

***15<sup>th</sup> Europe International Network of Basin Organisations Conference***  
***Dublin, September 2017***

# **Flood Risk Management In Ireland**

**Mark Adamson**

**Office of Public Works**

**21<sup>st</sup> September 2017**



# FLOOD RISK MANAGEMENT IN IRELAND



- FLOOD RISK IN IRELAND
- FLOOD RISK MANAGEMENT POLICY
- THE 'CFRAM' PROGRAMME
- FUTURE CHALLENGES

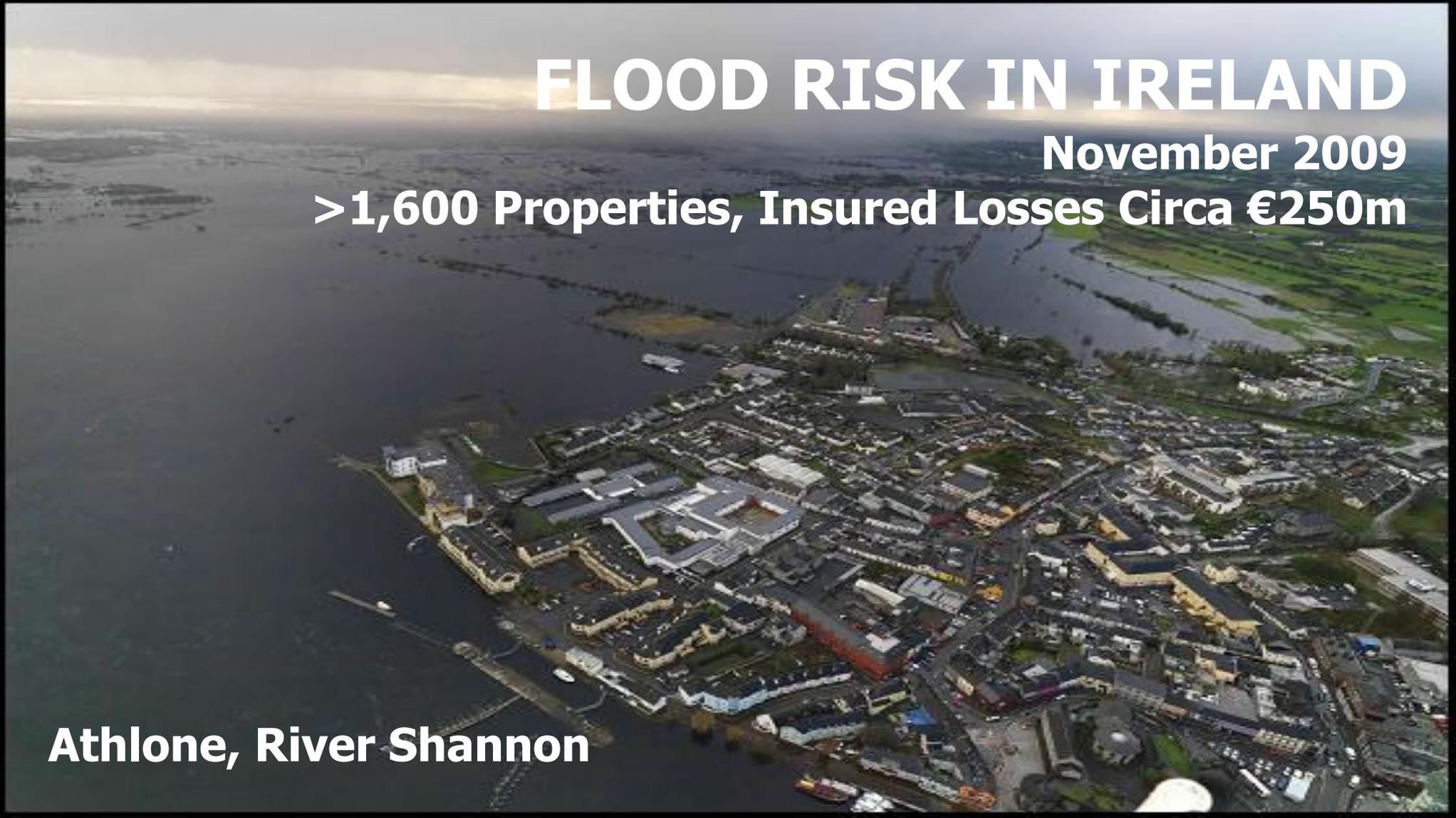
# **FLOOD RISK IN IRELAND**

**Coastal Flood, February 2002 – Dublin**

**Appx. €60m Damages**



# FLOOD RISK IN IRELAND

An aerial photograph showing a town in Athlone, Ireland, surrounded by floodwaters. The River Shannon is visible in the foreground and background, with the town's buildings and streets partially submerged. The sky is overcast, and the water is a dark, murky color.

