DHI SOLUTION

DECISION SUPPORT TOOL FOR MUNICIPALITIES AND WATER SUPPLY COMPANIES

WATER PLANS – ABSTRACTION PERMITS – GROUNDWATER PROTECTION

WEB-BASED DECISION SUPPORT TOOL

As the challenges of surface water and groundwater resource management grow, the hydrological models used to address these problems can be quite complex. Nevertheless, hydrological models provide significant added value to the decision-making process. For this, it is essential that model information is accessible to professionals who have little or no specialist knowledge of hydrological modelling.

We offer a solution wherein:

- the model is accessed via the Internet
- different scenarios can be created allowing the user to change certain parts of the model, such as abstraction, weed cutting, precipitation and so on
- different scenarios can be run – the model simulations are run at DHI
- the presentation of results of the model is targeted to the needs of the customer and may be visualised or downloaded

Export of results to GIS or GOOGLE Earth

SUMMARY

CLIENT

- Water supply companies
- Municipalities
- Water managers in general

CHALLENGE

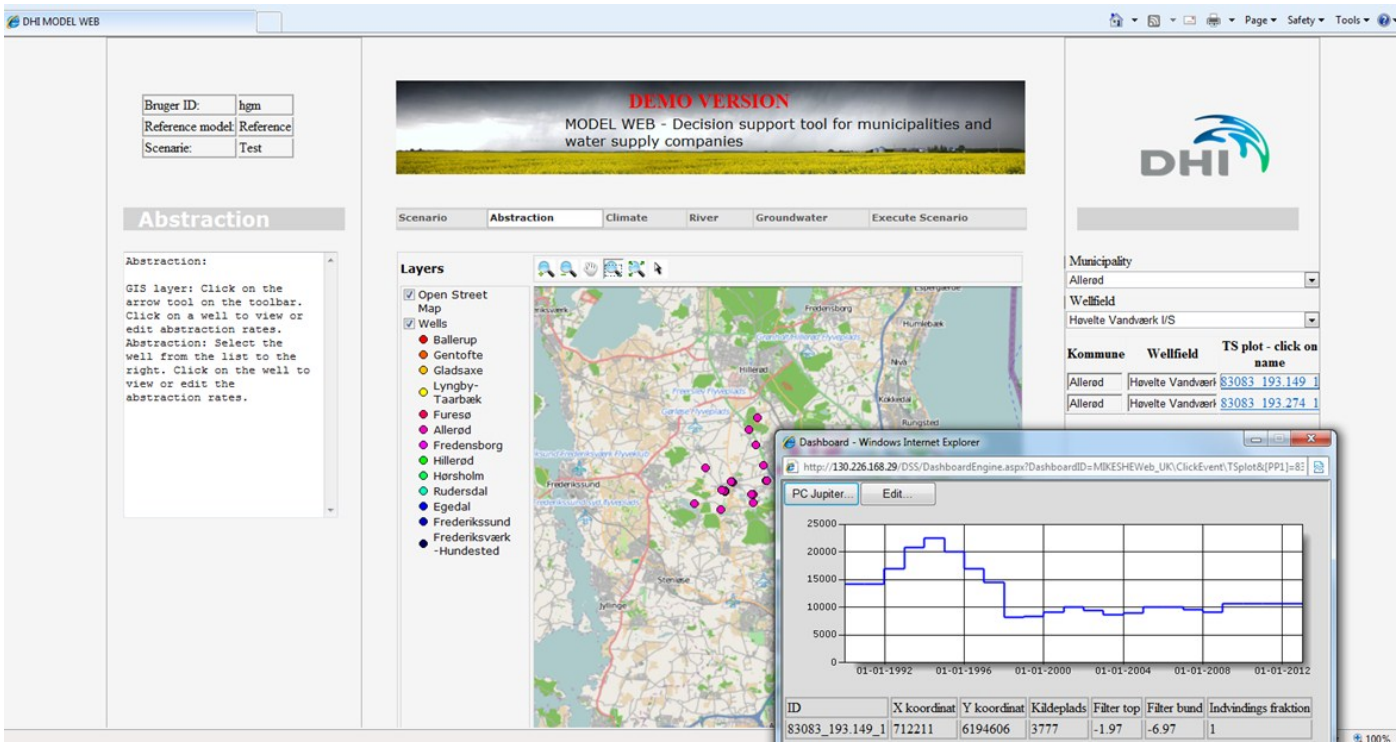
- Hydrological models for today's water resource management problems are often complex. Therefore, their effective use may be hampered by the lack of specialist knowledge
- Difficulty in the interpretation and application of model results by non-specialists

SOLUTION

A customised user interface for easy access to hydrological models through the web

VALUE

- Use of hydrological models as an active tool in the decision-making process for water related problems
- Intuitive and customised user interface, enabling non-modellers to execute and use models in the decision-making process
- The model is executed at DHI – hence, no local software installation is required
- Assess to the model through the WEB, using PC, tablet or smartphone
- Transparent decision-making process enabling stakeholders such as landowners to assess the results



Scenario definition. Change parameters as groundwater withdrawal, climate or river maintenance

INTEGRATING HYDROLOGICAL MODELS IN THE DECISION PROCESS

The main purpose of the system is to assist the user in the decision-making process, and at the same time enable the use of hydrological models as an active part of this process. The system is tailor-made to cater to the specific requirements of the user. All inputs and outputs from the system are processed such that no prior model knowledge is required.

The output from the scenarios could be tailored towards existing systems, enabling the hydrological model to become integrated seamlessly into the current decision-making process.

The system is customised to cater to integrated hydrological models such as MIKE SHE and MIKE 11. However, it could also be used with any other model as desired.

WATER PERMITS

Impacts from groundwater withdrawals need to be assessed on both the surface and groundwater regime. The system allows the user to modify the abstraction rates for the individual wells, and assess the impact on:

- groundwater levels
- discharge and water level in streams and rivers
- capture zones and infiltration areas

WATER RESOURCE ASSESSMENT AND PROTECTION

Capture zones and infiltration areas are important parameters with respect to groundwater protection. The system allows the user to calculate and view capture zones and infiltration areas for all well fields.

Water balance and changes to the main hydrological components are extracted and the change compared to a reference situation can be assessed.

All results are visible on the webpage as raster maps or tables. Results are also available for download as GIS files, or could be exported to Google Earth.

Contact: Oluf Zeilund Jessen - ozj@dhigroup.com
For more information visit: www.dhigroup.com