DAY WATER NEWS 4

PROJECT UNDER EU RESEARCH & DEVELOPMENT

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DayWater

www.daywater.org

We are now on the home stretch of the DayWater project, less than one year left. As usually, we inform you about the numerous ongoing activities, some might be of interest for you.

The assessment of urban stormwater eco-toxicology has been conducted in Luleå and in Stockholm (Sweden) and as well in Nantes (France).

Last year in September the CityNet Cluster organised a joint dissemination workshop in Copenhagen, in order to develop a common dissemination strategy for all 6 Cluster projects.

In October, the 4th International conference on Decision Making in Civil Engineering (DMUCE) was held in Porto. DayWater and several CityNet project partners presented contributions of their specific domain.

We are presently preparing the agenda of the last annual DayWater meeting in Prague from 25 to 27 of May 2005. As the last year, one conference day will be dedicated only to the demonstration of the ADSS and discussion of its virtues.

DayWater will close after three years duration with an international conference and demonstration workshop on 3-4 November 2005 in Paris. One of the important issues at this conference will be the future of the developed tools after the end of the project. You are invited to pre-register to this event at the ENPC (location in Champs-sur-Marne) via the web site or via e-mail: daywater@cereve.enpc.fr

DAYWATER (EVK1-CT-2002-00111) IS A PROJECT UNDER THE 5TH FRAMEWORK PROGRAMME OF THE EUROPEAN UNION AND ONE OF SIX PROJECTS FORMING THE CITYNET CLUSTER (EVK1-CT-2002-80013)

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FIELD TESTING... ...IN FRANCE

ADSS Testing spread over Europe

The field testing plays a very important role in the DayWater project. On one hand, it allows scientific partner to assess the adequacy of the ADSS and, on the other hand, testing is part of the ADSS development phase, since feedback will improve the system. That is why two loops of testing are conducted. The first loop consists on testing set of components on on-going projects; the second loop aims at testing the whole ADSS on 4 case studies. The first loop is currently under progress, including the characterisation of the end-users' projects and needs.

French testing examples

Within the diverse projects, three classes of projects and needs were distinguished:

- Projects concerning BMP design and choice (AESN, SIVOA) for which end-user ask to use mainly the profile definition for BMP design, the BMP database, the case studies database, the indicators and the Multi-Criteria Analysis.
- Projects of master plan elaboration (Limoges, Haut de Seine), for which user would like to use the spatial vulnerability assessment tool FLEXT to define and promote adequate BMPs on specific sites, as well as BMP database and dimensioning.
- Projects, where users have to convince other partners of BMP usefulness in specific project (Seine Saint Denis, Lyon). The ADSS will be used as a communication tool to provide arguments to promote BMP implementation, with the help of Water Aspects, BMPs, Case studies, Pollutants databases.

First testing results

- For the moment, the system is not user friendly enough: Hydropolis interface is a nice idea, but a bit confusing for end-users.
- Users noted the lack of explanations of technical and project internal terms; the ADSS structure is not developed enough to appreciate links between different data.
- English language is a barrier for most of the French end-users.
- Nevertheless, in terms of adaptiveness, it was stated that each end-user manages to imagine how he could use the ADSS in his specific case: hence the ADSS seems to be adaptive. All users did appreciate the possibility to enter their own data in the system, which is also a sign of the ADSS adaptiveness.
- For a decision-making support tool, most of the end-users underline the importance of context description in all projects. This aspect is taken into account in different components of the ADSS: Water Aspects & case studies database, profile definition ...

Participating end-users in each country

Each scientific partner is working with 1 to 7 end-users in his country for the field testing:

Czech Republic: City of Karlin

Danemark: City of Karlebo on several types of project

France: Water and sewerage services of the two departments of Haut de Seine and Seine Saint Denis, Agglomerations of Lyon and Limoges, Association Marne Vive, Regulatory body on river Orge (SIVOA), Seine Normandie Water basin Agency (AESN)

Greece: Consultancy office "Dimitris Soter-oupoulis & Partners", Municipality of Anno lossia, Municipality of Patras

Germany: City of Dresden, Wupperverband river basin association, Water body Emschergenossenschaft

The Netherlands: Municipalities of Bergen and Nijmegen, Consultant TAUW, Water body "Hoogheemraad schap van Schieland"

Sweden: Municipality of Hamarby

United Kingdom: Epping Forest District Council, Sevenoaks District Council, Countryside Property

