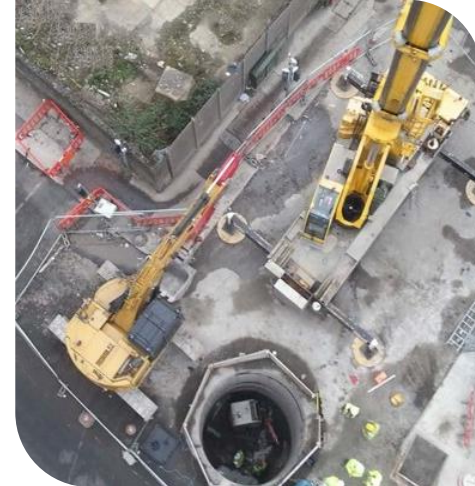
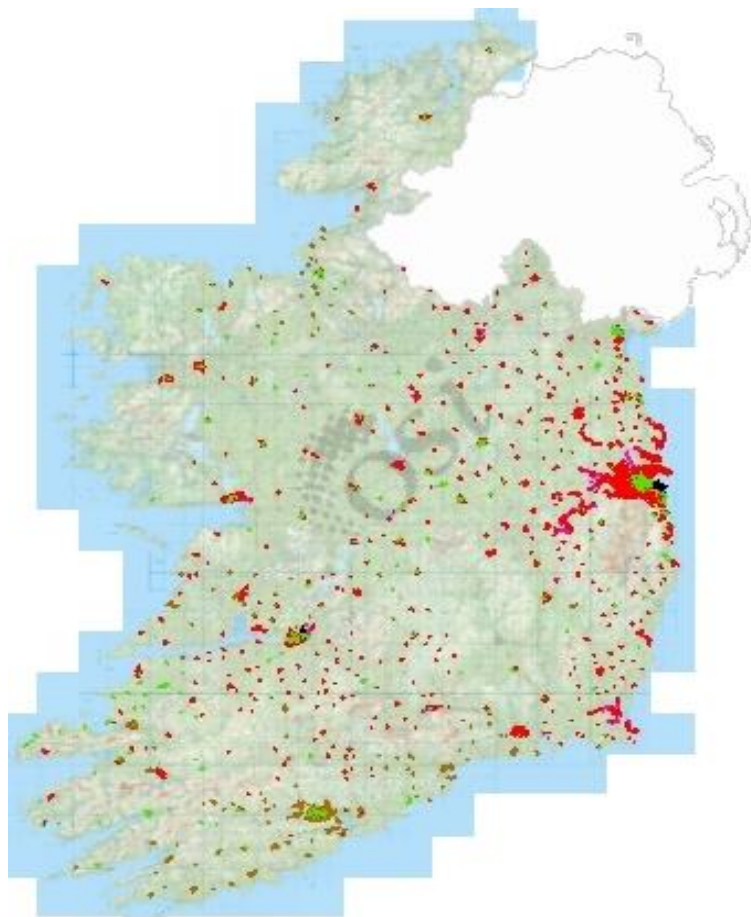


