HEALTHY NEIGHBOURHOODS

A research and design project investigating the impact of automated mobility on urban health in residential neighbourhoods in Almere

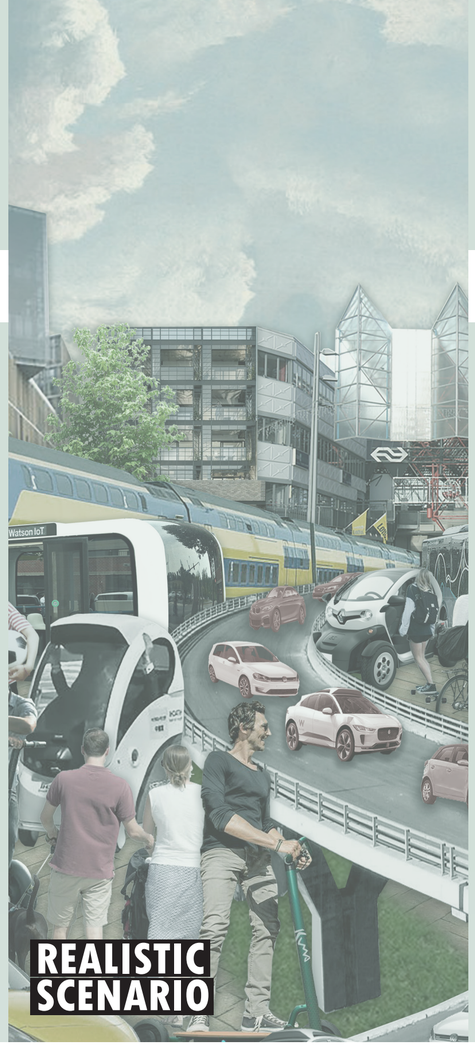
Physical inactivity, caused by dominance of the car in cities, the car dependency and infrastructural barriers in the city, can result in major health risks, especially in industrialized countries (Badland & Schofield, 2005). When engaging in physical activity, local streets and public spaces have been identified as the most suitable spaces (Badland & Schofield, 2005).

The introduction of automated mobility will provide car users with new possibilities to do while traveling. As a consequence, people are willing to travel longer, and the frequency of trips might increase (Stead et al., 2018). Automated forms of traveling will be chosen over active forms of travelling, because of the ease and comfort of automated vehicles. All of this results in more and more cars on the streets and an increased traffic complexity. Summing up, the ever-growing mobility puts urban health at risk. On top of this, the introduction of automated mobility is posing a threat on various facets of urban health (personal lifestyles, accessibility, etc.), especially in residential neighbourhoods (because of the high car dependency).

The following question is leading in this project: **"How can the implementation of automated mobility contribute in improving urban health, in residential neighbourhoods in the city of Almere?"**.

Automated mobility is still in an early stage, it is uncertain what will happen in the future. Therefore, scenario planning will be at the heart of this project. For the progressive scenario a design is made for two neighbourhoods in Almere. Urban regeneration strategies are developed with a set of design elements and recommendations. Creating and retrofitting urban environments which will improve urban health.

Promoting physical activity through urban design at the micro scale (neighbourhood scale) is one of the most effective measures to improve urban health. On top of this, strategies in reducing air pollution on the macro scale (city scale) will also be highly impactful in reducing diseases worsened by poor air quality. Besides, in the development of urban areas (on the district scale) a good accessibility to leisure facilities, healthy food, and public and green spaces can be integrated into the design to support health and well-being (Pineo & Rydin, 2018). Slow traffic should get the full priority, therefore fast automated vehicles are only allowed on a limited number of roads.



DESIGN ELEMENTS

- **1.1** - Mobility network
- **1.2** - Green/blue infrastructures
- **1.3** - Separation of flows
- **1.4** - Allowing automated mobility
- **2.1** - Fast vehicle free zones
- **2.2** - Driving independent
- **2.3** - Parking clustered
- **2.4** - Places to meet, play & sport
- **2.5** - Interconnected roads & routes
- **3.1** - Public areas / buildings accessibility
- **3.2** - Safety
- **3.3** - Human scale / enclosure
- **3.4** - Complexity / transparency
- **3.5** - Elements to meet, play & sport / imageability

RECOMMENDATIONS

Almere Haven

1.4 Allowing AM

Big automated vehicles are only allowed on a limited number of roads. Small automated vehicles are allowed on more roads.

1.3 Separation of flows

On fast traffic routes traffic flows will be separated. On slow traffic routes, the flows will be more mixed.

1.2 Green/blue infrastructure

In highlighted zones green and blue infrastructures will be realised/enhanced. A structure running in between the mobility network.

1.1 Mobility network

A selection of roads will from the mobility network. Automated vehicles will drive on this network.

Almere Stad

2.2 Driving independent

Vehicles will drive autonomously on the mobility networks between parking hubs and kiss and ride points.

2.1 Fast vehicle free zones

In the neighbourhoods blocks big automated vehicles are not allowed. There are a lot of safe spaces for the pedestrian and cyclist.

2.3 Parking clustered

Automated vehicles will be stalled in parking hubs. People will go to the parking hubs or kiss and ride points to use the fast traffic network.

De Wierden/De Hoven - Almere Haven

2.1

2.3

2.4 Interconnected roads & routes

A network of interconnected slow traffic routes will be provides throughout the hole neighbourhood. The routes connect the community spaces.

1.1

2.3 Places to meet/ play/sport

Throughout the neighbourhood there are many places where people can meet, play and sport. They will differ in size, function, appearance, ect.

Uithof/Montessoripad - Almere Haven

3.3

3.4

3.2

2.5

3.2 Safety

The slow traffic zones need to be safe. This will be realised by banning the big vehicles. People can continue their activities without being interfered by fast traffic.

2.1

3.1 Public areas / buildings accessibility

Public areas and buildings should be accessible by active modes of travelling and for everyone. Facilities will be provided for personal vehicles.

Joris Ivenslaan - Almere Stad

3.4 Complexity / transparency

Streets should reach a certain complexity to create visual richness. However to orientate, they also need to be transparent so people can reach their destination.

2.1

3.3 Human scale / enclosure

Human scale and enclosure gives people the sense of being safe and feeling at home in a street. This can be provided by selecting the right trees for each street.

3.5 Elements / imageability

The street should provide places to socialise, play and sport and support/triggers someone's imageability.

3.8

3.6

Walt Disneyplantsoen - Almere Stad

3.5

3.6 Include local inhabitants

Including local inhabitants in the design, maintenance and ownership of zones will connect them more to the space and make them feel more responsible.

3.3

2.1

3.7 Encourage community activities

Encouraging community activities/responsibilities will strengthen a community - people are more likely to know and trust their neighbours.

2.4

3.8 Sustainable design

Sustainability is one of the main goals in creating a healthy neighbourhoods so this needs to be incorporated in the design and the materialisation

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TU Delft **MSc Urbanism 2018-2019**