



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

National Flood Risk Management Plan

AND THE

CFRAM Programme

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Regional Projects & Flood Advisory Office**

Environmental SPC, 27th June, 2018

HISTORIC & POLICY CONTEXT

- NATIONAL FLOOD POLICY REVIEW: 2004
 - OPW: Lead Agency
 - Proactive, Catchment-based Approach
 - Flood Mapping
 - Flood Risk Management Plans
 - Flood Risk Management, rather than just Flood Protection (Flood Relief Schemes):
 - Prevention
 - Preparedness & Resilience
 - Protection

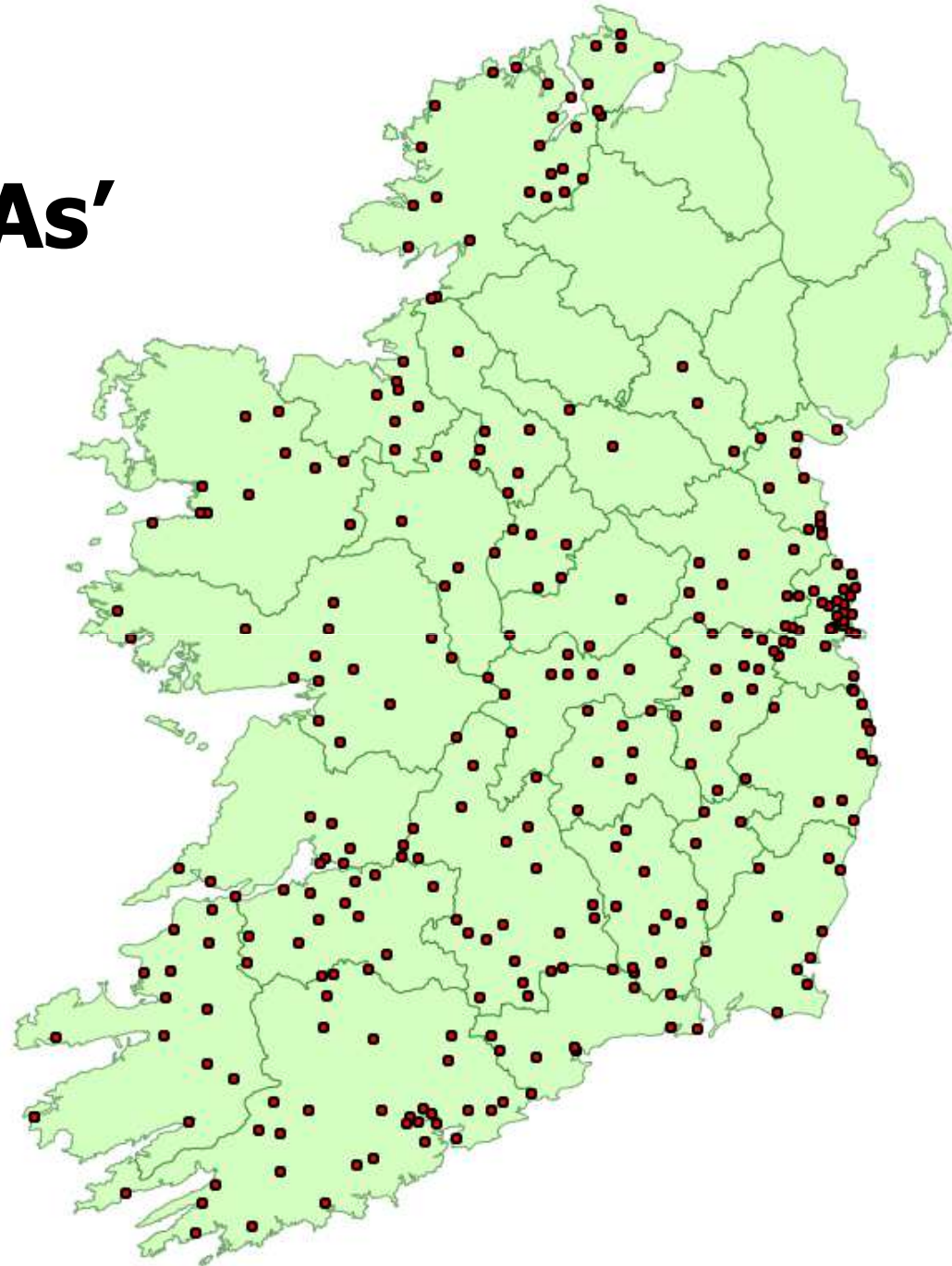
EU 'FLOODS' DIRECTIVE: 2007

- 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

PRELIMINARY FLOOD RISK ASSESSMENT (PFRA)

- **BASED ON:**
 - Historical Records
 - Predictive Hazard Assessment & Risk Analysis
 - Stakeholder Consultation (Local Authorities)
- **PUBLIC CONSULTATION**
- **COMPLETED 2011**
- **300 Areas for further assessment. 'AFAs'**

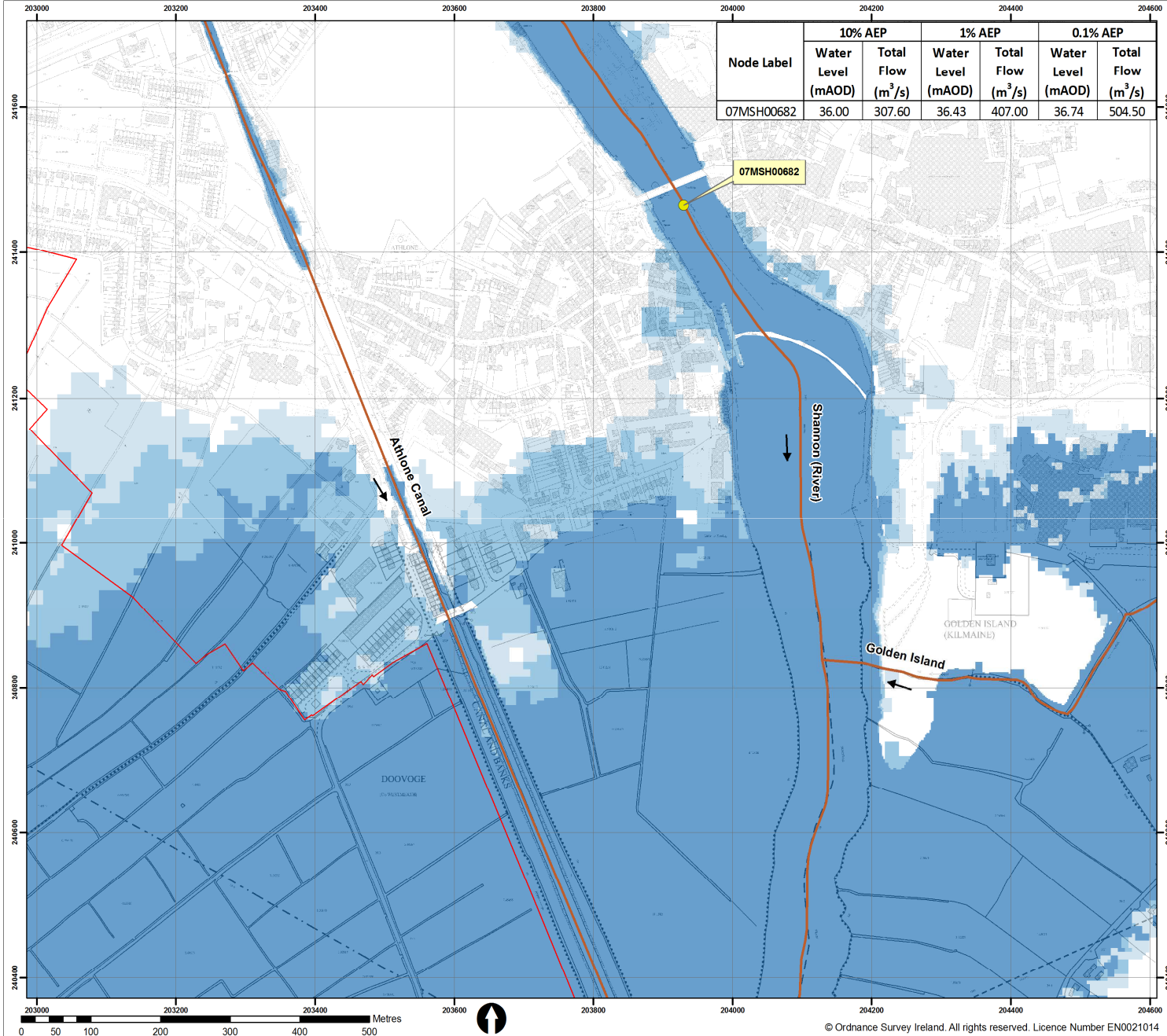
300 'AFAs'



