URBACT
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EUROPEAN UNION
European Regional Development Fund

Healthy Cities.
From planning to action

INTEGRATED ACTION PLAN

ALPHEN AAN DEN RIJN

Authored by: Margreet Boer (Project coordinator)
Ron Kervezee (Local coordinator), in cooperation with ULG members
Jasper Akker (Communication coordinator)

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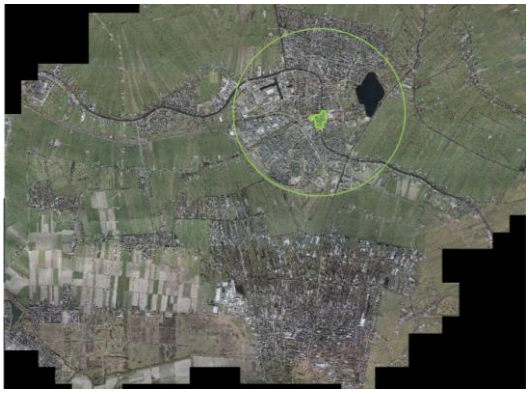
CITY CONTEXT AND DEFINITION OF THE INITIAL PROBLEM/POLICY CHALLENGE

OVERVIEW OF THE CITY

Alphen aan den Rijn is a municipality in the western Dutch province of South-Holland. The municipality consists of the eponymous town of Alphen aan den Rijn and seven smaller villages and occupies an area of 132,5 km2. The municipality is located in the so-called 'Green Heart', a protected area surrounded by larger cities like Amsterdam, Rotterdam, The Hague, and Utrecht, with a combined population of more than 8 million people. Originally a Roman city, Alphen aan den Rijn developed as an industrial town in the 19th and 20th century. Nowadays, it is known both for its service industries, secondary schooling and cultural facilities, and for its theme park (Archeon) and zoo (Avifauna) which attract visitors and inhabitants alike. The outlying area and villages are much more centred around agricultural activity. The village of Boskoop is famous for its more than 500 plant nurseries. Along with all the related businesses, these nurseries provide an important economic impetus for the region under the name 'Greenport Boskoop'. Thirty percent of all Dutch tree nursery products are traded via Boskoop. To put that number into perspective, the Netherlands is the second largest exporter of nursery products in the world! Two important water ways cross Alphen aan den Rijn. The Gouwe Canal, which is the commercial shipping connection with the port of Rotterdam. The Heineken brewery exports all of its beers from the Alphen's port. The other river, Oude Rijn, is mainly used for recreational purposes and is a promising potential source of renewable energy.



Population	111.000
Density	837/km2
Demographic profile	Age 0-19: 23% Age 20-64: 58% Age 65+: 19%
Life expectancy	Male 80,8 Female 83,6
Overweight age 19+ Overweight age 60+	51% 60%
Mental health (stress-related)	16%
Physical inactivity	Age 20-64: 7% Age 65+: 8%

INITIAL PROBLEM

Climate change affects the city of Alphen aan den Rijn more and more in a negative way. Stress tests proved that the city centre is vulnerable when it comes to heat stress and flooding. Biodiversity is decreasing, which is a big thread for our existence. The Climate Agreement of Paris forces our city to become Carbon neutral in 2050. This implicates that we have to invest in measures that not only support the energy transition but also enlarge the awareness of our citizens that the health of all living creatures on earth is our most important asset to cherish for the future. Besides that, the interest of visitors to come to Alphen aan den Rijn for shopping or leisure is decreasing. This has a lot of impact on the local economy, but also on the quality of the centre itself. Alphen aan den Rijn needs to break through the negative spiral and become a healthy and attractive city where people, both visitors and inhabitants, feel safe and happy.

Ambition and vision

Alphen aan den Rijn aims to integrate more healthy measures in its local urban planning. This includes measures from climate adaptation to pixel farming (using data to optimize the food production chain). Simultaneously with Floriade 2022, the centre of Alphen aan den Rijn should be a 'Living Lab' for sustainable healthy innovations that benefit both locals and visitors. Alphen aan den Rijn also aims to reduce the use of fossil fuels by working towards a zero-emission citywide energy distribution and by encouraging more eco-friendly mobility options, like biking, walking, or electric transportation. Alphen's citizens will benefit from these measures, improving physical, mental, and emotional health. It is proven that greenery has a positive effect on biodiversity, energy usage, air purification, water storage, heat stress, real estate value, leisure, social cohesion, and physical and mental health. Therefore, greening the city will also help the city cut its health costs. Alphen believes that alternative earning models can be developed that are just as profitable as their traditional counterparts but with a healthier impact on the environment. The city aims to prove the value of investing in healthy objectives, even if there is no direct or measurable gain in the beginning. This ambition extends to changing the mentality and approach of entrepreneurs, businesses, and social organizations. The chance to share knowledge with other European cities, looking into tools and methods that can be used for healthy urban planning, will accelerate the development of local innovations. It is a step closer to a healthy city.

SWOT Analysis

Strengths	Weaknesses
• Restricted pedestrian area in the city centre • Many separate bicycle paths and connections • Train and bus connections to all directions • Located in the 'Green Heart' of Holland • 500 tree, shrub and perennial nurseries in the area • Organised branch representations	• Much buildings and pavements • A lot of fossil fuel-powered traffic • Too many temptations that stimulate an unhealthy lifestyle (fast food, car use, tv and internet etc., alcohol and drugs) • Citizens take too little responsibility for the environment • People are taking ecosystem services for granted
Opportunities	**Threats**
• Greening the buildings, streets and playgrounds • A robust ecosystem which provides more services like clean air, reducing heat-stress, reducing flooding risks and biodiversity • Healthy people starting from youth (Pixel farming, fresh school meals, exercise in green spaces) • Zero-emission city distribution • Communication about healthier lifestyles • Urban planning tools that stimulates people to walk or take the bike • Energy transition	• Air pollution and noise disturbance • Heat stress, peak showers and drought • Decreasing biodiversity • 24-hours economy creates mental stress • Unhealthy lifestyle of citizens • Consumption of unhealthy food

FOCUS OF IAP

Alphen aan den Rijn, like many cities, has to deal with big themes like climate change and unhealthy lifestyle of citizens. It is proved that green and nature have a positive impact on the consequences of heavy rainfall, long periods of drought and heat. It will also make the city more attractive to walk or cycle and green eases the mind. Therefore, the focus of the Integrated Action Plan is to motivate people to lead a healthier lifestyle and to plan and realize more green in the city centre, both in public space and on the roofs and facades of private property. To do so, we need to cooperate with local stakeholders to motivate them to take responsibility for their share in making sustainable and healthy investments in greening the city, climate adaptation solutions, and embrace new earning models. An integrated ecosystem will be implemented with all corresponding services, in cooperation with retail businesses, local tree nurseries and property owners. The city of Alphen aan den Rijn needs to work on their capacity and understanding of the importance of urban planning for health. The final result should be a healthy and happy city!

SUMMARY OF MAIN ASPIRATIONS AND OBJECTIVES FOR THE IAP

The main aspirations and objectives of Alphen aan den Rijn are to reduce heat stress and flooding, increase the biodiversity and have a future-proof local economy. A clear agenda with planned actions will help to reach these objectives together with stakeholders involved. This should all lead to a healthier city for our inhabitants. Alphen aan den Rijn will focus on the following topics, classified under 7 main categories:

STRATEGY

- Coordination with the “Masterplan Groen-Blauw stadshart”
- Coordination with other relevant policies, e.g. the “Duurzaamheidsprogramma 2021-2030.
- Coordination between stakeholders (e.g. retailers, real estate owners and citizens)

GREEN AREAS, VEGETATION, BIODIVERSITY

- Improve attractiveness and liveability of the city centre
- Stimulate biodiversity and climate adaptation (e.g. heat stress)
- Implement trees and vegetation on streets, rooftops, and walls
- Improve interaction between urban furniture and green spaces

CONNECTIVITY AND MOBILITY

- Attractive walking routes from the train station to city centre
- Attractive walking routes in the city centre
- Downsizing number of (parked) vehicles in the streets
- Zero-emission city logistics

ACCESSIBILITY

- Remove obstacles in relation to physical disability
- Optimized route guidance for visually impaired
- Optimized accessibility of public transport

ACTIVITIES AND LIFESTYLE

- Health tracks
- Green playgrounds, green classes, and healthy meals at school
- Local for local food (city farming and pixel farming)
- Optimized use of public areas (urban furniture, informal sports etc)

COMMUNICATION

- To increase all stakeholder’s responsibility for the environment
- To promote greening of private property
- Green is healthy, makes people happy and is good for the economy

HEALTH IMPACT ASSESSMENT

- Data
- Heat Stress
- Biodiversity
- Air quality

SUMMARY OF HOW IT LINKS TO THE URBACT NETWORK AS A WHOLE AND HOW LEARNING FROM TRANSNATIONAL EXCHANGE HAS INFORMED THE CHOICE OF FOCUS

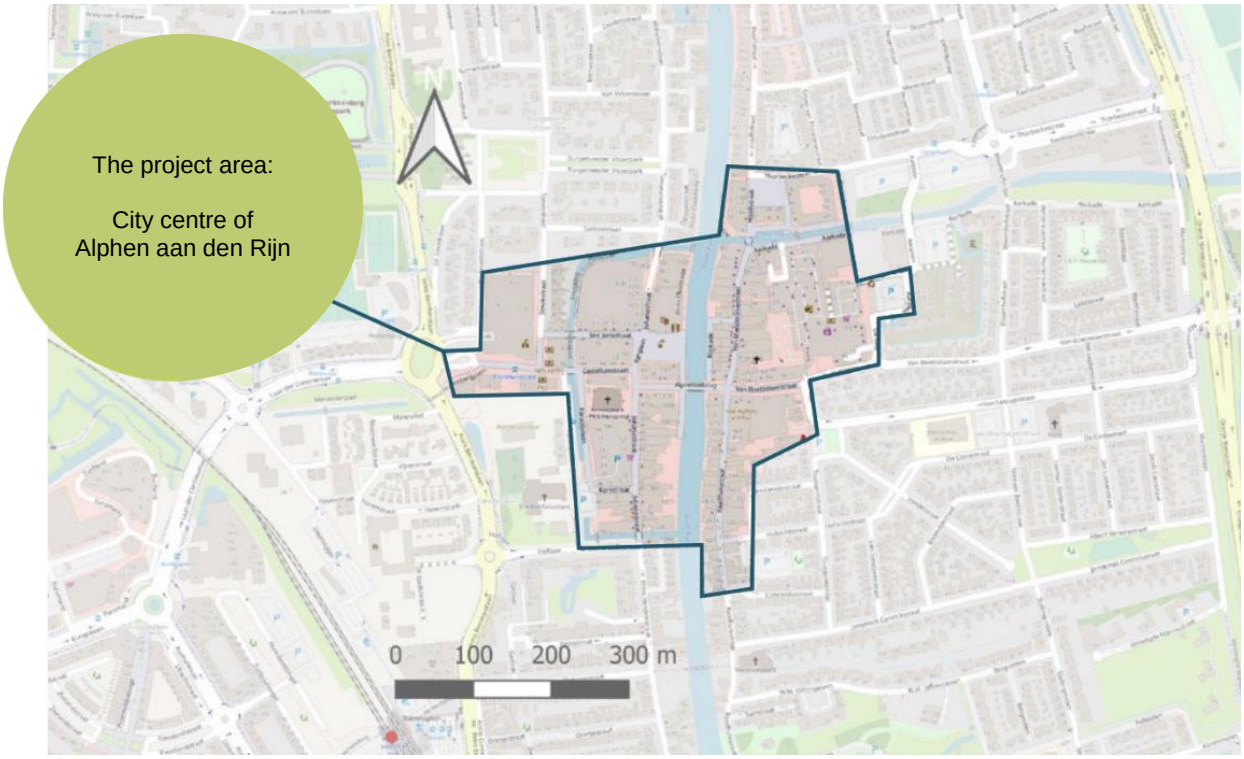
All partners of our URBACT network have different angles from which they encounter the way that health in the city should be positively influenced. So, also the ways and manners how they are contributing to the network are different. This broadens our own focus in such a way that we not only want to implement a lot of green in the city, but also work on clean air, water storage, healthy food, and more physical activity. From the transnational exchange we learned to look at our city and also plan actions in a much broader way than only greening. It also taught us a lot about community building, even though COVID-19 was a severe process blocker.

