



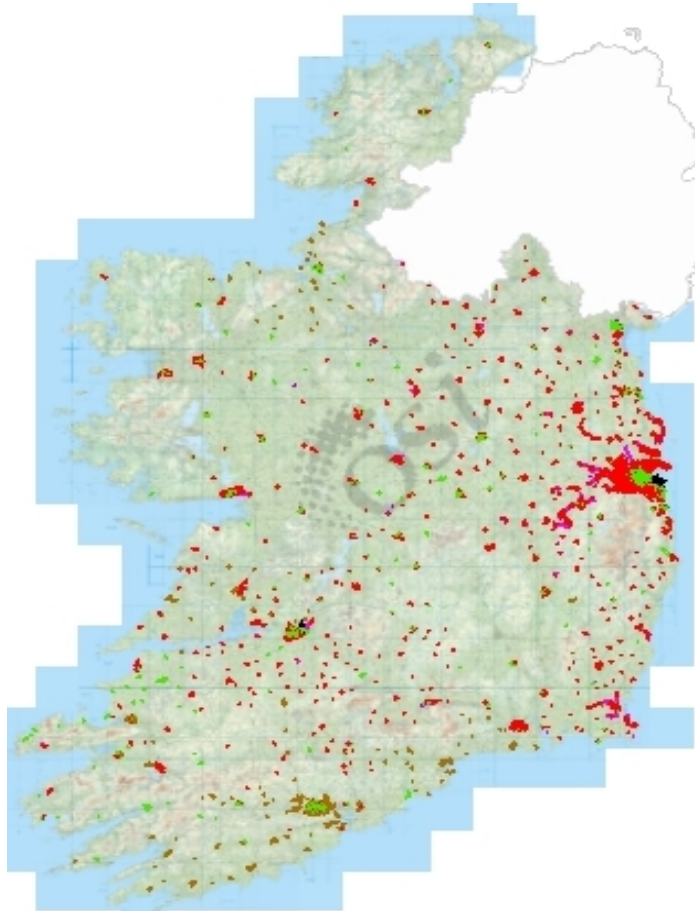
An Roinn Tithíochta,
Pleanála agus Rialtais Áitiúil
Department of Housing,
Planning and Local Government



Drainage Plans for Growth

Michael Goss
Water Services Training Group





Wastewater Networks

Key Challenges:

40% network not in GIS.

30% network based on poor/low confidence data.

Majority Network Models out of date/ low confidence

Solutions:

1. Drainage Area Plans (DAPs)

2. Wastewater Network Plans

3. Wastewater Network Programmes

1

Drainage Area Plans

The DAP - investigation of the failure mechanisms causing service failures on the network using a verified hydraulic model

Pollution Incidents

Sewer Flooding

Climate Change

Growth

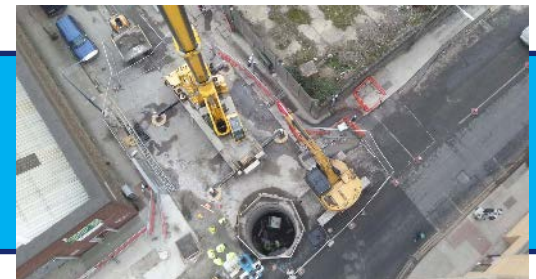
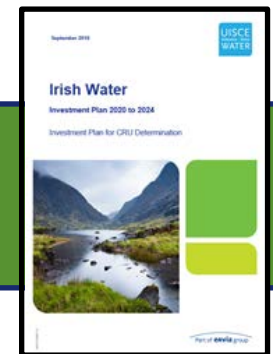
Urban Creep

High Level DAP Assessment for Investment Planning

Investment Needs & Notional Solutions

Detailed DAP Assessment for Project Planning

Prioritised Costed Solutions within a Plan and Programme

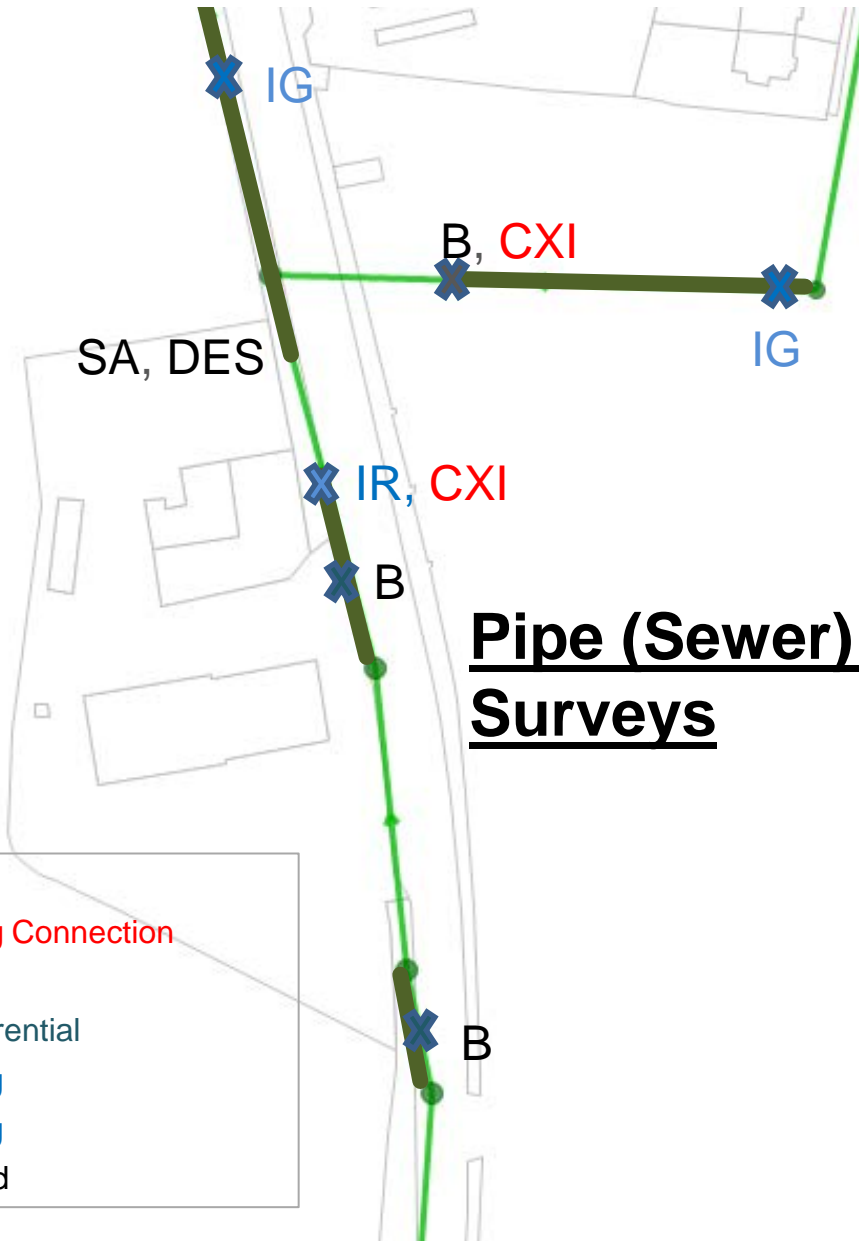


4 Stages in DAP Process

- **Stage 1 : Data Gathering**
- **Stage 2 : Model Build**
- **Stage 3: Risk Assessment**
- **Stage 4: Assess Options & Design Development**

