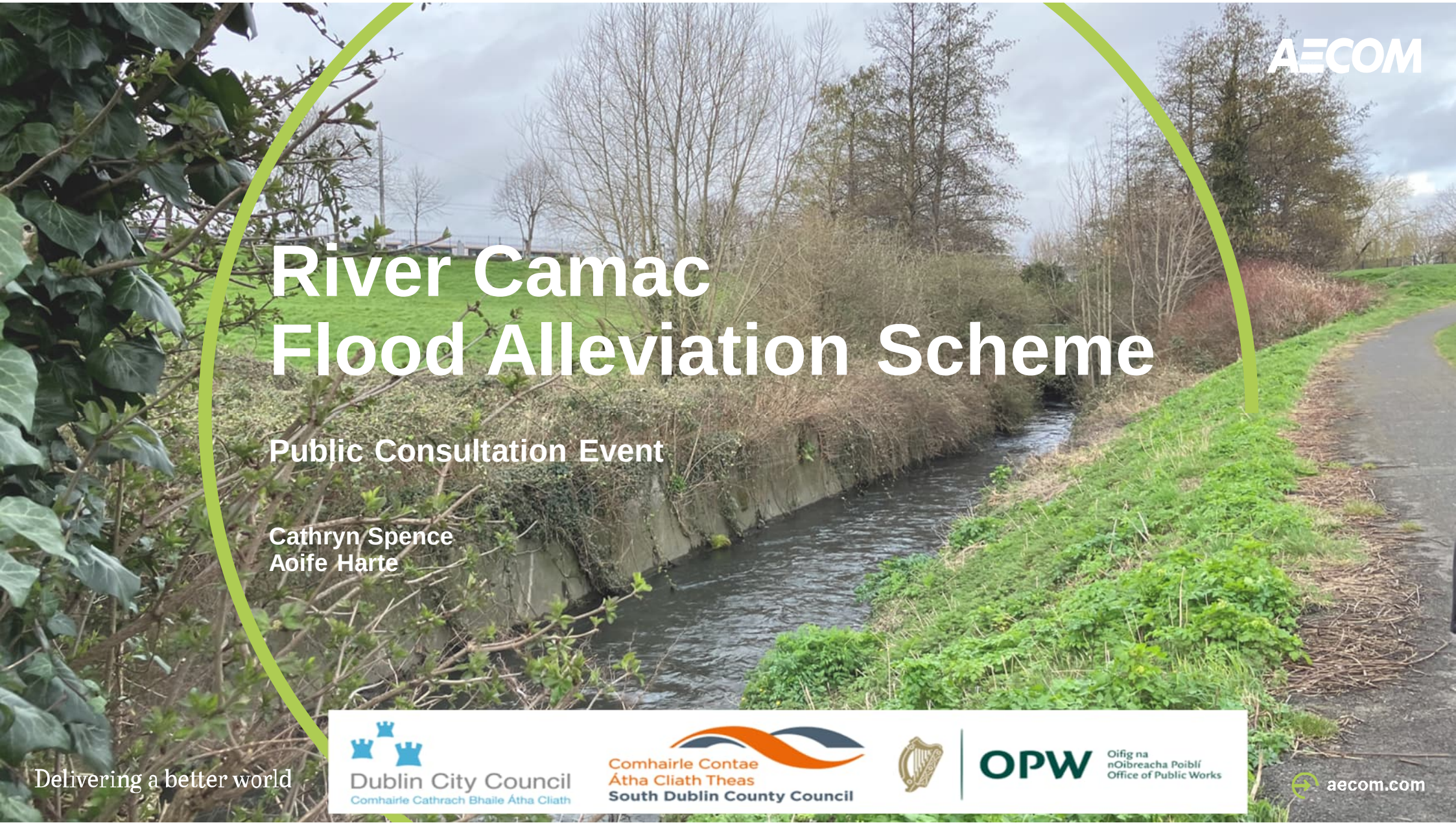

River Camac Flood Alleviation Scheme

Public Consultation Event

Cathryn Spence
Aoife Harte

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Comhairle Cathrach Bhaile Átha Cliath

Comhairle Contae Átha Cliath Theas
South Dublin County Council

OPW
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Office of Public Works

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River Camac Flood Alleviation Scheme (Camac FAS)

Steering Group:

Comhairle Contae Átha Cliath Theas
South Dublin County Council

Dublin City Council
Comhairle Cathrach Bhaile Átha Cliath

OPW
Oifig na nOibreacha Poiblí
Office of Public Works

Purpose:

Identify and evaluate potential flood alleviation measures to reduce fluvial flood risk from the River Camac.

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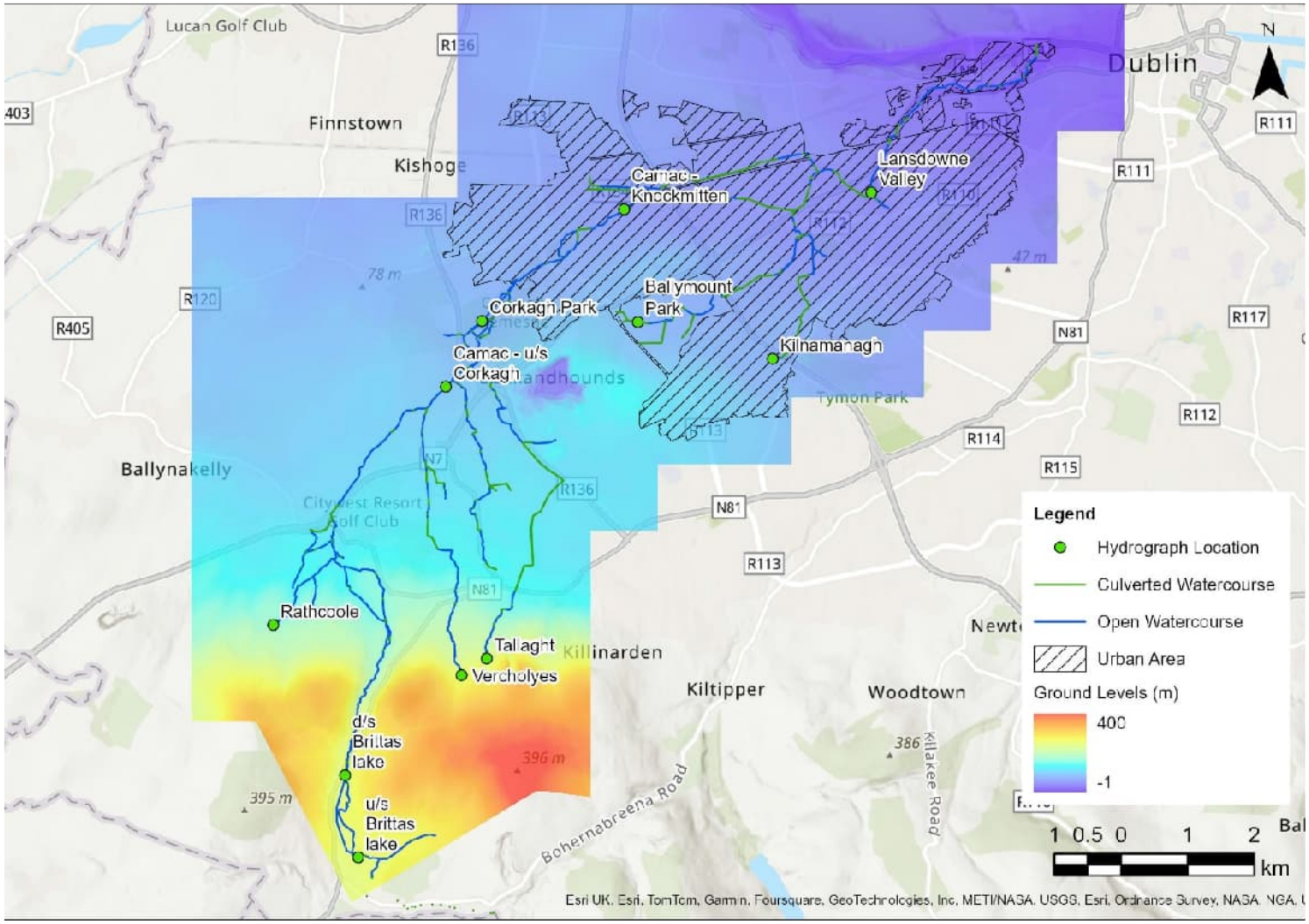
Previous flooding

Camac FAS Study Area



Dublin City Council
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South Dublin County Council

