

Using GIS Mapping With UAV Integration And Historic Flood **Extents To Explore Flood Emergency Response Pathways**

Part 2 - Evacuation Routes

Background

- Study Area : Cockermouth, Cumbria > To create a Prototype Flood Modelling (located at the confluence of the **Rivers Derwent and Cocker**)
- Highly susceptible orographic lift
- Five major flood events between 2000 - 2018
- Extreme rainfall events up to 144.00 mm/day (2009)
- \succ High economic losses up to £24 million (2015)

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Objectives

- Tool (PFMT)
- > To develop a UAV based framework
- for pre-flood identification of
- emergency evacuation routes
- > To create evacuation paths under different case scenarios

December 2015 Flood Extent

River Derwen

- > To estimate the direct and indirect
 - economic losses





Figure 1: Major flooding event in 2015 mainly focused at the confluence of Rivers Derwent and Cocker in Cockermouth Town Centre (Cumbria Country Council, 2016)





Figure 3: Two proposed evacuation routes for the Scenario 3 flooding extent, taking into account the closed roads which are inaccessible to vehicles. The evacuation centre is located at the Eco-Centre at Cockermouth School.

Part 3 - Flood Residential Economic Losses



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