DAP Stage 2 - Asset Surveys

Manhole Surveys



Pipe (Sewer) Surveys

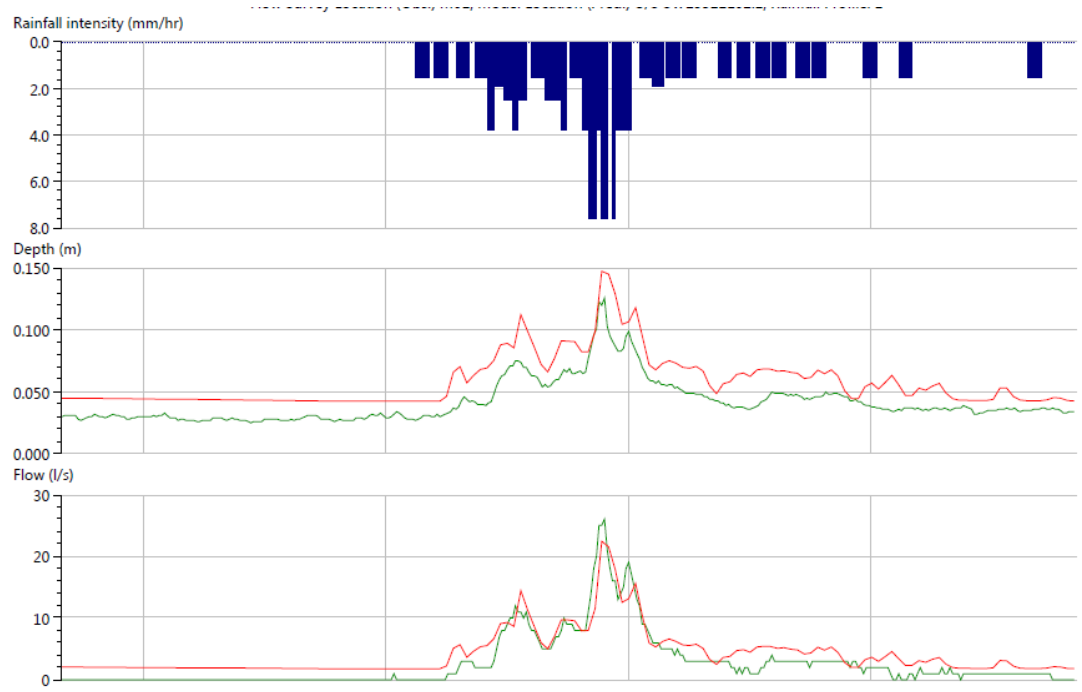
- | | |
|-----|--------------------------------|
| B | Break |
| CXI | Defective Intruding Connection |
| DES | Deposits - Silt |
| FC | Fracture Circumferential |
| IG | Infiltration Gushing |
| IR | Infiltration Running |
| SA | Survey Abandoned |



Flow Monitoring

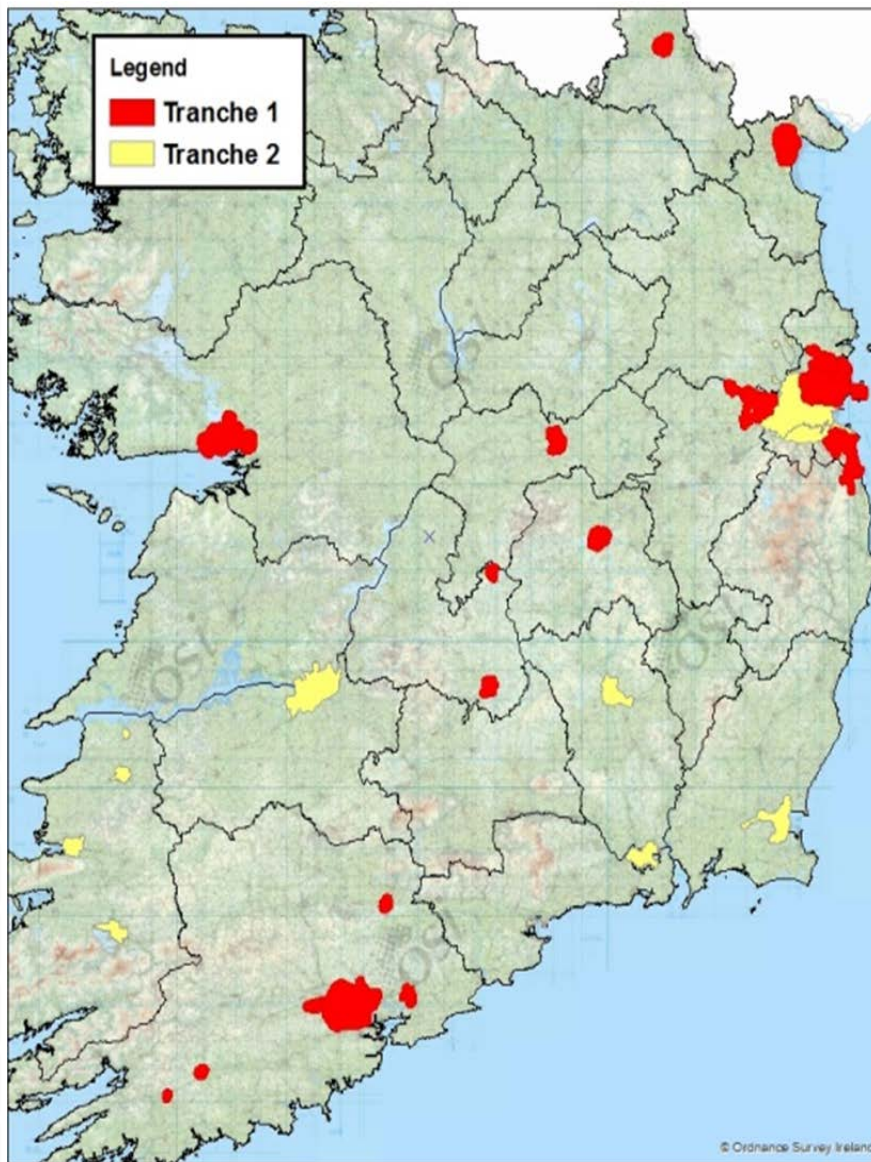


Model Verification



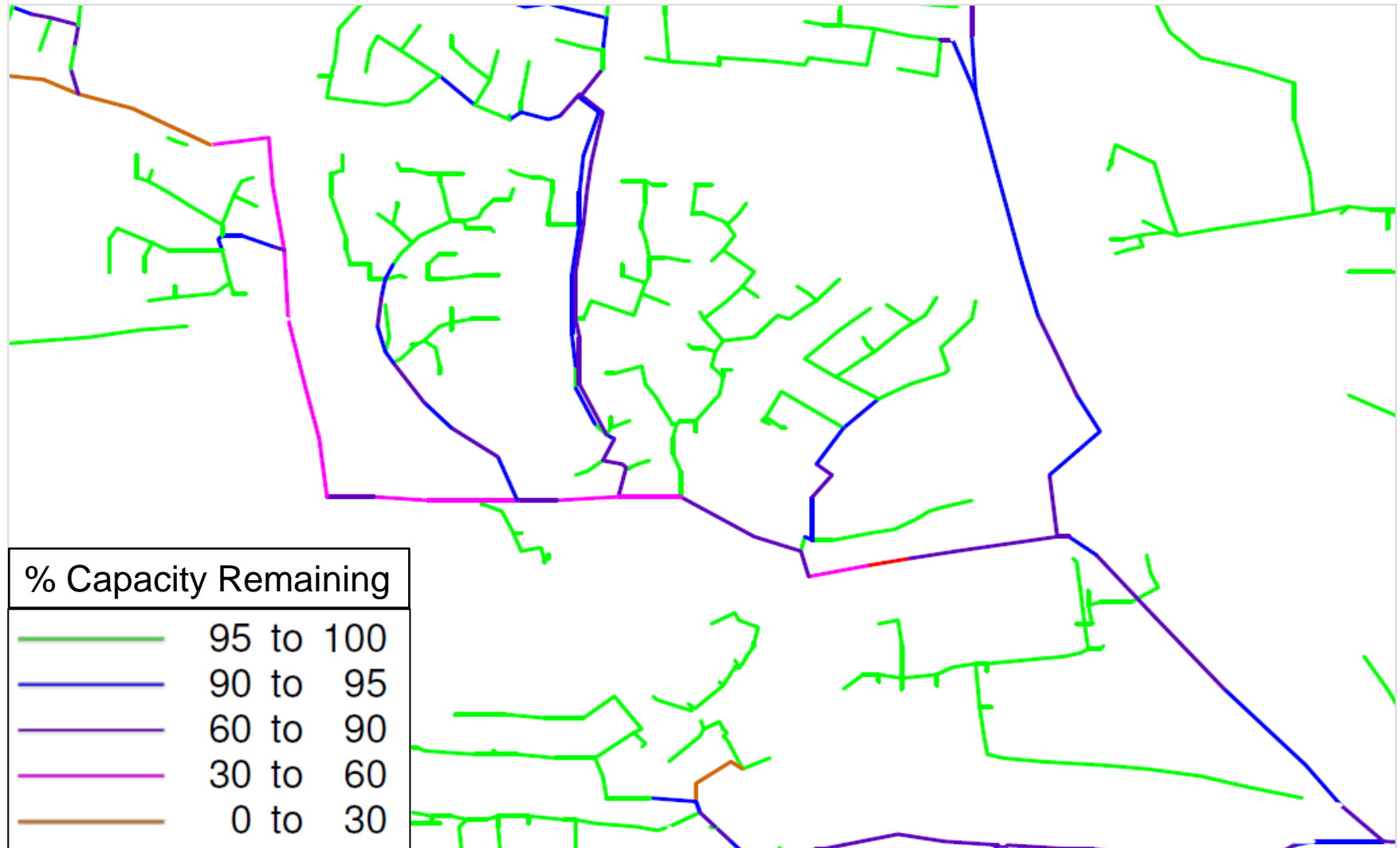
DAP Programme Tranche 1 & 2 (€50M)

