

# Climate Change Adaptation in the Nieuw-West City District of Amsterdam

Adaptation Action Plan; Executive summary; March 2011



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# Introduction

**Our climate is changing.**

**Climate research has demonstrated that extreme weather will occur more regularly. The most important climate effects in Amsterdam entail an increase in precipitation and rain storms, periods of droughts and hot summers.**

**A crucial aspect of the policies of the Nieuw-West City District of Amsterdam is to be fit to respond to all kinds of changes the City District will be facing: Economic, social , physical; but also the local effects of climate change. For that purpose the City District has developed a Climate Change Adaptation Action Plan (AAP).**

**Without adequate action the impacts from our changing climate will increasingly affect the living environment of the city district and the quality of life of its inhabitants. The City District of Nieuw-West is the first local authority within the larger Amsterdam Metropolitan Area to adopt a comprehensive adaptation strategy. Thus as a first step the AAP proposes many actions that will enhance our understanding of the challenges we will be facing in the near future. But also a range of concrete measures and adaptation responses are listed that will improve the adaptive capacity of the City District to the impacts of climate change.**

**The AAP describes the main impacts of climate change in the Nieuw-West City District. Targeted at these impacts the actions and responses are summarized. The AAP concludes by discussing the importance of a sound strategy for community involvement and engagement. Several recommendations at the practical level are given to promote community engagement on the ground.**



# Impacts of climate change in Nieuw-West

## Increase of precipitation and rainstorms

Winters will become wetter and there will be an increase in severe rainfall in summer.

Nieuw-West is part of an urban area where excess water will have to be processed by the sewerage system. As a result of climate change the sewerage system will be confronted with its limited capacities to process all the excess water, especially with a higher frequency of extreme weather and storm water incidents. Local flooding of streets and parks will be the result. This will cause economic and environmental damage to the City District. One of the main parks of the City District, the Rembrandtpark, has suffered severely from flooding in the winter of 2010-2011 as a result of rain water incidents.



## Drought

In summer longer periods without any rainfall will occur. Paradoxically periods with extreme rainfall will also increase.

This continuous fluctuation of wet and dry periods will strain soil conditions, exacerbating limited capacities for natural infiltration. Ground water levels will fall as a result of periods of drought. The foundation of part of the housing stock in Nieuw-West depends on wooden poles. Lower ground water level caused by periods of drought will lead to exposure of the wooden constructions to the air, inducing pole rot. Eventually this could lead to instability of the construction.

Long periods of drought could also lead to poor air quality in Nieuw-West. Dust and small particles will remain in the air for longer periods by absence of rain. This will cause higher levels of air pollution. The combination of these impacts will have serious environmental, health and economic consequences.



## Heat

Climate scenarios project an average increase of temperature by 0,9°C to 2,3°C in winter and 0,9°C to 2,8°C in summer. The number of tropical days in summer will also increase.

An average higher temperature can have a negative impact on the health of the City District's population. Hay fever will grow because pollen will remain in the air for a longer time. An alteration of climate patterns will also entail the development of new diseases . Climate science has demonstrated that the built up areas in the urban system will be confronted with the consequences an 'urban heat island effect'. All these consequences will have a negative impact on health and life expectancy of urban residents.



# Adaptation Actions

The Adaptation Action Plan of The Nieuw-West City District of Amsterdam gives priority to those actions that the local authority can actively influence itself. When needed the City District will cooperate with the Water Management office of the Central Municipality (Waternet) and other offices and service organisations of the City of Amsterdam, e.g. concerning the management of the sewerage and the dike protection.