PRESENTATION OF STRATEGIC GOAL AND VISION

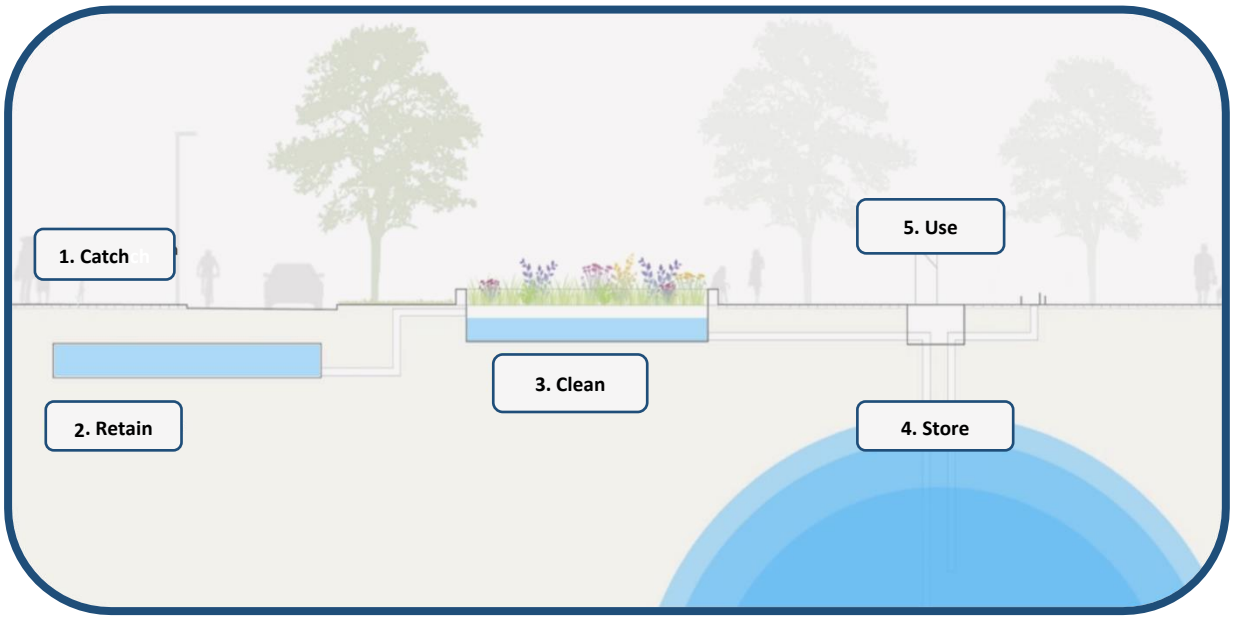
Our vision and strategic goals are captured in the following overview:

Concerning the greening part of this vision, we have the following approach:

We use a three-pronged approach in which we start with three greening pilot projects; not only in public space, but in cooperation with real estate owners to green some buildings in the centre as well. The city centre is defined on the following picture:



In the meantime, we also work on the water management part. The greened spaces and places must be supplied with good quality water the whole year around, even in long, dry periods. We are developing a system that will manage that. The figure below schematically shows this system:



To stimulate property owners to invest in greening their buildings, we recently set up a GreenFund, from which the owners of commercial property can receive cheap loans for their investments. We also unburden them on the maintenance aspects with a new concept, called 'Green-as-a-Service'. The next step is a pilot phase to test in practice if the conditions and agreements will be as sufficient as we planned. After the pilot phase the application procedure will be formally implemented.

To make the city more attractive and invite people to walk and/or exercise more we want to invest in healthy attractive walking routes.

We also work on other pillars of the strategy than greening. To make a step forward to a carbon-neutral city centre with good air quality we have in preparation and eventually are going to implement 'zero-emission city logistics'. All logistics in the city centre must be performed with electrical vehicles from 2025 on.

Our last pillar of the strategy is to stimulate healthy lifestyle, starting at schools. Children are the future and with this project we want to stop the increasing health costs with prevention of diseases instead of curing them.

DESCRIPTION OF THE PROCESS

GOALS OF THE URBACT LOCAL GROUP

The main goal of the URBACT Local Group (ULG) is to use the URBACT framework and methods to design Integrated Action Plans (IAP) on a local level for sustainable urban development and to strengthen the capacity of local stakeholders to develop efficient policies.

This is to be done by establishing a durable cooperation of the stakeholders, using the URBACT method. The URBACT method is based on a holistic approach, that takes into consideration the physical, economic, and social dimensions of urban development, from a sustainable perspective. The participative approach – the development of strong partnerships between public bodies, the private sector and civil society (including citizens and inhabitants) – is recognized as a cornerstone of efficient urban development policies.

ULGs translate these principles into concrete local dynamics that aim to foster shared ownership of the urban planning process. A key element of the process is to nurture the talent of city stakeholders and build their capacities, so they can actively get involved in delivering participative policy making and co-creation of Integrated Action Plans on a local level.

Role of URBACT Local Group

Alphen aan den Rijn has identified and mobilized the relevant key stakeholders for this project. The ULG has been set up as a new group with a specific purpose, revitalizing and greening the city centre. Many members are representatives of existing organizations who were already collaborating. We used this 'thinktank' as a basis to form the ULG, with an intention to extend the group with residents.

The ULG ensures the viability and the feasibility of the IAP at local level and the group will be the token of sustainability of results in the long term, after the end of the project. The responsibility of these groups is to ensure that the impact of the transnational exchange of practical experience between the cities is spread to the largest possible extent. The main task of the ULG is to gather all stakeholders who can actively contribute to the elaboration of the IAP and involve them in the activities of the network.

URBACT Local Group activities include:

- Analysing local challenges, seeking solutions and ultimately developing IAP to address these challenges;
- Embedding the learning from transnational exchange (practical knowledge, good practices, peer review, etc. from other cities in the network and beyond) into the local policymaking process;
- Contributing to the transnational exchange and learning process taking place at transnational level;
- Communicating results at local level, and disseminating lessons learnt to the wider community;
- Taking part in the URBACT training schemes organized at national and European levels by the URBACT Program, thereby developing the capacities of local stakeholders.

Due to organizational changes in the municipality as well as the influence of the COVID-19 pandemic situation on local stakeholders, in January 2021 the ULG has been broken up and could not function

anymore as a group with regular meetings. So, we continued as a project team with the basis that was already laid and checked the progress from time to time on individual basis with several former group members. Now, in springtime of 2022 while COVID-19 seems to become more and more under control and restrictions are loosened up, we prepare to set up a new ULG and built further on the foundations of the previous group.

Composition of the URBACT Local Group

In the beginning of the project, we started with the following group of ULG members:

Organisation	Name
Coordinating Team	Margreet Boer Ron Kervezee Rene Vierbergen Bart van Kasteren Floris van Hoof Communication officer (vacant)
URBACT LOCAL GROUP MEMBERS	
Municipality Alphen aan den Rijn	Debby Leenen
Greenport Boskoop	Bert Griffioen
VOC Retailers Association	Kees van Keeken
Real Estate Association	Kim Rimmelzwaan
Rijnland Water Authority	Johan Remijn
NL Greenlabel Certification Organisation	Rosa van Werven
PReT Recreation and Tourist Association	Han Hendrickx
Broere Rain Systems	Arie-Jan Broere

Mid-January 2021, due to COVID-19 most of the group dissolved. Most of the stakeholders were too busy keeping their business running in this challenging pandemic situation. In the meantime, the coordinating team kept the process ongoing, merely with 1-to-1 stakeholder coordination.

We plan to recover the group dynamics by inviting stakeholders to the communication events which are and will be set up for the greening of the city centre. For example, In Q1 we organised some communication events for the greening of the town hall square with residents, businesses and a group of people with physical disabilities. We will organise some more events in June/July for another part of the city centre and will invite people to become involved with the local ULG.

Role/Impact of transnational exchange and learning

This is the first time that Alphen aan den Rijn is involved in a transnational partnership to work on mutual goals. It is quite interesting to experience that this kind of exchange really brings value to our local aims and goals. To share ideas and knowledge with countries with different cultures, geographical locations and problems enriches the way we look at our own problems and to find most suitable solutions. For example, we never thought about the idea of health tracks until we learned this from the city of Loulé. Or the idea of free fresh water taps in the city that Anyksciai provided. Or the way Bradford cooperates with social workers to develop more quality of life for citizens in deprived areas and have them take responsibility for

their own environment. We experienced that meeting our partners in a physical way was the best way, because one can experience the cities problems on the spot and not only from pictures or spoken words. A result of that is a much better understanding of the local conditions and problems and why the specific solutions or measures are chosen. It makes it much easier to decide if solutions are suitable for implementing in our own city to enlarge the impact of planning on health. In Alphen, we aim to enrich our local actions with some of the ideas and methods we learned.

The way transnational exchange and learning in phase 2 of this project took place was very much influenced by COVID-19. Since March 2020 for 1,5 years we only had online video meetings, until October 2021. Although the meetings continued online, we experienced that in-person meetings enrich the understanding of other cities much more.

PART 2 - ACTION PLAN

Analysis of Planned Actions

Alphen aan den Rijn plans to perform the following actions on local level to meet the objectives of our city:

ACTION
GREENING PUBLIC SPACE
GREEN ROOFS AND FACADES
ATTRACTIVE AND HEALTHY WALKING ROUTES
ZERO-EMISSION CITY LOGISTICS
HEALTHY LIFESTYLE AT SCHOOLS

In the action tables on the next pages, we explain per action the breakdown of planned activities to achieve the expected results. The tables show a summary of details on governance, resources, funding sources, type of risks and how to mitigate them. Also, it shows the Healthy Cities Generator results of the planned actions and give some explanation and recommendation on how it could work even better.

By using the Healthy Cities Generator tool we assessed the actions on the following 20 urban determinants on health. In the first table directly hereunder we explain which results are pursued in general per urban determinant on health. We defined the expected impact of our actions on those urban determinants as 'negative', 'neutral', 'Low', 'Medium' or 'High'. The impact on urban determinants per action is visualised in the spider diagram in the action tables below. Furthermore the tool generated automatically the outcome of the impact on the different types of health, which has been made visible in a bar chart diagram. These different types of health are: Environmental health, Physical Health, Well Being, Lifestyle and Mental Health.
The Healthy Cities Generator has been used to analyse all IAP actions that have an impact on the urban environment. As not all of our actions can be directly related to the urban determinants on health, the health impact has been estimated through a qualitative analysis. This includes the actions 'Zero-emission city logistics' and 'Healthy lifestyle at schools'.

In the Annex of this report the Health Impact Assessment is explained in more detail.

D = Density
M = Mobility & Transport
P = Mixed use & Proximity
L = Environment & Landscape
H = Housing & Energy

Results to be pursued on urban determinants on health

Nr.	Type	Description
1	D1	Increase population and residential density
2	D2	Increase accessible business and commercial density
3	M1	Increase street connectivity and intersection density
4	M2	Improve connection to relevant places (facilities, green areas, other transport networks)
5	M3	Increase cyclability and cycling infrastructure
6	M4	Increase walkability and pedestrian infrastructure
7	M5	Increase availability of public transport
8	M6	Reduce the speed and/or volume of transport
9	P1	Increase residential proximity to diverse social services and facilities (healthcare, education, cultural and community centres etc.)
10	P2	Increase residential proximity to physical and sport infrastructure and facilities
11	P3	Increase residential proximity to recreational amenities, commerce, retail and economic activity
12	P4	Increase residential proximity to public open space and nature areas (parks, lakes, trails, etc.)
13	P5	Improve the food environment (reducing the density of fast-food stores and increasing proximity to grocery stores)
14	L1	Increase green coverage and green visibility (includes all types of greenery: public green areas, private green areas, street tree canopy, etc.
15	L2	Improve and increase proximity to and visibility of blue spaces
16	L3	Provide varied types of green areas (neighbourhood parks, varied planting, wild areas, large-scale city and regional green areas, etc.)
17	L4	Improve continuity of the green infrastructure
18	L5	Improve the urban landscape and general amenities in public open space (aesthetics, urban furniture, maintenance, lighting, etc.)
19	H1	Measures to improve the quality of housing
20	H2	Measures to improve the energy efficiency

ACTION: GREENING PUBLIC SPACE

ACTION Title: Greening public space

Typology of Action:	Physical health, Social health, Environmental health, Global health
Link to strategy / Subobjectives:	Masterplan Groen-Blauw, Coordination with stakeholders, Reduce heat stress/flooding, stimulate biodiversity, improve attractiveness and liveability of the city, improve accessibility for physical impaired, increase awareness about benefits of green

CATEGORY OF THE ACTION

- GREENING / LANDSCAPE
- VEGETATION/BIODIVERSITY
- CONNECTIVITY / MOBILITY
- ACCESSIBILITY
- ACTIVITIES AND LIFESTYLE
- COMMUNICATION
- HEALTH IMPACT ASSESSMENT
- OTHER

Short Description	Action Owner	Finance / Resources
We want to inspire the local stakeholders, like commercial property owners and inhabitants to show that greening has positive impact. We also want to create good conditions for green to grow and stay fresh. Pilot project for replacing pavement with trees and/or plants at the Town Hall square and the Aarkade junction to stimulate greening in the city and integrate better accessibility for physical impaired. Installing an underground rainwater buffer and storage under the Aarplein parking lot to collect rainwater in wet periods in order to use for the trees and plants in dry periods. Installing an intelligent rainwater management system to have the system automatically operated.	Ron Kervezee (city of Alphen a/d Rijn)	Municipality budget, Impulsregeling Klimaatadaptatie and other funds still to be found.
	Stakeholders	**Risks**
	The Board and Council of Alphen a/d Rijn, Project-manager of Alphen a/d Rijn, internal and external advisors, shop and/or other property owners, local residents	Not enough funding, delay in decision making, no solutions for technical problems.