- **TRANCHE 1**
- Cork City
- Ballincollig
- Midleton
- Roscrea
- Thurles
- Lower Liffey Valley
- Galway City
- Sutton PS (North Dublin)
- Dundalk
- Monaghan Town
- Bray & Shanganagh
- Portlaoise
- Tullamore
- Fermoy
- Drimoleague
- Dunmanway

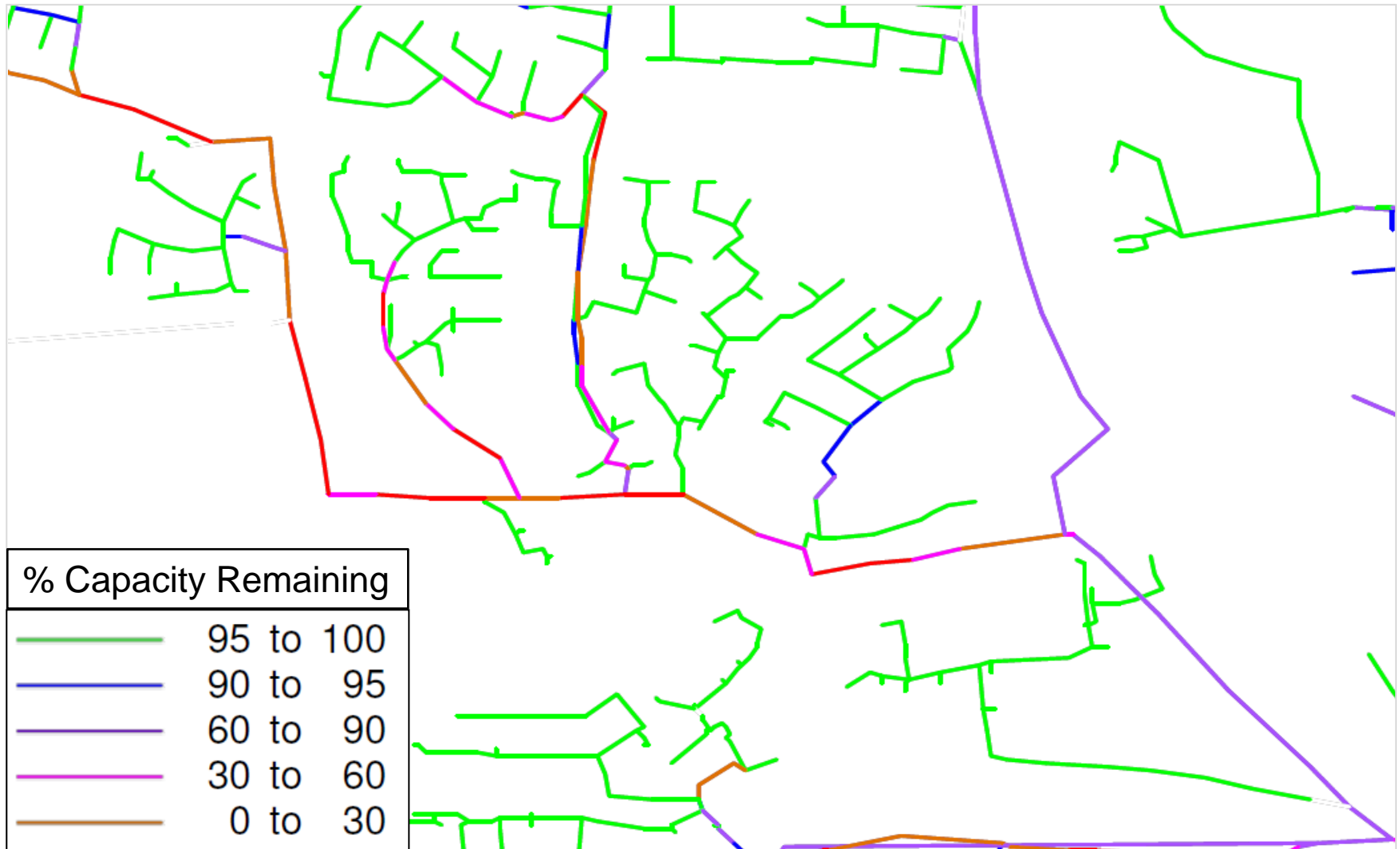


- **TRANCHE 2**
- Kilkenny City
- Waterford City
- Wexford Town
- Dungarvan (Waterford)
- Limerick City
- Tralee
- Killarney
- Listowel
- Ballylongford
- Main Lift PS (Ringsend)
- Dodder Valley Sewer
- West Pier (Dun Laoghaire)

