Minutes of the Third RainGain National Observers Group Meeting (UK)

Prepared by Susana Ochoa Rodríguez

Date & Time: Friday 21st March 2014, from 09:30 to 15:30

Venue: WSP House, 70 Chancery Lane, London, WC2A 1AF

Purpose of the meeting:

- To introduce the RainGain project to a group of national observers comprising specialists, practitioners, academics and local and central government policy-makers.
- To present progress to date of the RainGain project and the activities planned for the remainder of the project.
- To jointly discuss key aspects of pluvial flood management.
- To give the observers the possibility of getting involved in the RainGain project

Present:

A total of 46 people attended the meeting, including 11 project partners and 35 national observers.

NAME	COMPANY / ORGANISATION
Tony Maguire	AD Maguire
Andy Palmer	AECOM
Johan Van Assel	Aquafin
Matthew Roberts	BMT WBM
Patrick Goodey	Bristol City Council
Ian Titherington	Cardiff City Council
Lucy Frazer	City of London
Nestor Alfonzo Santamaría	City of London Corporation
Andrew Bailey	Clear Environmental
George Merrick	Environment Agency
Hye One Yang	Environment Agency
Alex Nickson	Greater London Authority
Susana Ochoa Rodriguez	Imperial College London
Maria Aivazoglou	Imperial College London
Christian Onof	Imperial College London
Rui Pina	Imperial College London
Karl Smith	Imperial College London
Richard Body	Innovyze
Andrew Walker	Innovyze
Rod Hawnt	Isodaq Technology
John Powell	Isodaq Technology
Jennifer Hill	JBA Consulting
Richard Billinghurst	Knox Cropper

NAME	COMPANY / ORGANISATION
Andy Johnston	Local Government Flood Forum
Barry O'Brien	Local Government Flood Forum
Graham Campbell	London Borough of Enfield
Miriam Lewis	Maldon District Council
Jacqueline Sugier	Met Office
Sharon Jewell	Met Office
Patricia MacKenzie	Met Office
Katie Norman	Met Office
Caroline Sandford	Met Office
Chris Vernon	Met Office
Chris Collier	NERC National Centre for Atmospheric Science
Alex Grist	Richard Allitt Associates
Linda Speight	Scottish Environment Protection Agency
William Neale	Thames Water
Davinia Leeming	Thames Water Utilities Ltd
David Stewart	Torbay Council
Mayra Codo de Oliveira	University of Bristol
Null Nanding	University of Bristol
Miguel Angel Rico-Ramirez	University of Bristol
Marie-Claire ten Veldhuis	University of Delft
Anna Romanova	University of Greenwich
Alma Schellart	University of Sheffield
David Fortune	XP Solutions

Minutes – Third RainGain National Observers Group (NOG) meeting (UK)

1. Opening and welcome by Dr Andy Johnston (Local Government Flood Forum):

Andy welcomed and thanked attendees for their participation, and provided a brief overview of the RainGain project, including context and objectives of the project, as well as project partnership. He then provided a summary of the outcome of the previous NOG meetings, which constitute the starting point of the workshop session carried out during this 3rd NOG meeting.

2. Presentations by RainGain partners – Progress to date and next steps for the RainGain Project:

The following presentations were given by the RainGain project coordinator (Dr Marie-Claire ten Veldhuis), as well as by representatives of each of the UK RainGain partner organisations. PDF versions of these presentations can be accessed from the RainGain project website (www.raingain.eu).

2.1. Presentation by Dr Marie-Claire ten Veldhuis (RainGain Project Coordinator, Delft University of Technology)

Marie-Claire provided an overview of the progress to date in all partner countries of the RainGain project. This included an overview of the pilot locations which have been setup and of the activities carried out aiming at improving rainfall estimates, urban pluvial flood models and urban pluvial flood risk management. Marie-Claire highlighted that the project has enabled valuable inter-comparison of modelling approaches, catchment characteristics and responses, and flood risk management strategies between the four participating countries. She then introduced upcoming activities, which include installation of new dual-polarisation Doppler X-band radars in Paris and Rotterdam, as well as events in which the RainGain project will be involved.