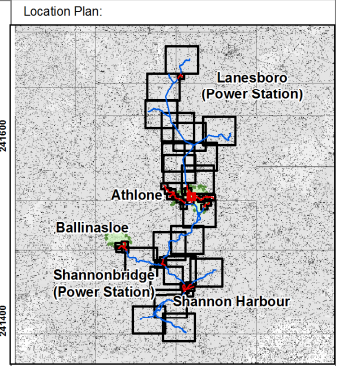
'CFRAM' STUDIES

- 'CFRAM' PROGRAMME
 - Outcome of National Flood Policy Review, 2004
 - Compatible with FD Requirements, 2007
 - Flood Maps
 - Flood Risk Management Plans (FRMPs)
 - Pilot Studies:
 - Lee, Dodder, Fingal – East Meath: 2005-2011
 - National Programme: 2011-2017

- **SCOPE OF WORK**
 - Survey & Data Collection
 - Hydrology (Incl. Use of FSU)
 - Hydraulic Modelling
 - Linkages to Water Framework Directive
 - Flood Mapping
 - Extent, Depth, Velocity, 'Risk-to-Life', Flood Zone & Various Risk Maps



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)	Water Level (mAOD)	Total Flow (m ³ /s)
07MSH00682	36.00	307.60	36.43	407.00	36.74	504.50



- Legend:**
- Nodes
 - Model Reach
 - AFA Boundary
 - 10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)
 - 1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)
 - 0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

IMPORTANT USER NOTE:
 THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.
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Jonathan Swift Street
Trim
Co. Meath

