experiences. This was the approach of UPS when they first started to implement a logistic hub in Hamburg (see right image to the right).

The big advantage of using these containers is that they can easily be relocated. If the initial location doesn't show the desired impacts/effects and an evaluation/assessment comes to the result that other locations might work better this can be adopted quickly and at low costs.

LOGISTICS



Micro Logistics Hub
Te-Damm | Berlin
Smart City | DB and State of Berlin



Micro Logistics Hub
Binnenalster | Hamburg
UPS

Final concept

IMPLEMENTATION

Final concept

Implementation

The implementation is very important for the success of all kinds of concepts. The ideas can be very good. But they will never show the desired outcomes if the implementation is not well planned and realized.

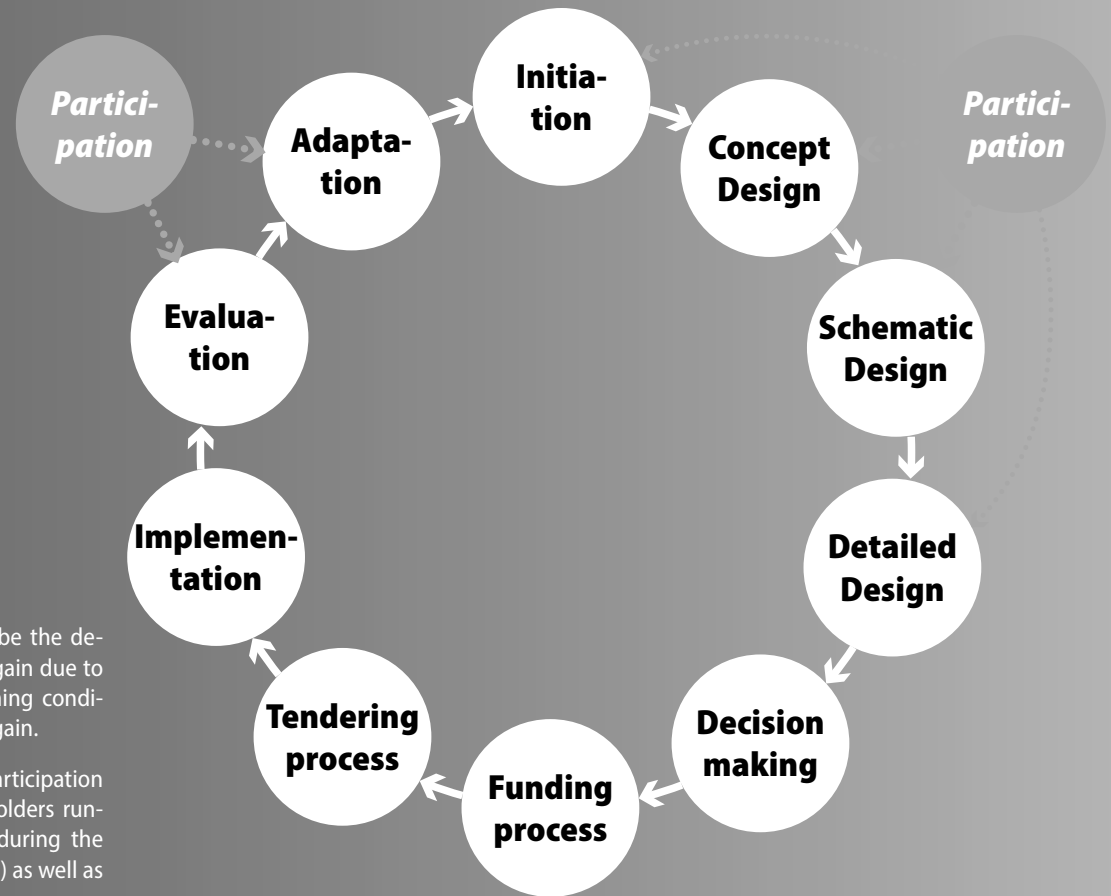
The process can be seen as a cycle. It consists of a sequence of steps that will be repeated after a certain time. Usually, this repetition begins already after evaluation the initial (test) phase of a concept. Normally, there are certain aspects that require some adaptation.

Beginning with the initiation, where the goals and framing conditions of the project are defined, a set of designing steps follow. With each of them, the design gets more detailed. It results in a decision to implement the elaborated ideas/approach. Once this is clear the funding process can start. With the necessary financial sources defined, the tendering of the implementation can take place. Once the partner(s) for implementation is found, the real implementation can take place. After a certain time of operation, there should come an evaluation. This requires that certain (needed) parameters are documented while the test phase (and even before implementation) to assess the impact of the implementation. If the result of the evaluation is satisfying, there is no need for adaptation. Else, the concept should be changed accordingly. That implies that the process of implementation more or less will start again.

IMPLEMENTATION

After a certain time of use, there will be the demand to implement certain changes again due to the constant development of the framing conditions. This initiates the whole process again.

Within this process, there is ideally a participation process to involve the relevant stakeholders running in parallel. This should happen during the very first steps (initiation and designing) as well as the evaluation and adaptation.



Final concept

Implementation

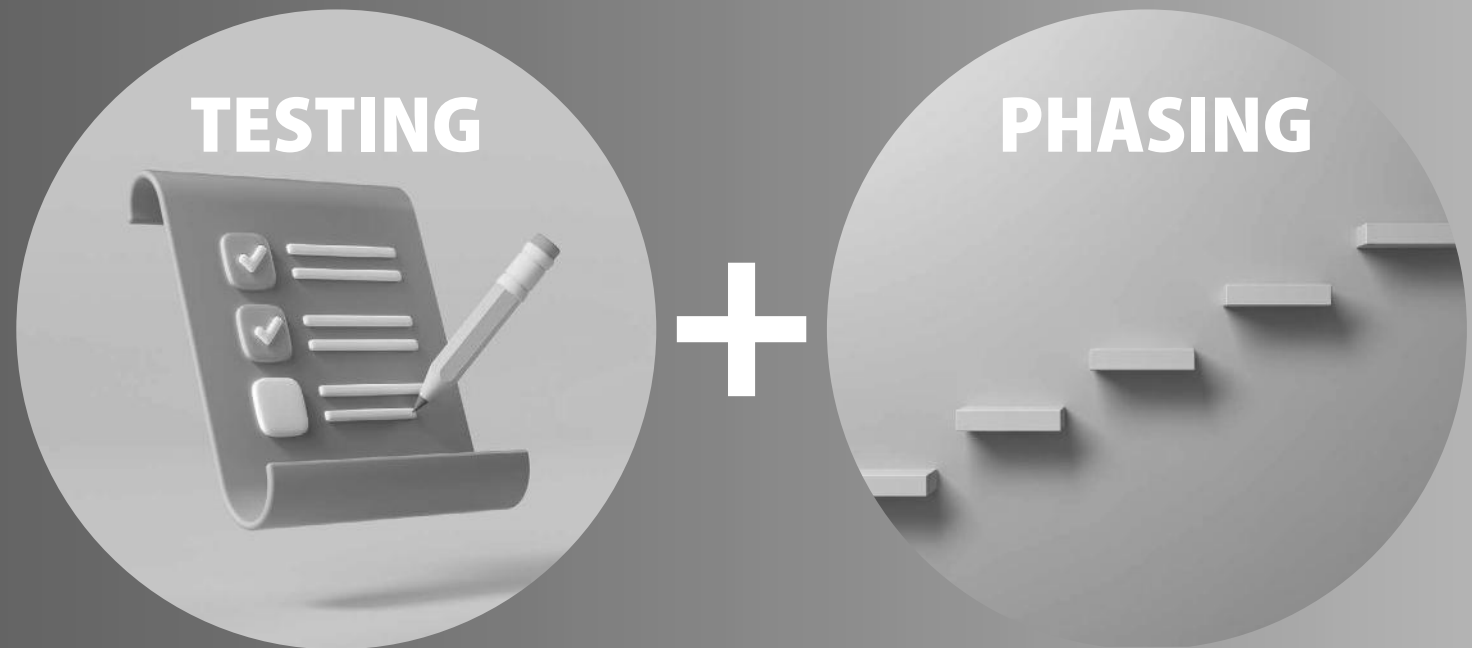
Testing & Phasing

A good concept for the implementation is to first test the ideas/elements in a small and controlled environment. This can be implemented in a fast and easy way. Selected people (or users of that specific area) can give gain experiences and give feedback. The planning for this is less complex. The planning and implementation process does only require a limited amount of stakeholders to be involved. With the feedback of the users and the assessment/evaluation of the test, adaptations that improve the outcome of the concept, can be done quickly. Finally, it requires less financial effort to realize the initial test environment.

Once the testing is finished and the concept/idea is adopted so that it fulfils the defined goals, the implementation of the full solution can start. For that, it makes a lot of sense to do it incrementally. To realize the concept in phases has a couple of advantages.