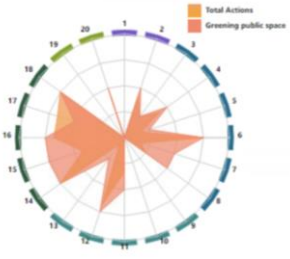
ACTIVITIES

ACTIVITY	Dates	Outputs	Related ACTIVITIES	BLOCKERS / Concerns
Communication event about greening the Town Hall square	Q1 2022	Collecting ideas and creating more awareness on the topic of greening the city	SSA: (Digital) Opinion poll	
Replacing pavement with trees and/or plants at the Town Hall square	Q1/Q2 2022	500 m2 of garden in front of the Town Hall	Health Impact Assessment	
Replacing pavement with trees and/or plants at the Aarkade junction	Q3/Q4 2022	120 m2 of garden in front of the shops near the Aarkade junction		External resistance
Placing sensors at greened Town Hall square for monitoring evaporation of trees and measuring temperature	Q3/Q4 2022	Environmental data	Health Impact Assessment	
Pilot Green-as-a-service maintenance contracting	2022	The Green-as-a-service concept will be tested in practice to explore if the conditions and agreements are sufficient.		
Installing a water buffer under the parking lot at the Aarplein	Q3/Q4 2022	Buffering xxx liters of rain water to prevend the area from flooding when peak showers occur.		Sufficient financial recourses
Installing a deep underground water storage to store the rainwater after purification for later use in dry periods.	Q3/Q4 2022	Storing xxx liters of purified rain water to use for watering trees and plants in the city in dry periods.		Political decision making, Sufficient financial recourses
Connecting the deep underground water storage with the Aarplein water buffer	Q3/Q4 2022	A working system to collect, buffer, purify and store rainwater for reuse.		Political decision making, Sufficient financial recourses
Installing the irrigation system with waterpipes to connect green areas, green roofs and green facades to the water storage	Q1-Q4 2023	A working system to keep th green in the city fresh and healthy in dry periods.		Political decision making, Sufficient financial recourses
A rainwater management system	Q1/Q2 2023	An automatic system to monitor and manage the purification, collection and backflow of rain water and address it to the final targets (trees and plants).		Political decision making, Sufficient financial recourses
Installing a water monitor in public space	Q2 2023	A visual attractive screen with dashboard in the city, so inhabitants can follow whats happening with the rain water.		Political decision making, Sufficient financial recourses

Impact on Urban Determinants of Health

Main positive impact on:

06 - Walkability;
12 - Residential proximity to public green space;
14 - Green coverage and green visibility;
16 - Different typologies of green areas;
18 - Urban landscape and general amenities in public open space.



Estimated impact on Health Indicators

Qualitative Assessment. Certainty of occurrence. Descrption of impact. Rcommendations

The communication event will stimulate the local residents and property owners to become aware of the positive impact of green and transform their own environments too a healthier and more attractive place. We will try to build bridges between people and stimulate them to work together. It will strengthen the sense of community and create connections between local residents. Public open spaces will become more attractive. Increasing the green areas will have a positive impact on biodiversity, social cohesion and mental health. We plan to implement extra urban furniture for the convenience of the inhabitants to sit and rest a while if they want. Maintenance of the green will be guaranteed according to the Green-as-a-Service concept, which is a very new approach to guarantee the health and freshness of the plants for a long term. We also want to serve the maintenance of green by assuring that there will be enough good quality water in storage to keep the trees and plants fresh and alive.We believe that showing a transformation from pavement to green to the public will convince more people to invest in greening too. We plan to assess the health impact of the greened areas by interviewing the local residents and passers-by once a year in the coming three years. Furthermore we plan to put one or more sensors to measure and monitor the impact on air quality. As the health generator indicates, greening of public space will have a lot of positive impact on physical activity, sedentary behaviour, wellbeing and quality of life and vitality and happiness.

ACTION Title: Greening roofs and facades

Typology of Action:	Physical health, Social health, Environmental health, Global health
Link to strategy / Subobjectives:	Masterplan Groen-Blauw, Coordination with stakeholders, Reduce heat stress/flooding, stimulate biodiversity, improve attractiveness and liveability of the city, increase awareness about benefits of green

CATEGORY OF THE ACTION

GREENING / LANDSCAPE
VEGETATION/BIODIVERSITY
CONNECTIVITY / MOBILITY
ACCESSIBILITY
ACTIVITIES AND LIFESTYLE
COMMUNICATION
HEALTH IMPACT ASSESSMENT
OTHER

Short Description	Action Owner	Finance / Resources
We want to stimulate the local stakeholders, like commercial property owners and inhabitants to green their buildings. We start a pilot project for replacing pavement with climbing plants at both sides of the shopping street 'Van Mandersloostraat' and invite property owners to green their roofs also. Therefore we are developing a calculation tool with which we can calculate the break even point of investments in green (also in combination with sun panels) at any building. Herewith we try to generate more trust that the investment is profitable on a longer term.	Ron Kervezee, Alphen a/d Rijn	Municipality budget, investments by property owners.
	Stakeholders	**Risks**
	The Board and Council of Alphen a/d Rijn, Projectmanager of Alpen a/d Rijn, internal and external advisors, shop and/or other property owners, local residents	Not enough funding, resistance of shop owners and residents, delay in decision making or no decision at all due to elections in Q1 2022, no solutions for technical problems.

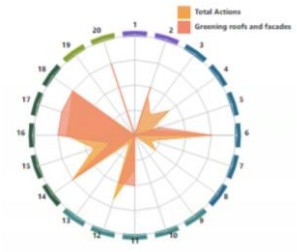
ACTIVITIES

ACTIVITY	Dates	Outputs	Related ACTIVITIES	BLOCKERS / Concerns
Developing a calculation tool for calculating the break even point and return of investment of green investments.	Q4 2021	Knowledge and trust for the property owners about their financial risks	GreenFund, greening roofs by property owners	None
Installing a GreenFund	Q1/Q4 2022	Cheap loans for property owners to green their buildings	Green-as-a-Service	Political decision making, financial resources
Implementing of the Green-as-a-Service concept	Q1 2022 - Q1 2023	Full service package for delivery, planting and 10-year maintenance of green with high quality guarantees	GreenFund, greening roofs by property owners	Political decision making, external resistance
Communication event about greening 'Van Mandesloostraat' and greening roofs and facades in general	Q3 2022	Collecting ideas to implement in the "Van Mandersloostraat' and other parts of the city	Greening roofs by property owners	External resistance
Replacing pavement with climbing plants at both sides of the 'Van Mandersloostraat', installing canope frames and benches	Q3/Q4 2022	In cooperation with property owners we realize 5 Green facades with shade canope's above the street and benches at street level	Greening roofs by property owners, rain water management system	Political decision making, external resistance, investors
Replacing pavement into a border with plants and wooden decking paths in front of the shops near the Aarkade junction	Q3/Q4 2022	In cooperation with property owners we realize a plant border of approx. 100 m2 with bee-friendly plants in front of some shops.	Rain water management system	Political decision making, external resistance
Stiumulating property owners to green their buildings	Ongoing	3 property owners start to green their roofs in 2022, 7 owners start to green their roofs in 2023 and 10 owners in 2024.	GreenFund, Green-as-a-Service, Rain water management system, Calculation tool	External resistance
Health impact survey among residents	2023/2024/2025	Input about the use of greened areas and about the experience and impact on health of residents.		Other priorities.

Impact on Urban Determinants of Health

Main positive impact on:

06 - Walkability;
14 - Green coverage and green visibility;
16 - Different typologies of green areas;
17 - Continuity of green infrastructure;
18 - Urban landscape and general amenities in public open space;
20 - Energy efficiency.



Estimated impact on Health Indicators

Qualitative Assessment. Certainty of occurrence. Descrption of impact. Rcommendations

We stimulate the local residents and property owners to become aware of the positive impact of green and transform their own environments too a healthier and more attractive place. We will try to build bridges between property owners and stimulate them to work together. It will strengthen the sense of community and create connections between business owners and local residents as well. Increasing the number of green facades and roofs in the shopping street will have a positive impact on the attractiveness, biodiversity, social cohesion and mental and physical health in the city. We plan to implement extra urban furniture for the convenience of the inhabitants to sit and rest a while if they want. Maintenance will be guaranteed according to the Green-as-a-Service concept, which is a very new approach to guarantee the health and freshness of the plants for a long term. We also want to serve the maintenance of green by assuring that there will be enough good quality water in storage to keep the trees and plants fresh and alive. We believe that showing a transformation from pavement to green and from roofs and facades to green to the public will convince more people to invest in greening too. We plan to assess the impact of the greened areas by interviewing the local residents and passers-by once a year in the coming three years. Furthermore we plan to put one or more sensors to measure and monitor the impact on air quality. As the health generator indicates, greening of public space will have a lot of positive impact on physical activity, sedentary behaviour, wellbeing and quality of life and vitality and happiness.

ACTION: ATTRACTIVE AND HEALTHY WALKING ROUTES

ACTION Title: Attractive and healthy walking routes

Typology of Action:	Physical health, Social health, Environmental health, Global health
Link to strategy / Subobjectives:	Improve attractiveness of the city, improve biodiversity, improve interaction between urban furniture and green space, attractive walking routes, downsizing number of parked vehicles, non obstacles related to physical disability, health tracks

CATEGORY OF THE ACTION

- GREENING / LANDSCAPE
- VEGETATION/BIODIVERSITY
- CONNECTIVITY / MOBILITY
- ACCESSIBILITY
- ACTIVITIES AND LIFESTYLE
- COMMUNICATION
- HEALTH IMPACT ASSESSMENT
- OTHER

Short Description	Action Owner	Finance / Resources
Existing walkingroutes will be transformed into walking routes that will be greener and more recognisable, suitable and attractive for walking. We intend to upgrade the route from the train station to the center and from the City Hall to shopping center 'De Aar', that will be renewed and rebuild in the coming years.	Ron Kervezee, Alphen a/d Rijn	Municipality budget, investments by property owners.
	Stakeholders	**Risks**
	The Board and Council of Alphen a/d /Rijn, Projectmanager of Alphen a/d Rijn, internal and external advisors, local residents and property owners	Not enough funding, resistance of shop owners and residents.

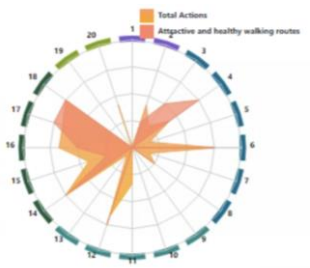
ACTIVITIES

ACTIVITY	Dates	Outputs	Related ACTIVITIES	BLOCKERS / Concerns
Communication event about why and how to make the walking routes more attractive	Q1 2023	Collecting ideas for attractive routes and creating more awareness on the topic of greening the city	Greening public space, greening facades	Political decision making, external resistance, funding
Replacing pavement with plants and/or trees along the route from the City Hall to shopping center 'De Aar'	Q1/Q2 2023	More healthy and attractive walking route	Greening public space, greening facades	Political decision making, external resistance, funding
Replacing pavement with plants and/or trees along the route from the train and bus station to the City Hall.	Q2/Q3 2023	More healthy and attractive walking route	Greening public space, greening facades	Political decision making, external resistance, funding
Installing excersize objects and benches	Q2/Q3 2023	More people doing exercizes and places to rest for elderly people or people with special needs		Political decision making, funding
Installing route signs	Q2/Q3 2023	Better and clearly visible route indication to the center		
Installing spheric lightning	Q3/Q4 2023	Increased attractiveness in the evening without affecting the safety of pedestrians and biodiversity		Political decision making, financial resources

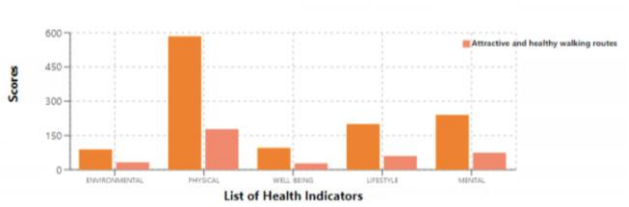
Impact on Urban Determinants of Health

Main positive impact on:

04 - Connection to relevant places;
06 - Walkability;
14 - Green coverage and green visibility;
17 - Continuity of green infrastructure;
18 - Urban landscape and general amenities in public open space.