Capacity Mapping – Dry Day

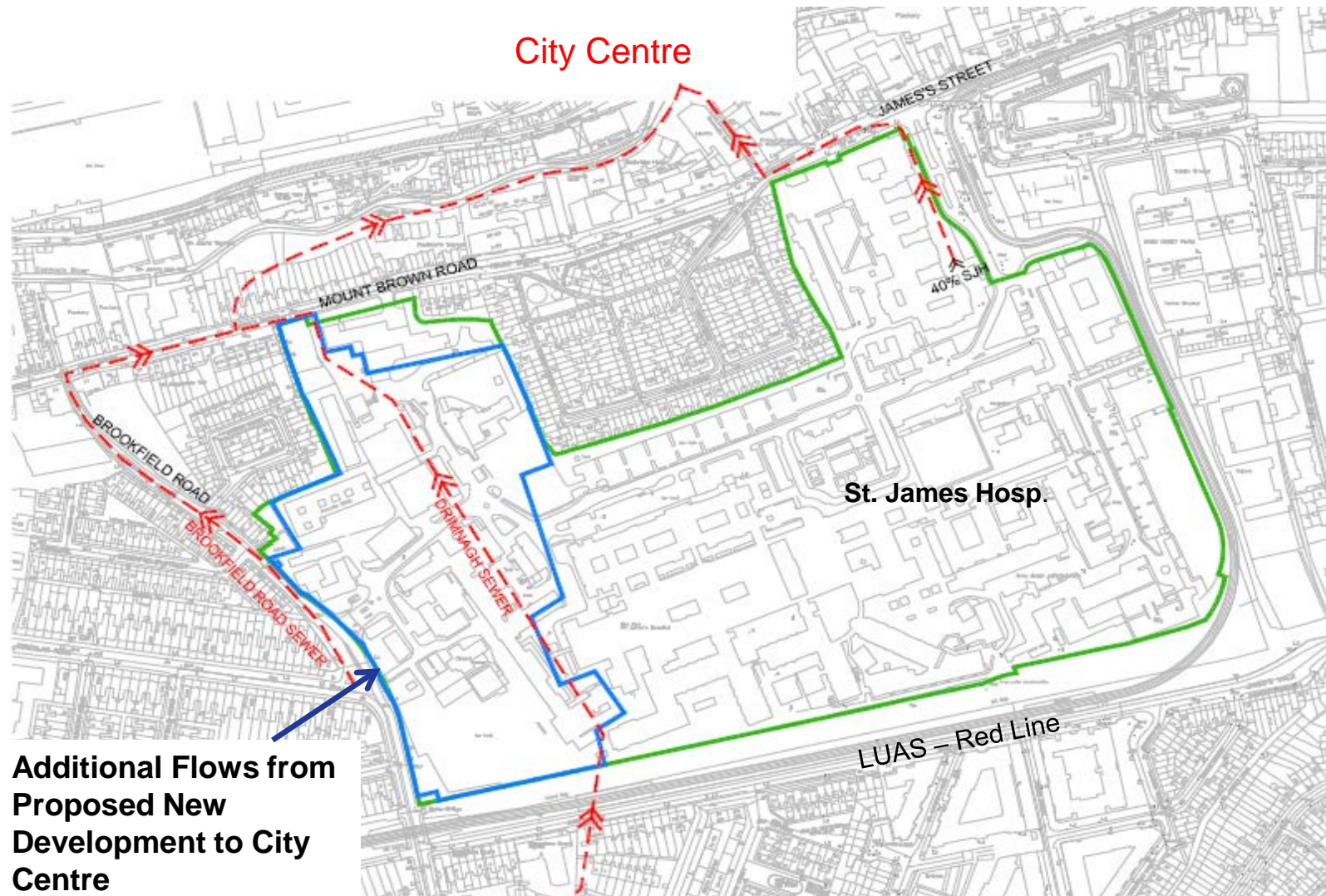


Capacity Mapping – Wet Day



New Children's Hospital

Model Impact Assessment on Dublin City Centre Network

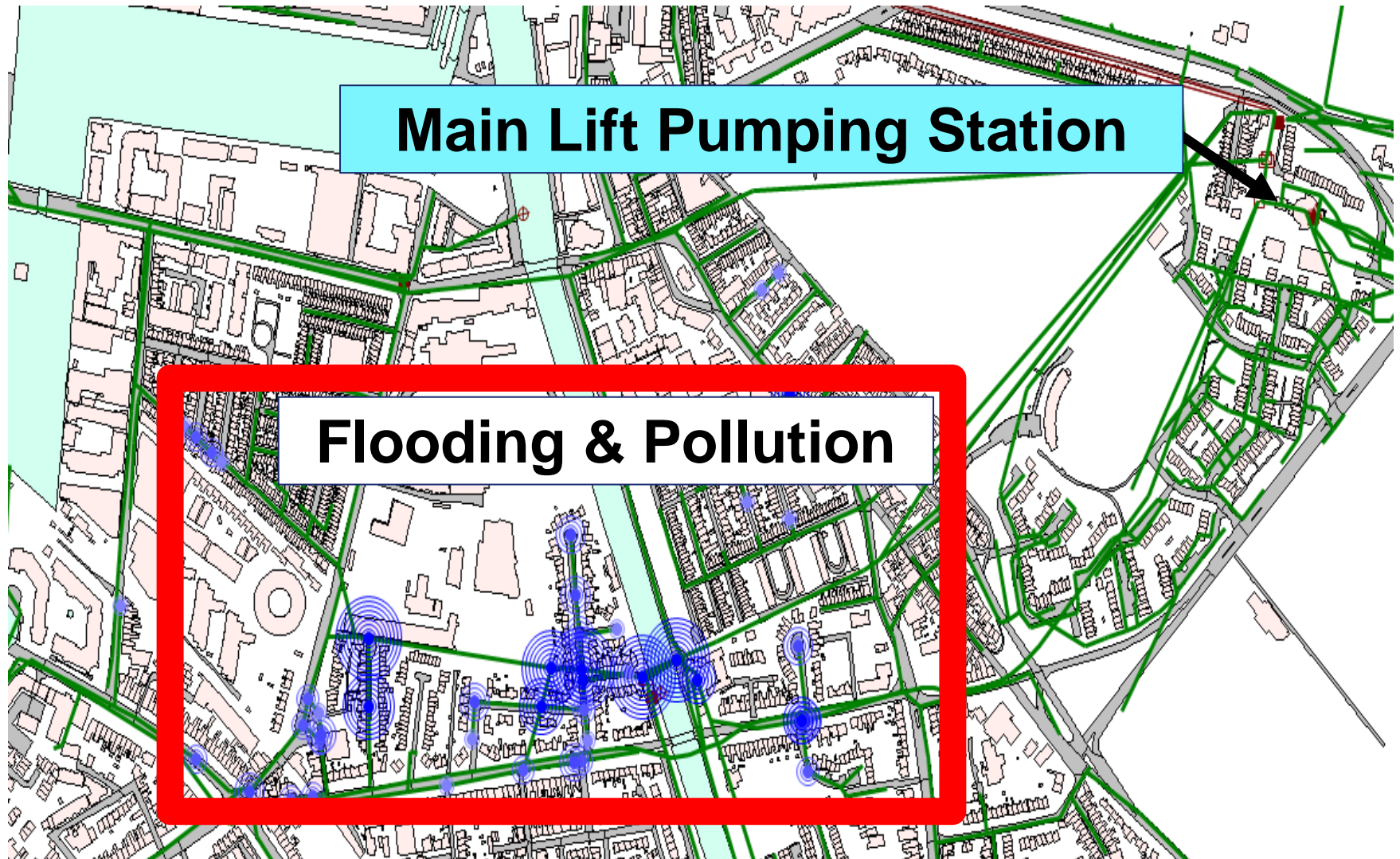


**Additional Flows from
Proposed New
Development to City
Centre**

Flood Prediction & Verification



Critical Asset Failure



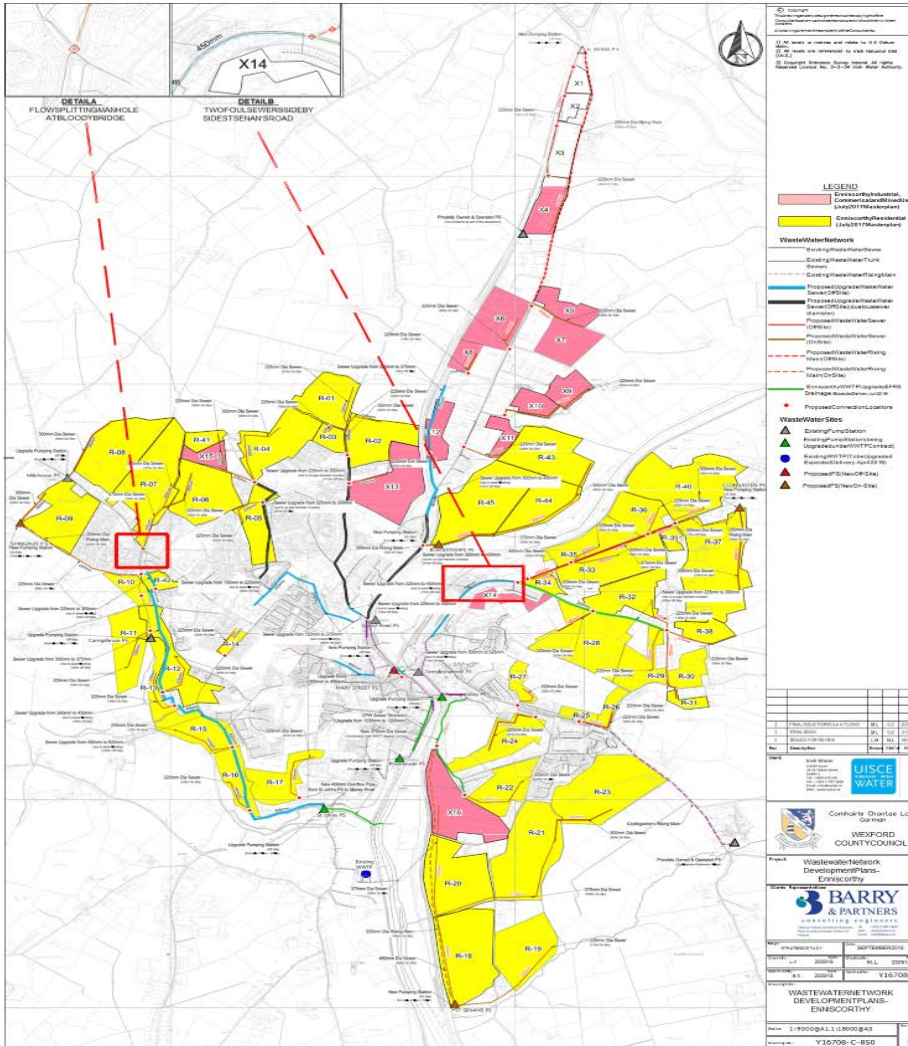
Storm Water Overflow Performance



2

Wastewater Network Plans

Wastewater Network Plans



**A Network Plan
to service the
Local Area Plan**

3

Wastewater Network Programmes

Wastewater Network Programmes

Storm Water Overflow (SWO) Survey,
Assessment & Monitoring (€6M)