November 2009

>1,600 Properties, Insured Losses Circa €250m

Athlone, River Shannon

A photograph showing a wide, turbulent river of floodwater that has inundated a street in Clonmel, Ireland. The water is grey and turbulent, filling the foreground and middle ground. In the background, there are several multi-story buildings, some with many windows, and some trees without leaves. The sky is overcast and grey. The overall scene depicts a significant flooding event.

**Clonmel, River Suir**

# **FLOOD RISK IN IRELAND**

**6<sup>th</sup> February 2014**

**>€100m Damage to Public Infrastructure**

# **FLOOD RISK IN IRELAND**

**Winter 2015/16**

**>500 Properties ( $\approx$  2,000 Properties under Threat)**



**River Shannon**

# FLOOD RISK IN IRELAND



- RECENT FLOOD EVENTS
  - November 2009: >1,600 Properties, Insured Losses ≈€250m
  - October 2011: Nearly 1,700 Properties, Insured Losses >€125m
  - June 2012: >€50m Insured Losses
  - Winter 2013/14 Storms: >€100m Damage to Public Infrastructure
  - Winter 2015/16: >500 Properties (≈ 2,000 Properties under Threat)
- EXPECTED INCREASE IN RISK UNDER CLIMATE CHANGE
  - Sea Level Rise (Coastal Cities), Wetter Winters, Warmer Summers

# FLOOD RISK MGT POLICY



- HISTORICAL FOCUS ON LAND DRAINAGE
  - ‘Land Commission’ Embankments (1800’s)
  - Drainage Districts (Acts 1925, 1929) – Local Drainage Schemes
  - Arterial Drainage Act, 1945 – Catchment Drainage Schemes
- ARTERIAL DRAINAGE AMENDMENT (1995) ACT
  - Local, Urban Flood Protection Schemes
    - Completed: 38 Schemes Protecting  $\approx$ 7,700 Properties,  $>$ €1bn Benefits
    - In-Hand: 11 Schemes in Construction, 26 Schemes in Design / Planning
    - Minor Works: €38m Approved for  $\approx$ 600 Local Schemes (Since 2009)

# FLOOD RISK MGT POLICY



- NATIONAL FLOOD POLICY REVIEW, 2004
  - ‘Blue-Skies’ Review by Inter-Dept. Group of National Flood Policy
  - Wide Range of Recommendations:
    - OPW ‘Lead Agency’ to Co-ordinate Flood Risk Management
    - Pro-Active, Catchment-based Approach
      - Programme of Flood Mapping
      - Preparation of Flood Risk Management Plans
    - Emphasis on Flood Risk Management, Rather than Just ‘Protection’
      - Prevention
      - Protection
      - Preparedness and Resilience

# FLOOD RISK MGT POLICY



- EU 'FLOODS' DIRECTIVE, 2007
  - KEY REQUIREMENTS
    - Preliminary Flood Risk Assessment (PFRA)
    - Flood Maps
    - Flood Risk Management Plans
  - OTHER PROVISIONS
    - Coordination with WFD Implementation
    - Trans-Boundary Co-operation
    - Public Dissemination / Engagement
  - 6-YEAR REVIEW CYCLE