Estimated impact on Health Indicators



Qualitative Assessment. Certainty of occurrence. Description of impact. Recommendations

We believe that making the main walking routes more attractive and green will stimulate people to walk more often, which is benficial for their physical and mental health. We expect this will have a positive impact on sedentary behaviour. Also this will attract more visitors to the city, which will benefit the local economy. Implementing more green along those routes will not only increase the attractiveness of the city, but also the biodiversity, social cohesion and mental and physical health. We plan to implement extra urban furniture for the convenience of the inhabitants to sit and rest a while if they want. But we also like to support those who need some extra exercise after a long time sitting at work or in public transport. Maintenance will be guaranteed according to the Green-as-a-Service concept, which is a very new approach to guarantee the health and freshness of the plants for a long term.

ACTION Title: Zero-Emission City Logistics

Typology of Action:	Physical health, Environmental health, Global health
Link to strategy / Subobjectives:	Masterplan Groen-Blauw, Air quality, Quality of life in the city center

Short Description	Action Owner	Finance / Resources
From 2025 we want all deliveries and other logistics in the city center to be performed with electrical vehicles. Therefore we install camera's to control all the entrances to the city center and with those cameras all offenders can be spotted and fined. Onwards to this situation we work together with stakeholders on solving their possible problems.	Ron Kervezee, Alphen a/d Rijn	Municipality budget, investments by companies to change their car or truck fleet.
	Stakeholders	**Risks**
	The Board and Council Alpen a/d Rijn, Projectmanager, advisors, logistic companies, shops, supermarkets and other organisations	Political decision making, external resistance of shop owners and logistic companies.

CATEGORY OF THE ACTION

GREENING / LANDSCAPE	
VEGETATION/BIODIVERSITY	
CONNECTIVITY / MOBILITY	■
ACCESSIBILITY	
ACTIVITIES AND LIFESTYLE	
COMMUNICATION	■
HEALTH IMPACT ASSESSMENT	■
OTHER	

ACTIVITIES

ACTIVITY	Dates	Outputs	Related ACTIVITIES	BLOCKERS / Concerns
Decision making to implement new policy	Q1 2022	New policy on logistics in the city center.		Political decision making, external resistance
Communication campaign	2022-2025	Share the policy change, work together with stakeholders to solve all practical problems	Implement the new policy	external resistance
Installing cameras and management system	2025	All routes to the center are controlled		
Implement the new policy	Q1 2026	Clean air, noise reduction	Health impact assessment	
Placing sensors for monitoring air quality	2026	Air quality data	Health impact assessment	

Qualitative Assessment. Certainty of occurrence. Descrption of impact. Rcommendations

We already started all preparations to come to a policy change in 2026. We are in close cooperation with LessGo, a company who created a logistic hub at the border of the city and does all deliveries already with electrical vehicles, like electric busses, pick-up trucks or even electric bikes. We contacted a lot of stakeholders to involve them in the process of transformation to clean and sustainable ways of logistics, expecially to supermarkets, shops, restaurants and other organisations or inhabitants in the city center. A preparation period for all stakeholders of four years is defined by law. It gives logistic companies time to change their fleet and implement all necessary organizational changes. After those four years we will have a city center with much more clean air and less noise and therefore a healthier city. This will have a very positive impact on the physical health of residents.

ACTION Title: Healthy lifestyle at schools

Typology of Action:	Physical health, Social health, Environmental health, Global health
Link to strategy / Subobjectives:	Masterplan Groen-Blauw, Green playgrounds, green classes, healthy meals, local for local food

Short Description	Action Owner	Finance / Resources
In March 2021 we started a pilot on serving fresh cooked lunch meals four tims a week for 100 schoolkids in grade 6 and 7 at 2 different schools in underprivileged neighbourhoods. We also planted more green at the schoolyard and put a lot of plants in the classroom. We intend to continue and expand this project in the coming years. The health impact of these measures will be monitored by the Louis Bolk Institute.	Ron Kervezee	National Government and Municipality budget, investments/in kind support by stakeholders.
	Stakeholders	**Risks**
	The Board and Council of the Municipality, Projectmanager, schools, Koppert Cress BV, LessGo BV, Louis Bolk Institute and other organisations	No funding will come available

CATEGORY OF THE ACTION

GREENING / LANDSCAPE	
VEGETATION/BIODIVERSITY	
CONNECTIVITY / MOBILITY	
ACCESSIBILITY	
ACTIVITIES AND LIFESTYLE	■
COMMUNICATION	■
HEALTH IMPACT ASSESSMENT	
OTHER	

ACTIVITIES

ACTIVITY	Dates	Outputs	Related ACTIVITIES	BLOCKERS / Concerns
Pilot "A healthy lifestyle starts with our youth" in Alphen aan den Rijn.	Q1/Q2 2021	1. healthy lunch 4 days a week (soup/salate with bread and spreads / 2. vegetables and fruit at 10.00 oçlock three days a week / 3. greening the class room with plants	Preparation of the lunches. Transport of the lunches to the schools by zero-emission vehicles. Inspirational and informational videos about the cook telling about the production, recepies, benefits and good taste of the vegetables. EU Schoolfruit (subsidy)	Continuation of the activities after the pilot has finished.
Evaluation of the pilot 'A healthy lifestyle starts with our youth' in Alphen aan den Rijn	Q3 2021	Conclusions on results before and after the pilot: Not all parents are involved or motivated to change their habits.	Communicaton about the results	Parents are not motivated enough to become involved. Schoolteachers don't have time for the extra work that it takes. The Municipality has no financial resources for continuation. Watering the plants and care during the summer holidays
Communication campaign	Q1/Q2 2022 - 2023	More awareness about the importance of eating healthy food	Strengthen the network of stakeholders	Parents won't cooperate changing their food habits
Fund raising / fund finding	Q1/Q2 2022 - 2023	Availability of (structural) funds to continue and enlarge the project	Strengthen the network of stakeholders	No funding comes available
Restart of the project	Q3/Q4 2022 - 2023	More schools and children involved by the servings of healthy food and greening the classrooms.	Preparation of the lunches. Transport of the lunches to the schools by zero-emission vehicles. Inspirational and informational videos .	watering the plants and care during the summer holidays




Qualitative Assessment. Certainty of occurrence. Descrption of impact. Rcommendations

The results of the first pilot were good. The children liked the fresh food and learned to eat vegetables they didn't ate before. The school were very enthousiastic about the pilot. The impact on health and behaviour was monitored by the Louis Bolk Institute and the conclusion was that the eating behaviour of children changed as follows:
Morning break - Before the pilot: consumption of vegetables/fruits (73%) and/or bread/cookies (34%) = After the pilot: no significant changes.
Lunch break - Before the pilot: consumption of bread (100%) = After the pilot: bread (86%) and/or fresh cooked lunch 28% and/or salad (23%)
As a result of the pilot the consumption of bread went down and the consumption of vegetables went up. This is positive for the health as it prevents overweight and/or obese. It is very difficult to change food habits. We have to create more involvement and awareness by parents about the benefits of health, so we must invest in better communication and seek for funding to continue the project.

RISKS

Internal support

During the process we experienced quite a lot of impact of the COVID-19 situation on straightforward decision making. Most of the colleagues worked at home/online, so the informal talks around the coffee machine fell away. And that is often the location to get people interested in what you are doing and to establish trust. So, it is hard to break through 'old thinking' and colleagues tend to choose for the safe paths they know instead of widening their window. Besides that, the workload is high, and we just do not have enough time to make things perfect. Above that the election period (March 2022) came in sight, and we noticed that the focus of decision makers was changing. Instead of pushing against the odds, we chose to take some time to reconsider how to get us back on track in the course of the year.

External support

As long as the COVID-19 pandemic situation will last, our stakeholders are focussed on surviving the crisis instead of investing in extra activities. Because big part of the project depends on external investors, the project has some delay. Though we work well together with the local retail association, the local real estate association, and other organizations, we also experience some resistance from one or two individual persons who try to frustrate the plans by all means.

Funding

The board of Alphen aan den Rijn has to make choices on how to divide the resources. COVID-19 increased the municipal costs enormously, so there is a lot of pressure on the budgets. We have some budget to start with, but it is not enough to realize all the actions. So, we depend on new funding, either from subsidy funds or from municipal resources. We wish to join new consortia of European cities to work on subsidized projects for a healthy environment, climate adaptation, greening and biodiversity. Not only for funding of course, but also to learn from each other.

Innovations

The water management system is an innovative system and so not all the specifications are already clear. Consequently, there is a risk that we have to deal with technical challenges, that can lead to some delay in the projects. However, we will hire the best specialists in that field to make sure we reduce the risk factor to a minimum.

Visual to inspire to green the town hall square

PLANNING OF ACTIONS

In the table hereunder there is an overview of the planning of alle actions and activities:

ACTION	Activities	Q4/21	Q1/22	Q2/22	Q3/22	Q4/22	Q1/23	Q2/23	Q3/23	Q4/23	Q1/24	Q2/24	Q3/24	Q4/24	Q1/25	Q2/25	Q3/25	Q4/25	Q1/26
GREENING PUBLIC SPACE																			
Physical health, Social health, Environmental health, Global health	Communication event about greening the Town Hall square																		
	Replacing pavement with trees/plants at the Town Hall square																		
	Replacing pavement with trees/plants at the Aarkade junction																		
	Placing sensors at Town Hall square for monitoring air quality																		
	Pilot Green-as-a-service maintenance contracting																		
	Installing a water buffer under the parking lot at the Aarplein.																		
	Installing a deep underground water storage																		
	Connecting the underground water storage with Aarplein buffer																		
	Installing the irrigation system to connect the storage to the green																		
	A rainwater management system																		
	Installing a water monitor/dashboard in public space																		
GREEN ROOFS AND FACADES																			
Physical health, Social health, Environmental health, Global health	Tool to calculate (financial) benefits of green investments.																		
	Installing a GreenFund																		
	Implementing of the Green-as-a-Service concept																		
	Communication event about greening the 'Van Mandersloostraat'																		
	Greening of 'Van Mandersloostraat'/canope frames and benches																		
	Greening of 'Aarkade' junction / plant border in front of shops																		
	Stiumulating property owners to green their buildings																		
	Health impact survey among residents																		
ATTRACTIVE AND HEALTHY WALKING ROUTES																			
Physical health, Social health, Environmental health, Global health	Communication event about healthy attractive walking routes																		
	Greening the route from the City Hall to shopping center 'De Aar'																		
	Greening the route from the train/bus station to the City Hall.																		
	Installing excersize objects and benches																		
	Installing route signs																		
	Installing spheric lightning																		
ZERO-EMISSION CITY LOGISTICS																			
Physical health, Environmental health, Global health	Decision making to implement new policy																		
	Communication campaign																		
	Installing cameras and management system																		
	Implement the new policy																		
	Placing sensors for monitoring air quality																		
HEALTHY LIFESTYLE AT SCHOOLS																			
Physical health, Environmental health, Global health	Pilot 'A healthy lifestyle starts with our youth' in Alphen aan den Rijn																		
	Evaluation of the pilot 'A healthy lifestyle starts with our youth'																		
	Communication campaign																		
	Fund raising / fund finding																		
	Restart of the project																		

As part of the co-production process, we tested a way to create more awareness about the importance of health in the city and engage our inhabitants to our actions.

THE IDEA

As our initial idea, an informational pop-up store, was not feasible in the given time anymore due to the COVID-19 situation, we decided to change it into a feasible action at last. We designed an Online Tiny Survey for our inhabitants to collect their point of view and ideas about greening the city, accessible with a QR-code. We designed a promotional text with an invitation to fill in the Online Tiny Survey and had it printed in biodegradable ink on a plantable card with bee- and butterfly-friendly flower seeds. With this, our inhabitants would get a little greening present that supports biodiversity as a thank you in return for the requested effort. The city would also benefit from it because next summer a lot of bee- and butterfly-friendly flowers should be blooming all over the city.

THE ACTION

For this action we went to the most crowded places in the city centre, like the shopping centre and the Wednesday market and made personal contact with the inhabitants to hand over the growing cards and to invite them to join our Online Tiny Survey. We went to several different places in the city centre to reach as much different people as we could. We also engaged a lot of colleagues in the Municipality, because they work in the Town Hall, situated in the city centre, and therefore often take pauses outside in the public spaces. We have distributed about 750 growing cards and digital flyers. We will use the rest of the growing cards for upcoming meetings and events with inhabitants.