- less finances required per phase
- each phase can be implemented faster
- reaction to changes of framing condition with the implementation of the next phase
- incremental growth of the people involved reduces potential for conflicts

IMPLEMENTATION



Final concept

Implementation

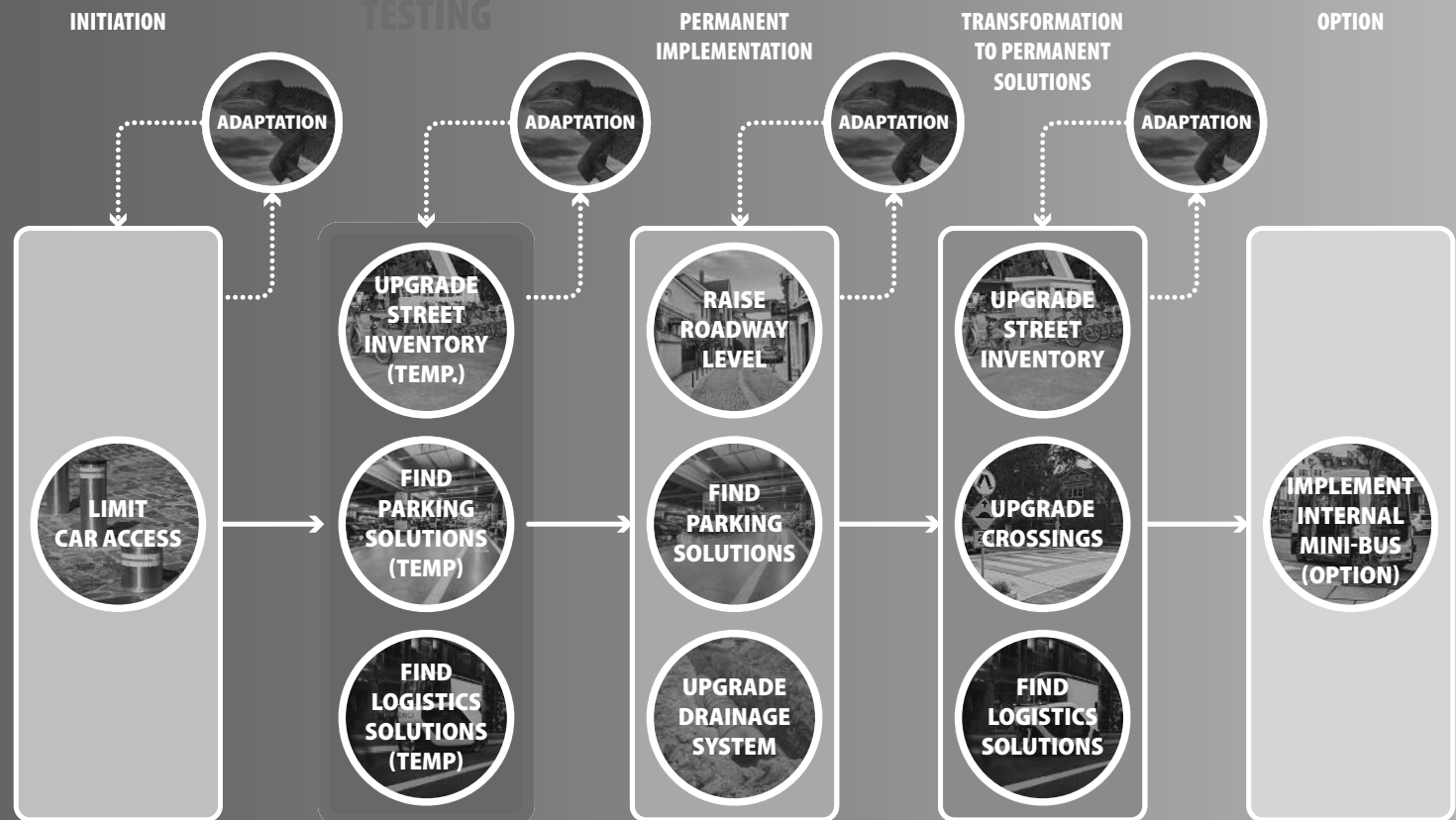
Process

For the implementation of the walkability concept in the Old Town of Batumi, the process shown to the right can be an approach for the implementation. This can be realized in phases to incrementally update the whole area.

It starts with implementation of limiting the accessibility for cars. Since this will be followed by a testing of certain design elements, the access control should be done in a temporary way. With the testing, first elements will be implemented that don't require a proper redesign of the public space. This includes for example the street inventory. But also for the parking and logistics there will be the demand for finding temporary solutions. If this is done, the permanent solution can be introduced by redesigning public space. It includes permanent parking solutions. The temporary solutions for certain elements can be then also upgraded to a permanent one. Finally, if there is the demand/wish to have this internal mini-bus solution, this can also be implemented.

With each step of the process shown to the right, there is the chance to adapt the implemented solution. This allows to quickly react to feedback and gained experiences. With such an approach, the final solution incrementally develops and grows. Due to adaptations, the final result might look different compared to the initial idea/concept.

IMPLEMENTATION



Final concept

Implementation

Phasing concept

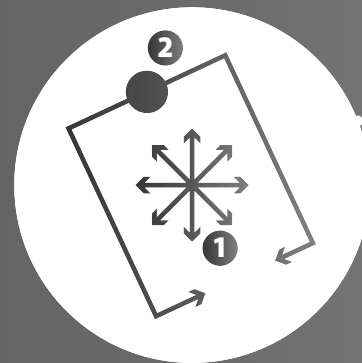
As discribed before, it makes sense to implement the walkability concept for the Old Town of Batumi in phases. The diagram to the right shows a potential phasing strategy. This builds upon the idea of a growth from the core. This is followed by a circular growth of the walkability area starting in the north of the Old Town and further growing along the eastern and western edges of the concept area.

The core part includes Giorgi Mazniashvili Street - the worst-rated part in the Old Town looking at the current conditions for walkability. Ther, the potential for improvement is the highest. It can help to convince the users because improvements can be achieved and realized very fast.

The encapsulation (second step) starts in the north because of the connection to the Black see and the more touristical part where a higher demand for good walking condition can be expected.

IMPLEMENTATION

Phasing



phasing concept



Final concept

Implementation

The phasing strategy is done in a way that the roads around the area of one phase can still be used properly (light green lines in the phasing maps to the right). That allows a working car circulation around the redesigned (closed) part.

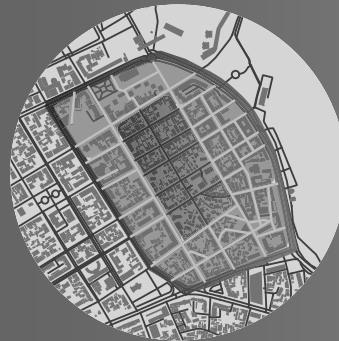
In total, the phasing concept envisions 4 phases. The third one can potentially be separated in two sub phases. It could also make sense to first start with the western part and add the eastern side later. That gives the opportunity to focus on smaller areas and upgrade certain parts quicker.

Theoretically, all of the phases could be further divided even smaller “packages”. This would increase the number of phases. The only framing condition is to keep the circulation around the redesigning area running.

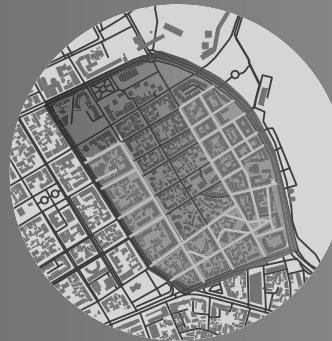
If the redesigning of public space and upgrade of the drainage system will be combined it might be needed to even develop different phases according to the requirements/needs coming from the drainage system.

IMPLEMENTATION

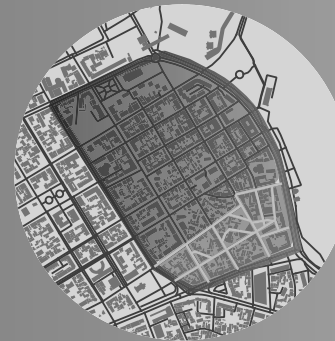
Phasing



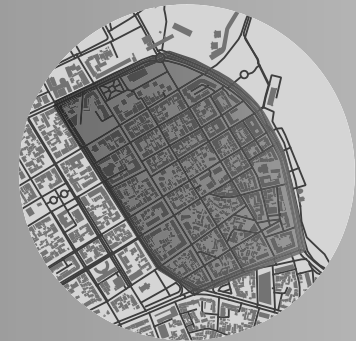
phase 1



phase 2



phase 3



phase 4

BEST PRACTISE EXAMPLES

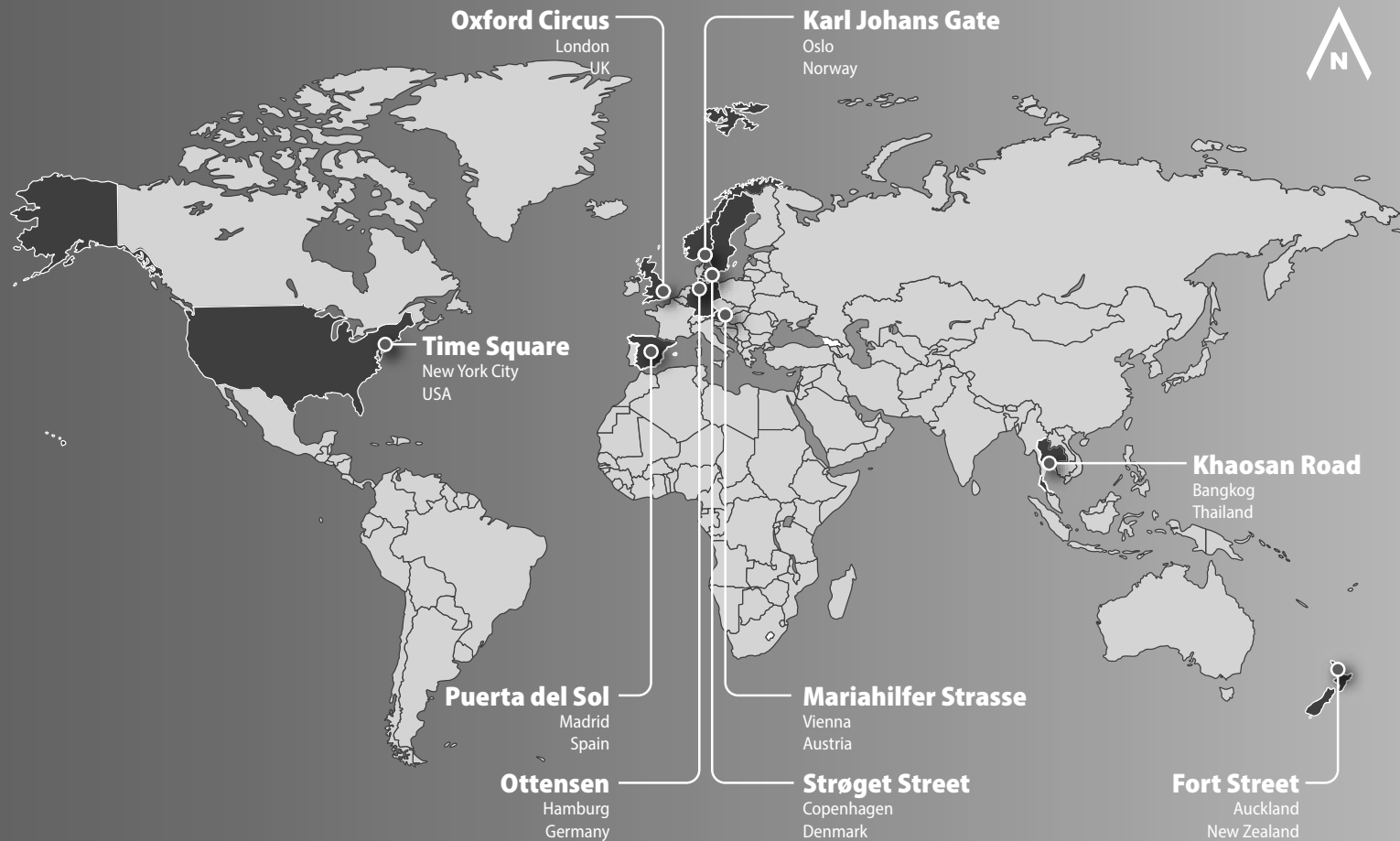
Best Practise Examples

The Old Town of Batumi would not be the first location in the world where the conditions for walking were improved. There are a bunch of good (or best practise) examples globally that can be taken as a reference and inspiration.

