

DAY WATER NEWS 3

PROJECT UNDER EU RESEARCH & DEVELOPMENT

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www.daywater.org

We have reached the second year of the DayWater project and tend to inform you about the numerous ongoing activities, where some might be of interest for you.

The bio-test procedure applied to runoff and re-suspended sediments has been defined and the test-sites chosen. The first tests were conducted in the Wupper River region (Germany), in Luleå and in Stockholm (Sweden) and as well in Nantes (France). The CityNet Cluster organised an end-user workshop in Ghent (Belgium) entitled "Integrated Urban Water Management". 14 end-users of the 6 projects came to present their needs. Representatives of the European Commission and the IWA presented "EU policy - one coherent management frame" and "From concept to practice: IWA's vision for sustainable cities". Adjacent a workshop for junior scientists on "Process data and integrated modelling" took place near Lyon (France).

The 5th International conference on sustainable techniques and strategies in urban water management (Novatech) was held in Lyon in June 2004. DayWater and CityNet project partners were highly represented with contributions of their specific domain.

We prepare the second DayWater annual meeting to be held in Copenhagen vicinity, at the Danish Technical University (DTU) between the 30 September and the 1st October 2004. One conference day will be dedicated to research progress presentation and discussion. The second day is dedicated to end-user testing and comments to DayWater decision support system, i.e. its IT shell and its components or tools, in their present state of development.

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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BIO TESTS

WWW-YES 2004

Testing sites spread over Europe:

Three small catchments with different geographical and land-use characteristics have been chosen as major test-sites: a stage of highway in Stockholm by the sea side, an urban catchment with some small industries in the Wupper basin in a former industrial region of Germany and a suburban area near Nantes in France without any industry.

About 10 samples after rain events are being collected at each site. The samples undergo three different types of bio-tests: The Danish Technical University is doing algal growth tests, Middlesex University is doing Microtox tests and the Ecole Nationale des Ponts et Chaussées is responsible for rotifer growth tests. Microtox is a very widely used biotest, the algal and rotifer biotests are more sensitive and provide more ecologically relevant information.

The preliminary results prove already toxicity in some of the highway runoff samples of the Stockholm site, with depleted algal and rotifer growth. In order to better determine the contamination source (metals, organics...), further tests have to be assigned. Up to now, no contamination could be observed in Nantes. Contact: mouchel@cereve.enpc.fr

3rd World Wide Workshop for Young Environmental Scientists (WWW-YES) on Discharged Urban Water: Resource or Risk?

For its third annual venue, 16 PhD students, from Europe, Morocco, Iran, India, Burkina Faso, Cuba and Brazil, met each other during 4 days in Vitry-sur-Seine (Paris suburb). Besides presenting and thoroughly discussing their respective research work on "Discharged urban water: resource or risk", focussing on storm and waste water reuse, they also built 4 cooperation research proposals and justified them in front of a panel of experts in urban hydrology and international scientific cooperation. This workshop was supported by the "Conseil General du Val de Marne", and was organised within its 2004 Water University and Festival de l'Oh. A network of young environmental scientists active in urban water management is progressively developed, with strong involvement of developing countries. This network will be especially useful for the preparation and operation of FP6 and FP7 Research & Development projects of the European Commission.

Contact: thevenot@cereve.enpc.fr

NOVATECH CONFERENCE

5th International conference on sustainable techniques and strategies in urban water management

This 5th Novatech conference gave to DayWater partners the opportunity to present and discuss their respective contributions to our project. Besides a general introduction to the DayWater project aims, structure and major results, presented by D. Thévenot, two other oral communications were given. R. Valkman & P. Lems presented a paper on "Contextual water management: from necessity to opportunity". J.-F. Deroubaix presented an analysis of stormwater management in Europe: "Analysis of the Politicisation Processes linked with Source Control Implementation".



Photo: D. Thévenot

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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 END-USERS

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END- USER INTERVIEW : COPENHAGEN ENERGY

Copenhagen Energy has been constituted by the City of Copenhagen to supply the city with water, electricity, gas, heating and drainage. The end-user in the DayWater project is the sewage department in Copenhagen Energy.

The City of Copenhagen has 500,000 inhabitants. The sewer system in Copenhagen is primarily a combined sewer system (89%). There are approximately 1120 km pipes, which transport annually 90 million m³ wastewater from Copenhagen and surrounding municipalities. The wastewater is transported to two large treatment plants, which Copenhagen and seven surrounding municipalities runs in co-operation.