Wastewater PS Telemetry (€7M)

Sewer Rehabilitation (€52M)

Network Capacity & Infiltration Assessment



SWO Assessment Programme

Inspection
Planning
Identify Storm
Water Overflows

Asset Survey of
Storm Water Overflow
Chamber & Outfall

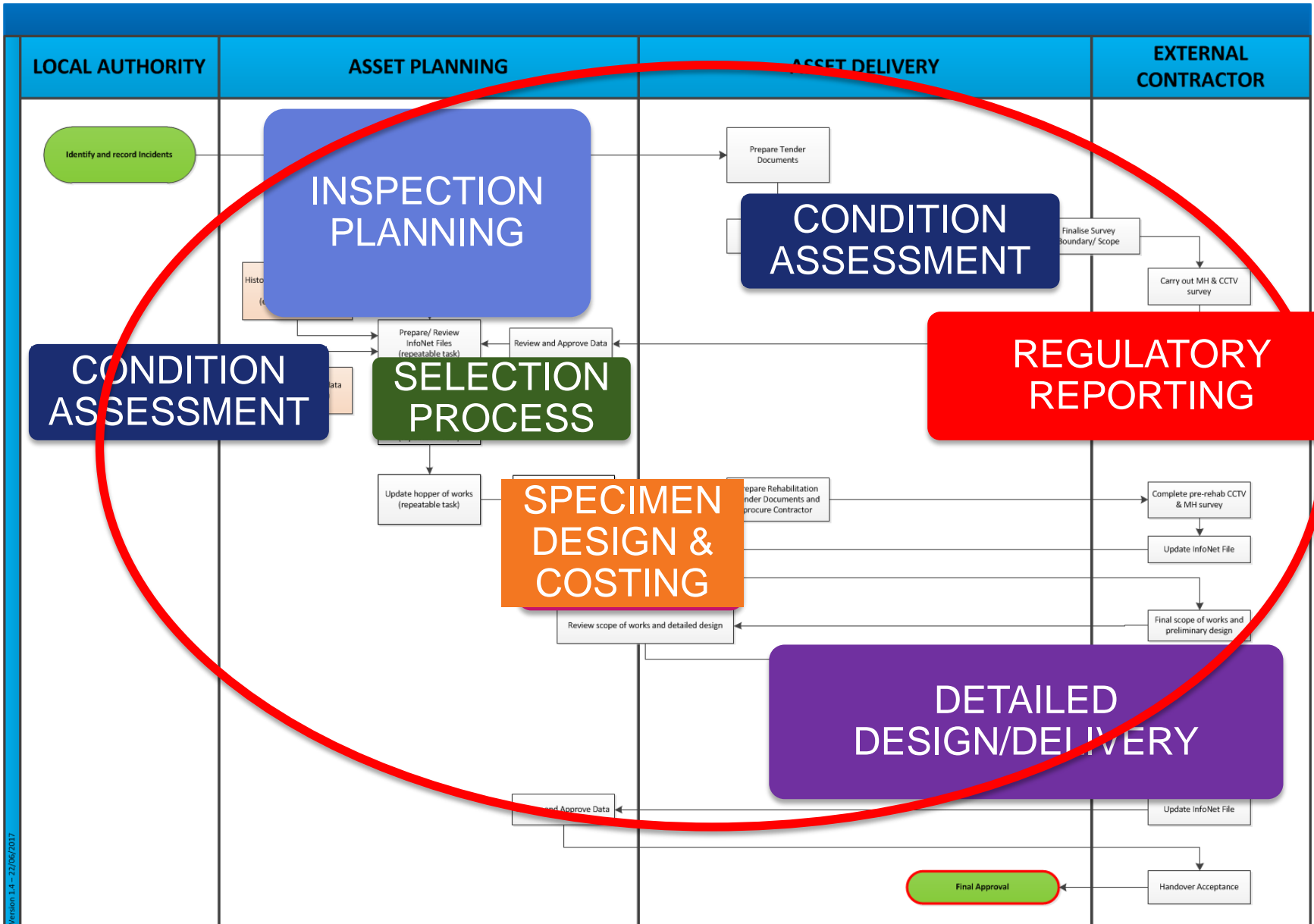
Field Survey
Assessment of Storm
Water Overflow
Discharge Point

Prioritise Selection for
Monitoring
(Event Duration
Monitors)

Detailed Design &
Installation – Asset
Delivery

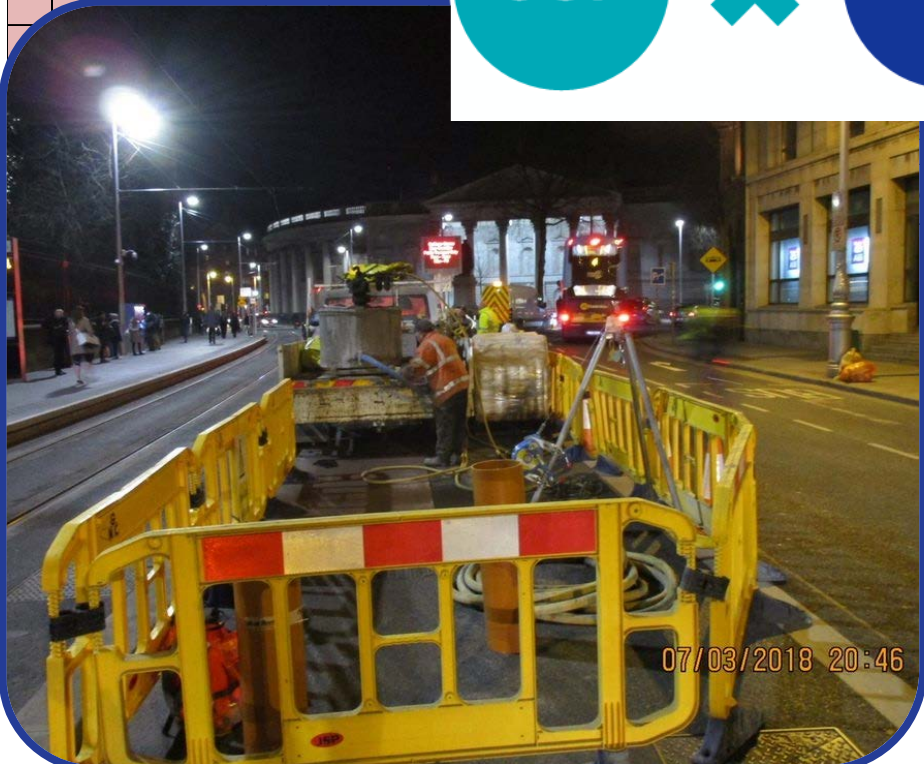


Sewer Rehabilitation Programme



Sewer Rehabilitation Prioritisation

Rank	Agglomeration	Drainage Code	US node ID	DS node ID	US shape ID	DS shape ID	US width (mm)	DS width (mm)	US height (mm)	DS height (mm)	US pipe material	DS pipe material	CCTV Survey Date	Structural Condition	Structural Mean Score	Structural Peak Score	Structural Total Score	TOTAL CONSEQUENCE SCORE	Pipe Material (WORKS)	Structural Condition (WORKS)	Capacity - Infiltration (WORKS)	TOTAL LIKLIHOOD SCORE - WORKS	TOTAL RISK SCORE - WORKS
1	Galway City	D0050	SM29245901	SM29245903	C	C	0	0	300	300	VC	VC	05/07/2005	5	145.45	240	320	4.06	25	100	0	125	508
2	Galway City	D0050	SM29245902	SM29245907	C	C	0	0	375	375	VC	VC	05/07/2005	5	40	240	720	4.06	25	100	0	125	507
3	Ramelton	D0341	SC22212106	SC22212107	C	C	0	0	225	225	PVC	CO	16/05/2013	5	14.72	165	371	3.99	20	100	0	120	479
4	Enniscorthy	D0029	SS97393503																25	100	0	125	450
5	Enniscorthy	D0029	SS97396902																25	100	0	125	436
6	Ramelton	D0341	SC22216105																10	100	15	125	436