The world map to the right shows a couple of good examples. This is only a small selection of what is already available. There are further best practises.

The map shows a concentration of the examples in Europe. That doesn't mean that you can only find good examples there. The shown case studies were chosen because for these, there are certain information available that show the development from a normal street/space to a walkable area. This is often a challenge. Finding examples where data/info is available to check the effects of the redesign difficult.

On the following pages, there will be a description for each of the examples. This includes a map showing the specific location. A photo gives an impression on the local situation. And of course, there will be all the data/info shown that are (publicly) available.



Best Practise Examples

NEW YORK - TIMES SQUARE

Best Practise Examples

New York - Times Square

After a rise in traffic accidents, the department of transportation wanted to redesign the Time Square. Through a study, they found that 90 % of all users were pedestrians but they just had 11 % of all space allocated to them.

In 2008 the Time Square was temporally pedestrianized with street furnitures and space for local businesses. Along the temporally pedestrianized areas changes were felt quite quickly. Foot traffic increased a lot and so did the sales from the local businesses. Through the pedestrianization the rents also increased. But the attempt did not have only positive aspects. The plazas were really crowded and these crowds left a lot of garbage on the square.

In a normal year the automated counting system detects 360.000 pedestrians each day. That makes the time square one of the most visited places on earth.

In 2014 Snohetta won the 55 million dollar contract. They added 10k square meters of new pedestrian space. The project was finished in 2017.

TIME SQUARE, NEW YORK CITY



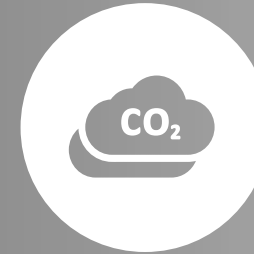
+11%
in pedestrian
volume



74%
of all users believe the area
"improved dramatically"



-35%
in pedestrian injuries



-40%
in particulate matter



+1.5%
in bus rideship

NEW YORK CITY



Best Practise Examples

MADRID - PUERTO DE SOL

Best Practise Examples

Madrid - Puerto de Sol

The city of Madrid decided in early 2020 to redesign one of their major squares and ban all traffic. The redesign will reorder the central plaza, who was redesigned many times during the last 40 years.

Under the plaza lies a metro station which will be renovated to increase space for pedestrians. A large glass opening takes a lot of the current space.

Pedestrians will gain almost 6k m² of new space on the Puerto del Sol and their surrounding streets. This an increase by 50 percent. These measures will save 7k car trips, a large part of them will be taxis. Vehicles who will load and unload for businesses in the area are still allowed.

The work to redesign the plaza began this year and will finish in 2023 and costs around 10 million €.

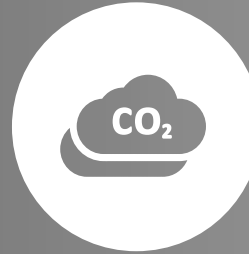
PUERTO DE SOL, MADRID



+6k
additional sqm
for pedestrians



-14%
of NOx gases

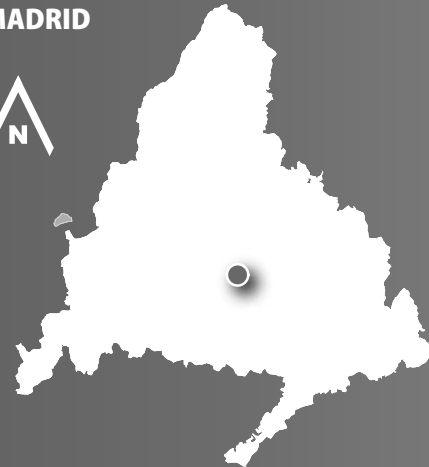


-28%
of carbondioxides



-7k
elimination of approx.
vehicle movements

MADRID



Walkability Concept - Batumi (Old Town)

Best Practise Examples

LONDON - OXFORD CIRCUS

Best Practise Examples

London - Oxford Circus

Examples

Oxford Circus is the junction where Regent Street and Oxford Street, two of the most important shopping streets of London, intersect.

At the beginning of 2020 the mayor presented plans to make the Oxford Circus car free. One reason for this plan were significant emissions which should have been reduced through the idea.

Plans to make the crossing car free exist since 2017. But funding for the redesign of the street was cut multiple times.

There are car free shopping days on both streets since 2005. This already leads to significant changes. The sales volume of the shops went up by 25%. On the other hand, emissions of NOx were reduced by 1/3.

OXFORD CIRCUS, LONDON

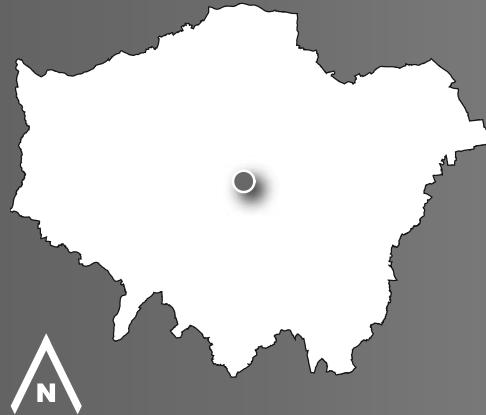


+25%
in sales volume of
retailing shops



-33%
of NOx gases

LONDON



Walkability Concept - Batumi (Old Town)

Best Practise Examples

HAMBURG - OTTENSEN

Best Practise Examples

Hamburg - Ottensen

Ottensen

From October 2019 till February 2020 the center of Ottensen (a district of Hamburg), the access for cars was limited. Only delivery vehicles, handymen and handicapped people could enter the area. Delivery vehicle were only allowed to enter the zone during specific timeslots. They only could load and unload at designated loading zones.

Ottensen already had good requirements before the attempt started to partially ban cars out of the area. It has one of the highest shares of streets without cars in Hamburg. The portion of people who own a car is also less then the average in Hamburg.

The project was scientifically evaluated during and after the project. A huge part of the residents was in favour of the project. Almost 80% of the shop owners wanted the project to continue. And more than half of the people taking part in the evaluation process said their life quality has improved.

OTTENSEN, HAMBURG



83%
of all residents favour
a car free layout



76%
shopkeepers said
project should continue



56%
of all residents say their
living quality improved

HAMBURG



Walkability Concept - Batumi (Old Town)

Best Practise Examples

OSLO - KARL JOHANS GATE

Best Practise Examples

Oslo - Karl Johans Gate

Karl Johans Gate

Part of Oslos Goal to reach zero carbon emissions is to close streets for cars and giving the space back to pedestrians.

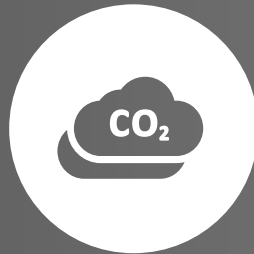
To improve the public life of the city centre the Danish architect Jan Gehl conducted a survey to identify challenges. These challenges were a lack of nice public spaces.

The municipality used these findings for a new zoning plan. Together with the plan to reduce the carbon footprint, the municipality began to remove parking places along streets and developed car free zones.

The most famous street is Karl Johans Gate. The city used a wide range of measures to attract new people to the street. Flower pots were installed on the previous roadway. Deliveries for businesses have to take place during special time slots.

As a result, the amount of carbon-dioxide emissions was cut down to 50%. The amount of car traffic in the area around Karl Johans Gate was reduced by 20%.

KARL JOHANS GATE, OSLO



-50%
of carbondioxides
since 1990



-20%
less car traffic

OSLO



Walkability Concept - Batumi (Old Town)

Best Practise Examples

COPENHAGEN - STROGET STREET

Best Practise Examples

Copenhagen - Stroget Street

At the beginning of the 1960s, the City Council of Copenhagen decided to establish a pedestrian zone between Town Hall Square and Kongens Nytorv, which lies in the eastern part of the city (called Stroget). This was necessary because many shopping areas expanded their territory and the area became really crowded with pedestrians. This pedestrian street is the oldest and longest network in the world.

After the area was banned for cars, the pedestrian volume rose by 35 percent. The conversion of the main street was accompanied by resistance by some business owners.

But success of pedestrianization led to the increase of pedestrian space in neighboring streets. From 1962 to 2005 space for pedestrians grew by a factor of six. That gave the potential to almost double the capacity/amount of outdoor cafe seating.

STRØGET STREET, COPENHAGEN



+35%
in pedestrian volume



+600%
pedestrian spaces



+81%
in outdoor cafe seating

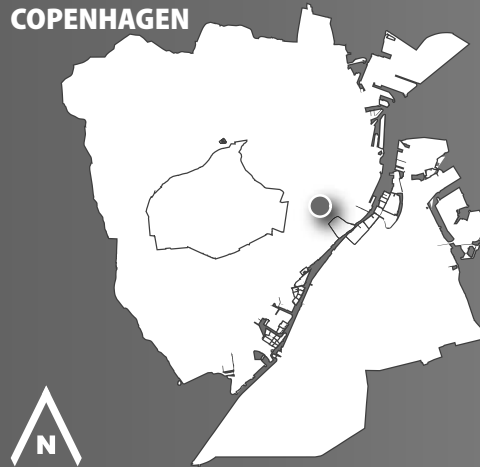


+400%
stopping and staying
activities from 1968 to 1996



+30%
in sales volume of shops

COPENHAGEN



Walkability Concept - Batumi (Old Town)

Best Practise Examples

VIENNA - MARIAHILFER STRASSE

Best Practise Examples

Vienna - Mariahilfer Straße

Parts of one of Europe's longest shopping street was redesigned till 2015. A part of the street is now car-free. Another part is now traffic-calmed. The redesign of Mariahilfer Strasse turned out to be a success.