All this took place in the 'slipstream' of the National Tree Planting Day, which was organised by Alphen aan den Rijn and which took place on the 10th of November 2021. On that special day Alphen aan den Rijn welcomed very special guests, her Royal Highness Princess Irene van Oranje, sister of our former Queen Beatrix, with her son Prince Carlos and her daughter Princess Margarita and their children. Princess Irene planted her tree of life, a Poplar, in the forest named after her.

Growing card with bee-friendly flower seeds

The QR-code to the Online Tiny Survey

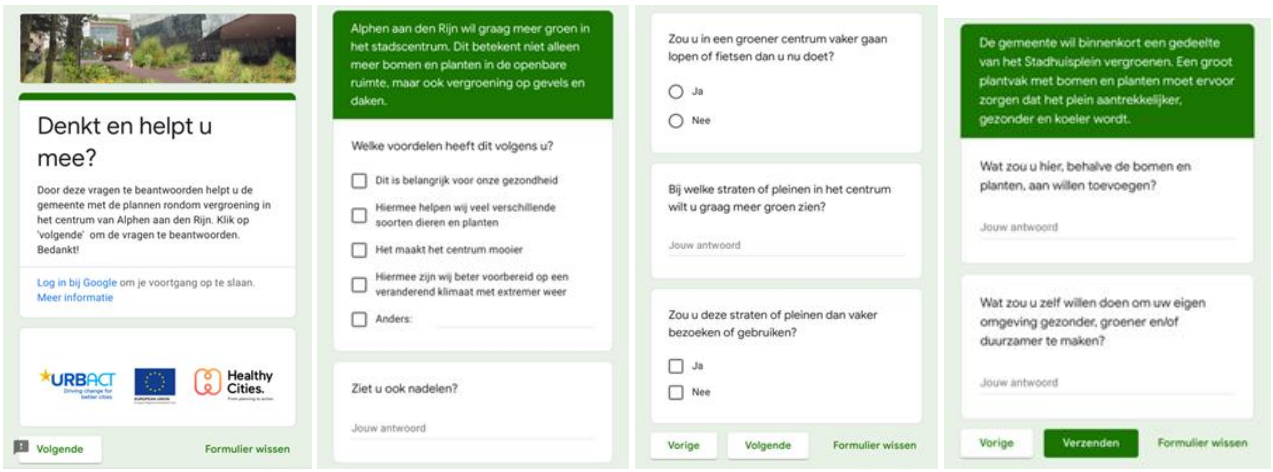
Project Team in action in our shopping street

Impression of the National Tree Planting Day

Impressions of the National Tree Planting Day.

THE ONLINE TINY SURVEY AND OUTCOME

As people in the streets mostly are in a rush and don't have or want to take time for a short interview, we assumed that the online survey should not take more time than three minutes. Therefore, the Online Tiny Survey consists of no more than 7 questions. We received 79 responses.

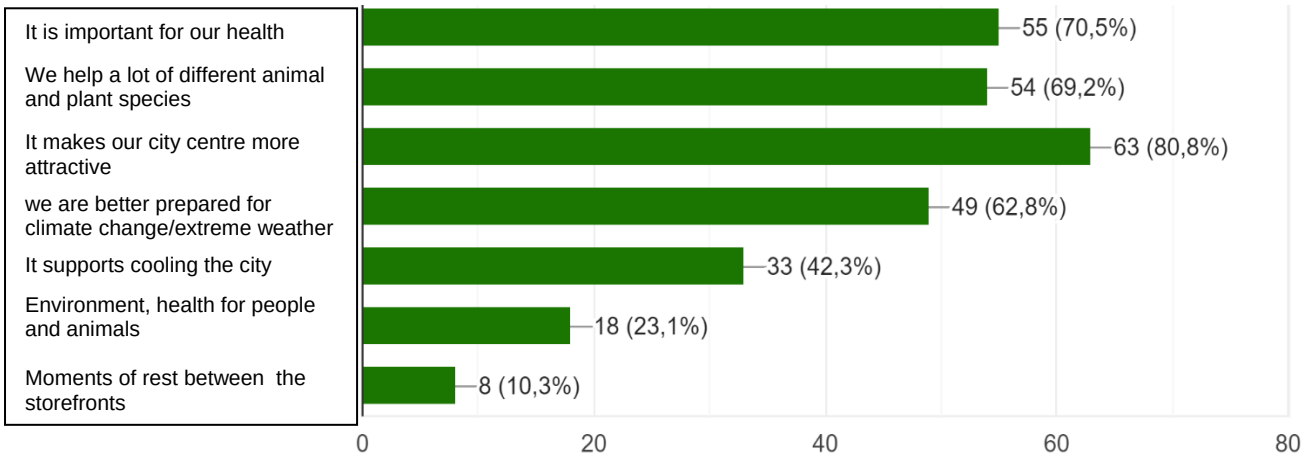


Pages of the Online Tiny Survey

The results were as follows:

Question 1: What are the advantages of applying more greenery in public spaces and on roofs and facades?

Answers:

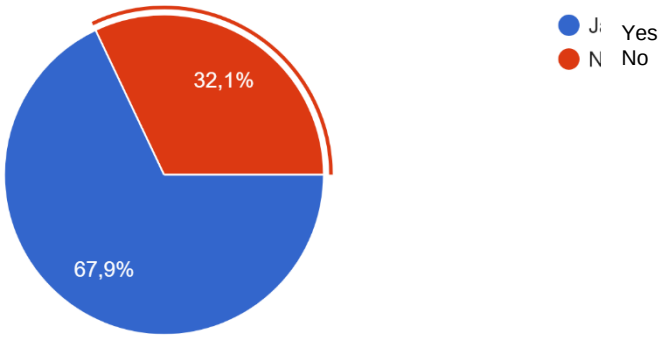


Question 2: Do you see any disadvantages?

Answers:	**Quantity**
No, not really, absolutely not, it doesn't harm anything, the greener the better, etc.	**11**
There are costs involved (purchase, construction, planting, maintenance, etc.), costs are higher regarding to pavement	**8**
It must be well maintained, takes a lot of maintenance, proper management and maintenance, less easy to maintain green on roofs	**17**
Don't let it become a public trash can	**1**
Take care of enough water supply, we are not going to facilitate that for the municipality	**2**
Less space for other users or events, less accessibility	**9**
Building differently or make adaptations to make facades suitable for greening	**2**
More leaf waste in the centre	**3**
Damage to masonry	**1**
More conflict between pedestrians, cyclists, scooters, expedition traffic, busses etc.	**1**
More annoying insects that bother us	**3**
Less space for houses in the city, then more houses must be built in the outlying areas	**1**
Alphen is already rather green (Raadhuisstr), it's good for the centre and sustainable future	**2**
Everything in moderation	**1**
The city will look less nice, but more ugly, with lack of maintenance it's more ugly.	**2**
Why isn't there anything done in our village Hazerswoude-Rijndijk?	**1**

Question 3: Would you cycle or walk more often in a greener centre?

Answers:



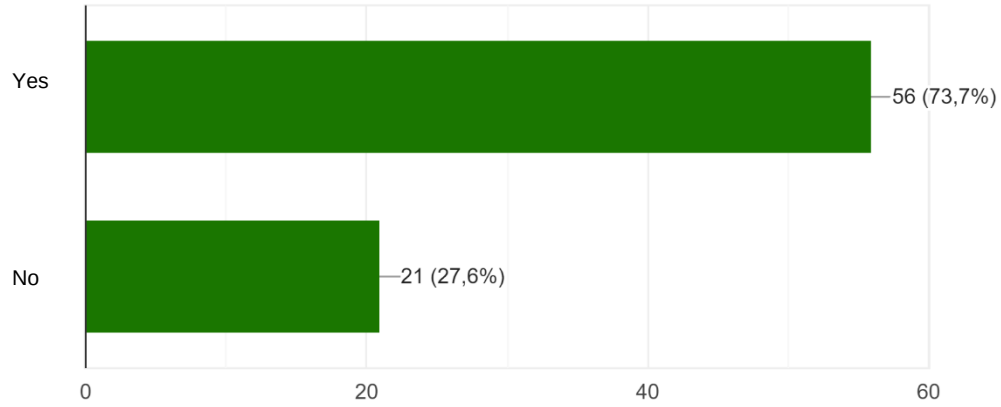
Question 4: In which streets or squares would you like to see more greenery?

Answers:	Quantity
Aarhof	7
City centre in general, all of Alphen a/d /rijn, everywhere it's possible to put more green	14
Ridderhof	1
Van Mandersloostraat and/or other shopping streets	10
Stadhuisplein, the Town Hall square is terribly boring	11
Rijnplein (also facades), near theater Castellum	21
Aarplein	4
We recently came to live here and/or we don't know	3
The Station area	2
Lage Zijde/De Vest	2
Paradijslaan	2
Industrial areas	1
Thorbeckeplein	9
Castellumstraat, a.o. between Omloopkanaal en Julianastraat	2
Sint Jorisstraat	4
Van Lennepstraat, streets around the centre	2
Main route through the centre (Alphens bridge), important structures	2
Aarkade	2

Julianastraat	2
Hooftstraat, the part from the Blijenbergstraat to the Regtstraat	2
All places where there are no houses or appartments at street level	1
Da Costasingel in Hazerswoude-Rijndijk	1
Lijsterlaan, area of streets with birdnames.	2
Willem Kloosstraat	1
Van Boetzelaerstraat	1
There isn't any space for green	1
Burg. Colijnstraat en Koninginneweg Boskoop (all the big trees there are gone)	1
Willem Dreesstraat	1
At the river banks of the Oude Rijn	1

Question 5: Would you use these streets or squares more often if they were more green?

Answers:



Question 6: What would you add to the Stadhuisplein (Municipality Square), other than trees and plants?

Answers:	Quantity
Places to sit, bench(es) WITH backrest, more places to rest, a bench near the greenery	27
Good mood lighting, this makes the city much nicer with a better sense of security	3
Wrap the lampposts with greenery	1
Flowers (also for bees)/ butterfly shrubs / Flower pots / flowery plants / tulips	11
Edible plants, municipal vegetable garden	4

Picking garden	2
Bee hotel, insects' hotel	5
Animals	2
Fountain, waterfeature, water elements, water storage	7
Water tap	2
Something for children, play facility (e.g. wooden object, robust), circular playground	8
Something for residents, fitness, swings for everyone, experience plateau in the green space	1
Restaurant or café with a terrace	1
Trash bins	4
Art / art object /wooden object	6
Bird houses, something else for birds	4
Info boards, education boards	2
Deal differently with reuse of rainwater	1
No bicycles	2
Nothing to add, good plan, really like it	3
Accessible bus stops, Disabled boarding point at bus stops	2
A well-arranged place for when the nightlife gets going again	1
A well-arranged place to wait for outgoing school (Bonifacius) and town hall	1
Coherence with 'sunken' flowerpots	1
Green facades, green roofs	2
Plenty of space for pedestrians	1
Car traffic out of the centre (especially at bus stops)	1
Clear signage	1
Solar panels on the town hall roof	1

Question 7: What would you like to do to make your own environment healthier, greener and/or more sustainable?

Answers:	Quantity
Plant more trees and plants, replacing tiles with plants, more grass, more green in garden	21
Plant bee and/or butterfly friendly plants	2

Quit smoking	1
No cars or bikes going through the street	1
Flowerpots with beautiful plants, more plants on the balcony	2
We already do things: replaced some tiles in the sidewalk with plants, maintenance of a public plant border in our living area	1
Greening our roof	8
Putting a rain barrel in the garden, re-use of rainwater captured on the roof for plants	4
Solar panels	9
Good maintenance of our garden	2
Good insulation in the house	1
Living in an apartment but used to have very green garden. That should be promoted more.	1
Keeping my own street clean and do some maintenance work on plant pots placed by the municipality, maintaining a public garden, help with the planting of green	4
Nothing / we are already satisfied at where we live / it's already green where we live	14
Make a herb garden / kitchen garden	4
Green hedge instead of wooden fence	1
Insect hotels / attractive for insects / opportunities for insects	2
Compost bin in the garden, no more cleaning up leaves	2
A heat pump, make my house more sustainable	3
Sending a request to the municipality to make my neighbourhood greener	1
Enlarge the tree mirrors and put plants in it	1
Subsidy and promotion for replacing tiles and pavement with plants and trees	1
Supervising a tree project for front yards (with subsidy of the municipality)	1
A greener schoolyard	1
Live more consciously	1
(Participation in) choice of perennials for public gardens	1
I would do everything, but it's costly	1
Lines with green to protect busy roads of shopping areas	1
Reduce speed, free zone with no package service.	1
A hedge maze on the square with the coloured sitting bank	1

EVALUATION / CONCLUSION

We experienced that the people to whom we handed the flyer with an explanation, were overall positive about our effort to collect their opinions and ideas and the way we did that. But we noticed also that people were busy and needed to rush to whatever they had to do. So, the promise was often to fill in the survey at home, but few did. It showed us how little time people seem to have to put some interest in their own living environment and the importance of that to their health. In the end, we only got about 79 responses to 750 distributed flyers. This is a conversion of about 10%, which is not bad in social marketing terms anyway.