D	CO	09/04/2013	
C	VC	19/09/2013	



Thank you.

mgoss@water.ie

ervia

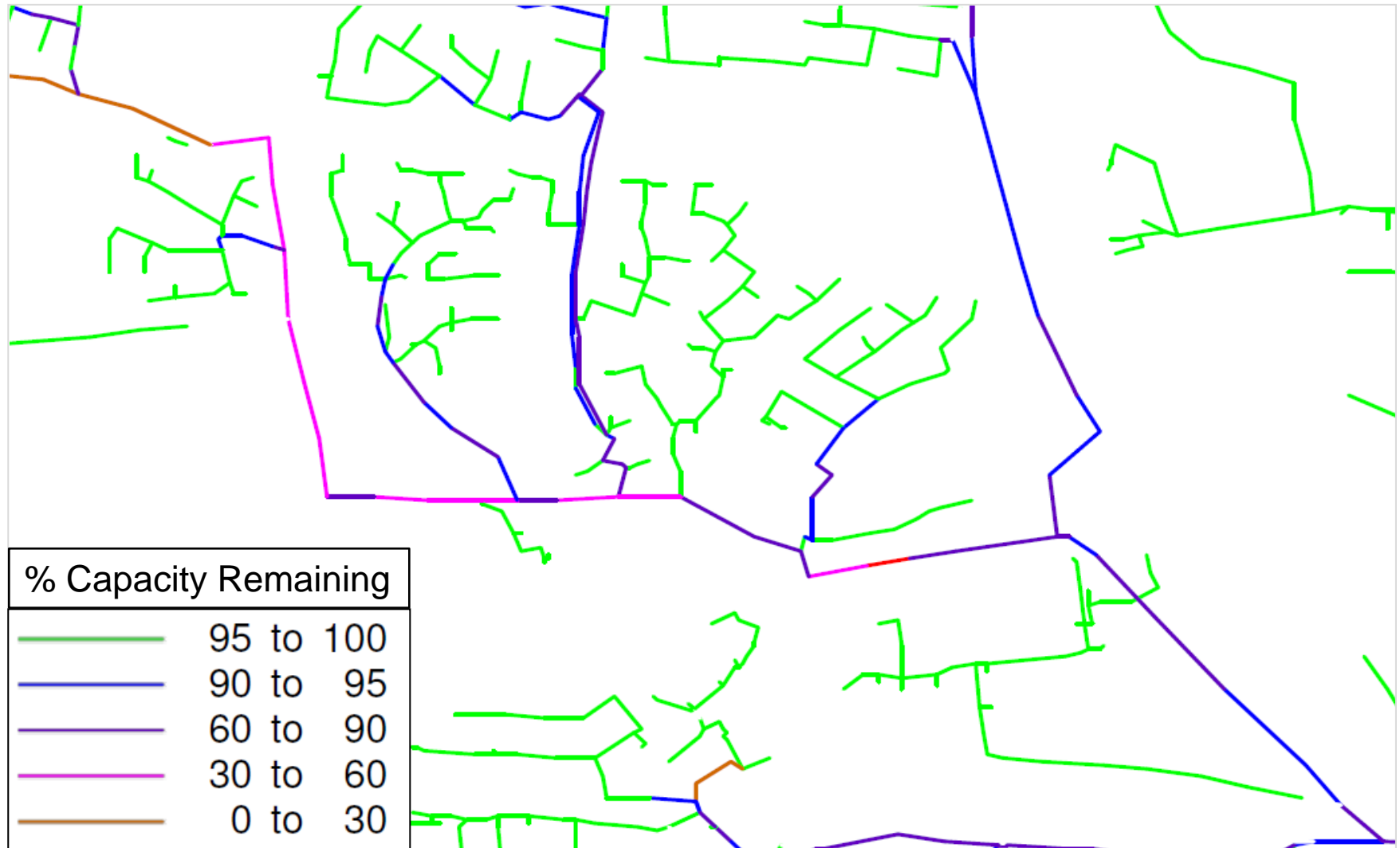
Aurora
TELECOM



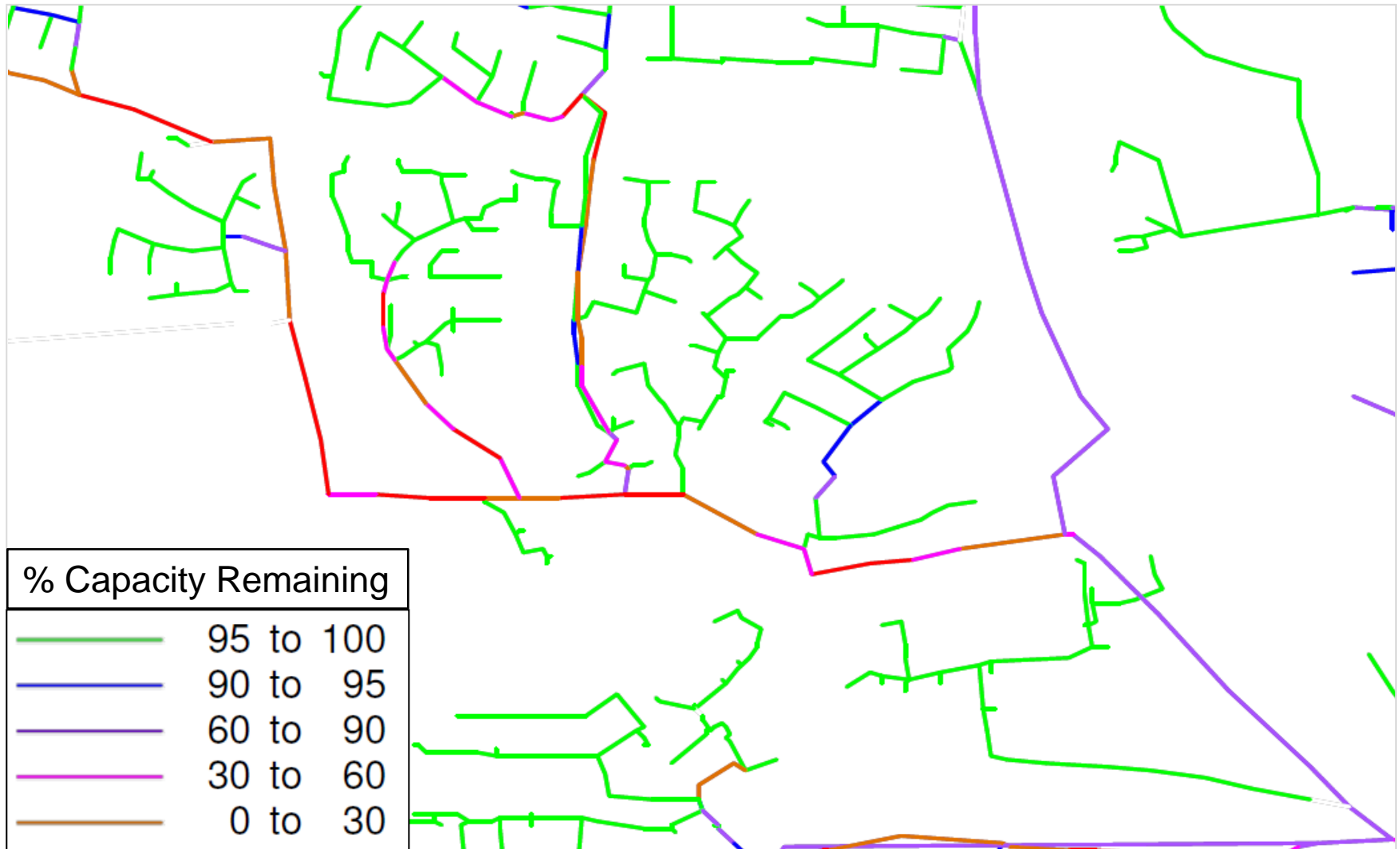
Gas
Networks
Ireland



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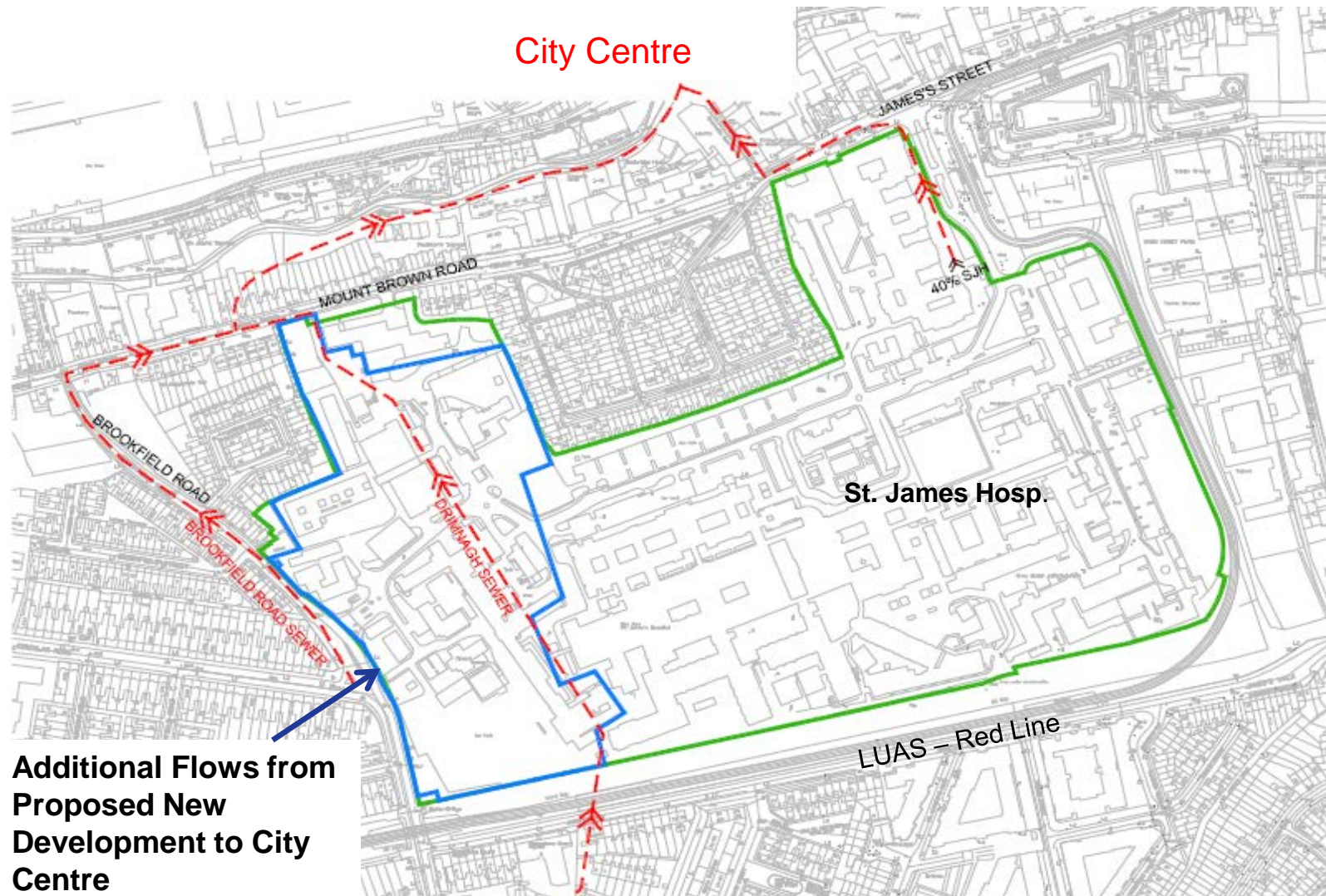