The pedestrianized street is visited more often than comparable streets. Visitors spend almost three times more money in local shops. And a study showed a direct link between frequency and turnover.

In the car-free zone, curbs were removed to create an even and flat surface. Through less traffic, the number of accidents decreased. It was feared that traffic will relocate in the adjacent streets. But fortunately, this was not the case.

The project was a big success. The rest of the street shall become car-free in the future as well.

MARIAHILFER STRASSE, VIENNA



71%
of all residents
favour this layout



38%
shopkeepers said
business improved



-27%
less car traffic

VIENNA



Walkability Concept - Batumi (Old Town)

Best Practise Examples

BANGKOK - KHAOSAN ROAD

Best Practise Examples

Bangkok - Khaosan Road

Khaosan Road

The Khaosan Road is the main corridor for tourists in Bangkok. Since the 2000s till 2020 it was pedestrianized from 8 pm till 6 am. A research project analyzed the outcome of that traffic calming measure. The effects were positive. Sales volume in shops along the street rose by 47 percent. While at the beginning most retailers rejected the idea, mainly because traffic jams were good for their business, after the implementation most accepted the project

In 2020 the street was redesigned. Now the layout is equivalent to a pedestrian zone without curbs. Cars are only allowed in the time from 9 pm to 9 am next day. Official street market stands were established instead of illegal ones who were banned before.

KHAOSAN ROAD, BANGKOK



+26%
in property value

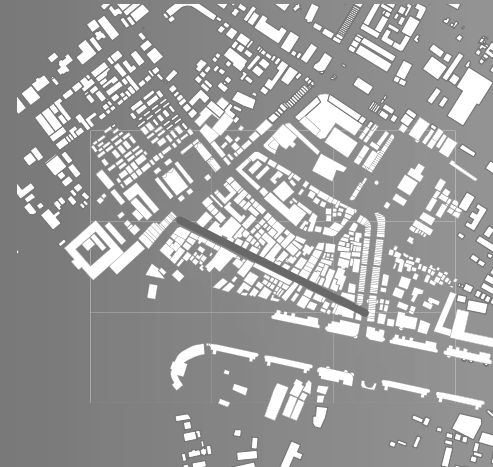


85%
of all retailers accept
pedestrianisation project



+47%
in sales volume of shops

BANGKOK



Walkability Concept - Batumi (Old Town)

Best Practise Examples

AUCKLAND - FORT STREET

Best Practise Examples

Auckland - Fort Street

Fort Street is part of the city's Laneway Circuit, a street network around the central Queens street. Car traffic is generally discouraged in the area. The speed limit for cars is 10 km/h and the access for loading and unloading is restricted to some certain hours in the morning. Parking along the laneway circuit is generally restricted. These measures were quite successful especially in the Fort Street, a part of the circuit close to the harbour.

The Fort Street was redesigned between 2009 and 2013. All curbs and bollards were removed to create the feeling of one public space. Street furniture can be found along the street. The new design supports businesses and different activities and contributes to a lively city centre. An evaluation showed that consumer spending in the area increased by 47 percent.

Since the implementation the pedestrian volume increased while traffic speeds decreased. Especially in the Fort Street the change was big.

FORT STREET, AUCKLAND



+54%
in pedestrian volume



+47%
in consumer spending

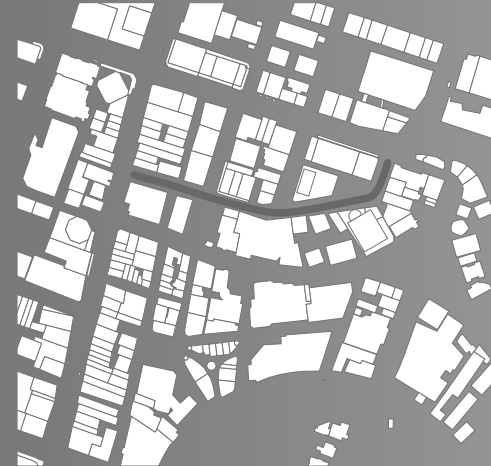


-25%
in car traffic volume



+80%
feel safer in that area

AUCKLAND



Walkability Concept - Batumi (Old Town)

EFFECTS

Effects

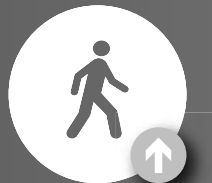
Improving the walkability of a street or public space in general can bring a lot of benefits as the examples presented before have shown. It does not only impact the flow of traffic. It also shows effects with the surrounding area. It will improve the environmental conditions, too.

A good walkability supports the transition of the whole mobility system - from a car oriented network to a multi-modal and environmental friendly solution. It can strengthen the use of public transport. It increases the share of pedestrians and even cyclists.

In addition to that, the idea of more walking instead of driving around has positive impact on our health. Case studies also show that people are more happy and the acceptance of the public space increases with a good walkability.

For the other uses adjacent to the street/public space, a good walkability also improves the situation. There will be more space available (also) for them. The people spend more time in such environments. This results in better running businesses. And finally, all of this also has positive impacts on the value of real estate.

All these positive impacts will cum if the walkability concept was well prepared and considers all aspects as well as stakeholders. If this is not the case, there is the risk that the concept fails.



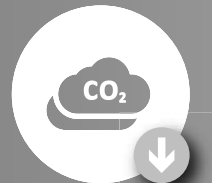
*higher
pedestrian
volume*



*more
happy/
satisfied
people*



*more
safty and
better
life quality*



*less
air polution
and noise*



*more
use of
public
transport*

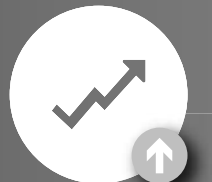


*higher
property
values*

WHAT TO EXPECT? for the Old Town of Batumi



*more
acceptance
of the
people*



*better
running
businesses*



*less
car
traffic
volume*



*more
space for
active
mobility*



*more
space for
other uses
(e.g. gathering)*



*more
time that
people spend
in the area*

PARTICIPATION

Participation

Participation is a very important if not even essential tool for a successful realization of a project/concept. The concept of participation is established in many regions of the world. There are a number of good examples where the inclusion of participation led to an improvement of the final result.

There are different levels of participation as shown in the pyramid of participation to the right. This reaches from no real participation and only instructing something up to a completely self-organized planning by the people/stakeholder affected by that. In between, there are further interpretations of participations. With each step up on the pyramid, the level of influence/power and success will increase. At the same time, this comes with more responsibility/risk and effort.



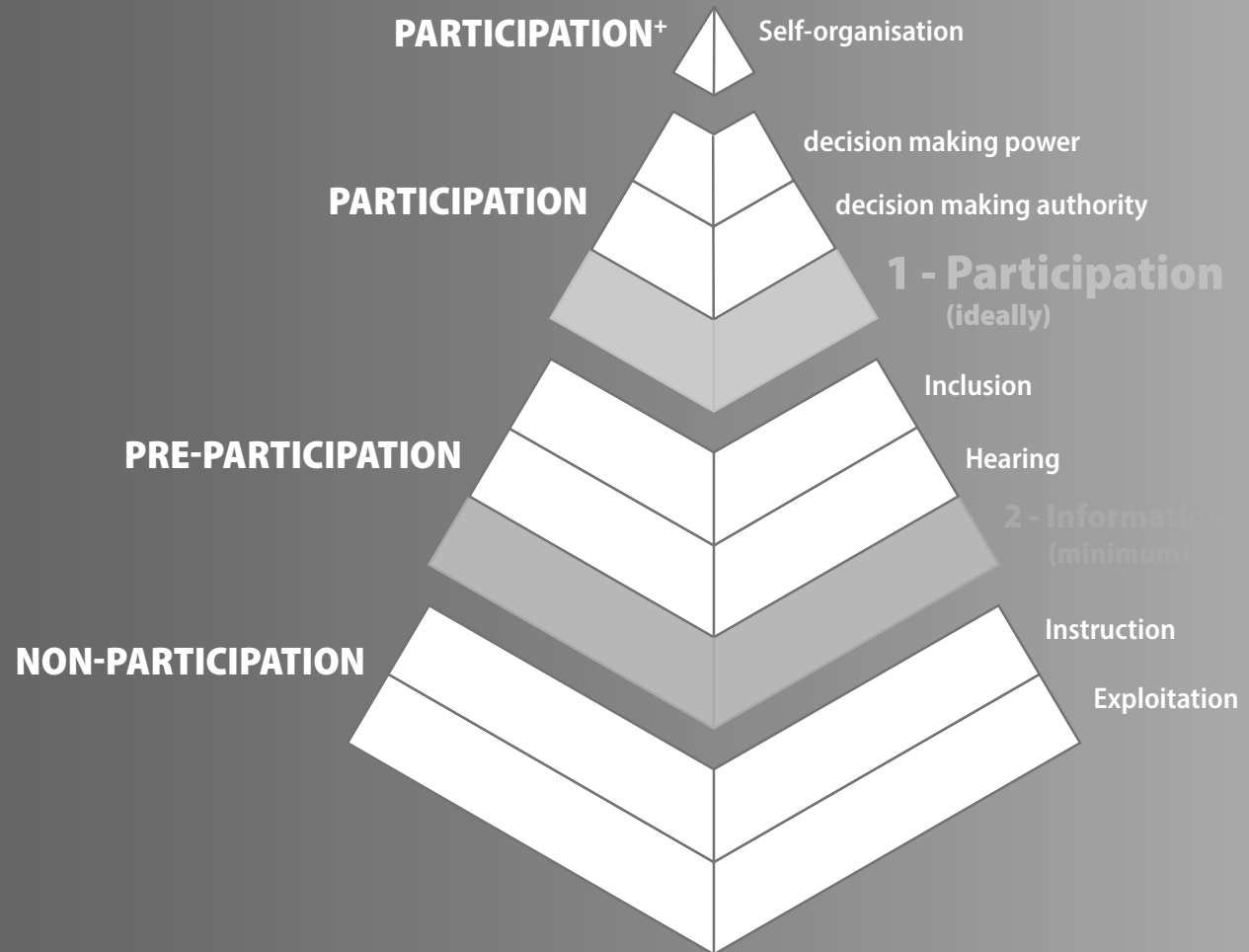
Participation

The minimum amount/level of participation should include at least the information of all the stakeholders affected by a project. That gives them the opportunity to get an overview of the project. If they see any issues due to a different point of view this allows them to give their feedback to the project team. This can then be considered or ignored. At least the awareness of potential challenges was raised.

