deWaLoP Fakten

Project name
Developing Water Loss Prevention

Project title
deWaLoP

Funding programme
Slovak-Austrian Cross-border Cooperation Programme 2007 – 2013

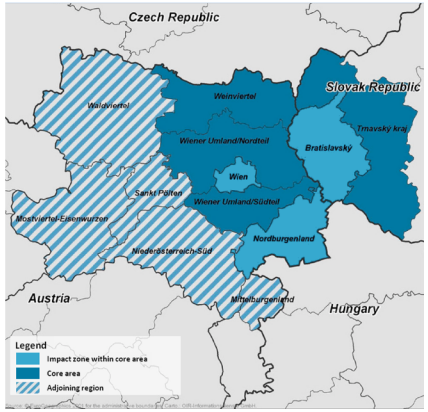
Programme priority
2 – Accessibility and Sustainable Development

Project duration
1 February 2010 – 30 June 2014

Project budget
Approx. € 1.440,000

For more information
www. dewalop.eu
www.sk-at.eu

Programme area



deWaLoP Partner

Lead Partner (LP)
Vienna Water - MA 31
Vienna City Administration
www.wienwasser.at
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Project leader: Markus Werderitsch

Project Partner 1 (PP1)
BVS Bratislava Water Company
www.bvsas.sk
Contact: Milan Hutkai

Project Partner 2 (PP2)
ACIN - Vienna University of Technology - Automation and Control Institute
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Contact: Markus Vincze

Project Partner 3 (PP3)
STU - Slovak University of Technology in Bratislava, Faculty of Civil Engineering
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Project Partner 4 (PP4)
IMST - Vienna University of Technology - Institute of Material Science and Technology
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Project Partner 5 (PP5)
Water Association of Northern Burgenland
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deWaLoP

Developing Water Loss Prevention

DEWALOP

EUROPEAN UNION
European Regional Development Fund

creating the future
Programm zur grenzüberschreitenden Zusammenarbeit SLOWAKEI - ÖSTERREICH 2007-2013
Program cezhraničnej spolupráce SLOVENSKÁ REPUBLIKA - RAKÚSKO 2007-2013

deWaLoP
Austrian project section

Rehabilitation of grey cast-iron, fibre cement and concrete pipes by means of a robot

Water losses of drinking water supply systems are unavoidable. For many years, Vienna Water has been employing trenchless and open-cut methods to renew and rehabilitate pipes in order to minimise losses. Various approaches are applied for this purpose.

A new method for pipe connection rehabilitation was developed in the context of the deWaLoP project. Vienna Water, the Water Association of Northern Burgenland and the Bratislava Water Company as potential users joined forces with two institutes of Vienna University of Technology to develop a remote-controlled robot with imaging techniques for pipe section inspection to ensure the trenchless rehabilitation of leaking pipe connections. Towards this goal, a specially developed sealing material suitable for use with drinking water is introduced into the socket gap.

The robot is specifically planned and built by the Institute of Automation and Control of Vienna University of Technology to allow for the introduction of the sealing material, which was tested and declared suitable for the use with drinking water by the Institute of Material Science and Technology.

Early warning system

The issue of water losses is dealt with at several levels in the context of the project at hand. For this purpose, an early warning system based on real-time calculations was likewise developed in the course of the DeWaLoP project. The early warning system is tested in pilot areas. Tests of methods and equipment for leakage location serve to complement measures for the avoidance and reduction of water losses.

deWaLoP
Slovak project section

More accurate determination of water losses by means of a water balancing model

The pipe network of Bratislava, which is markedly more extensive than the Viennese one, is managed by the Bratislava Water Company (BVS), which in addition to the city of Bratislava also supplies 116 municipalities in the environs with drinking water. Strategic pipe network renewal, which is rendered more difficult by this situation, is to be advanced by means of a water balancing model to be developed in the context of the deWaLoP project in order to enable BVS to meet EU requirements for water loss reduction as soon as possible.

This water balancing model allows for the identification of leaking, defective sections and for the determination of the cause of these losses. To be able to analyse the water losses in detail, it is necessary to conduct through-flow analyses and to provide suitable measuring points with appropriate equipment.

The development of the model as well as the definition of suitable measuring points and their provision with equipment are supported by STU and moreover draw on the experience of the Austrian partners.

deWaLoP
Project outcomes

Socket rehabilitation of grey cast-iron pipes (Vienna)

Testing of potential sealing systems
Development of a remote-controlled robot
Development of a sealing material suitable for use with drinking water

Water balancing model (Bratislava)

Safeguarding of data transmission from measuring zones
Development of a water balancing model including risk assessment
Definition of conditions for the creation of the hydraulic model in Bratislava

Field test (Vienna, Bratislava)

Know-how exchange and study visit
Test at construction site with the sealing material
Tests at construction site with the robot developed for the project

Socket rehabilitation of fibre cement and concrete pipes (Vienna, Burgenland)

Series of tests of the sealing material for its suitability for fibre cement and concrete pipes
Development of new tools and applications for the robot
Material tests of the sealing material for potential impacts on

Methods for the establishment of an early warning system (Burgenland, Bratislava, Vienna)

Development of an early warning system based on real-time calculations and a plan of measures to deal with unavoidable damage
Pilot tests for the implementation of the early warning system
Tests of methods and equipment for leakage location