Caroline Mousset (ENPC)

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DAYWATER STRUCTURE

OVERVIEW OF THE DAYWATER STRUCTURE

The DayWater project is structured into 7 work packages (WP), each of them placed under a different leadership:

WP1: Project co-ordination, meeting organisation, dissemination of results, web-site, file-server and newsletter (Cereve-ENPC)

WP2: Adaptive decision support system (ADSS) production, literature review of decision support tools, first ADSS prototype (DHI-Hydroinform)

WP3: Urban dynamics, core end-user (CEU) questionnaire exploitation, comparative study on decision making processes in Europe (TAUW)

WP4: Risk perception, risk assessment and risk management related to urban stormwater, methodology for evaluation and prioritising environmental hazards, definition of potential priority pollutants (Environment & Resources, DTU)

WP5: Multi-criteria analysis of structural and non-structural best management practices (BMPs), criteria relevant to assess BMP performance (Middlesex University)

WP6: Sources and flux models (SFM) and integration into the hydrological model (Chalmers University)

WP7: Elaboration and exploitation of CEU questionnaires, objectives of regional conferences, inventory of CEU sites for a first field testing, list of components to be tested, terms of reference of the ADSS (Cereve-ENPC)

THE CORE END-USERS

FRANCE
Agence de l'Eau: Mathieu Ahyerre, *ahyerre.mathieu@aesn.fr*

Conseil Général de Seine St. Denis: Claire Cogez, *ccogez@cg93.fr*

Syndicat Marne Vive: Claire Beyeler *marnvive@club-internet.fr*

NETHERLANDS
City of Nijmegen: Ton Verhoeven *t.verhoeven@Nijmegen.nl*

DENMARK
Copenhagen Energy: Niels Bent Johansen *nbj@ke.dk*

Karlebo Municipality: Kjeld Gammelgard *kga@karlebo.dk*

UNITED KINGDOM
Countryside Strategic Projects: John Oldham, *john.oldham@cpplc.com*

Harrow Engineering Services: Vic Jenkins *vic.jenkins@harrow.gov.uk*

GREECE
Municipal Water Supply and Sewerage Company of Patras: P. Papatheodoropoulos *panpapath@deya.gr*

Ministry of Environment, Planning & Public Works: A. Bouba, *katerinagr44@yahoo.gr*

GERMANY
City of Dresden: Ingrid Auer *Iauer@se-dresden.de*

Wupperverband: Marc Scheibel *schei@wupperverband.de*

SWEDEN
Stockholm Water: Knut Bennerstedt *knut.bennerstedt@stockholmvatten.se*

City of Luleå: Magnus Bäckström *magnus.backstrom@tekn.lulea.se*

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END- USER INTERVIEW : WUPPERVERBAND

The Wupper Association (Wupperverband) is a corporation under public law, responsible for the catchment area of the Wupper River, which is about 813 km² large. The members are the communities and counties, water supply and sanitation agencies as well as craft and industries in the catchment area of the River Wupper. Its contractual obligations are water treatment, flood protection, guaranty and possible increase of minimum low water flow, water supply as well as maintenance and ecological restoration of affluent waters. The Wupper Association works very closely together with its members and all those implicated in hydrological issues, e.g. the fishing association, the agricultural association and last but not least the citizens. The catchment area has 11 water treatment plants, in order to treat sewage from about one million citizens and the local industries. 8 storage dams provide flood protection and guarantee the low water flow during dry periods. The biggest dam serves as drinking water storage. In total 2300 km of water courses are to be maintained by the Wupper Association.

The water quality of the River Wupper itself varied from good to middle and heavily contaminated, but has improved a lot with the construction and operation of the treatment plants, even the fish populations recovered.

In Northern-Rhine-Westphalia we have the obligation to implement separate sewer systems for new residential areas. Due to very inhomogeneous soil conditions, infiltration strategies are not always applicable. In many communities the citizen can already decide himself whether he wants to be connected to the rain-sewer or whether he infiltrates the rain water on his own ground. In some cases impermeable areas evacuate surface run-off in trench systems. But we always have to consider the consequences, this might cause for the underground, regarding groundwater protection or existing sewer systems and buildings.

The DayWater project should show us the possibilities of stormwater source control and treatment in the catchment area of the middle and lower Wupper. We don't expect only technical tools for modelling and calculation, but also a platform which helps to involve all possible stakeholders from the beginning in a stormwater management project and to the final decision-making process.

