

BRIDGE SMS PROJECT – THE CORK COUNTY COUNCIL EXPERIENCE

JOHN LAPTHORNE ¹, KEN O’RIORDAN ¹, MARK O’SULLIVAN ¹, DANIEL RYAN ¹, CONNOR LARKIN ¹

¹ *Cork County Council, Road Design Office, Ballincollig, Ireland, John.Lapthorne@CorkCoCo.ie*

Abstract

Cork County Council has approximately 3,000 bridges under its control. County Cork is the largest county in Ireland and represents about 10% of the land area of Ireland. There are 11,500km of roads of all types in the County. The BRIDGE SMS project, funded under the FP7 Marie Curie IAPP programme, has given the Council personnel an increased awareness and appreciation of the importance of the role that scour plays in the deterioration of bridges. The project has assisted the Council Engineers in developing new ways in which we carry out our work, i.e., we have become more proactive rather than reactive in relation to extreme weather events. As a result of our participation in BRIDGE SMS, Council Engineers have a better understanding of the potential consequences of exceptional rainfall and following such an event, will actively look for damage to bridges. The project also has the capacity to give Council Engineers the ability to identify which of our bridges may be vulnerable to a major weather event. This will improve the Risk Management of the Asset and will enable the Engineer to prioritise future monitoring of bridges, focussing on the critical ones. The software being developed by the project will be a valuable management tool and will enable the Council to better manage our bridge stock. This in turn, will lead to lower maintenance costs and will provide a more secure bridge management system. In the light of constantly reducing engineering and financial resources, this is a considerable benefit to the Council.

One of the main aspects of the IAPP programme is the knowledge transfer between industry partners and research organisations. The Council has benefited considerably from the Knowledge Transfer aspect of the project. We have had a significant number of meetings with the personnel both from UCC and from UNIZAG. At these meeting, there has been a sharing of experiences from both sides to our mutual advantage. We have brought an awareness of the importance of on site Health and Safety issues to the members of the BRIDGE SMS team in the course of developing new systems for Scour Management. This Health and Safety Culture is now embedded in all aspects of the project. The Council has a data base of suitable contractors with appropriate experience in bridge rehabilitation and in undertaking in-river works. We have arranged for some of these contractors to assist the Team in installing test equipment for the Scour monitoring exercise, and for the Weather Information Logging Device and the Bridge Information Recording Device and other real time monitoring devices.

Within the past three years, the Cork County Council Road Design Office has rehabilitated or replaced of the order of 80 bridges, some of which were in very poor structural condition. This work has given the Council vast experience in dealing with local issues in relation to bridges. This includes potential difficulties in liaising with land owners, utility companies, Inland Fisheries Ireland, National Parks and Wildlife Service, the Office of Public Works and The Department of Heritage. We have brought this experience to the BRIDGE SMS project. This has assisted the project in addressing these issues which can sometimes be quite complex. We have been able to advise the BRIDGE SMS project on what is acceptable or otherwise to these semi state organisations. We are sharing our Knowledge with the Research Team. This knowledge will be incorporated into the deliverables currently being developed, such as software and to the outputs from the Real Time Monitoring. Examples of Bridge Rehabilitation will be discussed.

The Council has contributed significantly to the drafting of the ‘Guidelines for the Structural and Scour Inspection of Bridges’. We attended a workshop on them at the outset. This was followed by site visits to a number of bridges where we assessed the bridges in accordance with the draft Guidelines. At a subsequent (Skype) meeting, we suggested a number of opportunities to improve the draft. These suggestions were virtually all adopted and subsequently incorporated into the document.

The Council envisages that there will be further International networking opportunities as the project progresses. This will be to the benefit of both Cork County Council and the BRIDGE SMS Project. One of the potential collaboration is with the Irish Department of Transport through the Bridge Asset

Management Project (BAMP). Its objective is to develop systems for the management of the Bridge Stock in Ireland, under a number of headings, including Guidelines and Standards, Procurement, Software Development and Training. The members of the group are drawn from various Local Authorities throughout Ireland. We have introduced the Senior Members of the BRIDGE SMS research team to the Department of Transport BAMP. The senior officials in the Department have stated that they wish to establish a working relationship with the BRIDGE SMS project. This will be to the mutual benefit of both, as each party will be able to draw on the knowledge and experience of the other side.

Keywords: Marie Curie IAPP, asset management, bridge scour, Cork County, knowledge transfer