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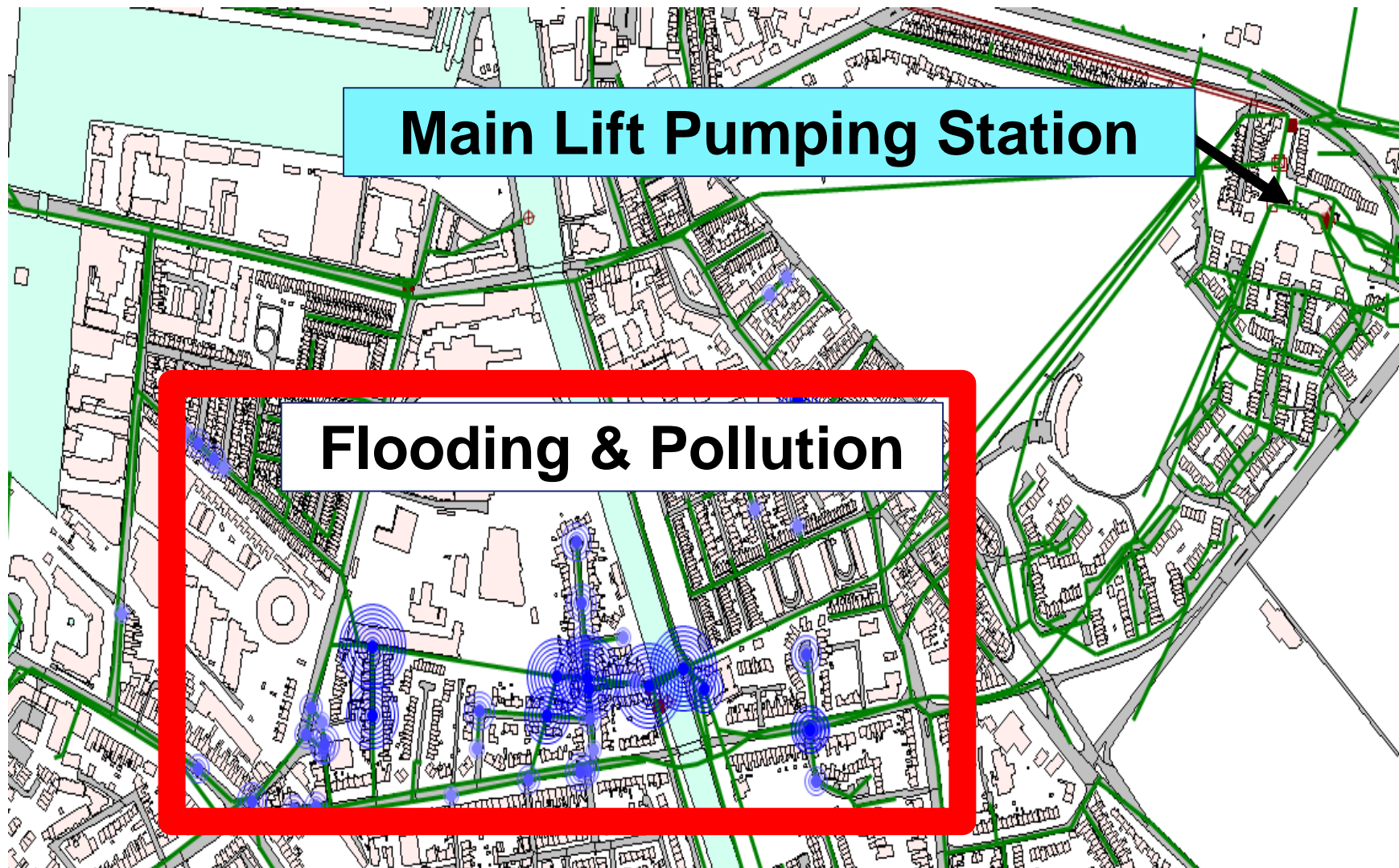
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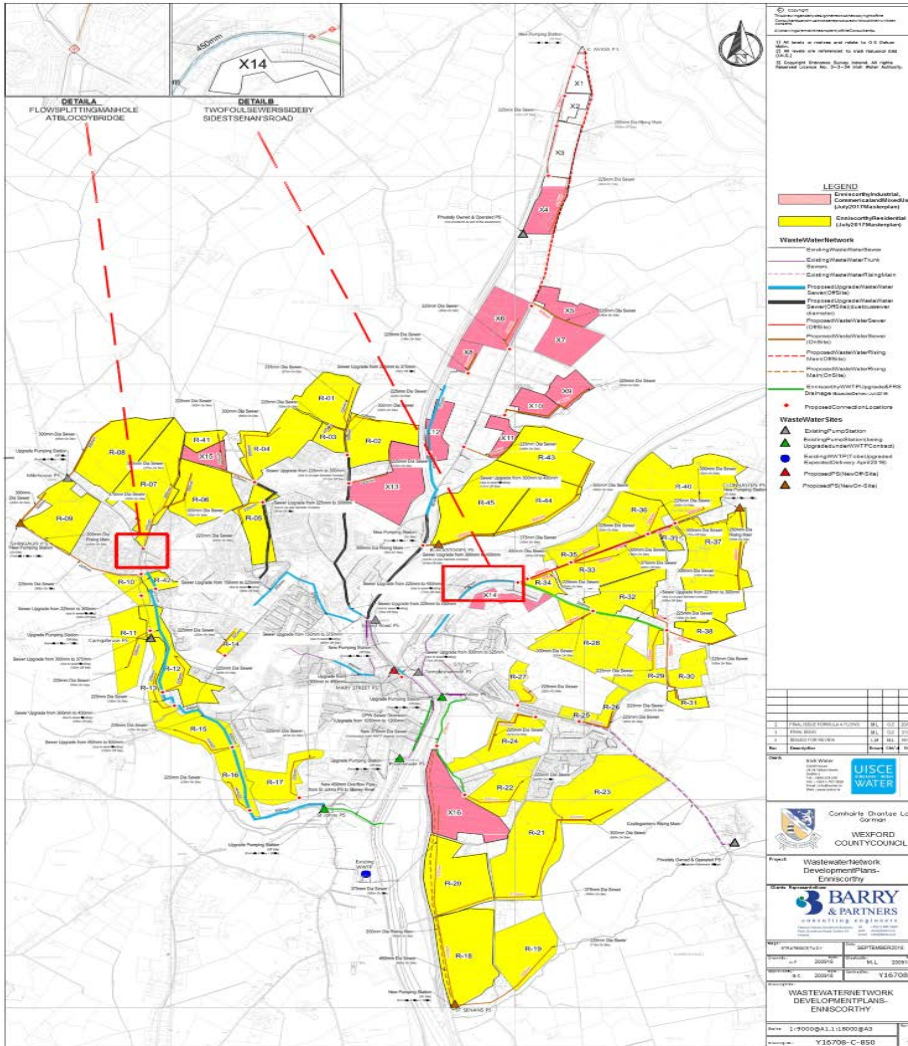