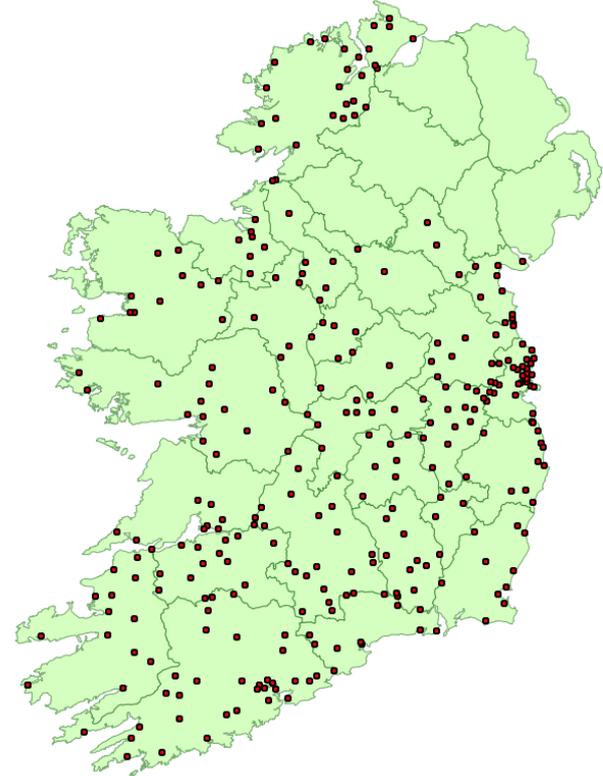
# THE 'CFRAM' PROGRAMME



- THE NATIONAL CATCHMENT-BASED FLOOD RISK ASSESSMENT & MANAGEMENT PROGRAMME
  - Developed to Implement 2004 National Flood Policy
    - Flood Maps
    - Flood Risk Management Plans
  - Deliver on Requirements of 2007 EU 'Floods' Directive
  - Pilot Studies:
    - 2005-2011: Lee, Dodder, Fingal-East Meath
  - National Programme: 2011-2017

# THE 'CFRAM' PROGRAMME

- FOCUS ON 300 AREAS FOR FURTHER ASSESSMENT ('AFAs')
  - Communities Subject to Potentially Significant Flood Risk
  - Identified through the 'PFRA'

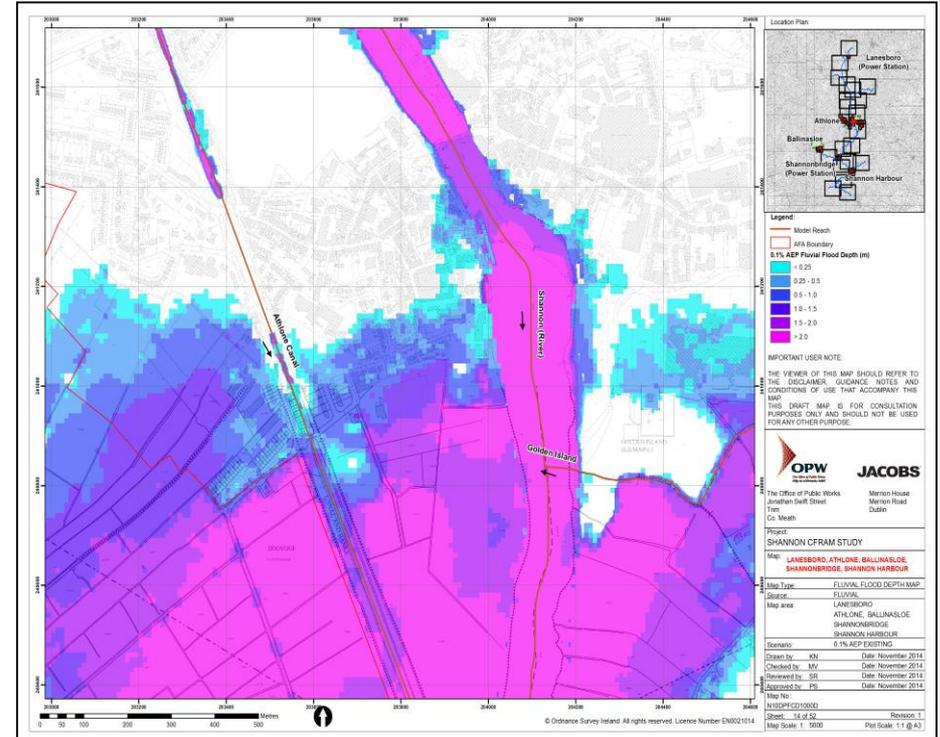
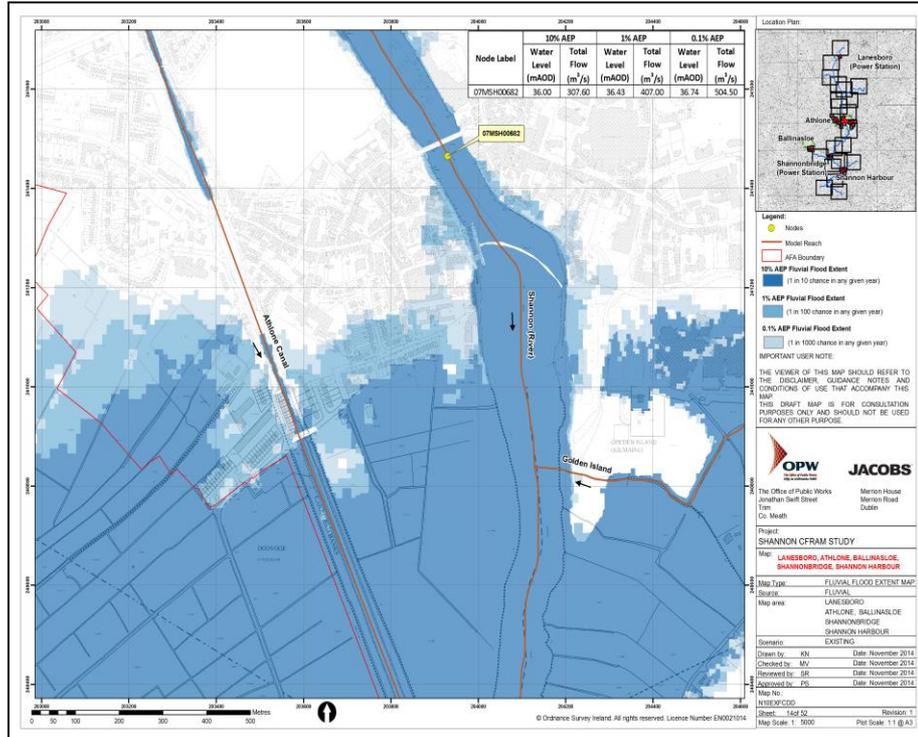