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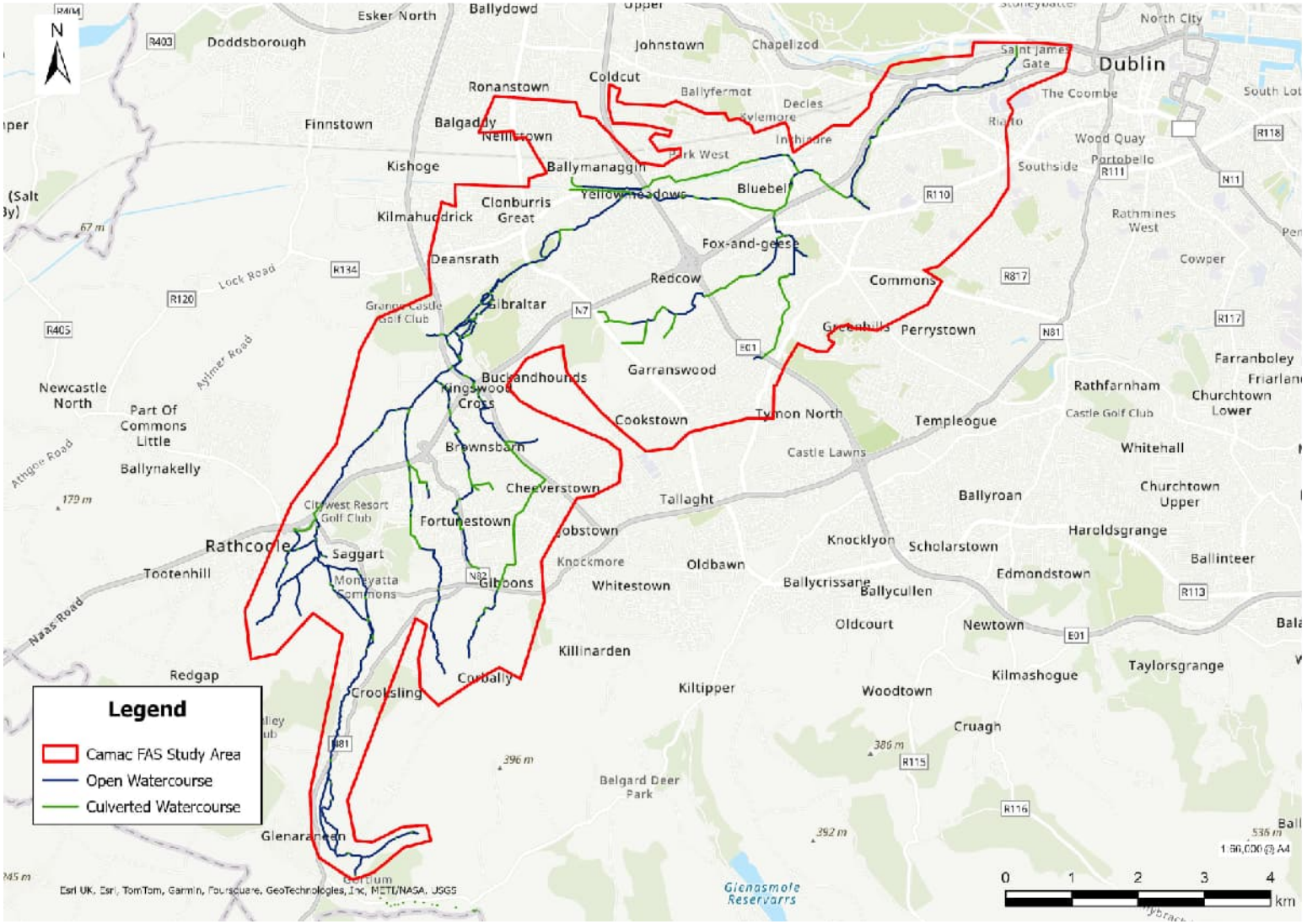
Fluvial flood risk



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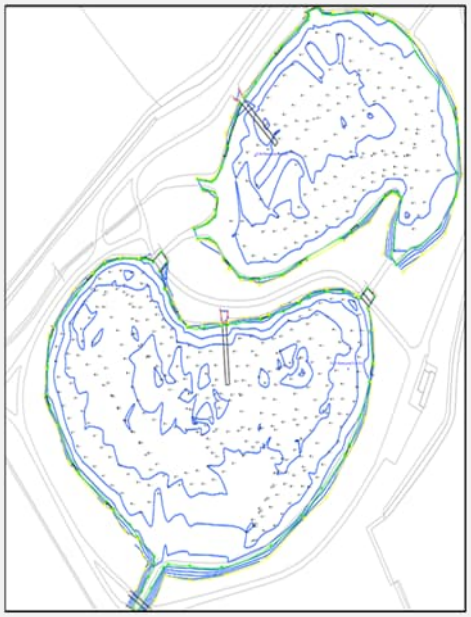
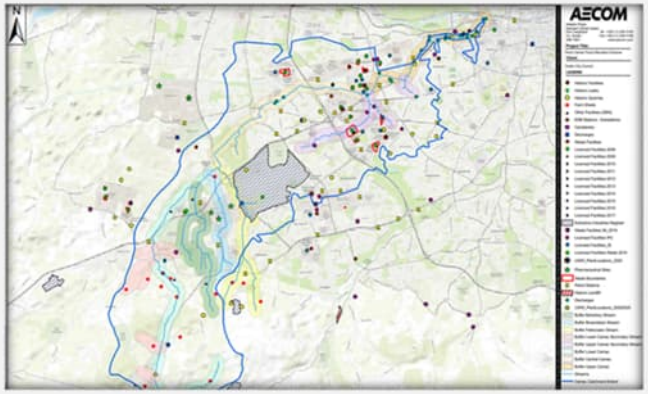
Survey data & Environmental surveys

Topographical and Bathymetric Surveys



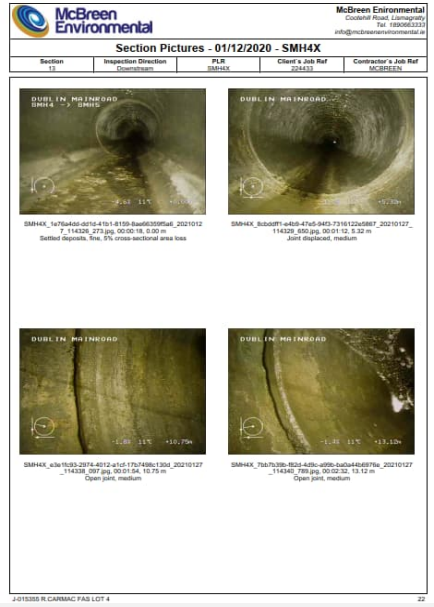
- Measurements and levels of the rivers, lakes, manholes & bridges within the catchment

Contaminated Land



- Desktop review of publicly available information to identify potential contaminated sites within the catchment

CCTV and Culvert Surveys



- CCTV survey of the of the extensive network of culverts within the catchment

Survey data & Environmental surveys

Environmental Surveys

- Site surveys for bats, birds, mammals, habitat and invasive species and wintering birds

Aquatic Surveys

- Aquatic surveys within the catchment including White-clawed Crayfish, fish and macro-invertebrates

Hydromorphology Assessment

- Assessment of the baseline physical character of the river and identification of pressures and impacts that relate to flooding

Survey data & Environmental surveys

Site Investigation

- Ground Investigation of the River Camac catchment where options have been deemed feasible at time of tender. The Site investigation included, cable percussive boreholes, core sampling of masonry or concrete with Ferroscan or GPR, slit trenches, groundwater level readings and environmental testing.

