

# **The Sewerage Atlas**

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### **Summary**

This Sewerage Atlas describes the results of surveys carried out amongst all municipalities and water boards into the current state of sewerage systems in the Netherlands. 76% of all municipalities (including 84% of all dwellings) took part in this survey. In addition, all water boards were involved. The results are therefore representative of the situation in the Netherlands. Various evaluations enhanced the quality of the data. The Atlas gives detailed information on existing sewerage systems, their management and the accompanying financial aspects. The simultaneous publication of *Riool in Cijfers 2005-2006* (Sewerage in Figures 2005-2006) gives the general outlines but without explaining the data and figures.

#### *Gravity sewerage systems*

The Netherlands has some 80,000 km of gravity sewerage mains. Of all the connections, 76% are combined, 18% separate and 6% are partially separate. Sewerage system managers consider that, from a technical standpoint, 5.5% of the gravity system will need to be replaced or renovated over the next six years. In 2003 and 2004 municipalities replaced or renovated 0.72% of their systems every year. On the basis of the projected renovation and replacement plans, there is therefore no evidence of a replacement backlog on a national scale, but it does appear that the replacement programme will need to be intensified after 2010. Municipalities inspect 7% and clean 11% of their systems every year. Furthermore they manage 5,500 km of rising mains (transport system).

#### *Pressure sewerage systems*

On 1 January 2004 there were some 15,000 km of pumping mains in the Netherlands, connected to some 190,000 properties. Following complete sanitation of all properties in the countryside this will rise to approximately 250,000. Then some 46,000 will not be connected, leading to a connection percentage of 99.3%.

#### *Water quality measures*

In order to reduce wastewater discharge, the municipalities are installing 1.6 million m<sup>3</sup> of detention and settling tank facilities; that is 320 litres per combined domestic connection. As of 1 January 2004 they had completed 60% of these facilities. In total there are almost 18,000 sewer overflows and emergency outlets, including sixteen unlicensed hazardous overflows. As of 1 January 2005, 30% of municipalities had achieved a 50% reduction in wastewater discharge, as required by national regulations. By 2010 that figure will reach 91%. Half of municipalities are working on additional improvements to water quality.

#### *Ground catchment and disconnections*

The average ground catchment area is 200 m<sup>2</sup> per dwelling connected to gravity sewerage systems. This includes roads, shops and industrial sites. On 1 January 2005, 4.3% of the combined sewerage system was disconnected. There are plans to disconnect another 5.7% by the end of 2010, so that 10% will be disconnected by then.

#### *Permanent positions*

There are 1,350 full-time office staff managing the sewerage system, including secondments and outsourcing. Managers reckon that the internal services are struggling with a staff shortfall of 20%. On the basis of Municipal Sewerage Schemes (GRPs), this percentage is somewhat higher. There are another 1,250 full-time (technical) field staff looking after the sewerage system.

### *Monitoring*

Municipalities monitor 20% of all sewer overflows. According to the water board survey, 65% of all municipalities carry out monitoring, while the municipal survey puts this figure at 90%. At least 30% of municipalities use the results for policy support. The same holds for evaluating figures. Out of all municipalities, 89% have a digital management system. In the case of 7% of these municipalities, processing the information can take more than four years.

### *Plan types*

Virtually all municipalities have a Municipal Sewerage Scheme (GRP). A further 58% of municipalities have a water plan, 54% an optimisation study and 47% a so-called water opportunity map and, or in combination with, a disconnection plan. 24% of municipalities have none of the three options. The water board survey sometimes gives slightly lower percentages.

### *Financial aspects*

The replacement value of the sewerage system is some € 58 billion. The average annual sewerage tax per household is € 125, which covers 87% of costs. In the last ten years revenues from sewerage taxes have doubled. The replacement and renovation programme will cost some € 2.8 billion in the next six years, and disconnecting € 1 billion. Municipalities are also investing in detention and settling tanks, sanitation of the countryside and flooding programmes. It is not possible to make a precise prediction of costs for the coming ten years, mainly because the consequences of new regulations in the areas of water quality and flooding have not yet been determined. In order to achieve all such measures, one could expect a rise in sewerage taxes of the same order as in previous years.