# Addressing challenges in Wastewater Networks

EPA Water Conference 2019

Michael Goss – Asset Planning Wastewater Networks





Wastewater Networks – IW GIS

## Key Challenges:

Low GIS coverage

30% network coverage based on poor/low confidence data

Majority network hydraulic models out of date & low confidence

Understanding of Network Performance & Condition

## Actions:

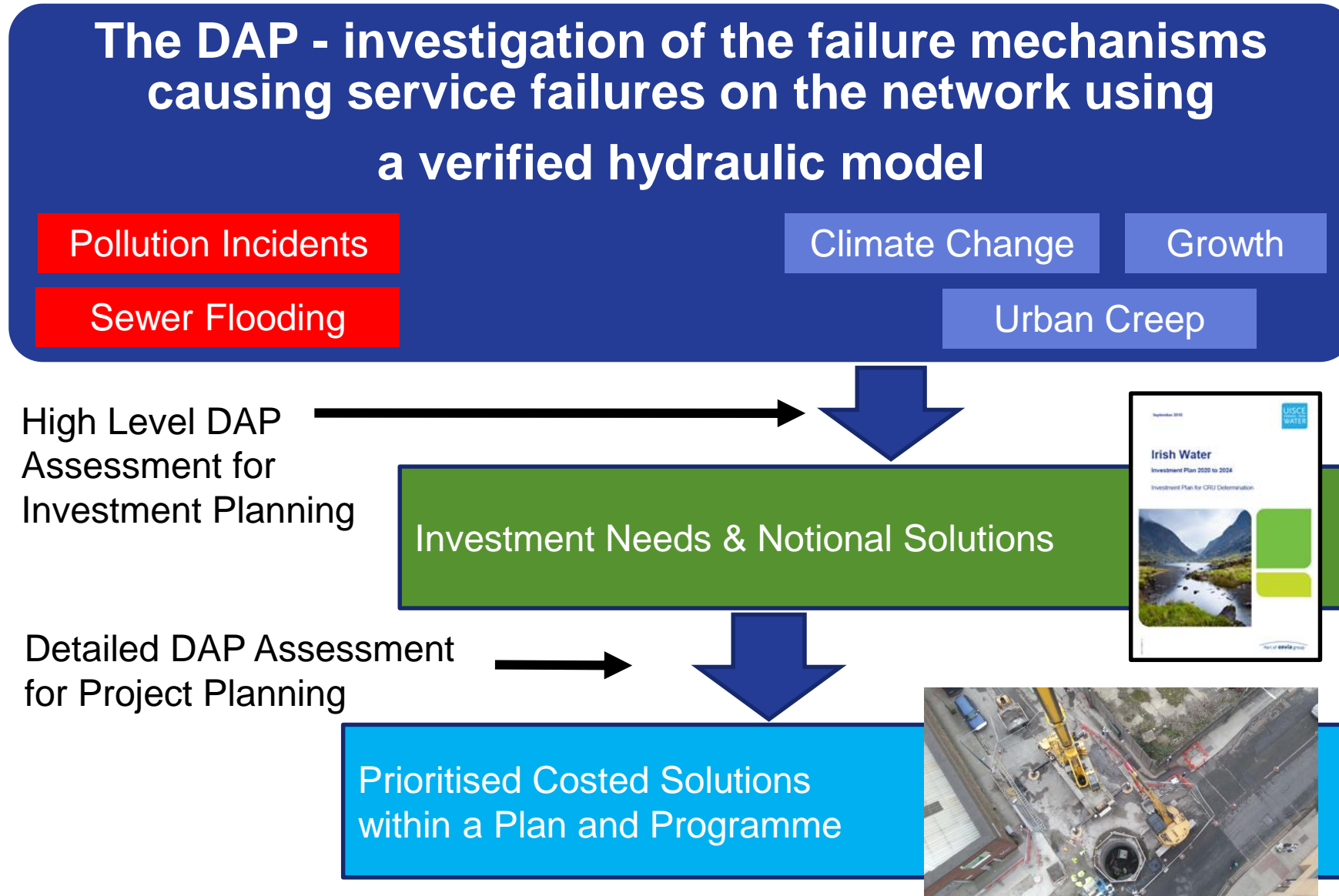
1. Drainage Area Plan Programme

2. Wastewater Network Programmes & Assessments

1

# DAP Programme

# Need for Drainage Area Plans



## 4 Stages in DAP Process

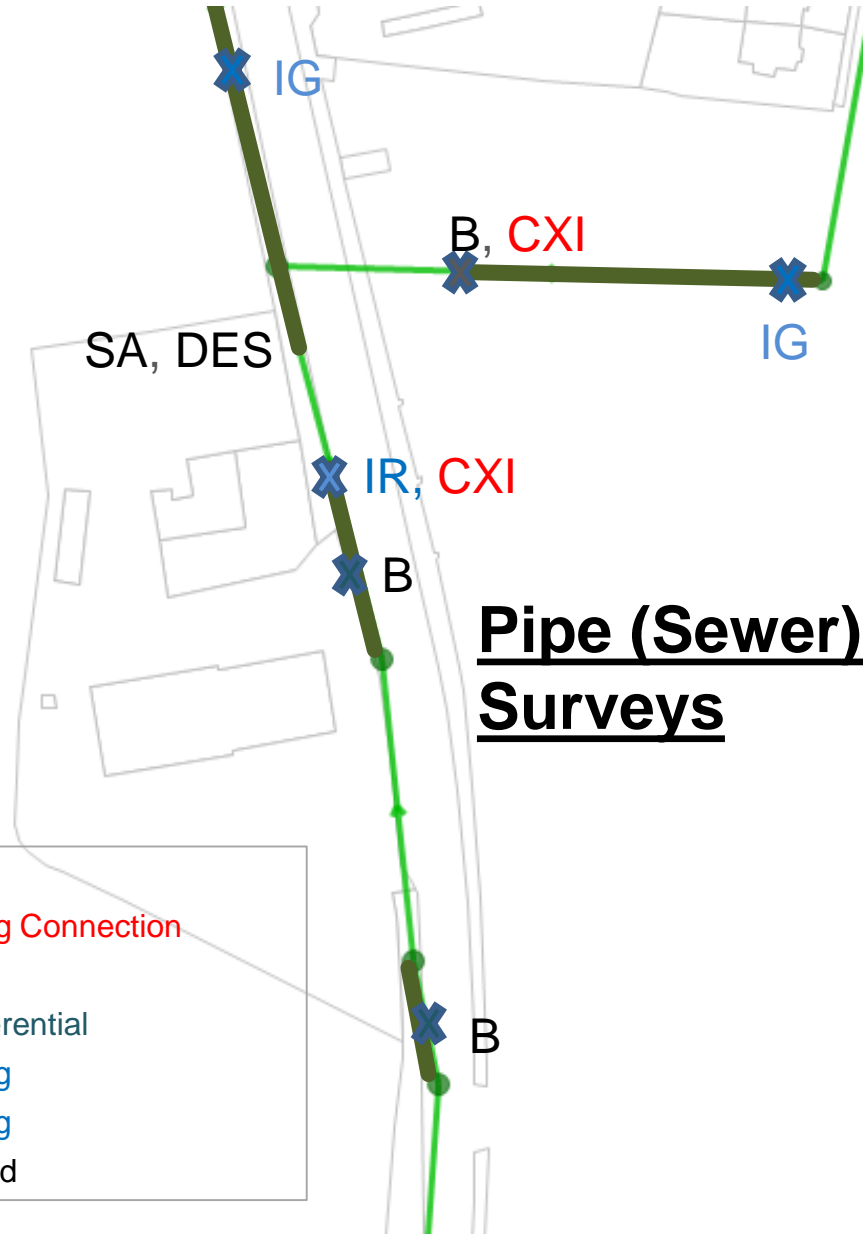
- **Stage 1 : Data Gathering**
- **Stage 2 : Model Build**
- **Stage 3 : Risk Assessment**
- **Stage 4 : Assess Options & Design Development**