To inform the stakeholders is no proper participation. But if there was no process of participation in the past at all this can be a good starting point. It gives both sides - planning team and stakeholders - the chance to get first experiences with participation and practice it.

Better/ideal would be a proper participation process where the stakeholder are really involved in the planning and implementation process. That approach makes sure that the demands/needs of all stakeholders are considered and the final concept/design includes a solution for them.

Starting with a proper participation right at the beginning might be a challenge. Nobody is used to it and has any experiences of the implementation. In such cases, it makes sense to incrementally develop a process of proper participation.



Participation

There are several definitions of for the word “participation”. To the right there is one of them.

The main idea/goal of participation is to integrate the different stakeholder in the planning process and get their input. Ultimately, the participation process aims for providing a solution that is widely accepted. To get there, a core idea of participation is that the stakeholders are involved in the process of idea generation, too.

Usually the initiation for such a process comes from the decision makers. This can be the administration or a project developer. Sometimes the participation process is initiated by the stakeholders.

Today, it should be considered with every project to have a certain level of participation. The intensity will differ from project to project. It depends on the individual framing conditions. A project with a high degree of complexity and large public interest will potentially require a different approach compared to a small project with less impact.

WHAT IS PARTICIPATION?



*Public participation is a process by which citizens and **stakeholders** are **engaged actively in planning**. It is usually not about yes/no-questions. Rather, they participate in **idea generation, problem solving and discussion**. Most times, public participation is **initiated by decision makers** (top-down). Sometimes, public participation is started by citizens and stakeholders themselves to raise awareness and find solutions (bottom-up).*

Participation **GOALS**

Participation

Goals

There are multiple goals that participation aims to achieve. They are shown to the right.

First, there is the goal to get the legitimacy for the implementation of a project. The worst that can happen is to develop and implement a project without any involvement of the stakeholders. There will always be a certain demand for involvement by the people affected by this project. To not include them and their opinions in the process risks to face big issues later with implementation and/or use of it.

Including all the stakeholders can even be beneficial for the project team. They can gather insights and experiences of the stakeholders. The ideas coming from the society/stakeholders helps to develop a robust and strong solution. So, implementing participation is a smart way of planning.

If the different stakeholders are involved in the process of planning this helps to avoid issues later. Considering their point of view as soon as possible helps to prevent conflicts or solve them right at the beginning of the process. It helps to get the support by the different stakeholders.

GOALS



1. Strengthen democratic legitimacy
and meet citizen's need for involvement

2. Smart planning
by harvesting crowd wisdom and innovative ideas

3. Built support
by sensing and solving conflict at the early stages

Participation

PLANNING PARADOX

Participation

Planning Paradox

The planning process is determined by two factors (see also diagram to the right). The first is the degree of freedom in planning. This reaches the highest point right at the beginning when the project is initiated. At that point where no decisions were made yet practically everything is possible. There are diverse options and paths to take.

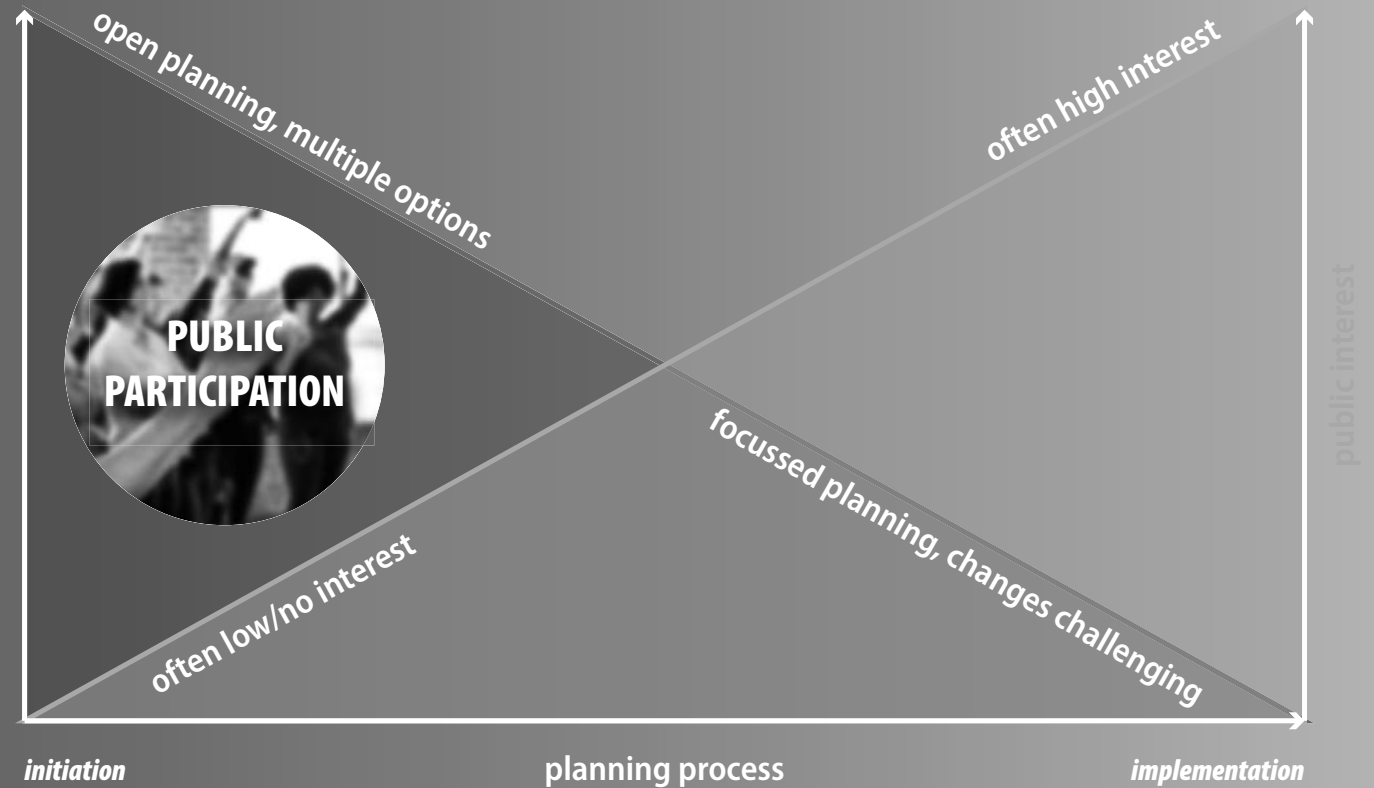
This degree of freedom will shrink over the time with a progressing planning process. Over the time, there will be more and more decisions made that limit the options.

On the other hand, there is the interest of the public society. Here, the development over time is the opposite. At the early stages, the interest will be low in most cases. This comes from the fact that only little is known about the project and the implementation is still far away.

This changes over time. The more specific a project gets and people can get a better understanding what the final result will look like the interest will become stronger. This is also driven by the fact that the implementation will get closer. So, the project becomes more and more serious. The highest interest will be at the end of the planning process.

The paradox here is that ideally, the public interest would be as high as the degree of freedom of planning. That means it reaches its climax at the beginning and not at the end.

PLANNING PARADOX



Participation

PLANNING CULTURE

Participation

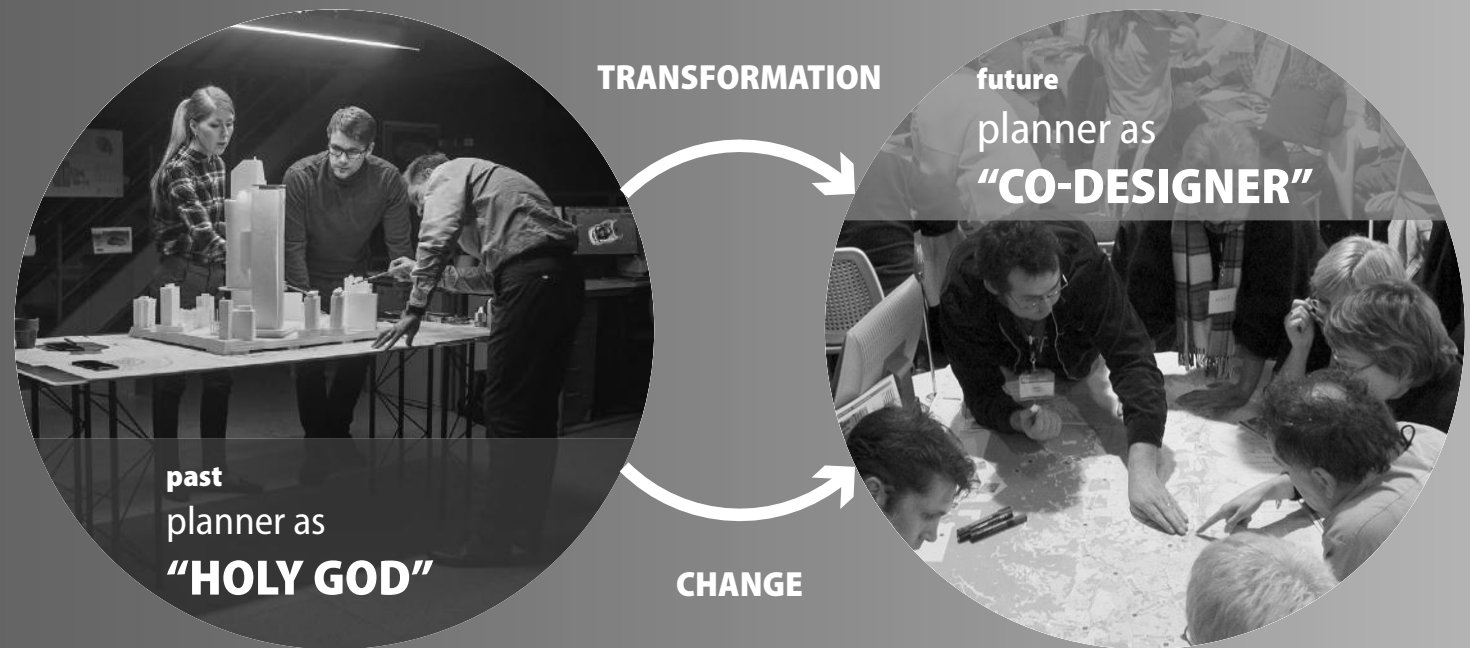
Planning Culture

The culture of planning has an impact on participation within a project. In the past, there was a very closed planning process and culture. It didn't allow for a proper participation and involvement of all stakeholders. The planner or planning team was seen as a kind of "holy god" that knows everything and will provide the perfect solution.