The Wupper Association is a "River catchment manager" and therefore the main tasks are to provide the technical know how and to mediate the different interests of its members and further stakeholders, in order to reach an optimum solution.

The engineer consultant IPS (Ingenieurbüro Sieker) is a scientific partner of the DayWater project and asked us to contribute as an end-user to the research project.

Marc Scheibel
(schei@wupperverband.de)

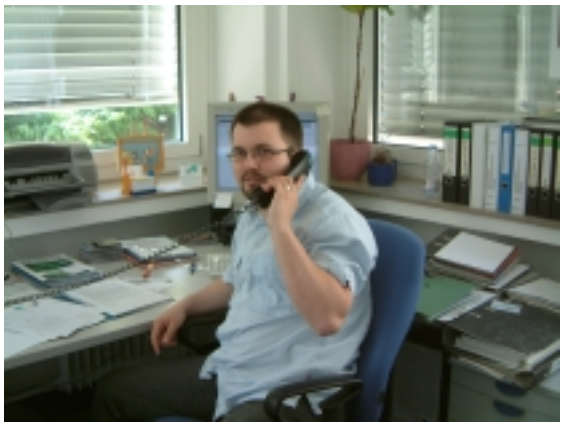

Photo: Marc Scheibel

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SOURCE & FLUX MODELS

CITYNET

Source & Flux Models

One part of the DayWater project deals with the development of a new modelling tool for simulating sources and fluxes in wastewater systems. By combining the modelling approaches in two previously developed models, STORM and SEWSYS, it is possible to use the new sources and flux modelling (SFM) tool to simulate different scenarios of stormwater source control practices. Results from long-term simulations with the SFM tool enable statistical analysis and the calculation of hydrological data such as hydrographs and runoff volumes. The user of the model has the option to employ either standard concentrations or the integrated pollutant generator from SEWSYS to calculate pollution loads. An example of the output from the pollutant generator is shown below. The pollution load is displayed per area category: wet deposition, roads, roofs and other impervious areas. It is also possible to study the sources of stormwater pollution in a specific catchment to a higher degree. The figure also shows how the total pollution for copper is distributed between the sources incorporated in the model. In this example corrosion of copper roofs and brake wear from vehicles are the dominating sources of copper pollution.

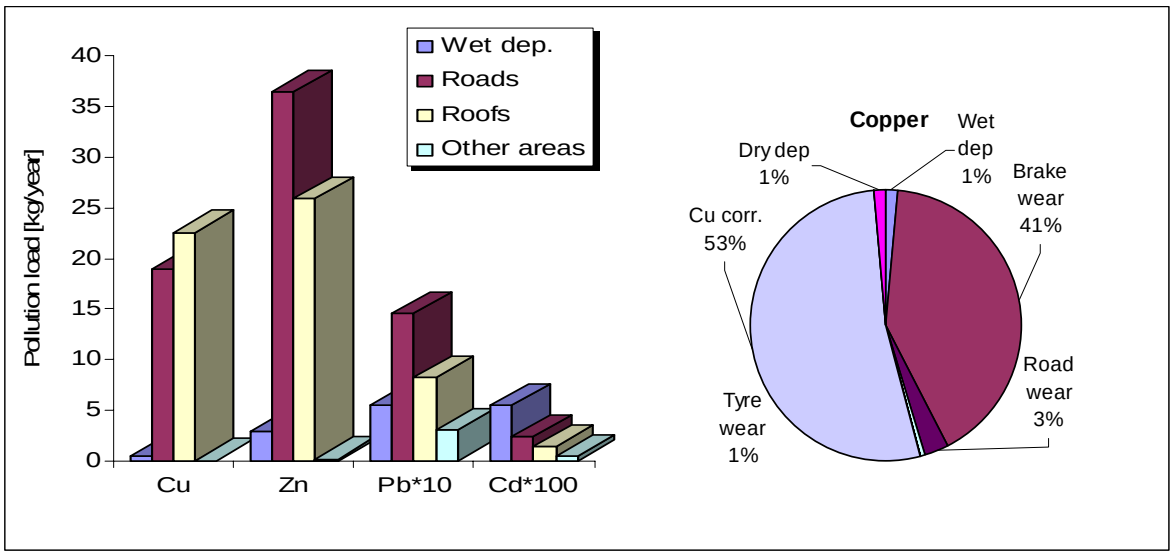
Contact: *stefan.ahlman@wet.chalmers.se*