The River Camac FAS Project

Understanding Flooding Mechanisms

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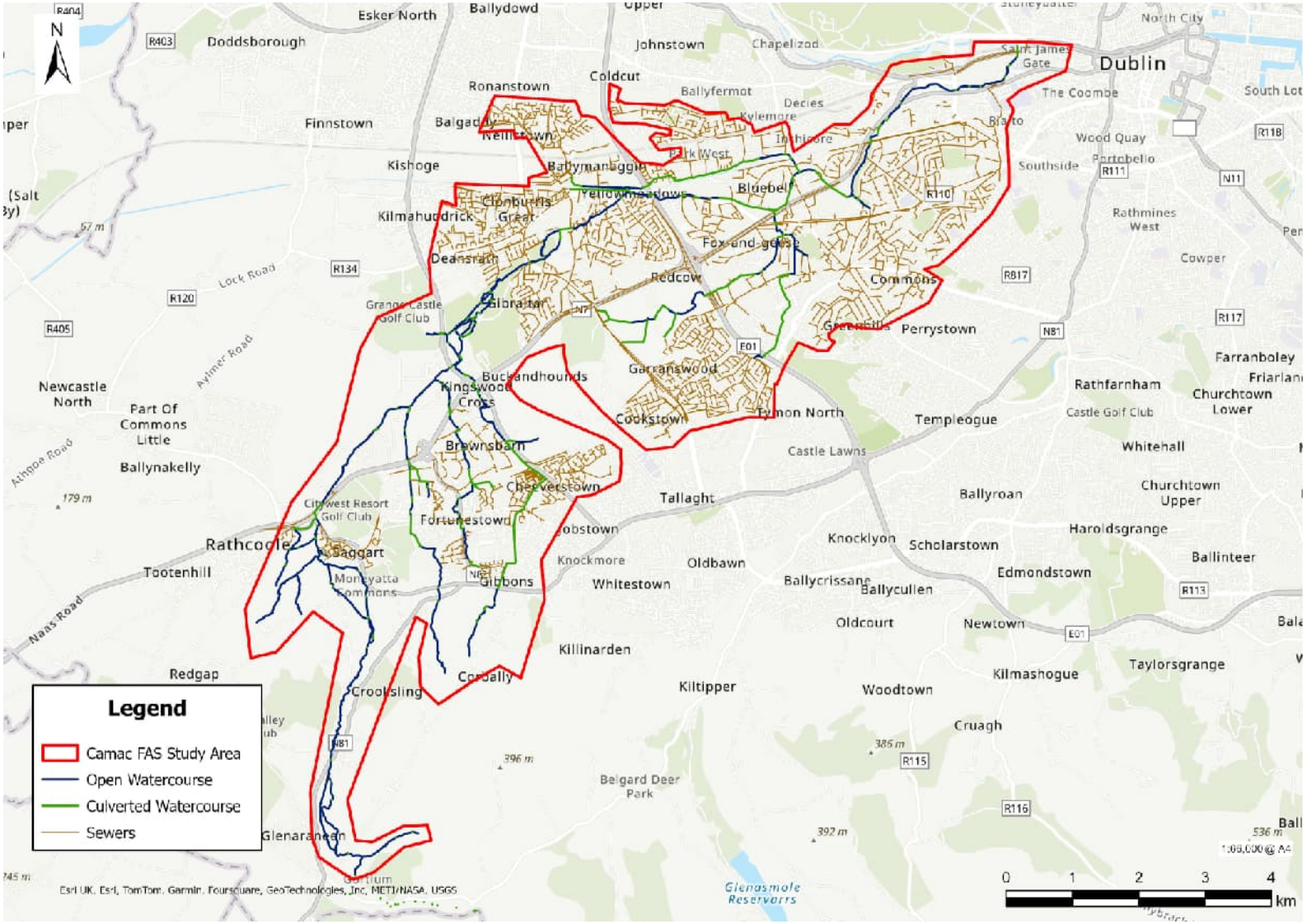
Understanding Flooding Mechanisms



- Detailed Integrated Hydraulic model DCC and
- Approx. 55km of river
- Used channel survey data, terrain data and structure survey
- Integrated model combines open channels, culverted watercourse and urban drainage system.

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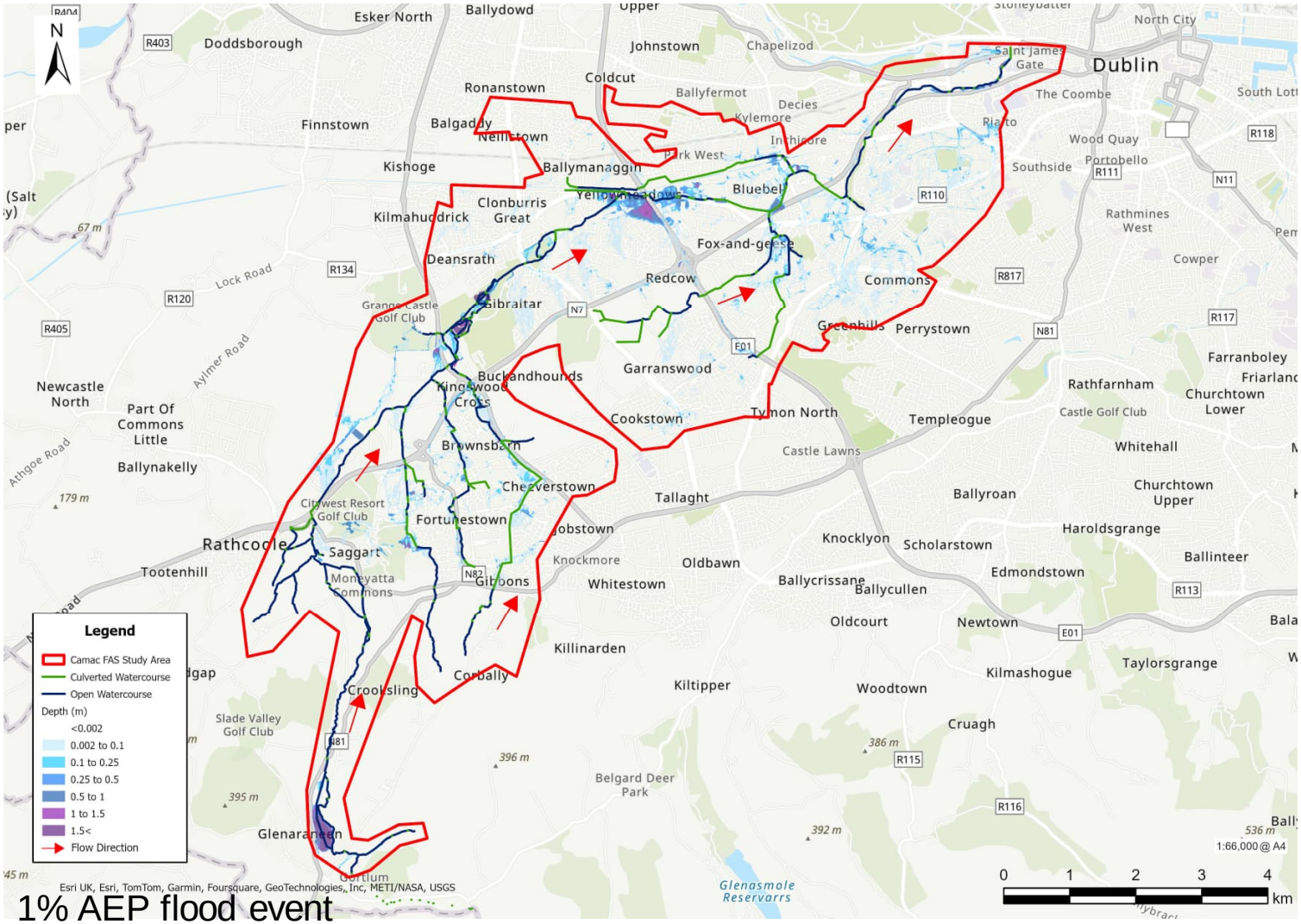
Flood extents



1% AEP flood event

Baseline flood scenarios

Present Day events:

- 0.1% AEP
- 0.5% AEP
- 1% AEP
- 2% AEP
- 5% AEP
- 10% AEP
- 20% AEP
- 50% AEP

Climate Change events:

- 0.1% AEP
- 0.5% AEP
- 1% AEP
- 2% AEP
- 5% AEP
- 10% AEP
- 20% AEP
- 50% AEP

Do Nothing

- hypothetical, walkaway situation
- Assets would deteriorate over time
- Blockages of bridges and culverts