With an increasing level of complexity, the culture of the planner providing a solution that will satisfy all needs and demands outdated. One person or a small circle of people cannot oversee all (potential) issues on their own anymore. It becomes more and more important to involve all the stakeholders. That enables the project to be successful in the end.

That's why the planning culture is currently experiencing a transformation process. It changes from the philosophy of the planner as "holy god" to the planner as "co-designer". This new approach or culture sees the planner (team) more in the position of supporting and assisting and less in dictating. That allows to have proper participation and bring a project to success.

CHANGE IN PLANNING CULTURE



Participation

Planning Culture

The issue with the planner as “holy god” is that it comes with a huge potential for conflicts. These conflicts come up at the beginning of the process since the whole process can be seen as a kind of black box. No one from outside has access to it and knows what is going on. Only at the end, the final result will be published and presented.

The planner faces a lot of discussions at the end of the project because the opinions and concerns for all the stakeholders were never considered during the process of planning/designing. The worst case would then be to restart the planning since the final design will never be accepted by the stakeholders.

Such a concept or culture can work in a relatively simple environment. If the planner (team) can anticipate the demands and needs of the stakeholders/users very well such a process can come to a successful ending. The reality is that our world becomes more and more complex every single second. Basically, it is not our world that reaches more and more complexity. It is more our knowledge and expertise that leads to this increase of complexity.

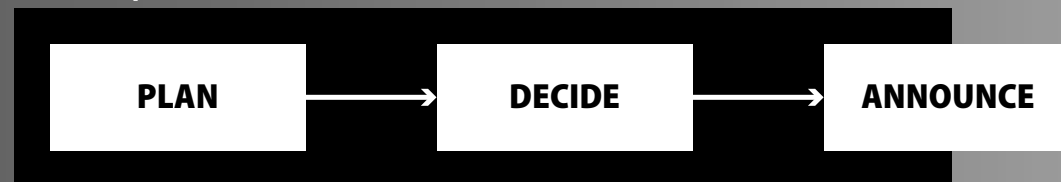
One single person or a small group of people cannot handle all the topics that need to be considered today. That is why a change of the planning culture is so important and happens at the moment.

CHANGE IN PLANNING CULTURE



internal process(es)

black box



PUBLIC
SOCIETY



Participation

Planning Culture

Looking at the increasing complexity of our knowledge, it makes a lot of sense to involve more and more people in the planning process. That makes sure that all aspects will be considered and the final solution will be accepted.

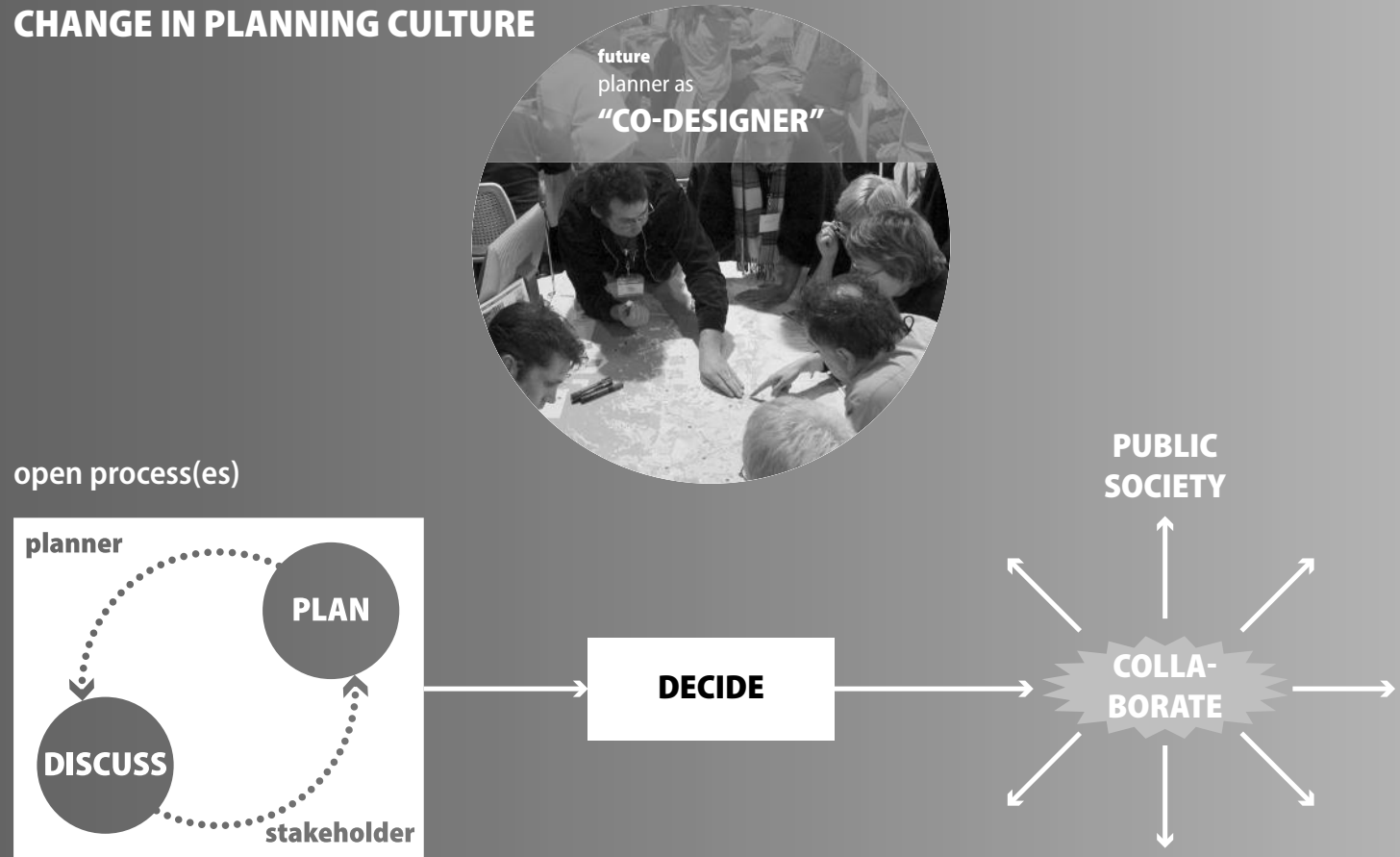
That way of thinking let to a new way of planning where the planner (team) is "only" a kind of "co-designer". The final result will not be dictated by him/ them. The planner brings in his expertise when it comes to planning a project. The stakeholders contribute their expertise and give important impulses. That enables the planner team to include all aspects and develop a future-oriented/proved solution.

The planning process itself also changes. It transfers from a very linear to an open, iterative, and circular approach. That makes sure that adaptations can happen fast and progress can be discussed quickly. Ideally, this will even accelerate the planning process if you look at it from a holistic perspective. If the linear process (shown on the previous page) crashes in the end, the whole process needs to be repeated. With the more incremental/ circular process shown to the right it reduces the potential for repetition down to smaller portions of the whole process.

Another benefit of this "new" approach of planning is that in the end when the final result is ready, the different stakeholder support and promote the idea/outcome.

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CHANGE IN PLANNING CULTURE



Participation

APPROACHES

Participation
Approaches

The participation itself can be done in two ways. There is the analog method where the participation works with paper and/or physical meetings/discussions. On the other hand, there is the digital approach. Here, the communication between planner team and the stakeholders is done by digital tools.

Both approaches have certain advantages and disadvantages. It depends on the framing conditions of a project which of both concepts makes more sense. They can also be combined. There is no “this or that”.

On the next pages, the two approaches will be further described.

APPROACHES FOR PARTICIPATION



analog



digital

Participation

Approaches

Analog processes can provide crucial insights and generate further good inputs/ideas by the direct and in person exchange between the planning team and the stakeholders but also by the conversation between the stakeholders. This strengthens the final result even further.

Practically every form of public participation can be covered by the analog approach. It makes it easy to explain the ideas for all participants. It includes all people - even those who are not so much digitally savvy. But it should also be considered that analog participation processes come with higher demand for resources. They limit the audience (due to physical availability for example) and it slows down the speed of the process.

For an analog participation, the following methods can be used (examples):

- info flyer
- announcement
- info kiosk/desk
- presentation
- hearing
- site walk
- workshop

APPROACHES FOR PARTICIPATION



- + easy interactions with the stakeholder
- + can cover all forms of public involvement.
- + easy way of explaining ideas
- + includes people who are not digitally savvy
- + facilitates creativity through exchange of participants
- resource intensive (human, time, material)
- limited audience
- slow process

Participation

Approaches

As an alternative to analog processes or as a complement, there are also digital approaches to do participation.

Digital participation processes have the advantage to be fast. With the help of digital tools, there is the opportunity to reach out to a large audience. Also, the process can be implemented quickly. Since the responses are already digitized, the analysis of them is much easier.