ANALYSIS OF RESULTS

About 70% of the respondents think that greening is important for our health and that it helps a lot of different animal and plant species. About 81 % believe that this will make the city more attractive too. 63% of the respondents think that it will help the city to be more climate resilient and 42% think that greening provides cooling.

Conclusion **we should put some more effort to the promotion of the positive health and climate effects of greening the city centre.**

About 21% of the respondents see the maintenance aspects of greening as a disadvantage and 10% also think that the costs of it will be an issue.

Conclusion **is that we have to secure these aspects before starting any project. The maintenance part is already overcome by the solution of the Green-as-a-Service concept. People always think about the cost side, but they are not aware what financial returns the greening generates. Therefore, we are also developing a format for property owners to calculate a business case on greening easily.**

About 68% of the respondents replied that they would walk or cycle more when the city centre is greener.

Conclusion **is that greening stimulates people into a more active lifestyle.**

26% of the respondents point at the Rijnplein and 14% point at the Stadhuisplein as the most important places to green. Next important places to green are the shopping streets, like the Van Mandersloostraat, the Thorbeckeplein and the Aarhof (shopping mall).

Conclusion **is that we made a rather good choice for the Stadhuisplein (Municipality Square) to be the first greening pilot. We are also making preparations together with property owners and shops to enroll a greening plan for the shopping street Van Mandersloostraat. The shopping mall Aarhof will be redeveloped as the agreements with the real estate development company have recently been signed.**

Almost three-quarters of the respondents confirm that they would make more use of these places and streets if they were greener.

Conclusion **is that greening the streets and squares make them more attractive to people and they will spend more time there.**

34% of the respondents would like to see sitting elements or benches added to the greening plan for the Stadhuisplein (Municipality square). Second best additions that they mention are flowers, artworks, and play objects for children. After that comes insect or bee hotels and water elements like fountains.

Conclusion **is that we have to combine the greening with other 'hardware' to make it more attractive and usable for our inhabitants and have more support and appreciation for the project as well.**

26% of the respondents are prepared to plant more plants and trees in their own garden. 18% are already satisfied with their living environment or do not want to do anything themselves and 11% like to contribute to the environment by installing sun panels. 10% are thinking about greening their roof. Furthermore, there are a lot of different small actions mentioned that can be implemented at home.

Conclusion **is that we must communicate more about all the different actions that will contribute to a better and more sustainable living environment, so people can pick the solutions that are the most suitable for them.**

URBACT
Driving change for better cities

EUROPEAN UNION
European Regional Development Fund

Healthy Cities.
From planning to action

ANNEX

HEALTH IMPACT ASSESSMENT

ALPHEN AAN DEN RIJN

Authored by: Margreet Boer

TABLE OF CONTENTS

WHAT IS HEALTH?

Health as is a state of complete physical, social, and mental well-being, and not merely the absence of disease, disability or infirmity (WHO, 1948).

In 1986, the Ottawa Charter for Health Promotion further developed the word health to include "the extent to which an individual or group is able, on the one hand, to identify and to realize aspirations and satisfy needs, and on the other, to change or cope with the environment. Health is therefore seen as a resource for everyday life, not the objective of living; it is a positive concept, encompassing social and personal resources as well as physical capacities."

WHAT ARE THE DETERMINANTS OF HEALTH?

Many factors combined affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact.

Source available here.

The determinants of health include:

- the social and economic environment,
- the physical environment, and
- the person's individual characteristics and behaviours.

The context of people's lives determines their health, and so blaming individuals for having poor health or crediting them for good health is inappropriate. Individuals are unlikely to be able to directly control many of the determinants of health. These determinants—or things that make people healthy or not—include the above factors, and many others:

- Income and social status - higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.
- Education – low education levels are linked with poor health, more stress and lower self-confidence.
- Physical environment – safe water and clean air, healthy workplaces, safe houses, communities, and roads all contribute to good health. Employment and working conditions – people in employment are healthier, particularly those who have more control over their working conditions
- Social support networks – greater support from families, friends and communities is linked to better health. Culture - customs and traditions, and the beliefs of the family and community all affect health.
- Genetics - inheritance plays a part in determining lifespan, healthiness, and the likelihood of developing certain illnesses. Personal behaviour and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life's stresses and challenges all affect health.

- Health services - access and use of services that prevent and treat disease influences health
- Gender - Men and women suffer from different types of diseases at different ages.

Source available here.

THE URBAN DETERMINANTS OF HEALTH

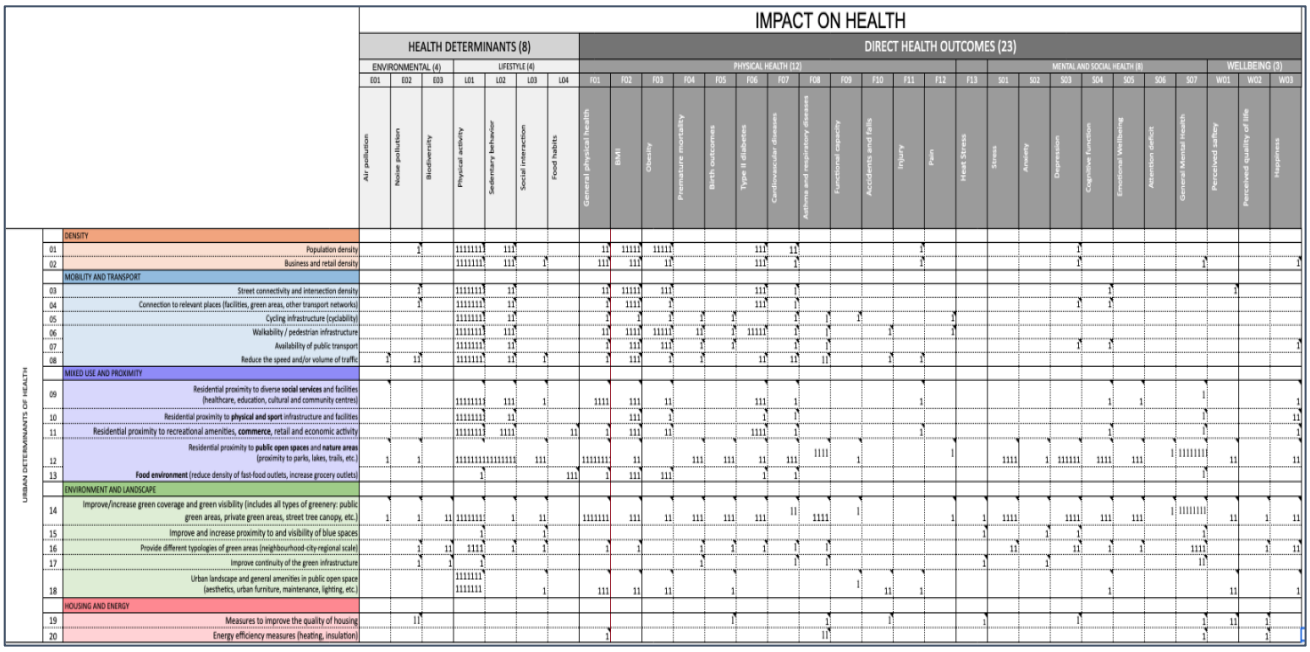
DENSITY	MOBILITY & TRANSPORT	MIXED USE AND PROXIMITY	ENVIRONMENT AND LANDSCAPE	HOUSING AND ENERGY
· Population and residential density	· Street connectivity and intersection density	· Residential proximity to diverse social services and facilities (healthcare, education, cultural and community centres)	· Improve/increase green coverage and green visibility (includes all types of greenery: public green areas, private green areas, street tree canopy, etc.)	· Measures to improve the quality of housing
· Business and retail density	· Connection to relevant places (facilities, green areas, other transport networks)	· Residential proximity to physical and sport infrastructure and facilities	· Improve and increase proximity to and visibility of blue spaces	· Energy efficiency measures (heating, insulation)
	· Cyclability	· Residential proximity to recreational amenities, commerce, retail and economic activity	· Provide different typologies of green areas (neighbourhood-city-regional scale)	
	· Walkability	· Residential proximity to public open spaces and nature areas (proximity to parks, lakes, trails, etc.)	· Improve continuity of the green infrastructure	
	· Availability of public transport	· Food environment (reduce density of fast-food outlets, increase grocery outlets)	· Urban landscape and general amenities in public open space (aesthetics, urban furniture, maintenance, lighting, etc.)	
	· Reduction of the speed and/or volume of traffic and space for traffic			

IMPACTS ON HEALTH AND HEALTH DETERMINANTS LINKED WITH THE URBAN DETERMINANTS

HEALTH DETERMINANTS		DIRECT HEALTH INDICATORS		
ENVIRONMENTAL	LIFESTYLE	PHYSICAL HEALTH	MENTAL HEALTH	WELLNESS
· Air pollution · Noise pollution · Biodiversity	· Physical activity · Sedentary behaviour · Social interaction · Food habits	· General physical health · BMI · Obesity · Premature mortality · Birth outcomes · Diabetes type 2 · Cardiovascular diseases · Asthma and respiratory diseases · Functional capacity · Accidents and falls · Injury · Pain	· Stress · Anxiety · Heat stress · Depression · Cognitive function · Emotional wellbeing · Attention deficit · General mental health	· Perceived safety · Perceived quality of life · Happiness

THE RELATIONSHIP OF URBAN DETERMINANTS WITH THE IMPACT ON HEALTH

Based on a systematic review of most updated scientific peer-reviewed publications (2016-2021) linking urban determinants and their impact on health.