Merrion House
Merrion Road
Dublin

Project:
SHANNON CFRAM STUDY

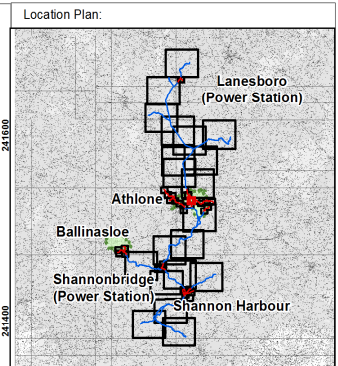
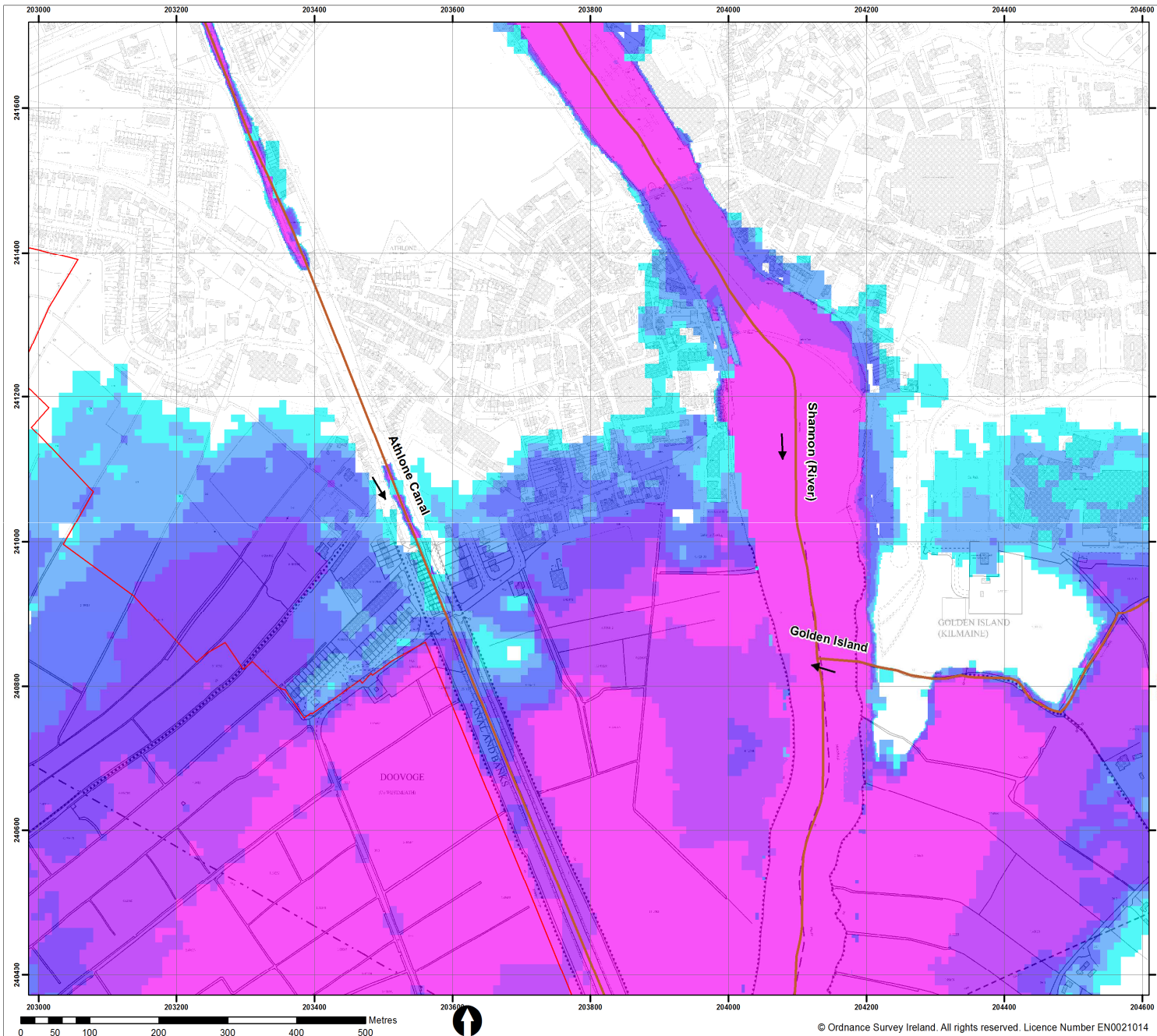
Map: **LANESBORO, ATHLONE, BALLINASLOE, SHANNONBRIDGE, SHANNON HARBOUR**

Map Type: FLUVIAL FLOOD EXTENT MAP
 Source: FLUVIAL
 Map area: LANESBORO
 ATHLONE, BALLINASLOE
 SHANNONBRIDGE
 SHANNON HARBOUR

Scenario: EXISTING

Drawn by: KN Date: November 2014
 Checked by: MV Date: November 2014
 Reviewed by: SR Date: November 2014
 Approved by: PS Date: November 2014

Map No.: N10EXFCDD
 Sheet: 14 of 52 Revision: 1
 Map Scale: 1: 5000 Plot Scale: 1:1 @ A3



- Legend:**
- Model Reach
 - AFA Boundary
 - 0.1% AEP Fluvial Flood Depth (m)**
 - <math>< 0.25</math>
 - 0.25 - 0.5
 - 0.5 - 1.0
 - 1.0 - 1.5
 - 1.5 - 2.0
 - > 2.0