## Key element of DAP Process under Stage 2

- Update or creation of **Hydraulic Model** of existing network based on:
  - Information system data (“GIS”)
  - Field Asset Surveys + Flow/Rainfall Monitoring

# 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

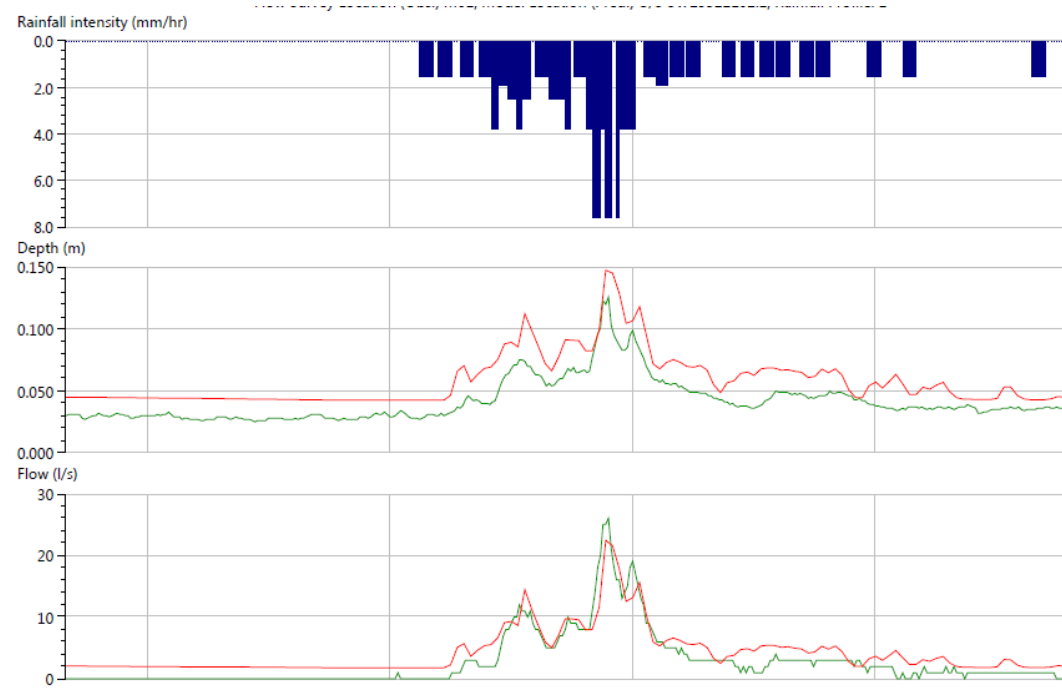




## Flow Monitoring

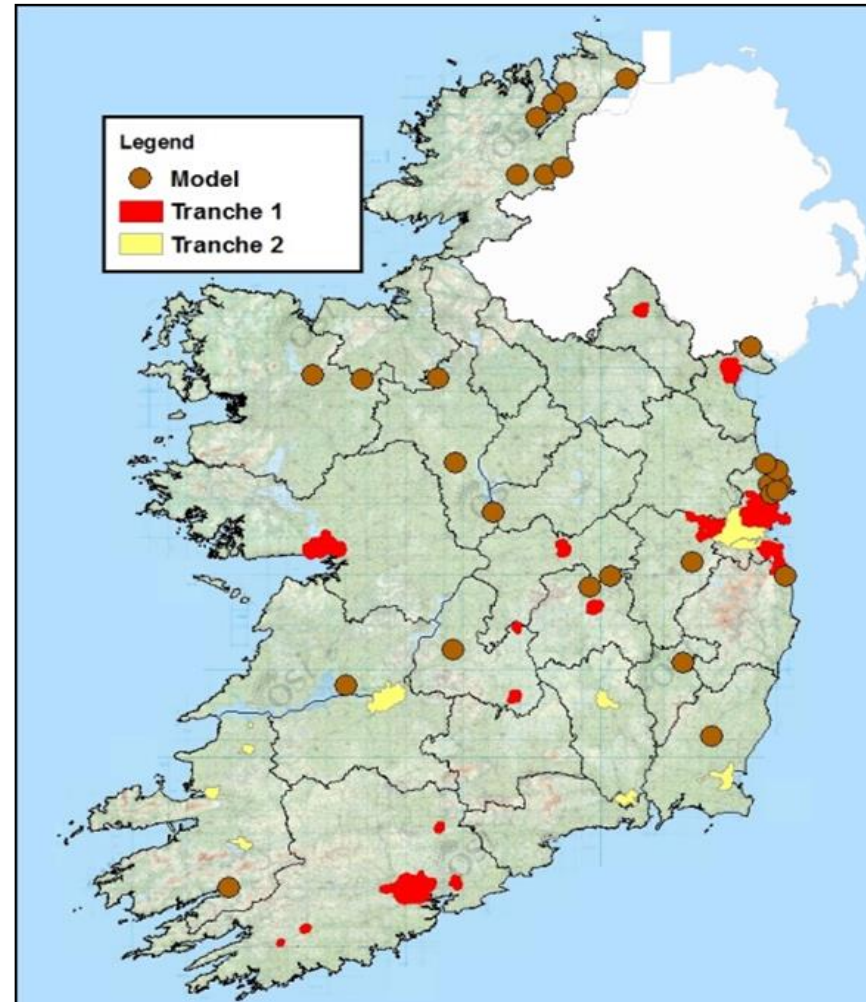


## Model Verification



# DAP Programme

- **TRANCHE 1**
- Cork City
- Ballincollig
- Midleton
- Roscrea
- Thurles
- Lower Liffey Valley
- Galway City
- Sutton Pump Station
- Dundalk
- Monaghan Town
- Bray & Shanganagh
- Portlaoise
- Tullamore
- Fermoy
- Drimoleague
- Dunmanway