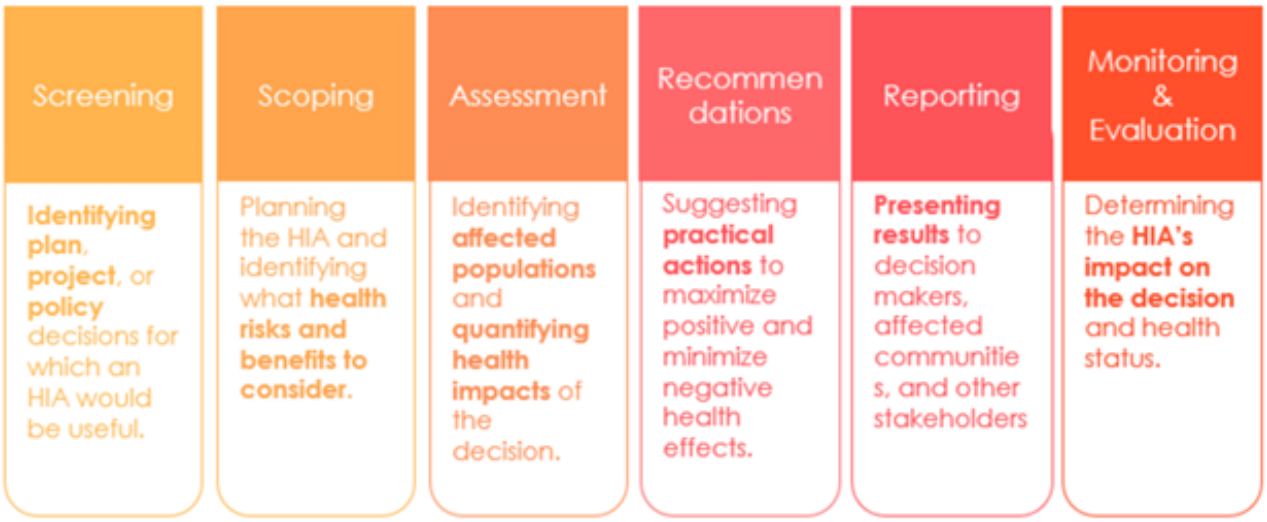
		IMPACT ON HEALTH																																				
		HEALTH DETERMINANTS (8)								DIRECT HEALTH OUTCOMES (23)																														
		ENVIRONMENTAL (4)			LIFESTYLE (4)					PHYSICAL HEALTH (12)												MENTAL AND SOCIAL HEALTH (8)							WELLBEING (3)										
		E01	E02	E03	L01	L02	L03	L04		F01	F02	F03	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	S01	S02	S03	S04	S05	S06	S07	W01	W02	W03							
		Air pollution	Noise pollution	Biodiversity	Physical activity	Sedentary behavior	Social interaction	Food habits		General physical health	BMI	Obesity	Premature mortality	Birth outcomes	Type II diabetes	Cardiovascular diseases	Asthma and respiratory diseases	Functional capacity	Accidents and falls	Injury	Pain	Head Stress	Stress	Anxiety	Depression	Cognitive Function	Emotional Wellbeing	Attention deficit	General Mental Health	Perceived safety	Perceived quality of life	Happiness							
URBAN DETERMINANTS OF HEALTH																																						
	DENSITY																																					
01	Population density		1		1111111	111				11	1111	1111			111	11				1					1													
02	Business and retail density				1111111	111	1			111	111	11			111	1				1					1				1									
	MOBILITY AND TRANSPORT																																					
03	Street connectivity and intersection density		1		1111111	11				11	1111	111			111	1										1				1								
04	Connection to relevant places (facilities, green areas, other transport networks)		1		1111111	11				1	1111	1			111	1									1	1											
05	Cycling infrastructure (cyclability)				1111111	11				1	1	1	1	1	1	1	1	1	1	1	1																
06	Walkability / pedestrian infrastructure				1111111	111				11	1111	11111	11	1	11111	1	1		1	1	1																
07	Availability of public transport				1111111	11				1	111	111	1	1	1	1	1								1	1											
08	Reduce the speed and/or volume of traffic	1	11		1111111	11	1			1	111	1	1		11	11	11		1	1																	
	MIXED USE AND PROXIMITY																																					
09	Residential proximity to diverse **social services** and facilities (healthcare, education, cultural and community centres)				1111111	111	1			1111	111	11			111	1				1							1	1		1								1
10	Residential proximity to **physical and sport** infrastructure and facilities				1111111	11					111	1			1	1														1								11
11	Residential proximity to recreational amenities, **commerce**, retail and economic activity				1111111	1111		11		1	111	11			1111	1				1							1			1								1
12	Residential proximity to **public open spaces** and **nature areas** (proximity to parks, lakes, trails, etc.)	1	1		11111111111111	111				1111111	11		111	111	11	111		1				1		1111	1	111111	1111	111		1	1111111	11		11				
13	**Food environment** (reduce density of fast-food outlets, increase grocery outlets)				1			111		1	111	111			1	1														1								
	ENVIRONMENT AND LANDSCAPE																																					
14	Improve/increase green coverage and green visibility (includes all types of greenery: public green areas, private green areas, street tree canopy, etc.)	1	1	11	1111111	1	11			1111111	111	11	111	111	111	11	1111	1			1	1	1111		1111	111	111		1	1111111	11	1	11				
15	Improve and increase proximity to and visibility of blue spaces				1		1															1		1	1				1								
16	Provide different typologies of green areas (neighbourhood-city-regional scale)		1	11	1111	1	1			1	1		1	1	1	1	1						11		11	1	1		1111		1	11					
17	Improve continuity of the green infrastructure		1	1	1								1			1	1					1		1				11								
18	Urban landscape and general amenities in public open space (aesthetics, urban furniture, maintenance, lighting, etc.)				1111111 1111111		1			111	11	11		1					1	11	1					1				11		1						
	HOUSING AND ENERGY																																					
19	Measures to improve the quality of housing		11											1			1		1			1			1				1	11	1						
20	Energy efficiency measures (heating, insulation)									1							11												1		1						

Source available [here.](#)

THE DEFINITION OF HEALTH IMPACT ASSESSMENT

"Health Impact Assessment is a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population" (WHO 1999).

We have followed the classical approach to Health Impact Assessment, through 6 steps:



SCREENING & SCOPING

Analysis

The past decades have shown that more and more people are faced with obesity and mental problems as a result of the drastically changed lifestyle during that period of time. Health problems as a result of air pollution and climate change (for example heat stress) are also increasing. All this leads to a reduced quality of life and health and increasing health costs. With the Masterplan Green-Blue city centre, the municipality of Alphen aan den Rijn is striving for a sustainable healthy living environment in the city centre, which improves the quality of life and health of residents and possibly reduces health costs.

The plan consists of 5 pillars:

- Healthy people / healthy food
- Greening
- Water management
- Zero-emission city distribution
- Energy transition

The HIA can be a useful tool to guide the measures to be taken in order to achieve the set goals as well as to substantiate the legitimacy of investments to that end. The image below shows the area demarcation to which the Masterplan Green-Blue City Centre applies.

Figure: Demarcation of Masterplan Green-Blue centre area.

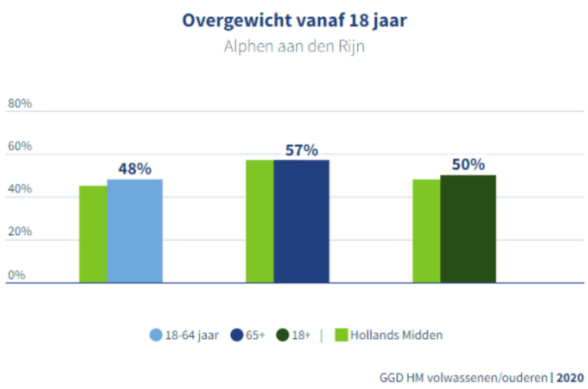
For this area, the HIA is particularly focused on the projects to be carried out within the 'Greening' pillar, combined with the 'Water management' pillar, and, by extension, the impact on health. A side note with regard to the latter is that many of the existing health indicators have been measured for the entire municipality and not for the demarcated project area. We therefore want to make a clear distinction between the applicable spatial control indicators for this specific area and the more generic indicators that are measured or estimated on other scale levels (neighbourhood or municipality) (as shown in the table below).

The above stated differentiation between spatial indicators and generic health indicators, are a direct result of the degree to which local government can (directly) influence above mentioned indicators. The spatial domain is a realm where local governments have a strong and steering influence; here they have different instruments to directly impact the spatial order. Health is a more generic domain where local government has a role too, but a different one. While we believe that the local government *can* have an influence on health (more indirectly), we must also recognize that we are just one of the many actors involved in this.

Therefore, a distinction between 'steering indicators' and more 'contextual indicators', give us more policy perspective. Spatial indicators are more tended to measuring policy (accountability), while generic health indicators are more geared towards a 'finger on the pulse'. We see a distinction between these types of indicators, but we also keep in mind that both are interdependent.

Population	111.000
Density	837/km2
Demographic profile	Age 0-19: 23% Age 20-64: 58% Age 65+: 19%
Life expectancy	Male 80,8 Female 83,6
Overweight age 19+ Overweight age 60+	51% 60%
Mental health (stress-related)	16%
Physical inactivity	Age 20-64: 7% Age 65+: 8%

Facts & Figures Alphen aan den Rijn (2016)



GGD Health Monitor: Overweight figures (2020)

Based on our main objectives we formulated the following Urban Determinants and Health Indicators:

As said before, the Health Impact Assessment will be merely focused on the Green and Blue aspects of the whole plan.

Governance

The stakeholders involved in the Health Impact Assessment are:

- (former and future) members of the ULG
- data specialist from the Municipality
- GGD (regional Health Authority)
- Greening committee of the Green Fund

The roles and responsibilities of the assessment team are defined as follows:

Role	Who	Responsibility
Process manager:	Margreet Boer	Managing the process and deliverables
Content manager:	Ron Kervezee	Responsible for quality of the content
Advisor:	Jasper Akker	Data collection and analyses
	ULG team	Supplying content and advising on the quality of the HIA
Data specialist:	Daan van den Hoorn	Supplying facts and figures on the indicators defined.

During the URBACT process the HIA will be used to improve the urban planning measures as much as possible for the Green-Blue city projects, within the feasibility of those measures of course. After that we aim to use the HIA as a tool to improve new and existing policies for the entire municipality.

Planning and design (compulsory)

Based on the 5 pillars of the Masterplan Green-Blue we have defined a lot of different activities per action which contributes to different health aspects. In the following table we give an overview of actions and in the side bar is pointed out to what health aspect the activities address to:

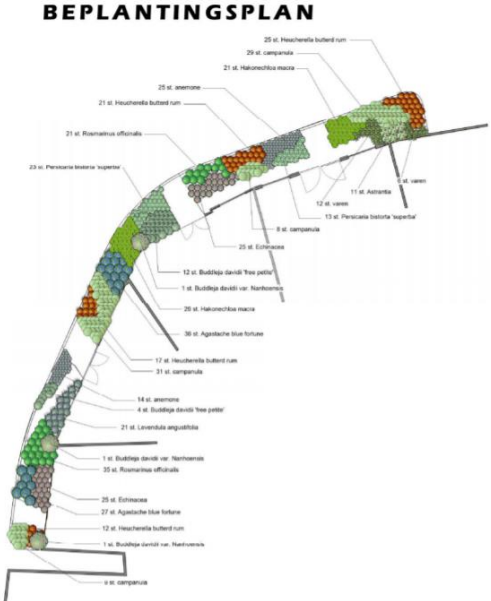
ACTION	Activities
GREENING PUBLIC SPACE	
Physical health, Social health, Environmental health, Global health	Communication event about greening the Town Hall square
	Replacing pavement with trees/plants at the Town Hall square
	Replacing pavement with trees/plants at the Aarkade junction
	Installing a water buffer under the parking lot at the Aarplein.
	Installing a deep underground water storage
	Connecting the underground water storage with Aarplein buffer
	Installing the irrigation system to connect the storage to the green
	A rainwater management system
	Installing a water monitor/dashboard in public space
GREEN ROOFS AND FACADES	
Physical health, Social health, Environmental health, Global health	Tool to calculate (financial) benefits of green investments.
	Installing a GreenFund
	Implementing of the Green-as-a-Service concept
	Communication event about greening the 'Van Mandersloostraat'
	Greening of 'Van Mandersloostraat'/canope frames and benches
	Greening of 'Aarkade' junction / plant border in front of shops
	Stiumulating property owners to green their buildings
ATTRACTIVE AND HEALTHY WALKING ROUTES	
Physical health, Social health, Environmental health, Global health	Communication event about healthy attractive walking routes
	Greening the route from the City Hall to shopping center 'De Aar'
	Greening the route from the train/bus station to the City Hall.
	Installing excersize objects and benches
	Installing route signs
	Installing spheric lightning
ZERO-EMISSION CITY LOGISTICS	
Physical health, Environmental health, Global	Decision making to implement new policy
	Communication campaign
	Installing cameras and management system
	Implement the new policy
HEALTHY LIFESTYLE AT SCHOOLS	
Physical health, Environmental health, Global health	Pilot 'A healthy lifestyle starts with our youth' in Alphen aan den Rijn
	Evaluation of the pilot 'A healthy lifestyle starts with our youth'
	Communication campaign
	Fund raising / fund finding
	Restart of the project

We started to make some draft designs for our pilot projects and with the SSA we collected a lot of ideas from our citizens that we can add to the plans.

Draft design for greening the town hall square

Objects to add to the plan

Draft visuals of planting border Aarkade/Van Mandersloostraat



Draft scenario for installing underground waterstorage and watermanagement system

ASSESSMENT & RECOMMENDATIONS

We used the table hereunder with the most common indicators to define what information we have available now on those specific indicators.