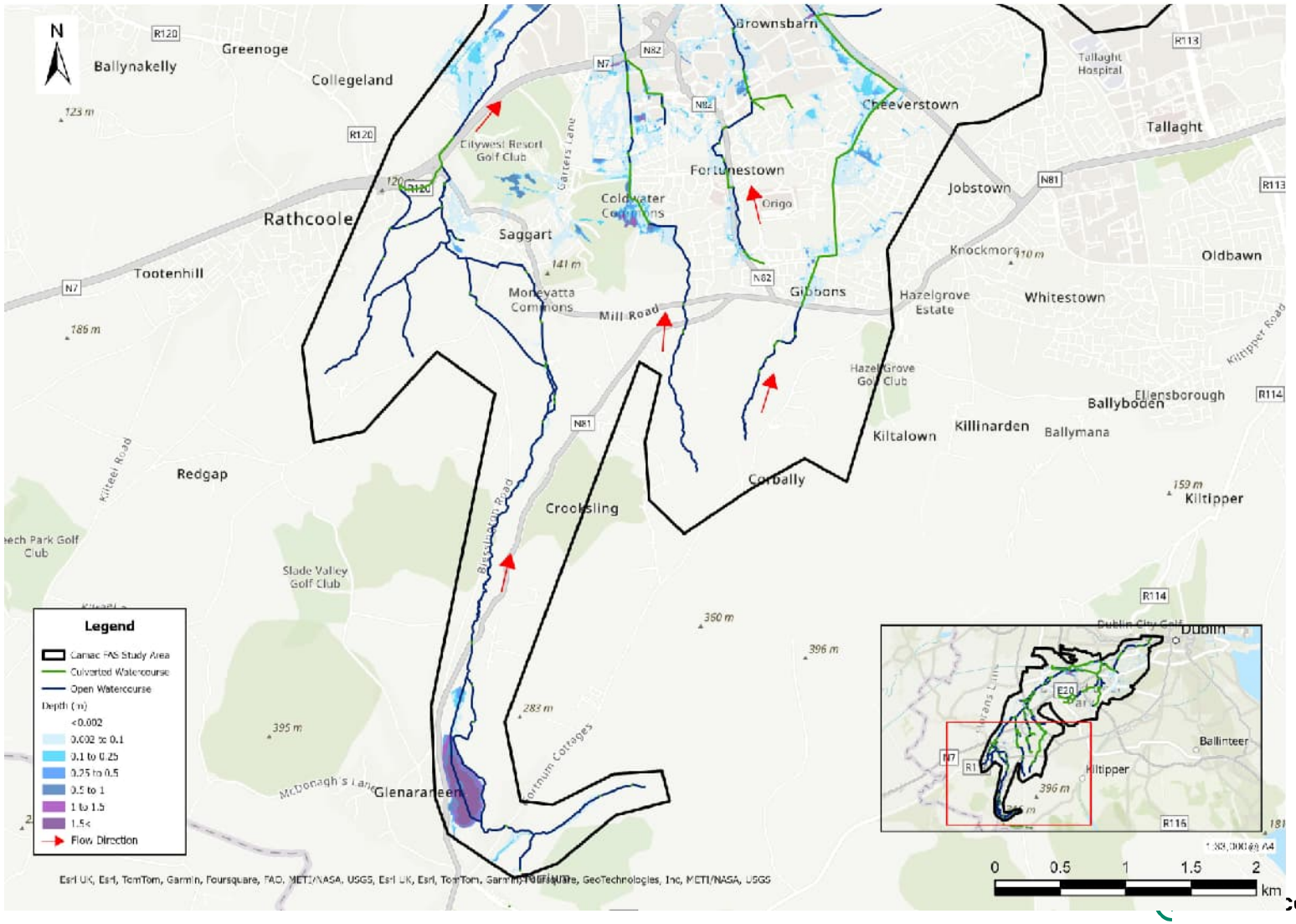
Existing Regime

- repair maintenance only
- gradual failure and deterioration.
- known repeat blockage issues.