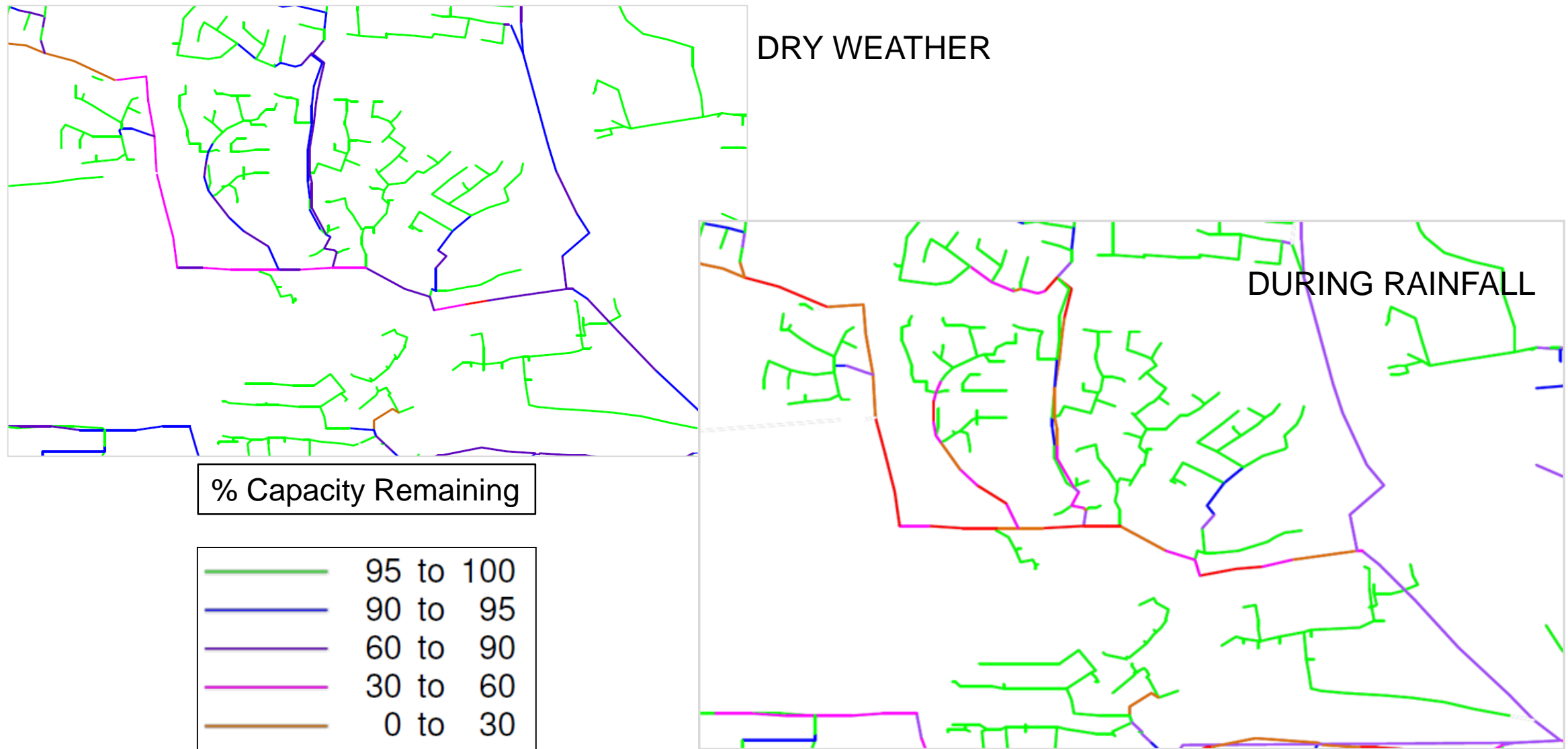


**Focus on: Environmental Compliance, Customer Service & Growth**

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



# Capacity Mapping



# Flood Prediction & Verification



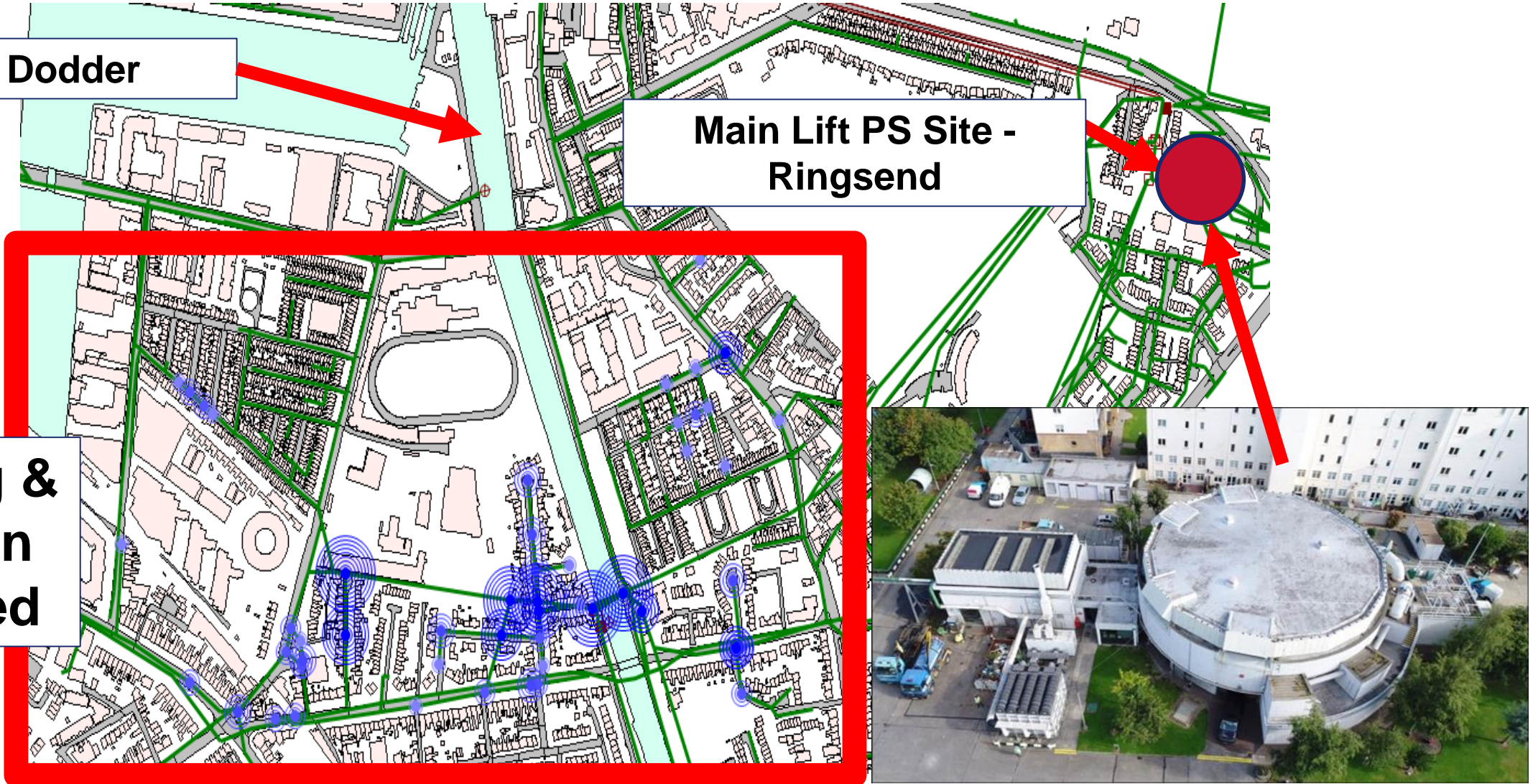


# Critical Assets – Impact of Failure

River Dodder

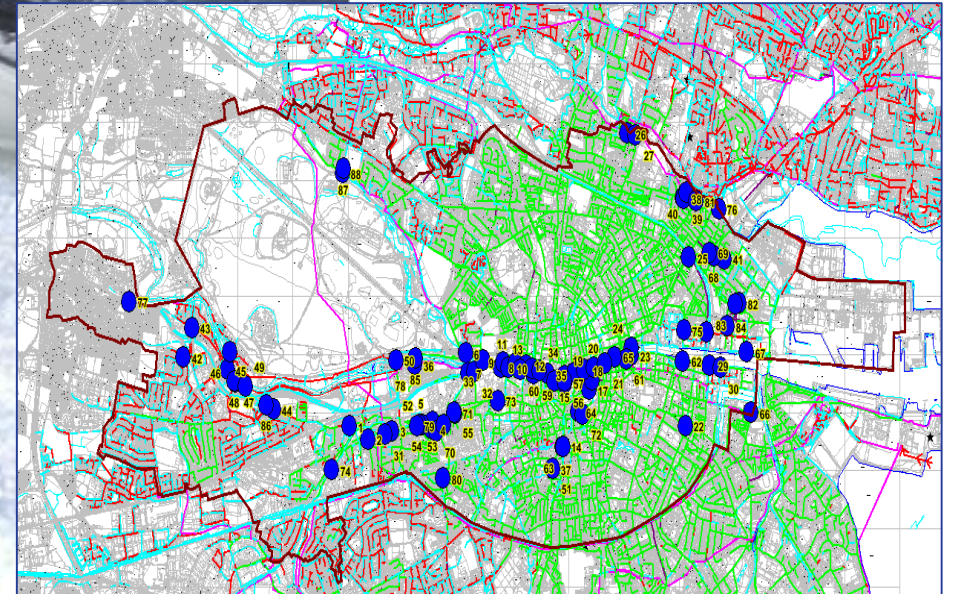
Main Lift PS Site -  
Ringsend

Flooding &  
Pollution  
Predicted





# Storm Water Overflow Performance



2

# Wastewater Network Programmes & Assessments



# Wastewater Network Programmes & Assessments

## National Programmes

Infiltration & Hydraulic Assessments