Type	Risk Factor Category	Risk factor	Measurable Indicator	How is it measured	Information of available data (volume, year, access to data etc.)
Physical Health	Physical	Obesity and overweight	Body Mass Index	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/leeftijdsgroepen/overgewicht
		Type two diabetes	Incidence of diabetes compared to the total population.		
		Cardiovascular diseases	Incidence of cardiovascular diseases compared to the total population.	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
		Asthma and respiratory diseases	Incidence of respiratory diseases compared to the total population.	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
		Functional capacity	Perception survey.	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
		Accidents and falls	Risk perception survey		
		Pain	Perceived degree of pain		
Physical Health	Behavioural	Physical Activity	Minutes per week of moderate and vigorous physical activity	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Leefstijl
		Sedentary Behaviour	Minutes per week sitting	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/leeftijdsgroepen/inactiviteit
		Food Habits	Eating five pieces of fruit and vegetables per		
		Food Habits	Drinking alcohol	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Leefstijl
		Food Habits	Drinking sweetened beverages		
Social Health	Psychic, emotional or social	Support and Social skills	No. of people attended to by the Department of Social Welfare and Family		
		Stress and anxiety	Stress perception survey	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
		Depression	Prescription of antidepressants		
		Cognitive fuction	No. of children with attention deficit disorders		
		Emotional wellbeing	Perception survey		
		Attention deficit	Rating Scale for Disruptive Behaviour Disorders		
		Mental health and psychological disorder	No. of people attended to by primary care centres	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
Environmental health	Environmental	Noise pollution	Decibels by day/night.		
		Air pollution	Levels of PM 10; PM 2.5; Ozone and NO2	Sensors/ weather stations	
Global Health	Global	Wellbeing and quality of life	Perception survey	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid
		Vitality and Happiness	Perception survey	Survey by regional Health Care Service (GGD) every 4 year, average data of the total Municipality	https://leengezonderhollandsmidden.nl/dashboard/dashboardthemas/Gezondheid

OBJECTIVE/ACTION DESCRIPTION AND ANALYSIS

Alphen aan den Rijn					
Title of your final objective or Action	**Greening public space**	**Green roofs and facades**	**Attractive and healthy walking routes**	**Zero-Emission city logistics**	**Stimulate healthy lifestyle at schools**
Analysis	For our city center, we plan to green the public space on several locations. Therefore we will initiate some pilot projects. Our aim is to reduce the risk of heat islands and flooding in the city, reduce air and noise pollution and increase the number of healthy citizens. Specificaly, heat stress is a very threathening factor for the physical health of citizens. More green in the city will also be beneficial for biodiversity, mental health, social cohesion and attractiveness of the city.	In cooperation with real estate owners we plan to green as many roofs and facades as possible. This will also contribute to reduce the risk of heat islands and flooding. It will also help reduce energy consumption, while it has an insulating effect and therefore a positive effect on carbon emmissions. It will also benefit the biodiversity, mental health, social cohesion and attractiveness of the city.	We plan to make some main routes in the city center more attractive for wallking. Those routes are the one from the train station to the Town Hall and the connecting route to the main shopping area. We aim to stimulate more physical activity for young and old people. Therefore we plan to implement some exercise equpment as well as benches to rest along those routes. This will help against the development of overweight and/or obesitas, which meet our strategic goal on reducing health costs.	For our city center, we plan to implement zero-emission logisitics in 2025. This wil help to reduce air pollution, which wil result in clean air for our citizens. This will be most beneficial for people with respiratory problems and also help to reduce health costs on that topic. There will also be less carbon emission, which meets our policy for a carbon-neutral city in the spirit of the Paris climate agreement.	Children are the future! Therefore we want to stimulate that they eat healthy food and study in an healthy environment. In 2021 we performed a pilot project on supplying fresh cooked lunches at school and plants in the classrooms and we want to continue that. With this project we want to stop the increasing health costs and invest in prevention of diseases instead of curing them.
Planning and Design	The first phase of our greening plans will take place in the spring of 2022. This pilot, focused on the town hall square, aims to motivate others in the city. First, we plan to green about 400m² of the square. Subsequently, we can green the other part of the square with the lessons learned until we reach the maximum capacity of green. Together with greening of the public space, we aim to inspire and support real estate owners to green their roofs and facades. In the meantime we also invest in the watermanagement part of the greening to guarantee good quality.	This action is planned during the second half of 2022. We have already some basic concept designs to discuss with stakeholders. First we establish a GreenFund, so that real estate owners can get cheap loans for financing the greening investments they might want. Also we unburden the real estate owners on maintenance with the innovative concept Green-as-a-Service.	In 2023 we plan to make a start in making our main walking routes more attractive. We aim to increase the number of trees along the routes, to install some benches and also some exercise equipment. We believe that this will help people to be more active, which is benefical for their health. We will invite our residents to share ideas that we can implement in the designs.	We already have had some meetings with stakeholders to explore the idea and to find support. We had some research done and shared the results on the substantive and financial aspects of the plan. It was positively received, so we have a good basis to move further on with the project.	We already started a first pilot to supply healthy meals to a class of children at 2 local schools. In the coming years we want to extend the project to more classrooms and also put green into classrooms and at the playground. We aim to integrate attractive walkingroutes in already planned infrastructural maintenance projects, but also make new attractive routes in the coming 4 years. Furthermore we aim to have a zero-emission city center in 2025.
Governance	Although the greening is initiated and encouraged by our city council and aldermen, our internal stakeholders prove to be our main obstacle. The greening evokes resistance, since it replaces previous (well functioning) plans, especially regarding traffic. As elections are coming up soon, also current policies are now subject for change or delay.	Main stakeholders involved are the property owners. We must convince property owners to cooperate in the greening of the public space and their buildings. They fear large investments especially now COVID-19 is really a thread to their economic and financial position.	We will work on these plans together with residents, shops and commercial property owners. It is important that they feel responsibility for a healthier use of routes to the city, which may implicate that for instance car use should be downsized.	Stakeholders involved in these actions areThe Board and Council of the Municipality, Projectmanager, advisors, logistic companies, shops, supermarkets and other organisations	Stakeholders involved in these actions areThe Board and Council of the Municipality, Projectmanager, Koppert Cress BV, LessGo BV, schools and other organisations, like Louis Bolk Institute

We also defined a short analysis of the main actions we have planned:

Furthermore we took in consideration what impact the actions may or may not have on the different urban determinants:

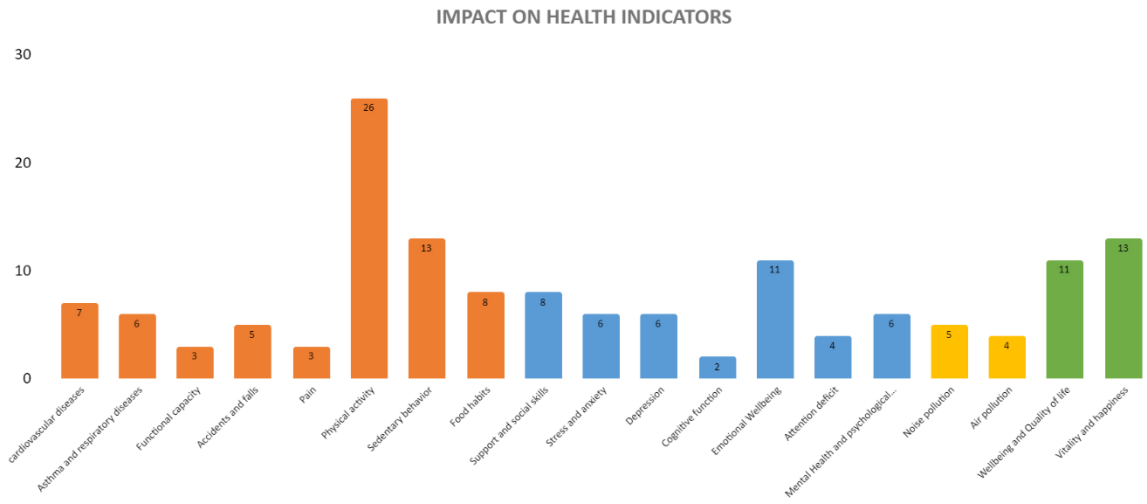
URBAN DETERMINANTS OF THE OBJECTIVE/ACTION

TYPE	URBAN DETERMINANT	MEASURABLE INDICATOR	Greening Public Space YOUR FINAL OBJECTIVE/ACTION INVOLVES THIS URBAN DETERMINANT (YES/NO)	Green roofs and facades YOUR FINAL OBJECTIVE/ACTION INVOLVES THIS URBAN DETERMINANT (YES/NO)	Attractive healthy walking routes YOUR FINAL OBJECTIVE/ACTION INVOLVES THIS URBAN DETERMINANT (YES/NO)	Zero-Emission city logistics YOUR FINAL OBJECTIVE/ACTION INVOLVES THIS URBAN DETERMINANT (YES/NO)	Healthy lifestyle at schools YOUR FINAL OBJECTIVE/ACTION INVOLVES THIS URBAN DETERMINANT (YES/NO)	(IF YES)IMPACT (HIGH/MEDIUM/LOW)
		inhabitants per km²	NO	NO	NO	NO	NO	
		housing units per ha	NO	NO	NO	NO	NO	
	Population and residential density	height of buildings	NO	YES	NO	NO	NO	
		stores per inhabitant /retail ratio	NO	NO	NO	NO	NO	
DENSITY	Business density	Gross income per capita	NO	NO	NO	NO	NO	
		nº of intersections with 3 or more streets per km²	NO	NO	NO	NO	NO	
		nº of physical barriers for pedestrians or cyclists	YES	YES	YES	NO	NO	LOW
	Number and type of intersections (junctions)	distance between block intersections	NO	NO	NO	NO	NO	
		linear m of bike lanes	NO	NO	NO	NO	NO	
		interruption points	NO	NO	NO	NO	NO	
		separate bike lanes on the widest streets	NO	NO	NO	NO	NO	
		width of bike lanes	YES	NO	NO	NO	NO	
	Cycling infraestrucure / Bike lanes / cyclability	continuous vegetation on cycling infrastructure	NO	NO	NO	NO	NO	
		% streets with pavements wider than 1.5 m	YES	YES	YES	NO	NO	LOW
		availability of pedestrian crossings	YES	NO	YES	NO	NO	LOW
		accessibility (ramps, level crossings, etc.)	NO	NO	NO	NO	NO	
		continuous vegetation on walking infrastructure	YES	NO	YES	NO	NO	LOW
	Walkability	Interconnection with other active modes of transport	NO	NO	YES	NO	NO	LOW
		access to a public transport stop (<300 m to bus stops / <600 m to metro/tram stop / <800 m to train station)	YES	NO	YES	NO	NO	LOW
CONNECTIVITY	Public transport	average distance to nearest stop	NO	NO	NO	NO	NO	
	Health, welfare and community services	average distance to nearest store health / community services per 20,000 people	NO	NO	NO	NO	NO	
	Entertainment, culture and recreation services	closeness to facilities (average distance)	NO	NO	NO	NO	NO	
	Physical and sports infrastructure (free time and s	closeness to sports services (average distance)	NO	NO	NO	NO	NO	
		distance to public open space >0.5 ha (< 300m)	NO	NO	NO	NO	NO	
		distance to public open space >5 ha (< 2 km)	NO	NO	NO	NO	NO	
		distance to public open space >15 ha	NO	NO	NO	NO	NO	
		percentage of people who have a green area less than 300 m away	NO	NO	NO	NO	NO	
LAND USE MIX	Public open spaces	built-up land percentage	NO	NO	NO	NO	NO	
	Green and blue areas (greenness index, trees, vegetation, lakes, rivers, etc.)	m² of green area per inhabitant	YES	YES	YES	NO	NO	HIGH
		no. trees / inhabitant	YES	YES	YES	NO	NO	HIGH
		% streets with vegetation	YES	YES	YES	NO	NO	HIGH
	Aesthetic	perception survey	YES	YES	YES	NO	YES	MEDIUM
	Urban furniture	no. of banks, bins, fountains per 1000 inhabitants	YES	NO	YES	NO	NO	LOW
LANDSCAPE	Maintenance and lighting	Perception survey	YES	YES	YES	NO	NO	MEDIUM
		nearness to truck routes	NO	NO	NO	YES	NO	HIGH
		% use of electric vehicles	NO	NO	NO	YES	NO	HIGH
		average speed of traffic	NO	NO	NO	NO	NO	
		percentage of land used for streets and car parks	YES	NO	YES	NO	NO	LOW
	Type of traffic	traffic calming and speed reduction measures	YES	NO	NO	YES	NO	MEDIUM
TRAFFIC	Traffic density	car traffic / day	NO	NO	NO	YES	NO	LOW

Next step was to identify the health indicators that would become most influenced by the actions planned. For that we used the healthy cities generator, a health impact assessment support tool that was developed within this project. This tool is based on published scientific evidence and makes it possible to visualize the health indicators within the different fields of health (environmental health, physical health, well-being, mental health and lifestyle) most influenced by a certain action.

With this tool we could analyse all IAP actions that have an impact on the urban environment. In case of actions that do not modify the urban environment, the impact on health has been estimated by qualitative assessment. This is also included in the Action Sheets.

The overall impact on health of all actions together showed the following result:



Reporting & Monitoring and Evaluating.

Within the Green-as-a-Service contract we developed together with the green contractor a key performance indicator (KPI) list for the green that will be implemented in the city centre. We prioritized the indicators as follows:

1. Heat stress
2. Biodiversity
3. Water retention
4. Image quality / attractiveness
5. Sustainability

We are setting up a monitor program to monitor and evaluate the performances, for instance quantity of evaporation, species/numbers of bees, birds and insects and reduction of water flow to the sewers. We are still working on our plan how to communicate these results.
We can also use these results for another Health Impact Assessment in due time and use these results also for the Healthy Cities Generator to find out if there will be a better outcome.

As the Healthy Cities Generator covers a broad spectrum of urban determinants and health indicators, the impact of greening is therefore not solely measured. For generating a very hight score, a city needs to perform high on all urban determinants and health indicators.

At this moment, the outcome of the Healthy Cities Generator, based on the actions we have included in the IAP, is as follows: