



EMPOWERING CITIES TO MAKE THE CASE FOR CLIMATE ACTION

BENEFITS OF WALKING AND CYCLING CASE STUDY



ROTTERDAM
SUPERBLOCK
OUDE WESTEN

Rotterdam - Juriaans Smits / InSpisem



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Novo Nordisk and C40 have formed a research-based partnership aimed at ensuring that urban climate action is beneficial to both the environment and the health of urban citizens. This collaboration aims to generate new insights into a range of benefits of climate action - in particular the health of city populations. At the heart of the partnership, cities play a pivotal role in the fight against climate change and poor health by increasing the active mobility of their population.

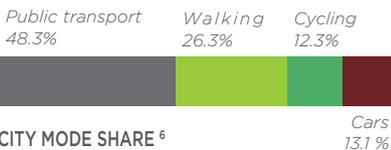
**1.3
MILLION
RESIDENTS**

**42% OF
ADULTS
OVERWEIGHT³**

**18% OF
ADULTS
OBESE⁴**

**9% OF
ADULTS
WITH TYPE II
DIABETES⁵**

**DRIVERS
FOR
ACTION**



City context

Rotterdam is the second city of the Netherlands, with 625,00 inhabitants (1.3 million in the entire Rotterdam region), and the largest port in Europe. The city is growing and is expected to host 690,000 residents by 2035. Life expectancy is lower than in other major cities in the Netherlands, although this is on the rise; and the city's residents face a range of health issues. These can vary significantly across different areas in the city depending on income and demographic, including areas with larger minority populations. While the existing health issues of these citizens may not be historically related to Rotterdam's urban planning, greater access opportunities for improved active mobility would certainly help improve their health.

One in five children are moderately to severely overweight, and approximately half of adults in Rotterdam, which is a higher percentage than the rest of the country. The prevalence of type II diabetes is also high: 9% of the adult population and 20% of people over 65.¹ Air quality is an issue; in 2017, various parts of the city exceeded the WHO recommended limit.² However, the number of bicycle and public transport journeys is drastically increasing and the number of car journeys is decreasing, which provides an excellent opportunity for measuring health and economic benefits.

**CREATING
A HEALTHY
ATTRACTIVE
& VIBRANT
CITY**

**1.6X MORE
CYCLISTS
OVER THE PAST
10 YEARS**

**CITY
POLICY
CONTEXT**

**HOST OF
WALK21 IN
2019**



Policies in place

Currently, Rotterdam wants to promote itself as a healthy city with attractive public spaces and a vibrant economy. The city therefore faces the challenge of continuing to increase active mobility as its population expands, alongside ensuring the economy grows and that air quality improves.

The streets have been transformed in recent years to accommodate the cycling network that is linked at local, regional and national levels. Bicycle traffic has grown by around 60% over the past ten years and the popularity of electric bicycles is rapidly rising as well, particularly for longer journeys. The use of public transport is also notably increasing, particularly the metro system.⁷ Alongside cycling and public transport, the city is looking to focus on walking. The transport department is currently developing its first walking policy, and in 2019 the city will host Walk21⁸, an international conference focused on supporting and encouraging walking, to accelerate the creation of a walkable city.



Taking action: Super Block Oude Westen

The current Rotterdam Traffic Plan 2015-2030 is looking to transform the inner city as a 'City Lounge', aiming to implement healthy, attractive and vibrant streets, by reducing car use and increasing the comfort of public spaces. Coolsingel, a major road boulevard being turned into a pedestrian, cycling and tramway-friendly street, is the starting point, to reduce car use, encourage more active mobility and therefore improve the health of citizens. This can also include improving access to public transport, as walking to and from transport stations also has a considerable, positive health impact. It is expected that in 2020, when redeveloped, Coolsingel will see around 10,000 fewer cars per day due to the car capacity being reduced from four to three traffic lanes.

The Mobility Department is now looking to go further and apply the concepts of Barcelona's Superblocks and open streets to increase active mobility. While the contexts of the two cities are different, they share the same aims for increasing active mobility, improving the health of citizens and public space in the city. This is therefore a great example of how one city can be inspired and learn from another, to apply similar design concepts and theories.

What is the timeline?

The Rotterdam Traffic Plan 2015-2030 sets the goals to a healthy, attractive and economically vibrant city. It outlines the importance of transforming an inner city to a 'City Lounge' promoting a transition towards more active mobility. The Coolsingel transformation is already underway, but the current municipal team should set more targets and plan more interventions for the new team to enact over the coming years. This is the best opportunity for Superblock to be integrated to the plan.

Where does it apply ?

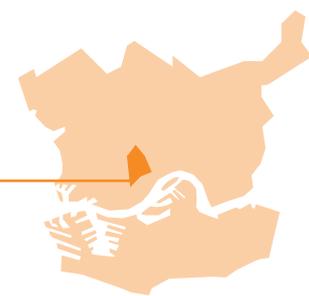
The intervention is planned in the Oude Westen block (~1 km²), home to 10,000 residents in the heart of the city and near the Central Station. Walking routes to and from public transport hubs play a significant role in this intervention. The streets are important access links to the centre and the Western and Southern part of the city, which also serves as an important area for a mixture of living, working, shopping and leisure-time activities.

SUPER BLOCK OUDE WESTEN

The project aims to improve streets through reducing the motorised traffic mode share from 25% to 5%, achieved by enhancing cycling and walking infrastructure and reducing street level parking. Major roads would be closed and traffic would shift to other routes on the border of the block. The remaining car trips would be expected to shift to active mobility modes and public transport, which would serve the inner areas of the Superblock. Parking facilities would be built at the entrance of the neighbourhood, to avoid cars both entering the area and parking on streets, with only delivery services being permitted.

Oude Westen is currently a vibrant area for living, working and shopping, and this intervention aims to contribute to a pleasant and safe environment, with pedestrians and cyclists playing a key role in this. Additional space is provided for pedestrians so that they can walk comfortably from one area of the city to the other, but also so they can enjoy spending time in the centre.

The municipality will also seize this opportunity to simultaneously conduct street renovations and maintenance operations on the public transport infrastructure (tramway), sewage systems and the installation of district heating.



GOALS

**REDUCED
CAR USE
FROM 25%
TO 5%**

**ANTICIPATED
MAINTENANCE
& UPGRADE OF
SERVICES**

**INCREASED
PEDESTRIAN
QUALITY OF
SPACE**

Benefits of Superblock Oude Westen

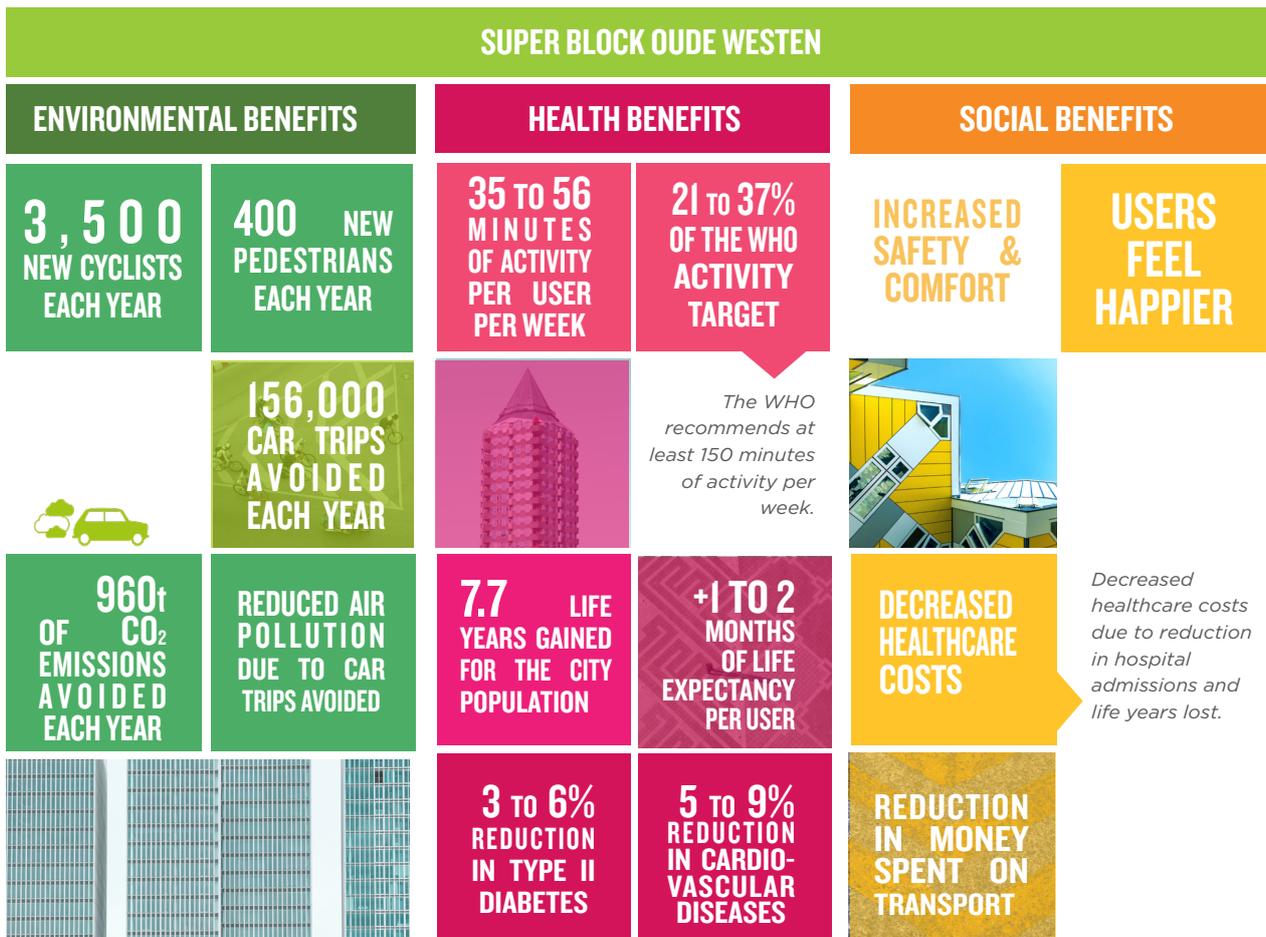
Superblock plans on having 5,000 new pedestrians and 16,000 cyclists, mostly as a result of switching from cars. The mode share of public transport would also increase, again due to a reduction in the use of private vehicles. The municipality is looking at reducing motorised transportation to around 32,000 fewer car trips per day.

The impact on new pedestrian and cyclists in the Superblock area is expected to be a reduction of 3 to 6% in risk of diabetes (resp. for walking and cycling) and an increased life expectancy of one to two months. Those impacts are the direct benefits of the Superblock action, and would be much larger if the impacts across the whole city area were considered.

The benefits of these street improvements not only impacts pedestrians and cyclists, but also those living in the surrounding area, due to the recovery of public space and the decrease in noise and air pollution. Retail activities would also be expected to improve, as similar projects in other cities have shown this before.¹⁰

Who is involved?

Increased active mobility and reduced car use incentives are led by the Rotterdam Transport department and supported by the Alderman for Mobility, Sustainability and Culture. The team is working together with other departments through an integrative approach, to consider additional areas of improvement within the neighbourhood, such as: the energy transition through installation of district heating; integration of adaptation measures for heavy rainfall and extreme heat prevention; and expansion of green spaces. The analysis of the neighbourhood is also based on an extensive data review of health issues in the city, released in 2016, by the Rotterdam Public Health Department.⁹



Predicted benefits issued from C40 Walking and Cycling Benefits tool, used by the City of Rotterdam at C40 Masterclass in Copenhagen in September 2018. The benefits quantify the impact of switching Oude Westen to a Superblock style configuration, designing the inner streets for walking and cycling, allowing access to public transport and blocking access to cars. More information on the [Benefits](#) page.

CHALLENGES

POLITICAL SUPPORT

Rotterdam recently underwent a change in government, presenting an opportunity for taking action and setting ambitious targets. The city wants to set targets to evaluate actions for a walkable city, through indicators monitored over the next four years. There is an urgency to tackling health and climate issues, however, as well as overcoming the city's prioritisation of on-street parking, which is made more difficult by the cost of providing additional indoor parking facilities.

The Walking and Cycling Benefits tool helps to provide evidence on the action's impacts, but also to provide the mobility department with a methodology for their economic analyses, comparing different options. This scenario comparison has enabled the city to have useful and meaningful conversations around the overall impact of the proposed interventions, and has helped drive action forward.

PUBLIC SUPPORT

One of the main challenges shared by many C40 cities is the lack of public acceptance of reduced road access. The municipality is planning to make the case by showing the added value in terms of welfare, health, economic profit and increased property value. In order to test the project and gain citizens' approval, the city's strategy is to use the scenario analyses, experimenting with pilot projects and monitoring these through qualitative and quantitative data, before being implemented as a policy or intervention.

One of the biggest pillars for this action is also public transport, as it will have to account for the large modal share currently occupied by cars in the area.

NEXT STEPS

Some aspects of the Superblock concept might be integrated in the long-term transport planning targets for 2030. The concept was considered radical and therefore challenging to implement in the short term, however, a simpler version that still encapsulates the overarching ideas was designed to

be integrated over the next 5-8 years. Following successful implementation, there will be an opportunity to use lessons learned and the Walking and Cycling Benefits tool to propose a plan achieving greater public acceptance.

LESSONS LEARNED

The city is striving to increase its active mode share, with a specific focus on improving and monitoring walking. This is also supported by a desire to improve the quality of life in the city by reducing the current focus on roads and motorised transport. Implementing the Superblock concept in the Oude Westen area, and ideally further afield in Rotterdam, aligns closely with this overall focus and is therefore seen as an excellent opportunity. It is also understood that the Superblock concept is relatively forward-thinking and may be more difficult to implement immediately in full. Therefore, the

implementation of interventions to improve active mobility, and the acceptance of the overall vision of the Superblock programme, were targeted as achievable and successful outcomes.

The Walking and Cycling Benefits tool can be used to help make the case for this intervention, running various scenarios and highlighting the potential health benefits to citizens of the city. Another successful outcome for the transport department is the integration of social and economic impacts into the design using the Walking and Cycling Benefits tool.

REFERENCES

Notes:

^{1,3,4,5} *Overweight prevalence, obesity, and type II diabetes for population between 19 to 65 years old, Rotterdam OudeWesten, Gezondheidatlas Rotterdam, City of Rotterdam, 2016.*

² *The main preoccupations of Rotterdam are NO₂ and PM₁₀. In the intervention area, NO₂ concentration is 1.1 times greater than the WHO recommended value. The overall air quality has improved in the intervention area over the past ten years. | Lucht en cijfers 2017, de Luchtkwaliteit in Rijmond, DCMR Mlieudienst Rijmond, p³³ (Statenweg Station), 2018.*

⁶ *Verplaatsingen in de Metropoolregio Rotterdam Den Haag en Nederland, 2004-2017 (OVIN2017)*

⁷ *Smart Accessibility for a Healthy, Economically Strong and Attractive Rotterdam, Rotterdam Traffic Plan 2015-2030, Rotterdam*

Municipality, collaboration with Goudappel Coffeng, 2017.

⁸ *Walk21, <https://www.walk21.com/>*

⁹ *Rotterdam a Healthy City, Rotterdam Public Health Memorandum 2016-2020, Rotterdam Municipality.*

¹⁰ *Investing in Cycling & Walking: Rapid Evidence Assessment A report for the Department for Transport, p63 Local spending, Brooklyndhurst, 2016*

Methodology for the Benefits Calculation: *C40 Walking and Cycling Benefits tool, used by the city at C40 Masterclass in Copenhagen in September 2018. More information on the [Benefits webpage](#).*

Pictures: *Juriaan Snickers (Unsplash), Rotterdam Municipality.*