



Best winter maintenance practices to reduce respirable street dust in urban areas – demonstration of best practices, strategy development and implementation



## Objective of the REDUST project

Aims of the REDUST project were:

- To find and demonstrate the best winter maintenance practices in the fields of traction control, dust binding and street cleaning, to accelerate their implementation to reduce levels of respirable (PM<sub>10</sub>) street dust in urban areas and to compare the costs with current state measures
- To develop and implement a strategy to reduce levels of respirable (PM<sub>10</sub>) street dust by means of better winter maintenance practices in urban areas in Finland

## Project results

Demonstration program and dust measurements in the street network were carried out during years 2011-2014 in the Finnish Capital region. Winter and spring maintenance practices were tested and selected methods were implemented in the actual street maintenance strategies of the participating cities. Dust binding and street cleaning methods which use high pressure water washing were found to be the most effective in reducing respirable PM<sub>10</sub> dust emissions. For example dust binding with calcium chloride solution was found to reduce street dust emissions by approximately 40-60% for 2 or 3 days after the maintenance action, which will clearly mitigate the health hazards caused for citizens exposed to street dust. Detailed analysis of the street network was made to support the street maintenance strategy development. It was found that it is very important to focus the most advanced maintenance actions to high priority traffic locations where many people are exposed to street dust. Those actions were also found to be the most cost effective. The project presented recommendations for street maintenance in the REDUST Best practices report and detailed information about the different work packages is available in the final reports of project Actions. All reports are available at <http://www.ymk-projektit.fi/redust/en>.



## Actions to disseminate the project results after LIFE+

### *Project website*

- Website <http://www.ymk-projektit.fi/redust/en> will offer street dust information gathered in the project until at least 2020
- Linking in the project partners own websites will be developed so that topics involving maintenance or environmental aspect of street dust will include links to REDUST website
- Project website may be further used as street dust information platform and new presentations may be added to service needs of specific audiences such as maintenance planners

### *Seminars and conferences*

- Results of REDUST will be presented in scientific and expert seminars and conferences in the coming years, both national and international
  - Helsinki will present REDUST results at Finnish Air quality measurement days 2015
  - Helsinki will offer REDUST project as presentation topic for 2016 Winter road congress in Finland
  - Metropolia will participate in the 13<sup>th</sup> European Week of Regions and Cities Open Days with REDUST poster
- Project publications will be distributed at seminars which have connection to air quality and/or maintenance

### *Distributing information to the municipalities and maintenance operators*

- Results of REDUST will be brought to the City Boards and Committees to make sure the local politicians know about the methods used to combat street dust
- Publications of REDUST (Best practices report and Layman's report) will be distributed to smaller cities in Finland via mail and in connection to visits
- KEHTO forum of the Finnish municipalities may be used to distribute information to other cities
- Information will continue to be distributed also within the REDUST partner cities to make sure the latest project results are employed in planning of future maintenance actions and strategy
- REDUST brochures will be distributed to smaller or new operators who may be unfamiliar with street dust prevention. If necessary additional/updated edition may be printed.
- Presentations of project results will be further developed to be suitable for different audiences. For example more educational sessions to street maintenance personnel may be arranged.

### *Future implementation and research*

- Results of REDUST will continue to be implemented in the street maintenance and strategy development in the Finnish capital region
- Results of REDUST will be utilized in future street dust research and project data may offer chances for further studies or new projects
- HSY will utilize the methods developed for dust-SMS in further development of air quality applications for citizens



## Project information

**Location:**

Finland

**Project period:**

01/2011-12/2014

**Total budget:**

1 046 150 €

**EC contribution:**

500 000 €

**Partners:**

Finnish Cities of Helsinki, Espoo and Vantaa

Helsinki Region Environmental Services Authority

Metropolia University of Applied Sciences

Nordic Envicon Oy

**Website:**

<http://www.ymk-projektit.fi/redust/en>