Flood extents – lower catchment

1% AEP flood event

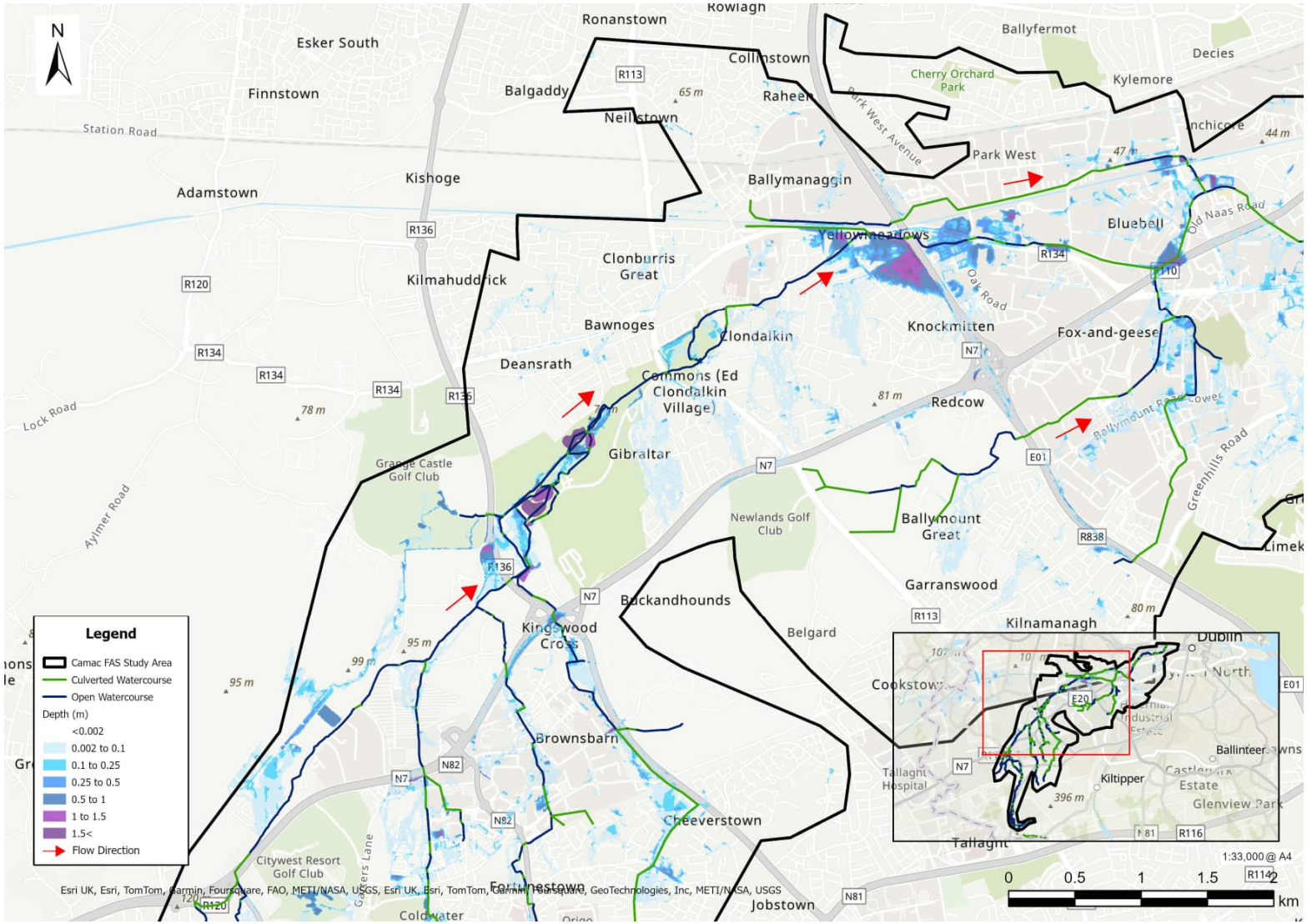
Do Nothing



Flood extents – middle catchment

1% AEP flood event

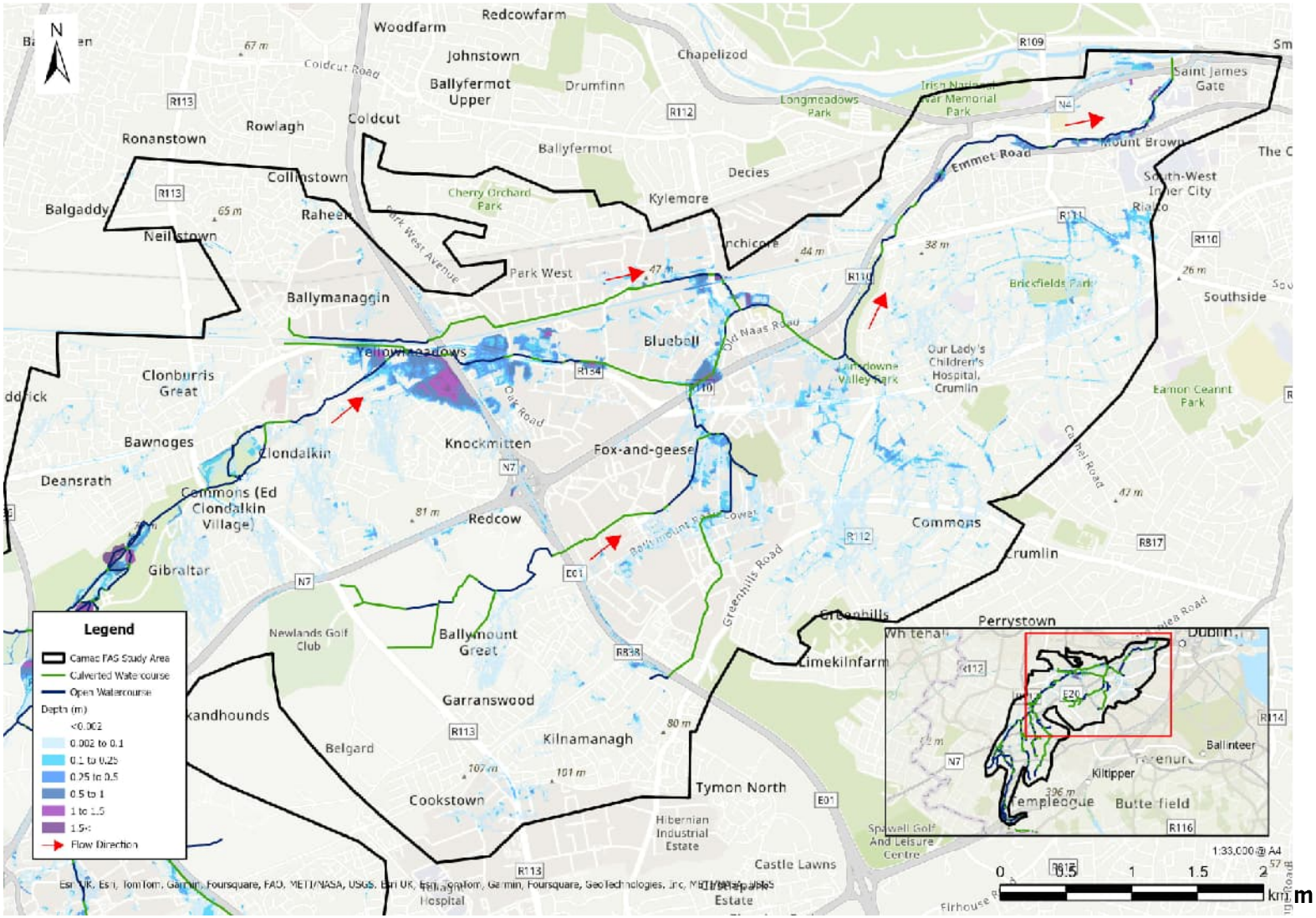
Do Nothing



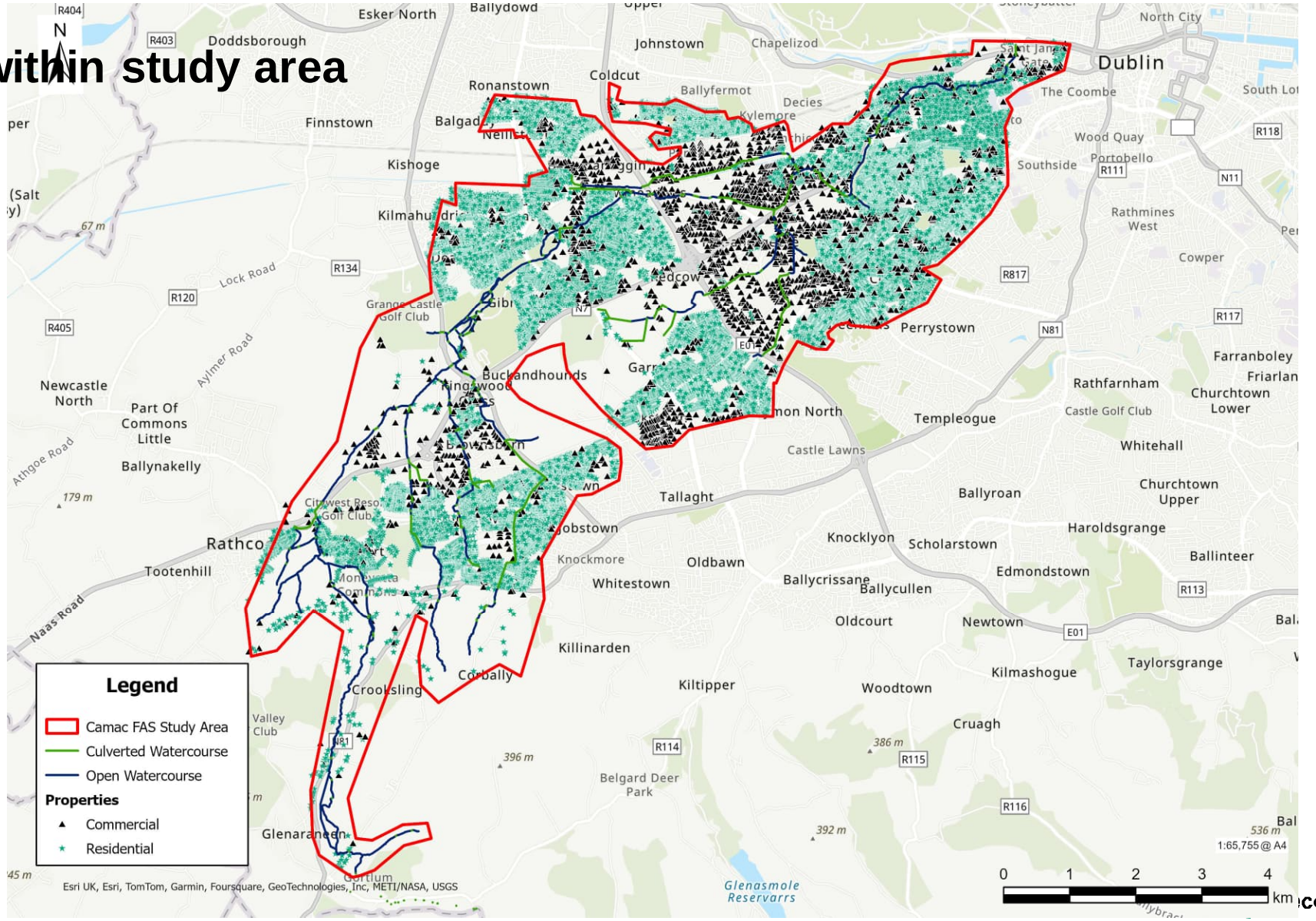
Flood extents – lower catchment

1% AEP flood event

Do Nothing



Properties within study area



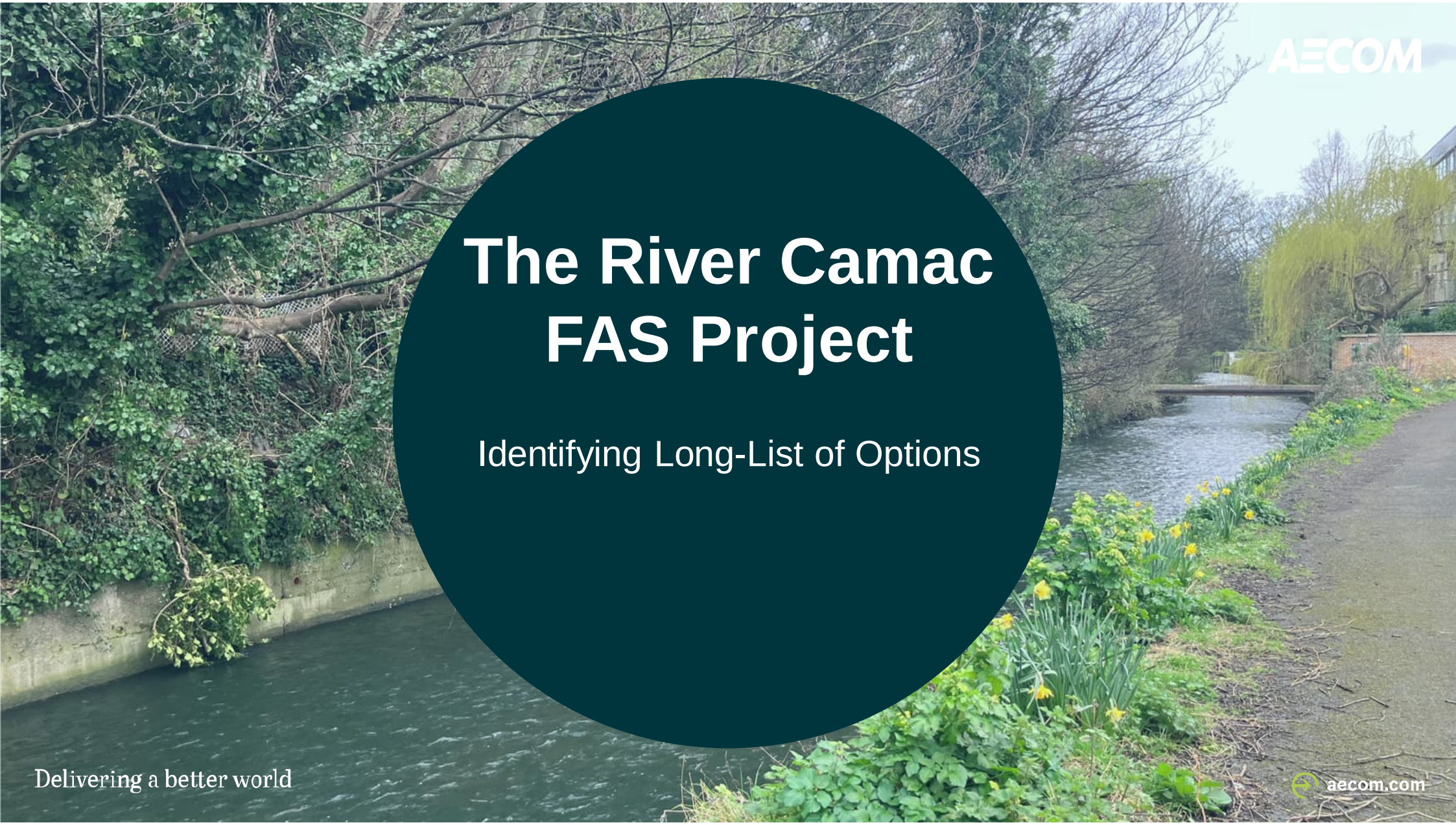
Properties at risk of fluvial and pluvial flooding

Estimated number of properties at risk of fluvial and pluvial flooding (present day)

Property Type	PD – Modelled Baseline Scenario							
	50%	20%	10%	5%	2%	1%	0.5%	0.1%
Residential	14	56	106	184	486	841	1010	1153
Non-residential	4	25	38	55	104	141	155	171

Estimated number of properties at risk of fluvial and pluvial flooding (end of appraisal period)

Property Type	MRFS – Modelled Baseline Scenario								
	50%	20%	10%	5%	2%	1%	0.5%	0.1%	
Residential	28	100	191	393	839	1352	1500	1630	
Non-residential	8	34	53	99	142	200	214	239	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Appraisal Scenarios

Do Nothing

- hypothetical, walkaway situation
- Assets would deteriorate over time
- Blockages of bridges and culverts

Existing Regime

- repair maintenance only
- gradual failure and deterioration.
- known repeat blockage issues.