Problems with the handling of stormwater

Copenhagen has a high presence of sealed surfaces. This, combined with the fact that Copenhagen has a combined sewage system, means that a high percentage of the rainwater will be lead through the sewer system to the treatment plants and from there to the marine recipient Øresund. This means that the treatment plants receive a lot of rainwater, which lowers the treatment efficiency. Furthermore a strong rainfall causes overflow of combined sewage from the sewer system to the recipients, which affects their water quality. The surface water system in Copenhagen is often in the lack of water; this is in some areas due to the abstraction of groundwater, but also an effect of transport of the rainwater, in the sewer system, away from the local area.

How is runoff pollution taken into account in our services?

Rainwater is mostly handled by building large underground retention basins, which, in the last five years, has lead to a highly improved water quality in the marine area around Copenhagen. Alternative technologies has in some areas been implemented, such as a constructed wetland and a compact physical-chemical water treatment plant (Actiflo).

Suggested case area

Ørestad is the name of the new part of Copenhagen that in these years is rising. Ørestad is centrally positioned in the Øresund region, a centre for traffic as it has connections to local trains, metro, buses and highway. The district is ambitiously planned, and CE, the sewage department, has contributed with the planning the sewer system and the runoff management. Water is a central element in Ørestad as a recreational theme. Rainwater will be used in the artificial channels. Roof runoff is discharged directly to the channels whereas road runoff is collected and is supposed to be low-technologically treated in an artificial wetland. Because roof runoff is discharged directly to the channels source control plays a significant role in the water management in the Ørestad.

Our interest in the DayWater project

From the DayWater we expect:

- Information about different risks in related to different BMP's,
- Information about BMP's in relation to USWM in other countries,
- A methodology for comparing alternative solutions in USWM,
- Knowledge about how to sell ecological rainwater solutions to citizens.

In the DayWater project we have close contact to the Danish Partner Peter Steen Mikkelsen, at The Technical University of Denmark.

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Photo: Copenhagen Energy

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LYON WORKSHOP

19th European Junior Scientist Workshop

The 19th European Junior Scientist Workshop (19th EJSW) on "Process data and integrated urban water modelling" has been held in Meaux-la-Montagne, France, in the Beaujolais area, approx. 60 km north of Lyon. It was organised by INSA de Lyon as one of the CityNet Accompanying Measures (Work Package 2). Accompanied by 3 seniors, 24 junior scientists (i.e. mainly PhD students) from both the 6 CityNet projects and other external projects and institutions, all of them coming from 11 countries in Europe and Australia, spent 4 days of intensive work. As traditionally in junior scientists workshops, individual presentations were given by each participant on his/her research project. The main modelling topics were urban water systems, hydrology, groundwater pollutant transfer. Further topics were infrastructure assessment and rehabilitation, performance indicators for technical and natural urban water systems, monitoring - data acquisition and validation, model calibration. Group sessions on the "ideal integrated model" were very intense and the results have been presented by 4 juniors at the CityNet senior workshop, on Monday 15 March 2004 in Ghent, Belgium. Reports on the group works and all presented papers are available on the CityNet web site <http://citynet.unife.it/> (under "Conferences").



Photo: J.L. Bertrand-Krajewski, INSA-Lyon

GHENT WORKSHOP

CityNet Management seminar for end-users in Ghent, Belgium -16-17/03/2004

The seminar was opened the head of the unit 'Water Cycle' at the Research Directorate Environment (European Commission).

The first seminar day was mainly dedicated to the CityNet sessions. Each of the six CityNet projects was introduced by their respective project co-ordinators. A real-life experience was presented by end-users of each project.

Six discussion sessions were held on the following topics: Risk perception, Source control in USWM, Systems analysis, Modelling, Ecological impact assessment, Socio-economy.

The overall attendance was very satisfying with a neat division of 50/50 between CityNet partners and externals. More than the half of the participants was end-users. Likely reasons for the rather disappointing participation from the CityNet end-users were: insufficient information and explanation to convince end-users; only few end-users are covering the whole urban water system; financial and administrative constraints; language difficulties.

The organising project CD4WC DayWater were the best represented CityNet projects. Besides a considerable local attendance, most delegates came from the north-western European countries.

The participants found it a good platform for networking activities and a high level of information transfer for direct use.



Photo: G. Dirckx, Aquafin

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OUTLINE OF NEXT ISSUE

DAYWATER NEWS IV (JANUARY 2005)

- ❑ Improved ADSS prototype with components and implemented functionalities
- ❑ Report on biotests applied to runoff and sediment pore water
- ❑ Determination of numerical values for the assessment of BMPs
- ❑ Methodology for evaluating hydrological impacts
- ❑ Methodology for adapting hydrological model to risk assessment
- ❑ Report on examples of SFM use
- ❑ Report on field testing & proposed improvements

PUBLICATIONS

DMUCE 2004, Porto:

"Decision making processes in the context of urban stormwater source control management within European countries: DayWater project"; M. Förster, et al.