Storm Water Overflow (SWO) Survey,  
Assessment & Monitoring Programme

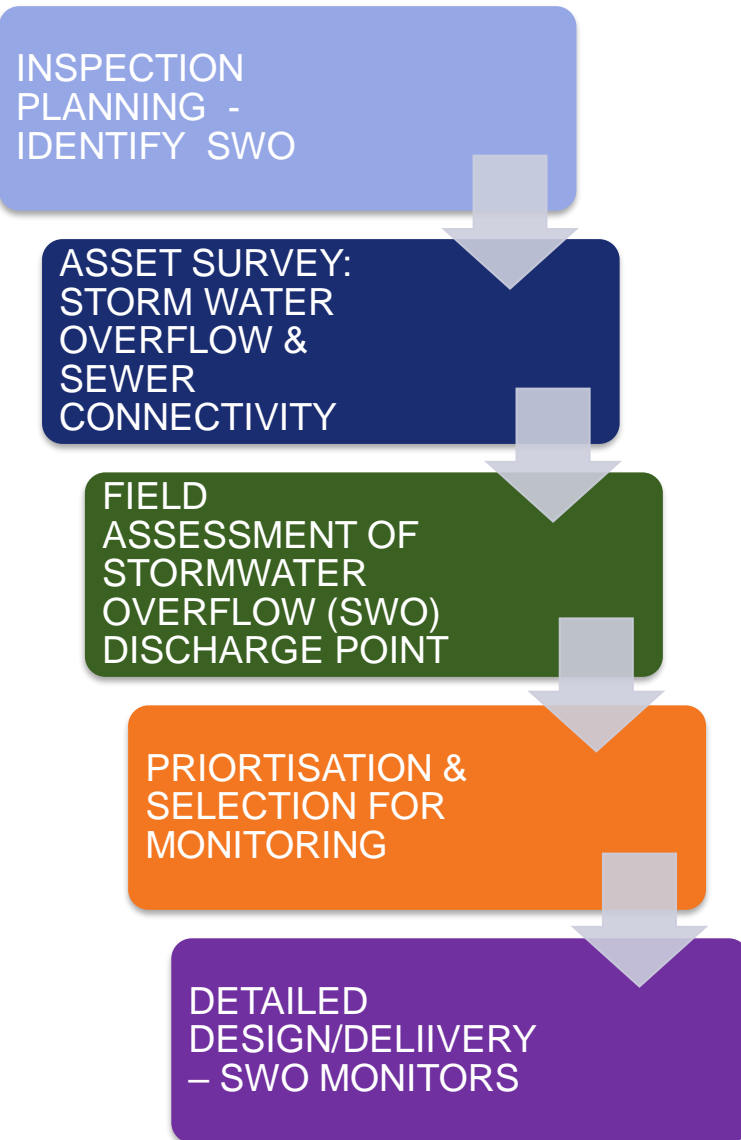
Sewer Network Rehabilitation Programme

Wastewater Pumping Station - Telemetry Programme

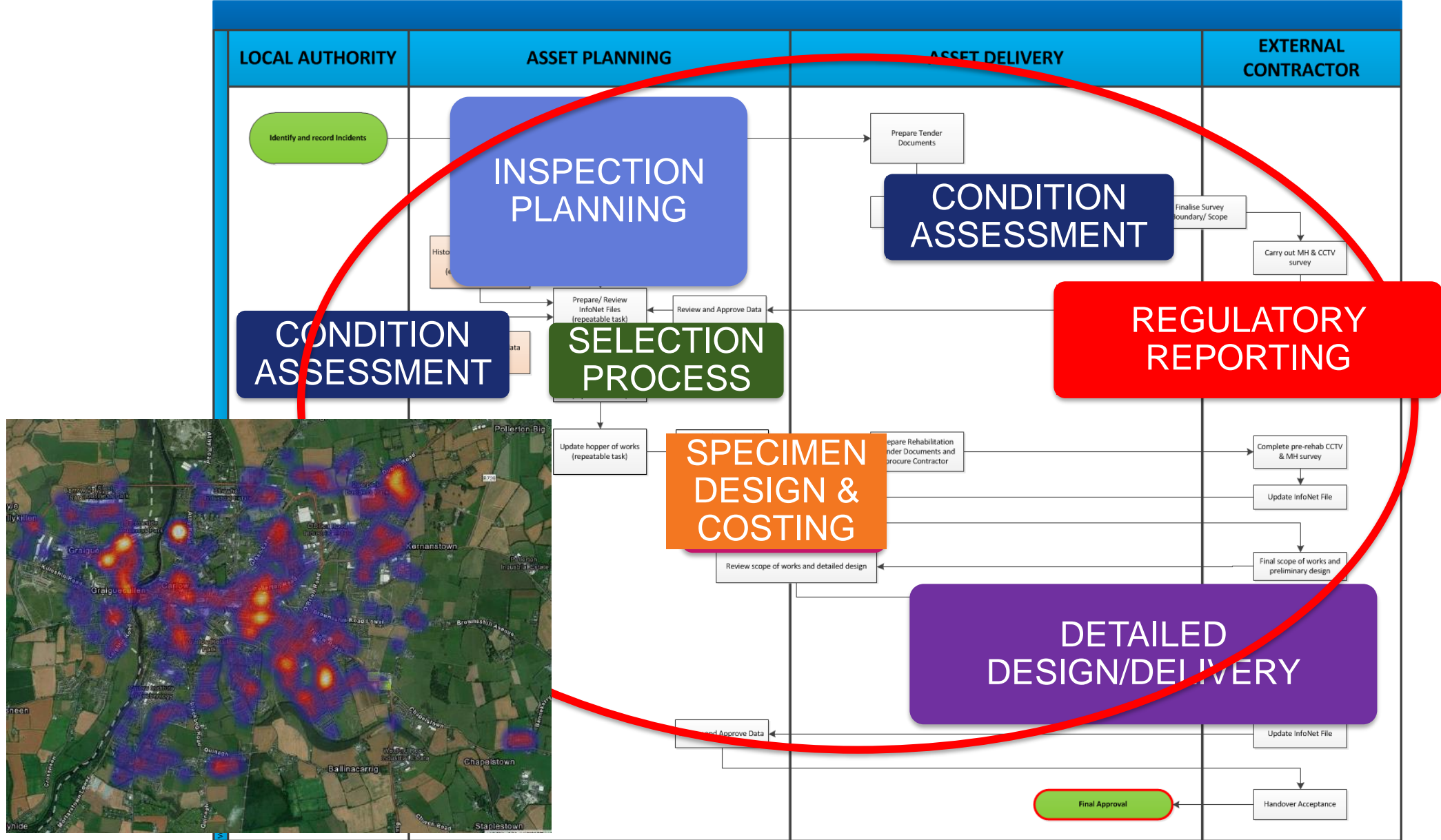
Wastewater Pumping Station & Rising Main Programme