2.2. Presentation by Dr Jacqueline Sugier (Team Leader - Weather Radar and Wind Profiler Systems R&D, UK Met Office)

Jacqueline gave an overview of the Met Office's radar network, as well as of the radar products they provide. She then introduced the 100 m resolution radar product which has started to be generated over the Central London Area since February 2014. This product constitutes and improvement over the previously available 1 km and 500 m products, not only in terms of resolution, but also in terms of accuracy. The 100 m product is generated based upon shorter radar pulse length, the processing of which has required adaption of the Met Office radar processing system to the new resolution. Improvements to wind drift correction algorithms, chiefly for the 1km resolution data, are ongoing. Throughout the remainder of the RainGain project the added value of the new higher resolution radar product for urban hydrological applications will be tested, using as case studies the RainGain pilot locations.

2.3. Presentation by Susana Ochoa-Rodríguez (Research Assistant, Imperial College London)

Susana provided an overview of the work that has been done at Imperial College London (ICL) since the last NOG meeting in April 2013. The main activity during this period was the installation and testing of a low-cost portable X-band in the heart of London between March and October 2013. This radar proved to be useful for capturing storm cells at high resolution; however, the accuracy of the rainfall estimates is rather poor and this is mainly due to the strong and dynamic ground clutter

observed in the city. Data will continue to be processed and conclusions regarding the added value and potential uses of such radar will be drawn. In addition to the testing of the X-band radar, work has continued in the development and testing of radar-raingauge merging techniques aiming at improving the applicability of radar rainfall estimates to urban hydrological applications. Moreover, urban drainage models with different structures and resolutions are being tested and methodologies for overall uncertainty estimation are being developed. On the management side, a survey was conducted amongst local authorities aiming at examining the understanding, benefits and limitation of the current surface water flood warning services provided by the Flood Forecasting Centre. Moreover, the survey gathered feedback regarding local authorities' tolerance and minimum requirements in terms of probability and lead time of surface water flood warnings. Lastly, in collaboration with the Greater London Authority a workshop pack was developed which will help local authorities in engaging community members in local flood risk management.

2.4. Presentation by Dr Andy Johnston (Chief Operating Officer, Local Government Information Unit / Local Government Flood Forum)

Andy provided an overview of the work that the LGFF has done within the RainGain project in order to help local authorities (LAs) better manage urban pluvial flooding. One of the main activities organised by the LGFF was an international local authorities meeting, which took place in Paris in October 2013 and was attended by LAs representatives from all four RainGain partner countries (UK, Belgium, France and Netherlands). This meeting provided an interesting opportunity for discussing strategies for the management of urban pluvial flooding. One of the main discussion topics was insurance; other topics included bottleneck issues for local governments, such as budgetary constraints and governance. From the discussion that took place, it seemed as if the Dutch governance system was the best amongst those of the RainGain partner countries. The UK system, on the other hand, appears to be extremely fragmented and does not acknowledge the systemic nature of water. In fact, many of the gaps in flood risk management in the UK were revealed by the recent winter flood events.

During the remainder of the RainGain project, the LGFF will focus on unlocking many more players to deal with surface water flooding. For this purpose, three pilot areas which have been heavily flooded will be selected and investigations will be conducted to determine who is doing what in the area, and what the current level of understanding of flooding mechanisms and tasks is. This will reveal what people in England need from their flood management systems and how the RainGain project can help with that.

3. Presentations by invited speakers:

Presentations were given by four guest speakers focusing on different aspects of urban pluvial flood risk management. PDF versions of these presentations can be accessed from the RainGain project website (www.raingain.eu).

3.1. Presentation by Ian Titherington, Cardiff County Council: "Greener Grangetown: a partnership approach to sustainable drainage"

Ian introduced the Greener Grangetown initiative, which aims at better managing runoff while at the same time improving the look of the Grangetown community (south of Wales) through implementation of a set of sustainable urban drainage systems (SuDS). This initiative is the result of a true cooperative effort between Cardiff Council, Natural Resources Wales and Welsh Water. The project is still in the planning stage, but so far the partnership has worked well and the envisaged

economic, social and environmental benefits are enormous (e.g. large increase in green areas and number of tress; capacity will be released from the combined sewer system, leading to huge energy savings and making it possible to build new houses without having to enlarge the sewer system; residents will take ownership of their streets; etc.). If successful, this project will serve as example for water sensitive sustainable drainage and will encourage greater partnerships within the public, private and public/not-for profit sectors.