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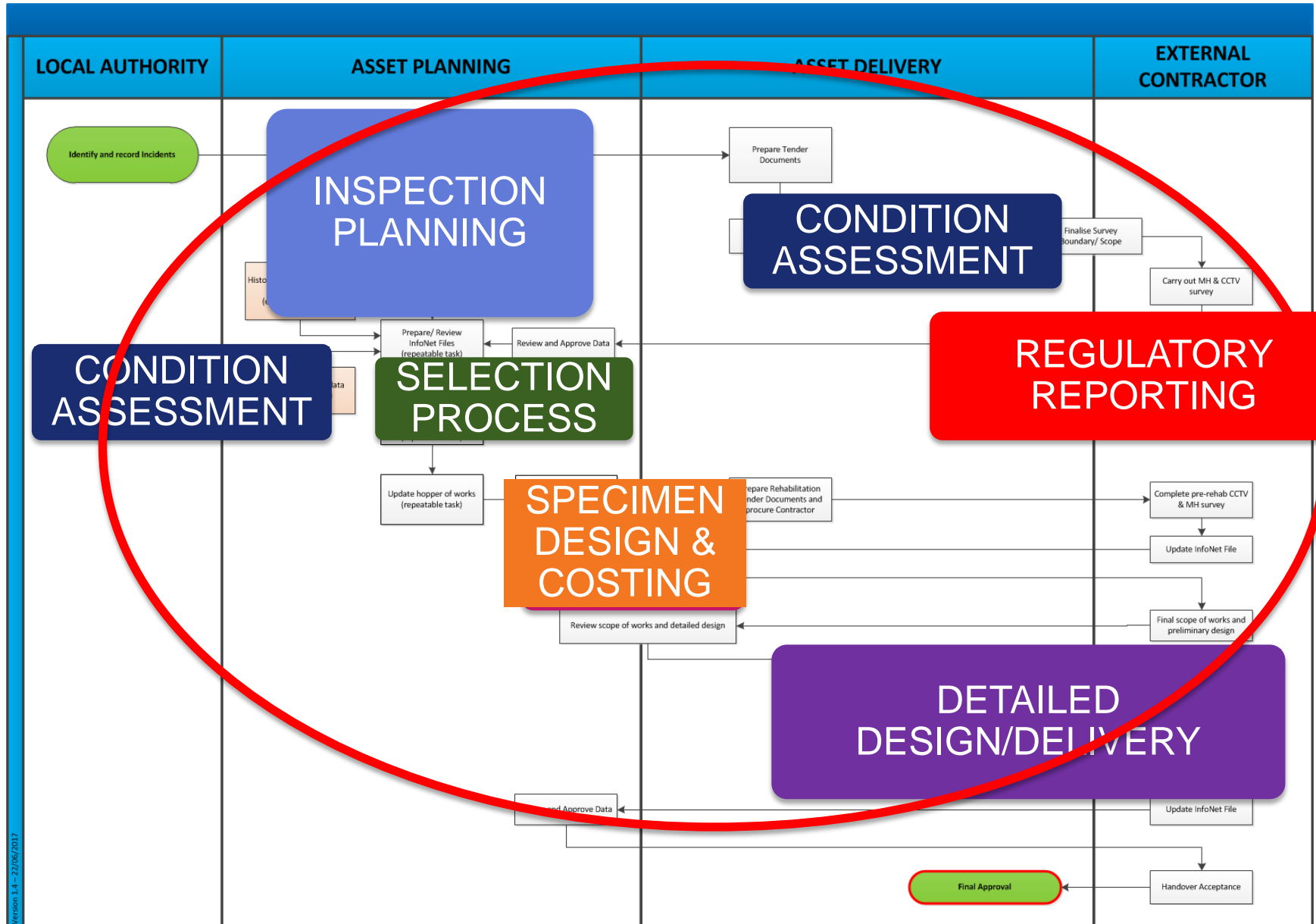
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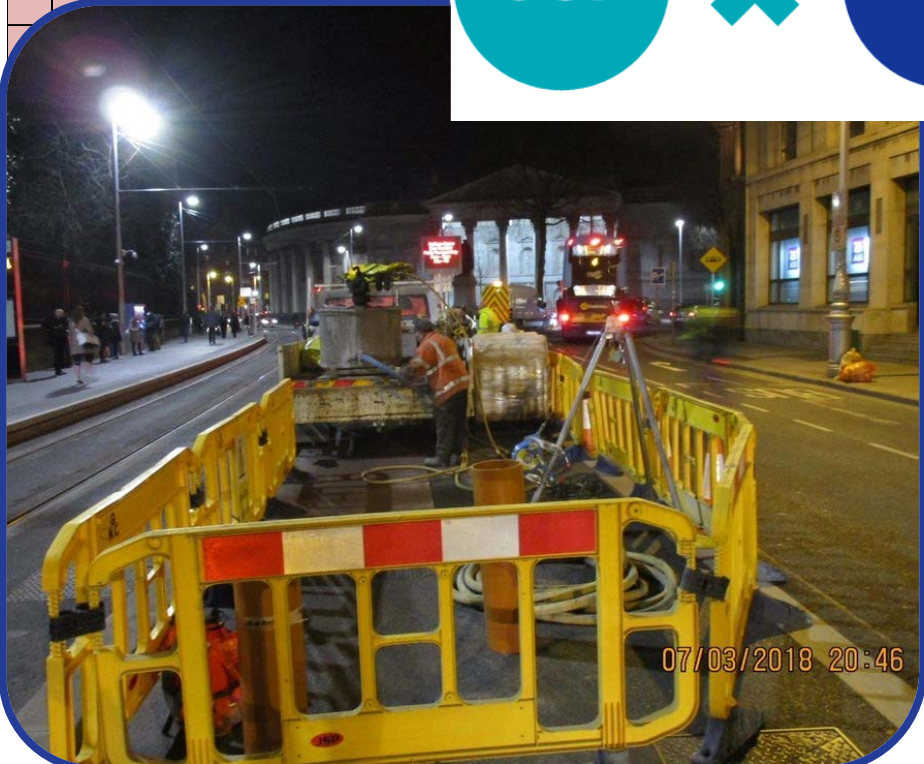


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