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Project:	
SHANNON CFRAM STUDY	
Map: LANESBORO, ATHLONE, BALLINASLOE, SHANNONBRIDGE, SHANNON HARBOUR	
Map Type:	FLUVIAL FLOOD DEPTH MAP
Source:	FLUVIAL
Map area:	LANESBORO ATHLONE, BALLINASLOE SHANNONBRIDGE SHANNON HARBOUR
Scenario:	0.1% AEP EXISTING
Drawn by: KN	Date: November 2014
Checked by: MV	Date: November 2014
Reviewed by: SR	Date: November 2014
Approved by: PS	Date: November 2014
Map No.: N10DPFCD1000D	
Sheet: 14 of 52	Revision: 1
Map Scale: 1: 5000	Plot Scale: 1:1 @ A3

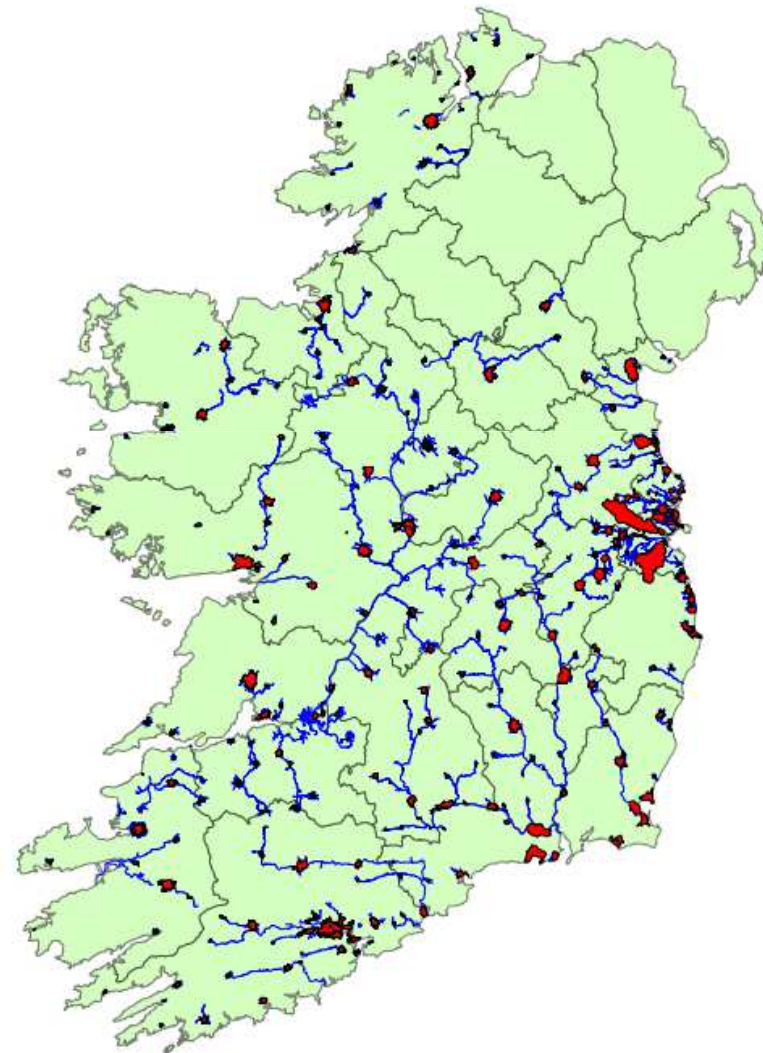
'CFRAM' STUDIES

- FLOOD MAPS ('CFRAM' PROGRAMME)
 - Range of Flood Maps Produced
 - Extent, Depth, Velocity, 'Risk-to-Life', Flood Zone & Various Risk Maps
 - Up to 8 Flood Event Probabilities
 - Future Scenario Mapping
 - 2 Representative Climate Futures
 - 2100 Medium and High future scenario.