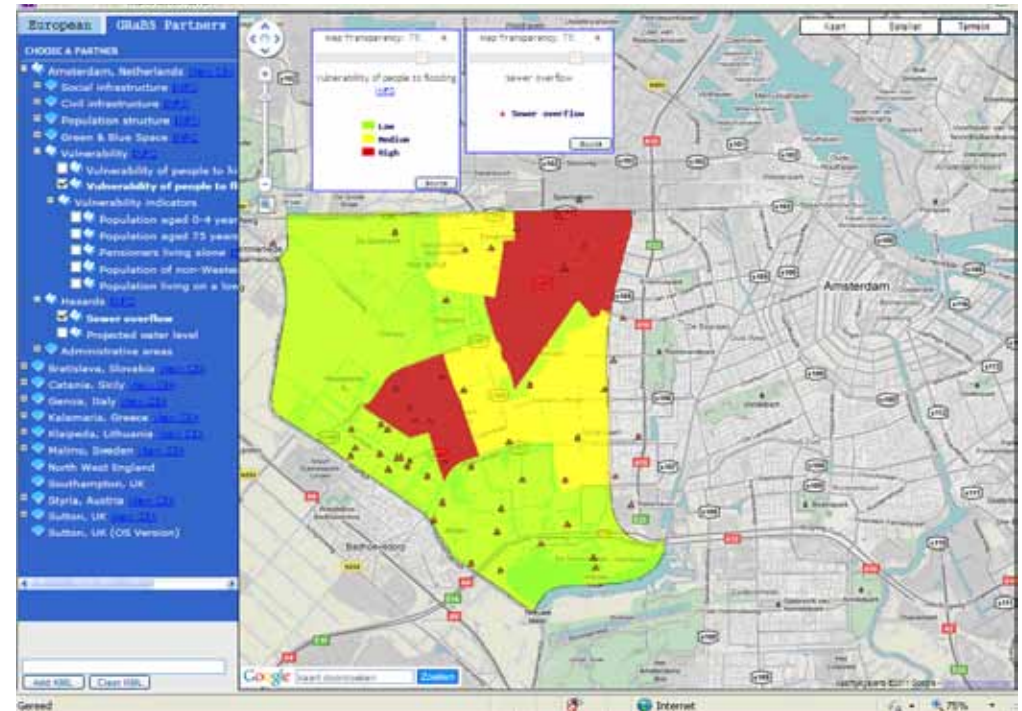
The delivery mechanism of the Adaptation Action Plan is based on three separate trails of action:

## 1. Assessment of crucial climate issues

The Adaptation Action plan will further the conditions for ongoing assessment of local climate change impacts. Research on specific climate change impacts that are predicted at the City District level will be engendered. The GRaBS climate risk and vulnerability tool is helpful as a first step in this process. As a follow up a more comprehensive Climate Impact Map will be produced that will display all relevant spatial features of the urban system of the City District in direct confrontation with predicted climate changes and related impacts. Specialised Climate Map information in combination with the GRaBS climate risk and vulnerability assessment tool should produce better information on necessary specific localised actions and measures.

Action 1: Produce a comprehensive climate change impact map

Action 2: Adopt the climate risk assessment tool of the University of Manchester



## 2. Integrate climate change adaptation in spatial policies and planning

The issue of climate change adaptation will be integrated in all relevant policy documents. Climate change adaptation responses fall within the scope of different (spatial) policies and thus it is of vital importance that aspects of climate change adaptation are explicitly integrated into and become a component of these policies. The AAP lists all policy documents which are connected to climate change adaptation goals and that will be delivered in the actual local government term until the next local election. These policies will have to integrate climate change adaptation goals within the specific Climate Paragraph of the document that will be approved by the Political Executive Board and/or the City District Council.

- Action 3:** Integrate climate change adaptation in all relevant (spatial) policies
- Action 4:** Protect the green infrastructure of the Western Garden Cities
- Action 5:** Insert a specific climate paragraph in all spatial (project) plans
- Action 6:** Integrate climate change adaptation in the checklist *Sustainability in urban regeneration*



## 3. Pilot demonstration projects

It is important to learn and gain experience in the field of climate change adaptation by piloting demonstration projects. The City District of Nieuw-West has selected five pilot projects which will be implemented in this local government term. In order to catalyse actual and concrete measures that can be adopted in these projects a toolkit has been developed. The tool kit is an integral component of the AAP and is attached as separate document for practical usage.

- Action 7:** Pilot climate change adaptation demonstration projects and enhance 'learning by doing'
- Action 8:** Get inspired! Make use of the climate change adaptation toolkit and the design directive climate change adaptation in the western garden cities



# Community participation in climate change adaptation

## Attitude towards climate change

Climate change is for many people still a very abstract issue that doesn't connect to their experienced direct interest. In Holland, only 25% of the population has ever shown any interest in the topic; e.g. by starting a web search on climate related issues. Because of this limited awareness on climate issues, the willingness of the general public to become engaged in climate change adaptation action will also be very limited. When we do want to involve our communities in climate change adaptation we will have to start by raising their awareness. When our communities are more aware of the issue they will become more motivated to engage in adaptation actions. The City District chooses to support specific actions that relate to climate change adaptation. The City District subsidises green roofs for private house owners.

## Recommendations for Participation in Climate Change Adaptation

As an isolated issue climate change adaptation could be seen as abstract policy only. If climate issues are embedded and integrated in concrete plans, such as housing schemes, people could connect to these issues more easily and thus could become motivated to participate in adaptation. Four general recommendations may guide the promotion of participation in climate change adaptation. The general recommendations are specified in concrete actions in a separate attachment to the AAP:

1. Make an inventory of all the interests of stakeholders and target groups which are or should be involved
2. Disclose all the necessary information to raise awareness about climate change impacts to enhance support for climate change adaptation
3. Adjust the communications strategy and specific messages to target group characteristics.
4. Create and sustain the proper level of involvement



# CREDITS

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