# THE 'CFRAM' PROGRAMME



- FLOOD MAPPING
  - Extent, Depth, Velocity, 'Risk-to-Life', Flood Zone & Various Risk Maps

# THE 'CFRAM' PROGRAMME



# THE 'CFRAM' PROGRAMME



- FLOOD MAPPING
  - Extent, Depth, Velocity, 'Risk-to-Life', Flood Zone & Various Risk Maps
  - Maps Produced for up to 8 Flood Event Probabilities / Magnitudes:
    - 50% up to 0.1% Annual Probability
  - Climate Change Scenarios: 2 Representative Future Scenarios
  - Benefits:
    - Preparedness & Resilience
    - Emergency Response
    - Sustainable Planning

# THE 'CFRAM' PROGRAMME



- FLOOD RISK MANAGEMENT PLANS (FRMPs)
  - 29 FRMPs at River Basin Level
  - High-Level Measures
    - Prevention
      - Sustainable Planning and Development & Urban Drainage Systems, Home Relocation, Land Use / Natural Flood Management
    - Preparedness & Resilience
      - National Flood Forecasting Service, Emergency Response Planning, Individual / Community Resilience, Individual Property Protection

# THE 'CFRAM' PROGRAMME



- FLOOD RISK MANAGEMENT PLANS (FRMPs)
  - Community-Level Measures
    - Appraisal of Options for Flood Risk Management Measures
      - 'Line & Level' Design
      - Consideration of Climate Change Adaptation
      - Costed and Subject to Economic Cost–Benefit Analysis
      - Appraisal using 'Multi-Criteria Analysis'
      - Environmental Appraisal
      - Extensive Public Consultation (National and Community-Level)
    - Flood Relief Schemes Proposed for ≈120 Communities

# FUTURE CHALLENGES



- IMPLEMENTATION OF CAPITAL PROGRAMME
  - ≈160 Flood Relief Schemes, >€1bn
- RURAL RISK
- CRITICAL INFRASTRUCTURE
- CLIMATE CHANGE ADAPTATION
- NATURAL FLOOD MANAGEMENT
- PUBLIC AND STAKEHOLDER ENGAGEMENT
  - National Level
  - Community Level

# FUTURE CHALLENGES



- PROGRESS MADE SINCE 1995
  - Protection
    - Flood Relief Schemes Providing Safety to Communities and Citizens
  - Prevention
    - Policies to Ensure Sustainable Development, Informed by Flood Mapping
  - Preparedness and Resilience
    - Empowering Communities and Citizens to Recover from Flood Events
  - FRMPs
    - Set Effective, Sustainable Strategy for Flood Risk Mgt
- SIGNIFICANT WORK DONE – MUCH STILL TO DO!

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