CityNet Joint Dissemination Workshop

The six CityNet project coordinators met in September 2004 in Copenhagen in order to discuss the different dissemination strategies in the CityNet Cluster projects. The following points were retained:

- Stronger collaboration with the CORDIS press service (press delegation supported by the EC press department, RTD Info, Research headlines on the web site),
- Focus on national and international papers,
- Change the style of the CityNet press release: underline global point of views to be more attractive for the common public (use key words like flooding, costs, risk...),
- Try to spread information, presentations to other scientific communities outside IUWM (e.g. limnologists or geologists meetings, seminars or workshops),
- Information of the broad public done via the cluster web site through vulgarisation of results during the project period,
- Develop a public relation service and competencies for further projects: creation of a dissemination group,
- Collect successful dissemination operations other than scientific, like interviews in Water 21 etc.

Contact: *foerster@cereve.enpc.fr*



Pollutant Generator of SEWSYS: calculation of pollution loads

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OUTLINE OF NEXT ISSUE

DAYWATER NEWS IV (AUGUST 2005)

- ADSS prototype with implemented components and functionalities
- FLEXT: GIS based vulnerability mapping tool
- Annual meeting in Prague May '05
- Ongoing Final Testing on case study sites
- Publications on the 10th International Conference on Urban Drainage (Copenhagen) & Final CityNet Conference

PUBLICATIONS

"Multi-criteria decision approaches to support sustainable drainage options for the treatment of highway and urban runoff"; Science of total environment 334-335 (2004), 251-260; B. Ellis, J.C. Deutsch, J.M. Mouchel, L. Scholes, M. Revitt

"Chemical hazard identification and assessment tool for evaluation of stormwater priority pollutants"; Water Science & Technology (2005); E. Eriksson, A. Baun, P.S. Mikkelsen, A. Ledin

"Coping with uncertainty and risk in urban stormwater management"; Proceedings of UPEM (Denmark); P.S. Mikkelsen, G. Geldof, C. de Roo, M.B. Hauger

"Risks and problems in urban stormwater management from an end-user perspective across Europe"; CityNet workshop (Ghent); M.B. Hauger, A. Ledin, P.S. Mikkelsen

CO-ORDINATOR'S WORD:

Much effort has been spent during the first half of the project duration to reach a consensus, within the consortium, on the structure and expected functions of the Adaptive Decision Support System (ADSS). Since then, i.e. during the 4th semester, scientific partners developed the numerous ADSS components and DHI implemented on its site devoted to DayWater (www.daywater.cz) all those components which were sufficiently structured and developed. It becomes now possible for all partners to nourish, online, the related databases and check their operation.

During this development phase selected end-users in 8 European countries, assessed the design and operation of sets of components which were best adapted to their actual needs. As shown on page 2, this first loop of field-testing was found very useful, both by end-users and by scientific partners. The second and final loop of field-testing involves 4 core end-users, selected for the diversity of their geographical, administrative and regulatory context:
Countryside Properties (UK), Seine-Saint Denis County (F), Stockholm Vatten (S) and Wupperverband (D).

The specific aim of the final ADSS testing operation is to check the interactions between all ADSS components and the adequacy of the whole system to end-user needs.

We face now a new challenge. On one hand, we wish to wait for the development of most ADSS components, for their implementation either within or outside the ADSS core system and for their interconnections. Indeed, if such interconnections are not fully implemented, it is impossible for end-users to test them. On the other hand, if these final ADSS tests are performed later during semester 5 or even 6, it will be too late to exploit, as it was initially planned, the results of these tests for improving the ADSS prototype operation. But they might result in recommendations for the further commercial development of the ADSS prototype.

The third annual meeting will be held on 25-27 May 2005 in Prague. Following the end-user request, this meeting will be devoted to demonstrations of the ADSS and its components, on real projects involved in final testing, and to the presentation and discussion of the procedure of these final tests. The preparation of the future ADSS development and dissemination after the end of the DayWater project will be also an important topic. We look forward to strong support by DayWater end-users for this difficult task of transferring research results into a commercial activity.