‘Do Something’

- Intervention beyond that of the existing flood risk management practices
- Each ‘Do Something’ scenario comprises of short-list option

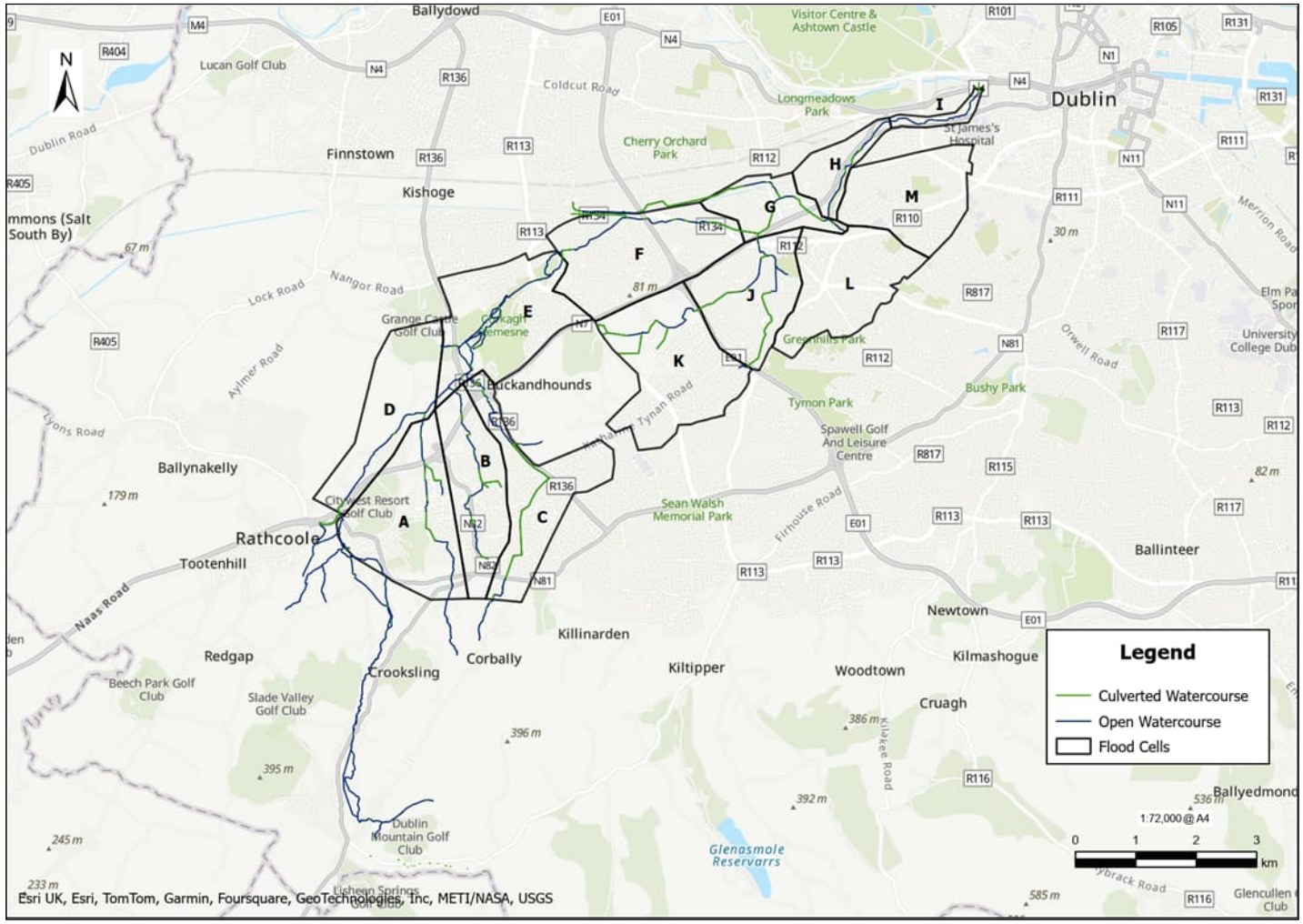
Scheme Objectives

The scheme objectives are as follows:

- To mitigate and reduce **fluvial flood risk** from the River Camac and its tributaries.
- To adopt a whole catchment approach in the development of the scheme proposals.
- To target a **1% Annual Exceedance Probability** (AEP) Standard of Protection (SoP) for fluvial flood risk sources, considering 2 alternative SoP's to determine value for money (VFM)
- To ensure that the scheme proposals **do not adversely impact on flood risk elsewhere**.
- To select an option that delivers best value in terms of balancing the potential impacts, risks, and benefits to people, infrastructure, the environment, cultural heritage, and the economy.

Flood Cells

The River Camac FAS Study Area was split into 13 '**Flood Cells**' based on hydraulic connectivity



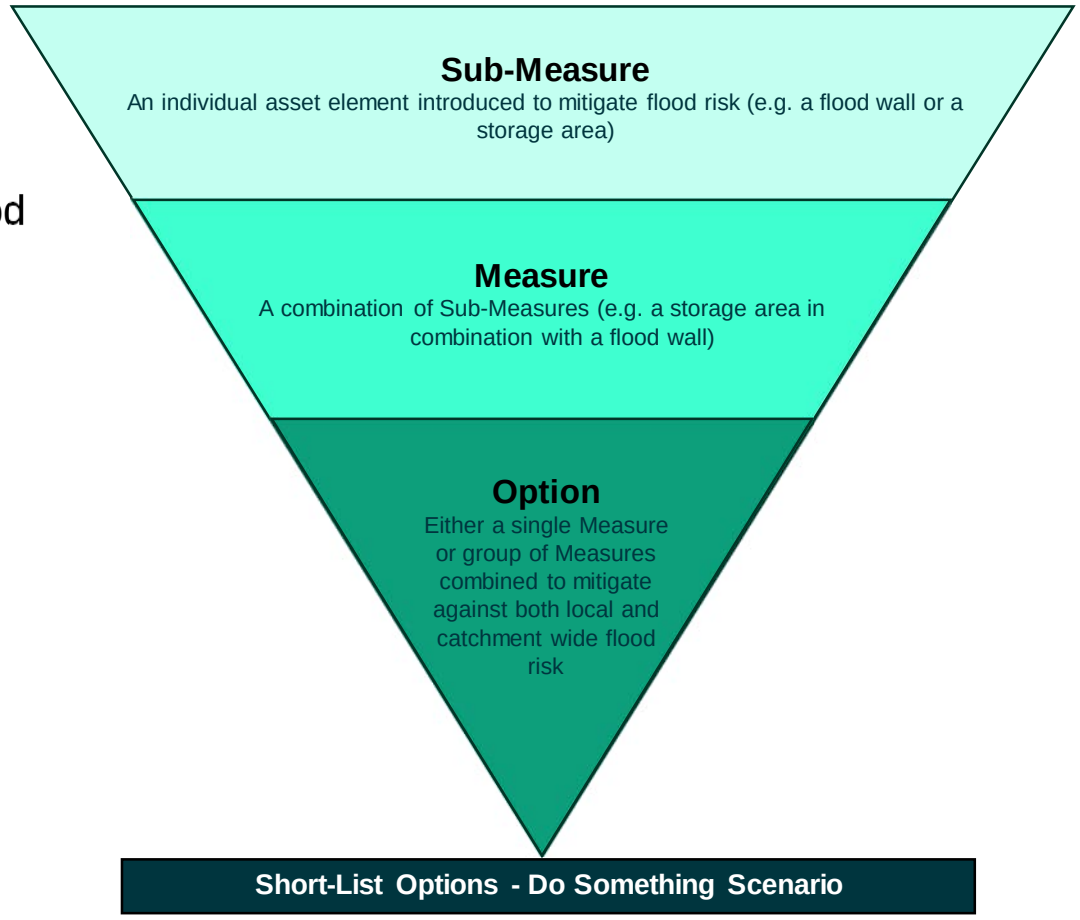
- Flood Cell A – Verchoyles
- Flood Cell B – Fortunestown
- Flood Cell C – Tallaght
- Flood Cell D – Upper Camac
- Flood Cell E - Corkagh-Clondalkin
- Flood Cell F - Knockmitten-Gallanstown
- Flood Cell G – Bluebell
- Flood Cell H – Inchicore
- Flood Cell I – Kilmainham
- Flood Cell J – Ballymount
- Flood Cells K – Kilnamanagh
- Flood Cell L – Walkinstown
- Flood Cell M - Drimnagh

