

## 40% reduction of non-revenue water



Client: Oasen  
Country: The Netherlands  
Period: 2014-2019

### Case

Dutch Drinking water utility Oasen faces a gradually aging pipe infrastructure. As a consequence, the number of leakages and the amount of non-revenue water was expected to increase. To bring this to a halt, Oasen defined the objective to reduce the number of leakages and increase the reliability of supply.



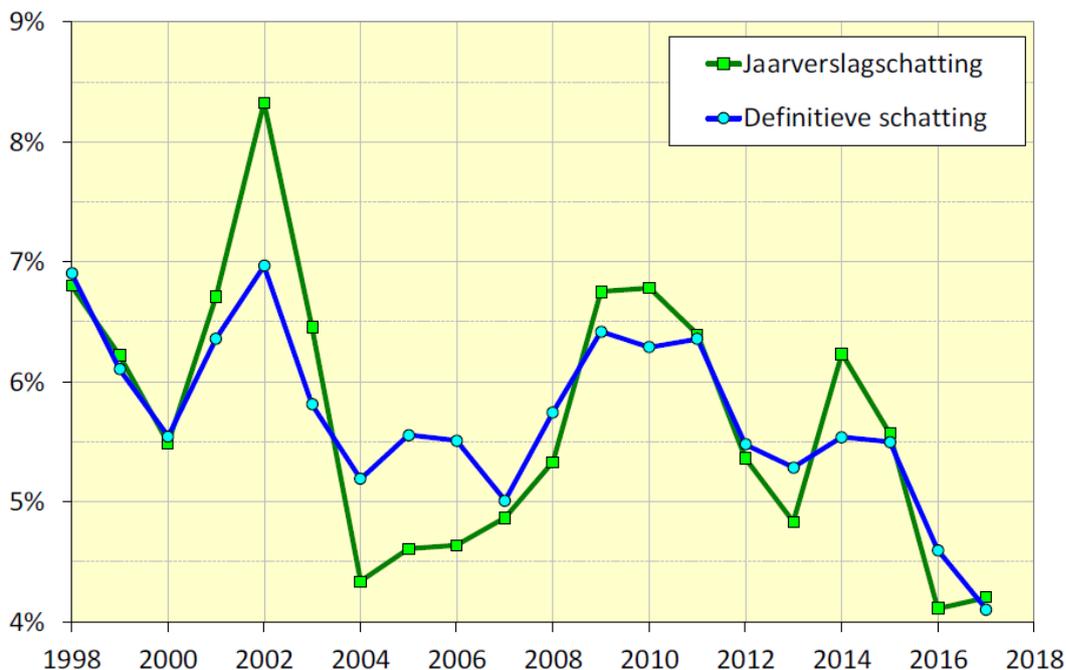
**Figure 1.** An example of a leak of circa 20m<sup>3</sup>/h, which may stay unnoticed at the surface due to the wet soil conditions in the Netherlands (courtesy image: website Oasen, 2020)

## Approach and solution

Oasen decided to increase the percentage of annual replacement up to 1% (ie. replacing the complete network in 100 years' time). To select the pipes that contributed most to leakages and NRW, Oasen chose a data driven approach. It was decided that at least 50% of the replacement decisions would be made based on these calculations, and less than 50% for third parties or for other reasons. Too often pipes are replaced before they have reached their technical life span. In 2014 Spatial Insight implemented a pipe replacement model at and together with Oasen. With this model, for each pipe the replacement priority is being determined automatically and combined with the replacement impact of the pipe. The model generated the annual project portfolio for the projects department of Oasen.

## Contribution to organisation's strategy

Figure 2 shows the preliminary estimation of the NRW percentage as reported in the annual report of Oasen (green line) and the final estimation for the period 1998 up to 2017 (blue line). As from 2014 the NRW drops rapidly from 5.5% down to a historically low 4%. This remarkable result is a great example of the power of how strategic objectives can be turned into measurable results in an accountable and transparant way. And that is why we love data driven asset management.



**Figure 2.** Development of the estimation of non-revenue water at Oasen, as reported (green line) and final (blue line). Please note that the underlying data has a typical delay of up to two years, because of manual meter reading and processing (courtesy image: Baggelaar, 2020)

## More information

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## Reference

Baggelaar, P. K. (2020). *Waterverkoop en niet-afgerekend water*. Amstelveen: Icastat