D. Thévenot

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DAYWATER AGENDA

INTERNATIONAL CONFERENCES

10TH INTERNATIONAL CONFERENCE ON URBAN DRAINAGE ICUD, COPENHAGEN - DENMARK;
22-26 AUGUST 2005
http://10icud.er.dtu.dk

CITYNET ACTIVITIES

DECISION SUPPORT SYSTEM CROSS PROJECT MEETING &
PROJECT STEERING COMMITTEE MEETING, PRAGUE
24 MAY 2005

FINAL CITYNET CONFERENCE, COPENHAGEN
22 – 26 AUGUST 2005
http://citynet.unife.it/

DAYWATER ACTIVITIES

THIRD ANNUAL MEETING, PRAGUE
25 -27 MAY 2005

FINAL DAYWATER CONFERENCE & WORKSHOP ON DECISION SUPPORT FOR INTEGRATED URBAN STORMWATER MANAGEMENT,
AT ENPC IN PARIS
03 - 04 NOVEMBER 2005
http://www.daywater.org

CITYNET CLUSTER

CITYNET CLUSTER

DayWater belongs to the CityNet project cluster of six individual research and development projects (2001-2005), which focus on different aspects of integrated urban water management (water supply, sewage, drainage), including their urban-rural interfaces (raw water sources, receiving waters, groundwater).

E-Mail: Wolfgang.Schilling@bygg.ntnu.no
http://citynet.unife.it/

CARE.COM

The project CARE-W finished successfully last year. Since then a great interest has been registered to apply the methodology and software developed in this project for planning of rehabilitation of water networks in cities. Therefore the key partners of CARE-W, namely SINTEF, WRc, Cemagref, LNEC and NTNU have decided to form a company, CARE.COM. The company is under foundation; it is already practically operating and offers support to cities based on the CARE-W technology. They are supported by other former partners of CARE-W. Some projects are already under preparation.

Contact: Sveinung.Sagrov@sintef.no

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CONTACTS DAYWATER PARTNERS

CEREVE - ENPC, France
See box

TAUW, Netherlands

Handelsskade 11, PO Box 133 — Phone: 00 31 57 06 99 331
7400 AC Deventer — Fax: 00 31 57 06 99 666

Chalmers University, Sweden

Water Environment Transport — Phone: 00 46 31 77 22 126
41296 Gothenburg — Fax: 00 46 31 77 22 128

Environment & Resources DTU, Denmark

Bygningstorvet, Building 115 — Phone: 00 45 45 25 16 00
2800 Kgs. Lyngby — Fax: 00 45 45 93 28 50

Middlesex University, United Kingdom

Urban Pollution Research Centre — Phone: 00 44 20 84 11 53 08
Queensway — Fax: 00 44 20 8411 54 40
Enfield, Middlesex EN3 4SA

National Technical University of Athens, Greece

Faculty of civil Engineering, Department of Water Resources
5 Heroon Polytechniou Str — Phone: 00 30 21 07 72 28 35
15780 Athens — Fax: 00 30 21 07 72 28 79

DHI Hydroinform, Czech Republic

Na Vrsich 5 — Phone: 00 42 02 67 227 130
10000 Praha 10 — Fax: 00 42 02 71 73 69 12

Ingenieurgesellschaft Prof. Dr. Sieker, Germany

Rennbahnallee 109a — Phone: 00 49 33 42 35 95 15
15366 Dahlwitz-Hoppegarten — Fax: 00 49 33 42 35 95 29

Laboratoire Central des Ponts et Chaussées, France

Route de Bouaye, BP 4129 — Phone: 00 33 24 08 45 866
44341 Bouguenais Cedex — Fax: 00 33 24 08 45 998

Luleå University of Technology, Sweden

Department of Sanitary Engineering — Phone: 00 46 92 04 91 634
97187 Luleå — Fax: 00 46 92 04 94 93

For e-mails and web sites please check our homepage...

DayWater Co-ordination

Daniel R. Thévenot & Miriam Förster

Centre d'Enseignement et de Recherche sur l'Eau, la Ville et l'Environnement (Cereve)

Ecole Nationale des Ponts et Chaussées (ENPC)

F-77455 Marne-La-Vallee Cedex 2 France

Phone: 33 (0)1 64 15 36 43
Fax: 33 (0)1 64 15 37 64
Mobile: 33 (0) 6 73 69 41 18
33 (0) 6 73 69 41 72

e-mail:
daywater@cereve.enpc.fr

www.daywater.org

CONTENT: Daniel Thévenot & Miriam Förster, ENPC
LAY OUT: Miriam Förster, ENPC
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