Flood Cell

- Detailed assessment of properties at risk
- Pluvial flood risk versus Fluvial flood risk
- Flood Cell K, L or M – pluvial flooding: not progressed further
- Flood Cell D or K - very few properties at risk: not progressed further

Developing the Long-List Options

- Screen types of measures that could be used
- Remaining 8 Flood Cells
- Possible sub-measures were identified within each flood cell
- A long-list of 88 sub-measures were identified



Types of options considered

Increased flood storage

- On-line flood storage
- Off-line flood storage

Structural Measures

- Walls/embankments
- Re-purpose existing infrastructure i.e. upgrading existing walls that are not currently flood walls
- Increase or make use of existing defences

Non-Structural Measures

- Forecasting System
- Public Awareness campaign
- Individual Property protection

Screening of options

- High level review of possible options – technical, environmental, social
  - Measures screened out
- High level cost-benefit analysis
  - Measures screened out
- Prioritise flood storage options, including:
  - Reconnect existing flood plains/creation of new floodplain areas
  - Flood storage/retention
- Structural measures (such as walls/embankments) also reviewed

Long-List to Short-List

A total of 88 sub-measures were initially screened to identify long-list of 53 measures, made up of 63 sub-measures

A qualitative assessment of the long-list measures was completed to screen out measures deemed unviable.

The potential level of risk for each measure was assessed within the following categories:

- **Land ownership**
- **Technical delivery**
- **Environment**
- **Social impacts**

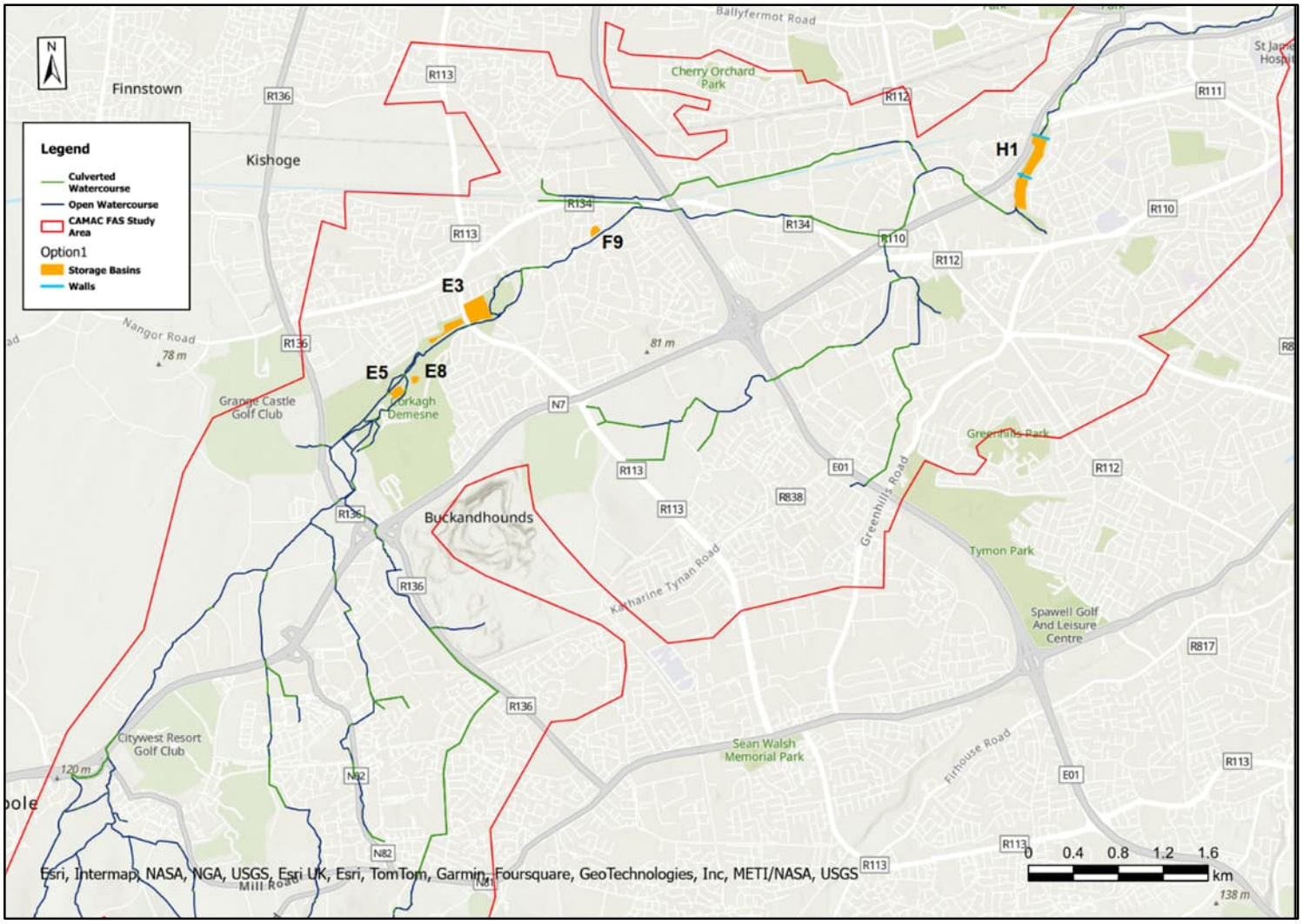
A high level Cost-Benefit Assessment (CBA) was undertaken on 14 measures.

Short-list measures

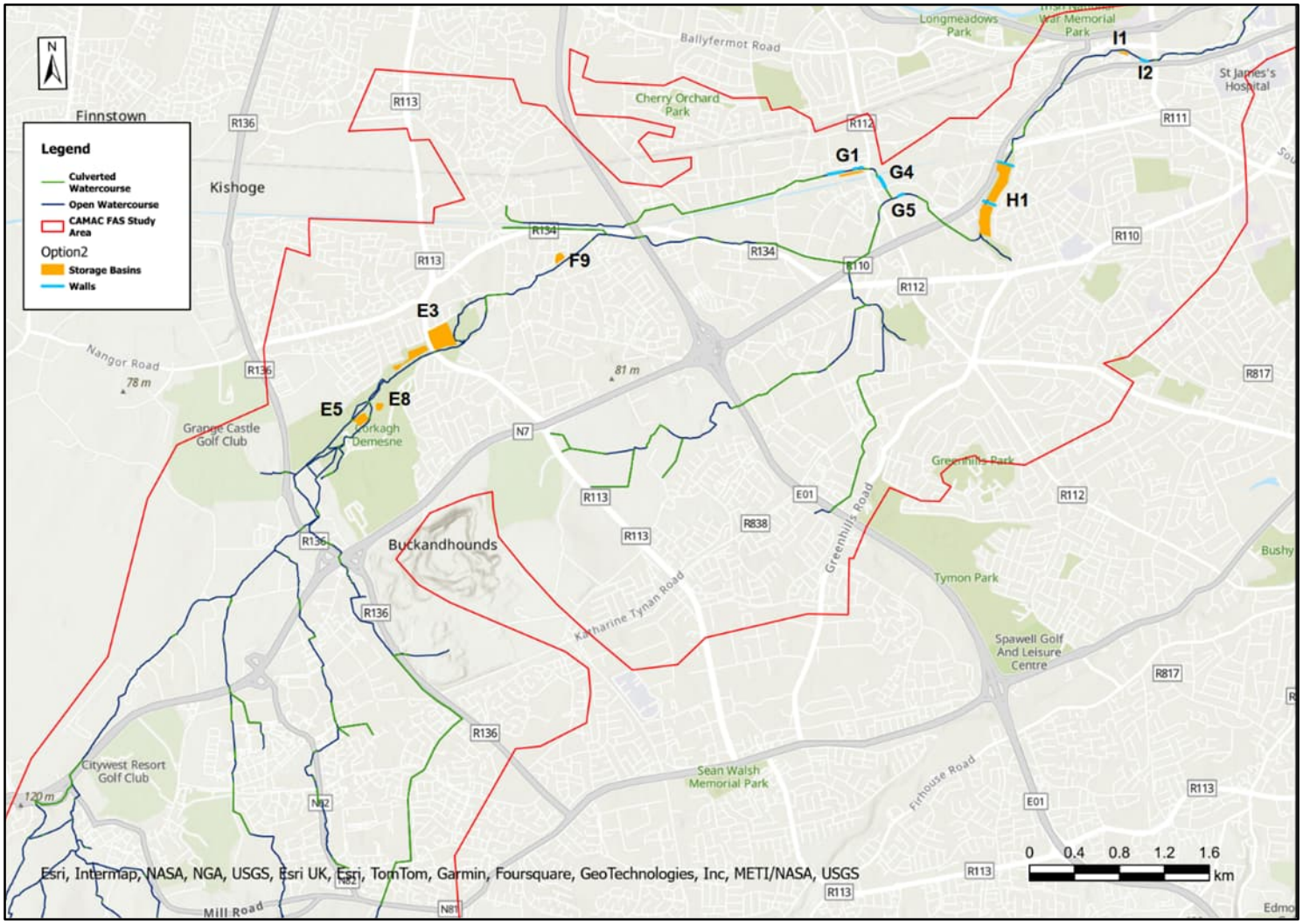
Do Something Option 1

Option 1 is focussed on flood storage measures within the catchment and includes the following measures:

- Corkagh Park Storage (E3, E5, E8);
- Yellow Meadows storage (F9);
- Lansdowne Valley Storage (H1)



Do Something Option 2



Option 2 - catchment wide scheme with flood storage and flood wall(s),

- Corkagh Park Storage (E3, E5, E8)
- Yellow Meadows storage (F9);
- Lansdowne Valley Storage (H1);
- Floodwalls at Labre Park (G1);
- Floodwalls Bluebells Avenue (G4 and G5)
- Floodwalls Turvey Park (I1) and Old Kilmainham (I2)

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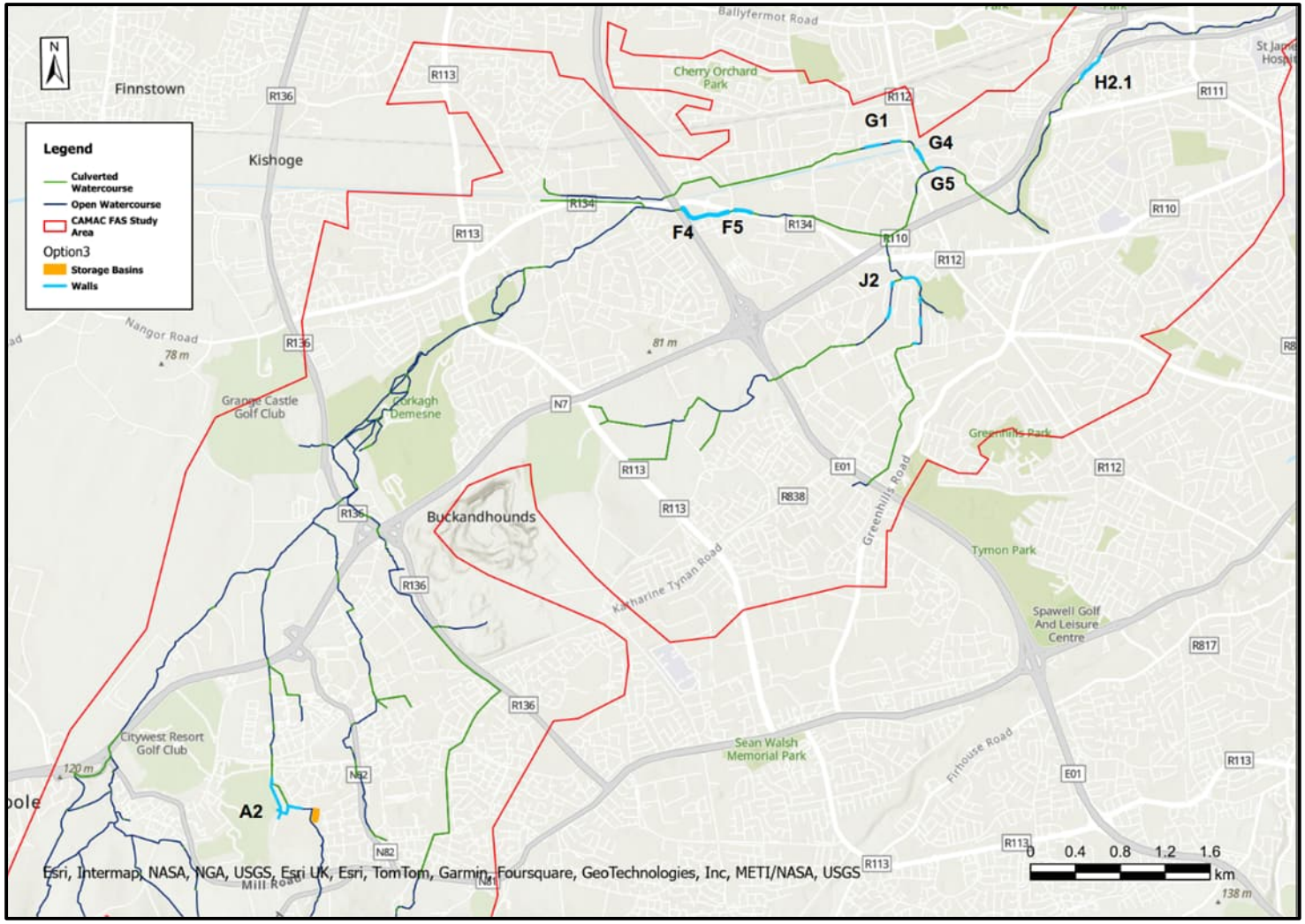
Do Something Option 3

Option 3 stand alone measures

- Saggart Lakes Storage (A2)
- Ballymount Industrial Estate flood walls (J2);
- Gallanstown flood walls (F4, F5);
- Goldenbridge Industrial Estate flood walls (H2.1);
- Flood Walls at Labre Park (G1);
- Flood Walls at Bluebells Avenue (G4 and G5);

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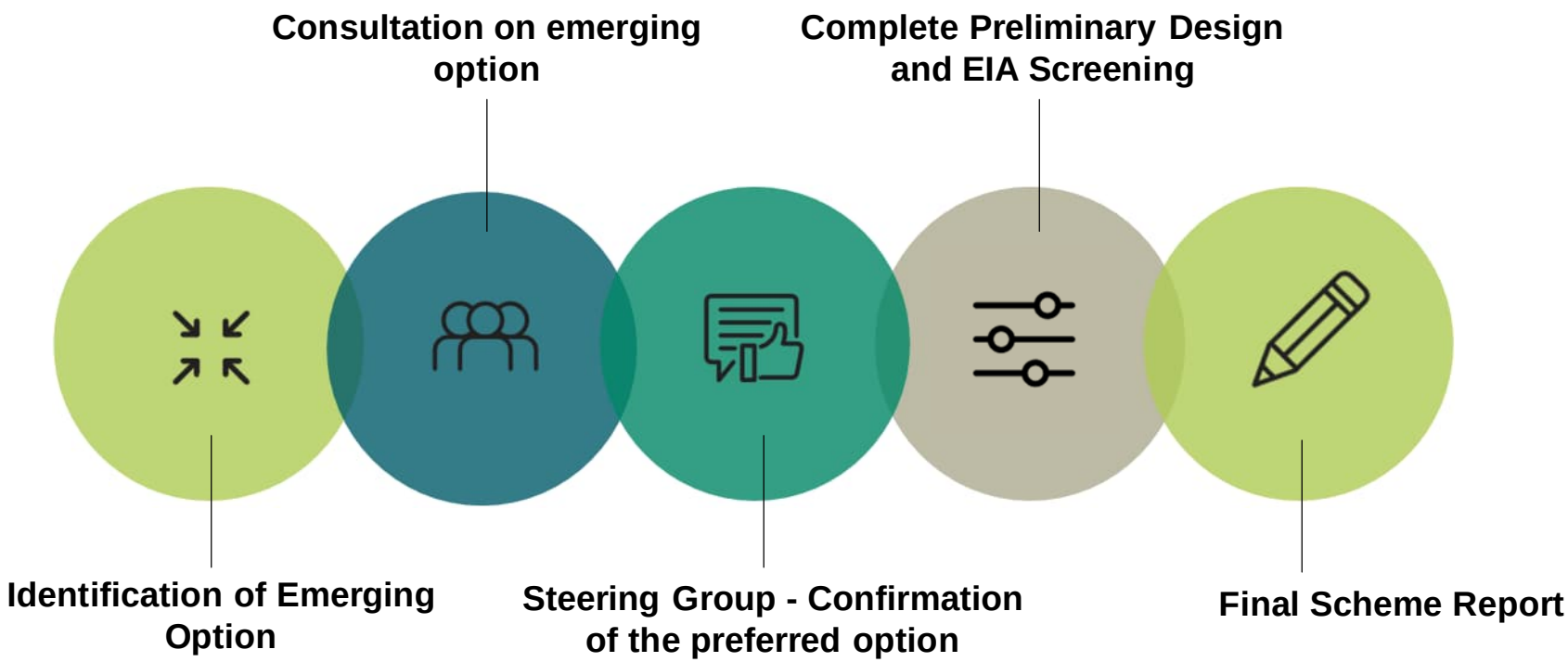
Next steps for Stage 1



Indicative Scheme Programme

Stage 1 completion

Summer 2024

Stage 2
Planning permission
Public exhibition

Stage 3
Detailed design
Public procurement

Stage 4
Construction

Stage 5
Handover

Thank you.

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