On the other hand, there are certain limitations to be considered. Digital participation can not cover all stages/levels of involvement. The creativity is limited due to no direct exchange between participants. And of course, this approach excludes (at least at the moment) those people who are not digitally savvy.

For a digital participation, the following methods can be used (examples):

- social media - info/poll
- website - info/interactive
- online survey
- digital event

To achieve the best result, it makes total sense to combine both approaches. This makes sure that the maximum amount of people will be enabled to participate.

APPROACHES FOR PARTICIPATION



- + reach out to large audience
- + requires less resources
- + fast process
- + easy to implement
- + easy analysis of gathered info

- cannot cover all stages of involvement
- limits creativity because of no direct exchange between participants
- excludes people who are not digitally savvy

Participation

GROUPS OF PARTICIPANTS

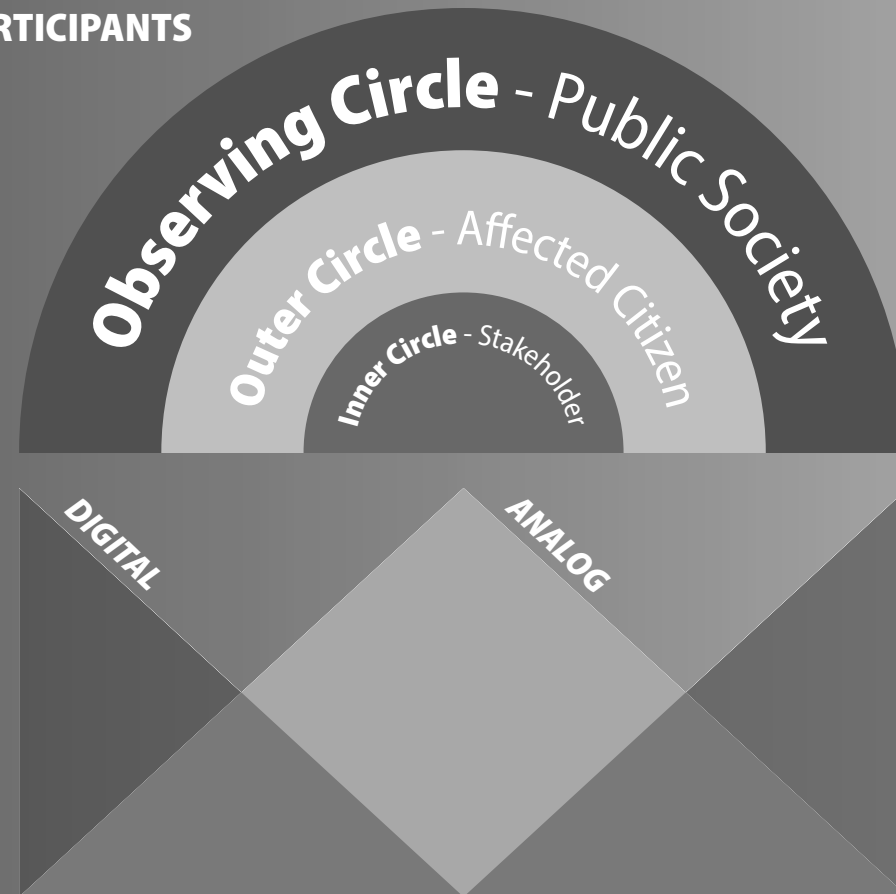
Participation

Groups of Participants

The participants can be divided into three groups as shown to the right. It starts with the inner circle where the stakeholders are. They are directly connected to the project. The next group is the outer circle. This includes the affected citizen. Those people will somehow get in contact with the project and realize the impact of it in their daily life. The third group is called the observing circle. This is the rest of the public society (of a district, city, region etc.). Starting in the middle (inner circle) the number of people included by the specific circle will grow.

Due to the size of each group, it makes sense to differentiate where to use which of the two approaches for participation (analog and digital). For smaller groups it makes a lot of sense to utilize the analog process and involve the people personally. If the group of participants grows it is recommended to consider the digital approach. It is better capable of handling larger groups of people and the analysis/assessment of feedback can be done easier/quicker.

GROUPS OF PARTICIPANTS



Participation

QUALITY CRITERIA

Participation

Quality Criteria

There are certain criteria that determine if a participation process will be successful or not. These criteria are not new and not something that only applies to participation.

First it is important to have the participation as a part of the planning process. It should not be detached and go in a different direction compared to the planning process itself.

Regarding the outcome the whole process should be open and allow any direction of thinking and development. If there are certain directions of development predefined this limits the chance of involving the participants.

As shown before, it makes most sense to have the participation at the beginning of a project. When the potential for changes and adaptation is the highest the input from “outside” can provide the best contribution.

All aspects of the planning should be presented to the participants and the process should be designed in a transparent way. That develops trust in the planning among the participants.

No person should be excluded. It should be the case that every interested person can participate. If that does not apply, there is the risk of facing issues and rejection at the end of the process. Facing the concerns of certain stakeholders right at the beginning ensures success in the end.

QUALITY CRITERIA



Public participation is...

1. ...part of a planning process
2. ...open in regard to the outcome
3. ...happening in the early planning stages
4. ...enhancing transparency of the planning process
5. ...open to all interested and affected people
6. ...empowering silent voices
7. ...striving to include multiple perspectives
8. ...strengthening respect and mutual understanding
9. ...conducted by neutral facilitators

There will always be certain people who might be able to contribute good input/ideas but they don't have the power to present their ideas. The participation process should enable them to do so. That supports with generating good and future-proof outcome.

The participation should aim for multiple and different perspectives. This can be achieved by selecting a broad range of people. If the potential for involving stakeholders is limited, the selection of them is very important. The group of participants should represent as many different perspectives as possible.

Respect and mutual understanding are key elements for a successful participation. The whole process should aim for strengthening those.

The participation process should be led by a neutral facilitator. People from the planning team are not a good choice. That limits the potential to get as many different opinions and inputs as possible.

Participation

CONCEPT FOR OLD TOWN OF BATUMI

Participation

Concept for Old Town of Batumi

For the walkability concept of the Old Town of Batumi, there are different means that can be considered for the participation process. It makes sense to include both approaches - analog as well as digital. That increases the potential to get a lot of feedback and develop a robust solution in the end.

Looking at the process of planning and implementation, there are several steps where it makes sense to include participation. This is shown to the right. The diagram also presents certain ideas of how to implement the participation. This applies to all 6 steps of the planning and implementation process.

Since there is not a lot of experience with public participation in Batumi so far, it is good to start with a process that aims for informing the stakeholders. Also, first ideas for a proper participation can be included. Starting immediately with a proper and extensive participation will potentially overwhelm the participants and risk the project to fail.

For the implementation of the participation it requires a proper planning of the process. The ideas presented here can be seen as an initial input. There is the need for further elaboration of a proper concept.

CONCEPT FOR PARTICIPATION

ANALOG

announcement
in newspaper,
at City Hall,
and on flyer

communication in newspaper
workshops,
committee meetings,
site walks,
public presentations,
public hearings
questionnaires and interviews

**Initia-
tion**

**Concept
Design**

**Schematic
Design**

**Detailed
Design**

**Evalua-
tion**

**Adapta-
tion**

all the options
mentioned for
the design
phases

all the options
mentioned for
the design
phases

DIGITAL

announcement
on website and
on social media

communication on website and social media
feedback via website and social media
interactive website with possibility to give ideas etc.
digital public presentation
digital workshops
digital committee meetings
questionnaires and interviews via website and social media

all the options
mentioned for
the design
phases

all the options
mentioned for
the design
phases

Participation

Concept for Old Town of Batumi

During the European Mobility Week (16/09/22 - 22/09/22), the city hall of Batumi executed an initial testing of improved walkability in the Old Town of Batumi. Therefore, parts of the roads were closed at the weekend of 17/09 and 18/09 were closed for car traffic. The public space was used to so some social activities and have info booth ect. positioned on the roadway.

Such a test can also help with including the public society. They can experience the effects of the concept/idea in a real-life environment and not only on plans. That helps to really assess the concept by the stakeholders.

Another benefit of such limited tests are:

- fast implementation
- reduced financial requirements
- easy adaptable
- involvement of the inner circle of participants (more or less) guaranteed.

With feedback coming from that testing during the European Mobility week, the city hall of Batumi can incorporate changes in the design and progress further with the planning. There is also the chance to do further tests and get more feedback from the people using the public space. With longer periods of testing, the feedback will also be more valid.

CONCEPT FOR PARTICIPATION



EUROPEAN MOBILITY WEEK



TEST PHASE 17/09/22

COSTS & FUNDING

Costs & Funding

Within the planning process, there is the question of costing and funding. Both component will affect the final result.

The ideal solution to improve the walkability of the Old Town of Batumi will potentially generate a large amount of costs. This comes from the idea of raising the roadway level to the one of the sidewalks. But also other components will cause financial costs. With an ongoing and progressing planning process, these costs can be properly calculated and build the foundation for the decision making process. Within the current concept phase, it is difficult to even estimate the costs. This requires further progress of the planning process.

For the funding of the project, there are different components that can contribute.

OVERVIEW



COSTS



FUNDS

Costs & Funding

Looking at the costs structure, there are 4 pillars that structure the financial demand of the project. They are shown in the diagram to the right.