"In which way and how far the computer can support the decision making process?"; J.-F. Deroubaix, J.-C. Deutsch

ACTUI 2004, University of Exeter:

"The Development of Multi-criteria Analysis for the Evaluation of Urban Surface Drainage Options"; L. Scholes, M. Revitt, B. Ellis

Journées Information Eau, Poitiers

Evaluation des performances et aide à la décision pour la gestion à la source des eaux pluviales urbaines: le projet DayWater; Martin C., Legret M., Raimbault G.

Junior scientist workshop on modelling (CityNet)

Modelling of snowmelt from a small urban catchment - Dynamics of road runoff and suspended solid transport; Westerlund C., Hernebring C., Viklander M.

CO-ORDINATOR'S WORD:

At the end of the first year of DayWater project, all partners prepared and submitted their reports and cost statements to the European Commission: as these cost statements were considered as justified, the first annual payment was received by ENPC and immediately forwarded to each partner institution.

During the 5th International Conference on sustainable technique and strategies in urban water management (Novatech), held in Lyon, France on 6-10 June 2004, the DayWater project was well disseminated by 3 oral presentations (see above) as well as during discussion within the Source Control Management (SOCOMA) working group.

Since the work meeting held in Prague in August 2003, nearly all DayWater partners took part in a common research debate devoted to the expected ADSS functions and structure. The debate was managed with the help of the BSCW discussion forum and followed by numerous file exchanges, phone discussions and meetings (Athens - October 2003; Lyngby - December 2003; Paris - March

2004 and Prague - May 2004). Different personal experience of partners and different traditions of USWM decisions procedures within each country, have been observed. Such diversity of viewpoints, regarding the adaptive role of the ADSS or the required guidance level of the user, was found significant and source of better integration of end-user needs all around Europe. Thus it was necessary to spend time, during the second and third semester, to reach a consensus within the consortium. The consequence of this discussion – which can be understood as a design & development phase - is that the field testing with CEU and EEU will be performed in parallel instead of two successive loops as foreseen in the initial work plan. This testing operation will be initiated during the second DayWater annual conference, to be held in Copenhagen on 30 September - 1st October 2004.

D. Thévenot

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DAYWATER AGENDA

CITYNET CLUSTER

INTERNATIONAL CONFERENCES

IWA 4TH WORLD WATER CONGRESS IN MARRAKECH
- MAROCCO;

19-24TH SEPTEMBER 2004

WWW.IWA2004MARRAKECH.COM

DMUCE, 4TH INTERNATIONAL CONFERENCE ON
DECISION MAKING IN URBAN AND CIVIL
ENGINEERING, PORTO - PORTUGAL;

28-30 OCTOBER 2004

WWW.DEC.UC.PT/DMUCE4

INTERNATIONAL CONFERENCE ON WATER SENSITIVE
URBAN DESIGN, CITIES AS CATCHMENT IN
ADELAIDE - SOUTH AUSTRALIA

21-25 NOVEMBER 2004

WWW.PLEVIN.COM.AU/WSUD2004/

10TH INTERNATIONAL CONFERENCE ON URBAN
DRAINAGE ICUD, COPENHAGEN - DENMARK;

22-26 AUGUST 2005

<http://10icud.er.dtu.dk>

CITYNET ACTIVITIES

DISSEMINATION WORKSHOP, COPENHAGEN
27 SEPTEMBER 2004

<http://citynet.unife.it/>

DAYWATER ACTIVITIES

ANNUAL MEETING, COPENHAGEN
29 SEPTEMBER - 1 OCTOBER 2004

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).

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FP6 PROJECT PROPOSAL: WATER FOR BILLIONS

The CityNet Project Steering Committee has taken an initiative and embarked on a discussion towards creating a proposal for an Integrated Project. After an initial scoping meeting in Gent in March this year, we now want to involve all CityNet partners and supporters in this discussion, with the objective to create the best possible proposal backed by the most competent consortium. The working title of the project is "Water for Billions".

APUSS PROJECT END ON 31 DECEMBER 2004

A recent meeting in Dresden (Germany) on 13-14 September 2004, all recent experiments and progress were presented. A set of new methods to measure infiltration and exfiltration in sewer systems has been developed and tested in various sites: detailed standard protocols and examples of application will be made available at the end of the project. Modelling approaches at reach and catchment scales have also been developed, coupled with specific software for simulations. Additionally, socio-economic aspects, performance indicators and investment strategies will be further developed until the end of the project. A list of final documents will be made publicly available on the APUSS website after a final validation by the end of February 2005.

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