3.2. Presentation by Alex Nickson, Greater London Authority: "Involving Londoners in flood risk management"

The Greater London Authority (GLA) is responsible for informing Londoners about flood risk and for supporting them in the management of such risk. Surface water flooding is one of the main hazards in London and the fact that it can occur anywhere, even in areas not obviously prone to flooding, makes it very hard to raise awareness and to get local communities to protect themselves from this type of flooding. To improve this aspect, the GLA co-funded RainGain to develop a workshop pack for local authorities to help them engage with their communities on flood risk and flood risk management. This workshop pack guides community members through the process of capturing local knowledge and through understanding/answering three main questions: (1) Why they may flood / have flooded; (2) Who is responsible for managing it; (3) What are the options for managing it. The workshop pack is freely available to anyone interested in using it. During the Q&A session attendees discussed with Alex some of the challenges associated to engaging Londoners in local flood risk management, including the very dynamic nature of London's population.

3.3. Presentation by Linda Speight, Scottish Environment Protection Agency: "Implementation of a pilot Surface Water Flood alerting tool for Glasgow"

Linda started by providing an overview of the activities and services provided by the Scottish Flood Forecasting Service (SFFS) (this is joint initiative between the Scottish Environment Protection Agency (SEPA) and the Met Office), which include daily provision of the flood guidance statement, provision of flood and extreme weather alerts, management of flood events, as well as research and development activities. As part of its flood warning strategy 2012-2016, the SFFS ha set to develop approaches for forecasting of urban pluvial flooding. To this aim, a pilot Surface Water Flood Alerting tool for Glasgow started to be developed in May 2013 and is envisaged to become operational in June 2014. This pilot project has been linked to the Glasgow 2014 Commonwealth Games, which provide a great opportunity to demonstrate science and increase awareness about surface water flooding. The pilot system has been designed to meet end users' needs, making best use of the rainfall forecasting and hydraulic modelling capabilities currently available at the SFFS, while considering time required for implementation as well as real-time operational constraints. The envisaged system will take NWP-Nowcast ensembles as input to the Grid-to-Grid (G2G) model, whose results will be linked to static maps of potential impacts of different types. While the implementation of the system has been challenging and some aspects could still be improved, important lessons have been learnt and this project will serve as starting point and example for the implementation of surface water flood forecasting systems elsewhere.

3.4. Presentation by Anthony Maguire, Dublin City Council: "Interreg IVB FloodResilienCity Project - Developing Dublin's Pluvial Flood Risk Management Strategy"

Anthony provided an overview of flood risk from different sources in Dublin city and the way in which flood management strategies for each source have been developed over the years. A lot of this work has been done as part of European projects, with the most recent one being the Interreg IVB FloodResilientCity Project, within which a pluvial flood risk management strategy was developed for Dublin City. Within this project urban pluvial flood hazard as well as risks were quantified and mapped. Based on this, urban development strategies were implemented which aim at better managing urban exceedance while achieving multiple benefits, including flood mitigation, amenity and biodiversity enhancement. Moreover, initiatives aimed at improving community flood resilience have started and an alert system, based upon 'storm families', grouped according to their return period, duration and damage potential, has been put in place. More work will continue to be done in order to improve the newly implemented strategies and better adapt to the increasing risk that urban pluvial flooding poses over Dublin.

4. Workshop session

Attendees were split into three groups of approximately 15 people each. Each group comprised a mix of professionals, including rainfall experts, engineering consultants, flood risk managers, academics, amongst others. Each group was asked to carry out two activities: (1) identify the variables which would affect a decision to implement and operate a local surface water flood forecasting and warning system and (2) discuss and provide recommendations about key aspects which would guide the design of the interface of a local surface water flood warning system. Afterwards, a reporter from each group presented the group's findings to the audience. **The summary of these conclusions is provided in a separate file.**

5. Closing – by Andy Johnston

Andy concluded by thanking attendees for their participation and by thanking WSP for letting us use their premises for this event.