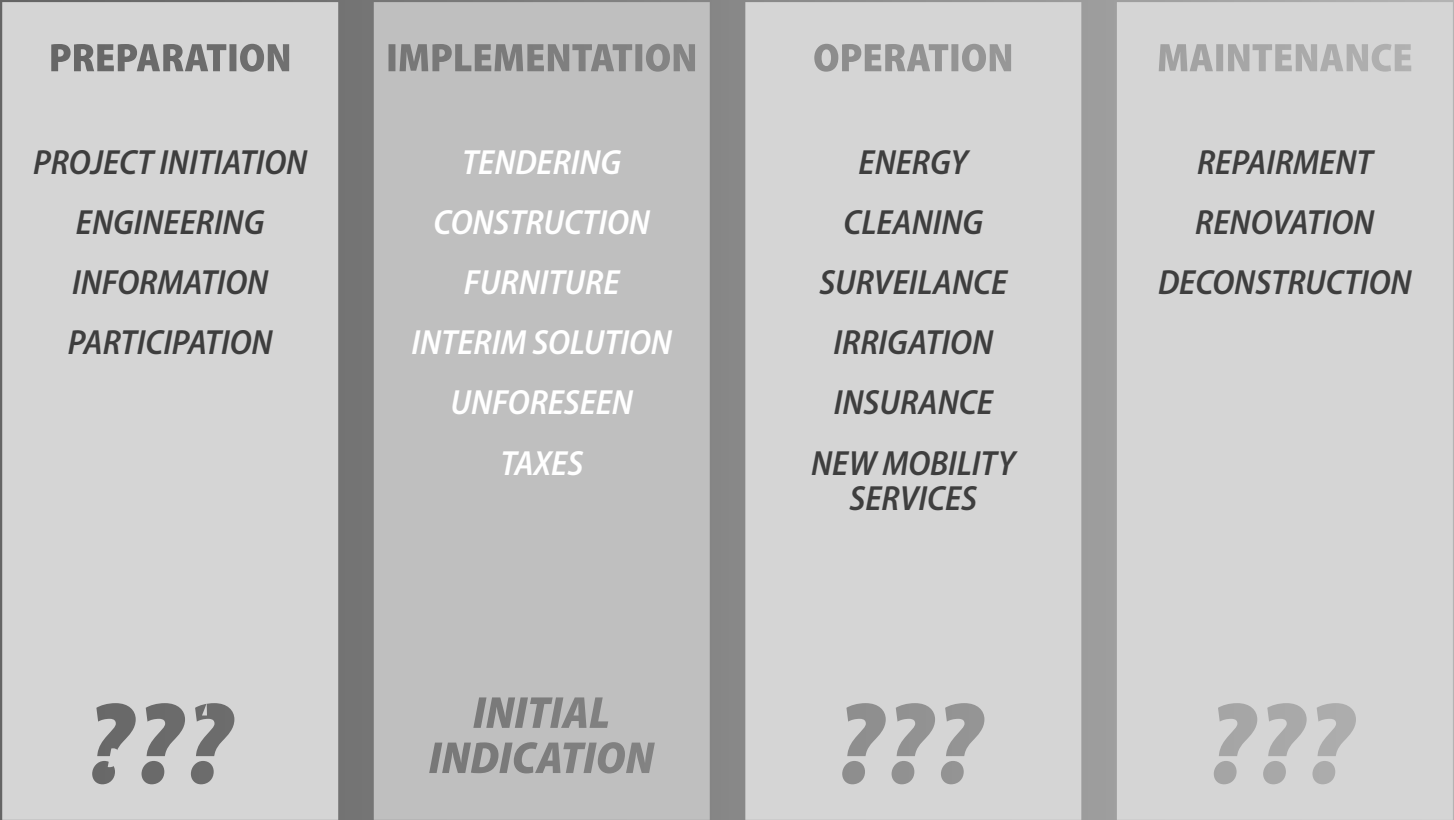
For preparation of the project, there is a need for financing certain activities associated to that process. The whole planning process needs to be financed. The same applies to the public participation. And even the initiation of the project will require certain money.

For the implementation, there is the possibility within this conceptual phase to give a first indication of the different components. This phase includes the tendering for the construction, the construction of the pavement itself, the furnitures/inventories, any kind of interim solutions, unforeseen costs and taxes.

What should also be considered with every project are the costs that come with the operations. This includes the provision of energy for lighting (for example), cleaning, surveillance, irrigation, insurances, and provision of new mobility services (sharing).

Finally, the maintenance costs are also important for the decision making process. Her, the repairment, renovation, and ultimately deconstruction should be considered.

COSTS



Costs & Funding

For certain elements of the concept design, there is the chance to give a first indication at that stage of the whole process. This applies to pavement and the street furnitures/inventories.

The numbers for the different components can be seen to the right. Due to the current development at the global markets driven by post-COVID effects and the war in Ukraine, the stated numbers/cost factors to the right should be assessed critically with the further process. If needed, they should be updated, of course. The exact final costs will depend on the further development of the concept.

COSTS

Implementation - Rates



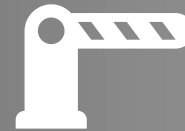
pavement

180 GEL/sqm



crossing

20k GEL/unit



access control

20k GEL/unit



parking space

25-40k GEL/unit



logistics hub

5k GEL/unit



tree

1k GEL/unit



lighting

1.5k GEL/unit



bike rack

500 GEL/unit



seating/bench

500 GEL/unit



trash bin

500 GEL/unit

Costs & Funding

For funding of the project, there are several sources as can be seen to the right. Some of them are representing public funding systems. Others make use of private money. Some represent indirect sources of financing.

Which funding structure suits best needs to be assessed during the progressing planning process. It makes most sense to do this, once there are more precise info for the costs. This requires more detailed planning.

A good solution for the funding can be to strongly involve the private businesses. As described earlier, an improved walkability will have positive impact on the businesses, too. So, the implementation of such a concept should also be of interest for them. To partner with them and develop a joint concept where both - the City of Batumi as well as the businesses - contribute financially will make sure that both sides will take responsibility and make sure the project will be successful.

FUNDING



National Funds

Advertisement

Business Improvement District (BID)

Private Investors

Fares for PT

Private Public Partnership (PPP)

Parking fees

Loans

(Green) City Bonds

European Funds

Local Option Sales Taxes (LOST)

Costs & Funding

The situation at the moment in the Old Town of Batumi require a renovation or upgrade of the existing drainage system. If there is a strong flooding situation, the capacity of the existing drainage system is not capable of carrying all the water. This results in flooded roadways (at least). It makes it hard for people to use the public space by active mobility - and to a certain extend also motorized traffic.

This demand for upgrading the drainage system can be seen as a good chance to combine it with the walkability concept/project. When the drainage system will be renovated, there is the opportunity to raise the roadway level at the same time.

That has multiple advantages. First, it reduces the costs since the road works only need to be done one time. Of course, this also optimizes the time it takes to implement both things. It can be done in one step.

Since the drainage system will not be renovated in one step for the whole Old Town, this gives the opportunity to implement both things with the phasing concept proposed for the improvement of walkability.

FUNDING



drainage



walkability

CONCLUSION



Conclusion

The Old Town of Batumi has a lot of potential to become a beautiful area for walking - and active mobility in general. This can and will have a positive impact on the whole area and its users. It can also act as a good example for the rest of the city and contribute to transform the whole mobility system of Batumi to a more sustainable system that will foster environmental friendly solutions. The car traffic will be reduced to the absolute minimum needed amount.

Such an approach generates a number of benefits - not only for the people using the public space. It'll also positively affect the surrounding plots and businesses with their users/owners.

There are a broad range of design elements that support the development of a walkable area. One core element in this regards will be the reduction or even elimination of cars from the area that is envisioned to be redesigned. In addition, there are further design elements that assist the change in mobility behaviour and modal shift. An important role here plays the comfort and microclimate. Active mobility will become exhausting with increasing distances and hard climate conditions. This should be addressed by the design approach.

The final concept design envisions a (almost) car-free Old Town of Batumi. To achieve this, there are certain criteria to be fulfilled. First, an effective access management will be required. This allows to get control over the car traffic that enters the Old

Town. The concept envisions automate number plate recognition (ANPR) for that - combined with boom gates or retractable bollards. Another important component of the concept is to raise the roadway to the level of the sidewalks. This eliminates the obstacles for pedestrians and cyclists and makes the public space more attractive for them. What also contributes in this direction is to prioritize active mobility. To not only eliminate cars from the Old Town and shift the issues to other parts of the city, the concept includes different facilities for district parking. That bundles the parking capacities to certain locations and keeps the surrounding areas free of parked cars. To allow logistics to distribute within the Old Town in an environmental friendly way, there will be a logistics hub included in the concept. It makes sure that smaller and lighter goods can be delivered with cargo bikes on the last mile. Since not all the logistics can be covered by those smaller means of transport, the concept envisions certain roads to be available for larger logistics vehicles. This can than also be used for waste management.

The implementation could be done in different phases. It makes sense to start in the core of the Old Town with the street that is currently worst rated with regard to walkability - Giorgi Mazniashvili Street. From there, the further development of the concept can be done from the north to the south. The phasing provides the chance to adapt the concept according to the experiences and feedback

gained by the testing. This is a smart approach since changes don't have to be implemented throughout the entire area but only in the currently tested part.

There are a lot of good examples for walkable areas in the entire world. This report includes a couple of them. It shows the dimensions and character of the individual projects. The examples will also show some benefits of improved walkability by providing certain numbers/statistics.

A very important factor for the success of that concept will be the participation of the public society. Done in a good way, this will make sure that the project is going to become a success. To reach that point, it is crucial to involve all relevant stakeholders at the very early stages of the planning process. Also, it is very important to allow all different opinions and points of view. The planning culture therefore needs to transform from seeing the planner as "holy god" to a situation where he will be a "co-designer". The planner (team) will assist with their expertise and help to finish the project. The input and ideas should (also) come from the stakeholders. There are different approaches of participation. The analog one makes sure that participants will be involved the best way and can have a direct exchange. This type of approach is limited to smaller groups of people. If the need is to involve large groups of participants, it makes more sense to utilize digital tools to include the stakeholders. Ideally,

both approaches will be combined. That provides the advantages of both "worlds". By doing so it eliminates the disadvantages of each approach.

For costs and funding, there will be the need to further develop the concept. With (more detailed) planning of the redesign, the estimation (and later calculation) of the financial impact of that project can be done. This includes the definition of the exact boundaries of the project. For certain cost factors of the implementation, there are initial indications given in this report. They need to be assessed with the ongoing process of planning and should be updated if needed. Since there is the need for renovating/upgrading the drainage system of the Old Town of Batumi it makes sense to combine this with the implementation of the walkability concept. This reduces the financial efforts and time needed for the implementation of both projects.



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*„God made us walking animals—
pedestrians. As a fish needs to swim, a bird
to fly, a deer to run, we need to walk, not in
order to survive, but to be happy.“*

Jeff Speck

city planner
Walkable City: How Downtown Can Save America, One Step at a Time

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Sea Side of Batumi