FLOOD MAPS

- Detailed Mapping for 300 Communities
 - Appx. 4,000 km River Channel
 - 90 Coastal Communities
 - **Communities with Appx. 3m People (Appx. 2/3rds Population)**
- Less Detailed Mapping for Appx. 2,500 km Other Mapped River
- Inform:
 - Emergency Response Planning,
 - Community Resilience,
 - Sustainable Planning



'CFRAM' STUDIES

- FRMPs – COMMUNITY-LEVEL MEASURES
 - Screening & Option Development
 - 'Line-&-Level'
 - Costed – Unit Cost Database
 - Consideration of Climate Change
 - Appraisal
 - Scoring Options Vs Range of Objectives
 - Weighted 'MCA Benefit Score'
 - Cost-Benefit Analysis
 - Public Consultation: Appx. 150 PCDs

'CFRAM' STUDIES

- FRMPs – COMMUNITY-LEVEL MEASURES
 - CFRAM PROG. – Appx. 18,000 Properties
 - Pilot / Accelerated Schemes: Appx. 6,500 Properties
 - 118 New Schemes in Plans: Appx. 11,500 Properties
 - Euro 940m over 10 years. Euro 70m in 2018.

'CFRAM' STUDIES

- FRMPs – COMMUNITY-LEVEL MEASURES
 - Overall FRS Programme
 - 42 Schemes Completed
 - Appx. 9,500 Properties Protected
 - Appx. €1.9bn NPV Benefits
 - 33 Schemes in Construction, Design, Planning
 - Appx. 5,500 Properties (+6,500 CFRAM)
 - Protection for Appx. 33,000 Properties:
 - Appx. 95% Properties in AFAs
 - Appx. 80% Properties Nationally

'CFRAM' STUDIES

- FRMPs – NATIONWIDE MEASURES
 - Prevention:
 - Sustainable Planning & Devt. Management
 - Sustainable Urban Drainage Systems
 - Voluntary Home Relocation Scheme
 - Climate Change Adaptation Planning
 - Natural Flood Risk Management

'CFRAM' STUDIES

- FRMPs – NATIONWIDE MEASURES
 - Protection:
 - Maintenance of Existing Flood Relief Schemes, and Completion of Ongoing Schemes
 - Maintenance of Arterial Drainage / District Drainage Schemes
 - Maintenance of Other Channels
 - Minor Works Scheme

'CFRAM' STUDIES

- FRMPs – NATIONWIDE MEASURES
 - Preparedness & Resilience:
 - Flood Forecasting & Warning
 - New National Flood Forecasting Centre
 - Emergency Response Planning
 - Promotion of Individual / Community Resilience
 - Individual Property Protection
 - **Flood Event Data Collection**

- **FLOOD RISK MANAGEMENT PLANS**
 - Set Strategy for Effective, Sustainable Management of Flood Risk in Ireland
 - Prevention, Protection, Preparedness & Resilience
 - Finalisation of Plans, NIS & SEA statement.
 - Approved by Minister – 16th April
 - Launch 3rd May 2018 – www.floodinfo.ie
 - Local Authorities required to note or approve plan by 3rd August 2018

Dublin City Council Area

At Construction

- Dodder Fluvial E35m to date.
- South Campshires E5m to date
- Wad river E5m to date.
- Flood Resilient Cities E5m to date.
- Dollymount E3.5m to date.
- Surfacewater network upgrades. E2m pa.

Dublin City Council Area

At Study/Design/Planning Stage

- Poddle, consultant appointed March 2018.
- Camac, new study required.
- Dodder Phase 3, Clonskeagh-Dartry.
- Clontarf Promenade
- Sandymount, Phases 1 and 2.
- Santry Phases 2 and 3.
- Liffey Lucan to Chapelizod.

DCC – Climate Change

- All new schemes are to look at risk of climate change.
- Sea level rise of 0.5m -1.0m -1.5m by year 2100. Higher waves.
- Increased river flows of 20% - 30% by the year 2100.
- Increased thunderstorms & monster rain.
- Increased groundwater flooding.

Adoption/noting of flood plan

- 2nd July Dublin City Council Meeting.
- E & T recommend adoption of the OPW flood plan Dublin City Council Area.
- Increased Flood Protection of Dublin City rivers and coastline, 2,000 dwellings, 250 businesses and estimated Euro 240m in reduced damages.
- Improved Infrastructure & Roads protection.
- Climate change provisions.

Any Questions?