# SWO Assessment Programme



# Sewer Network Rehabilitation Programme



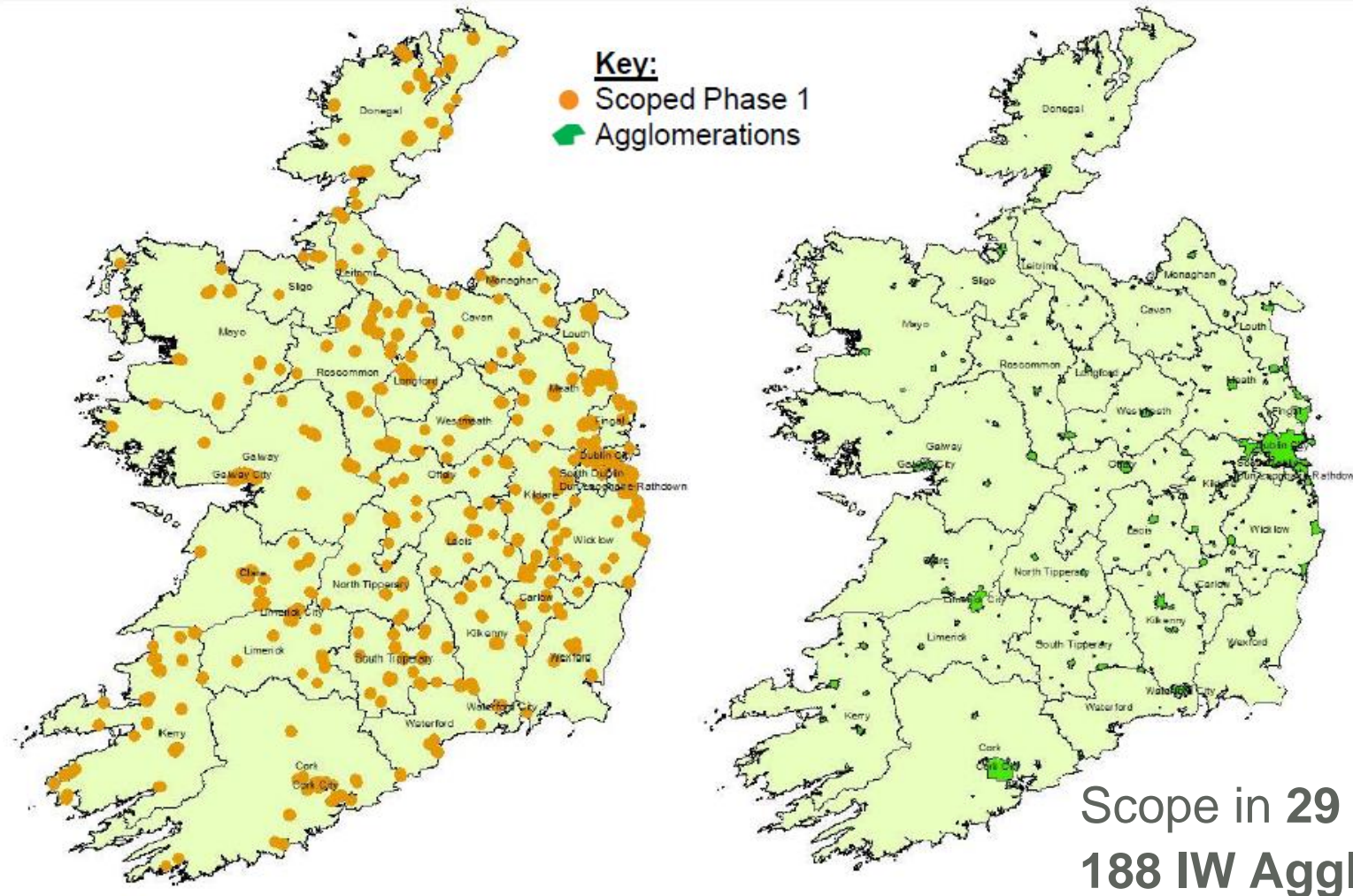


# Sewer Rehabilitation Prioritisation

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	SS97393510	C	C	0	0	225	225	CO	VC	20/08/2013	5	12.28	200	684	3.60	25	100	0	125	450
5	Enniscorthy	D0029	SS97396902	SS97395901	C	R	0	600	225	700	VC		02/10/2013	5	200	320	320	3.49	25	100	0	125	436
							0	225	225		CO	CO	02/07/2013	5	3.8								
							0	150	150		CO	CO	13/05/2013	5	6.24								
							0	150	150		CO	CO	20/02/2013	5	231.11								
							0	225	225		CO	CO	09/04/2013	5	9.07								
							0	150	150		VC	VC	19/09/2013	5	5.63								



# Scope of Regional Contracts



Scope in 29 County/ City Councils  
188 IW Agglomerations

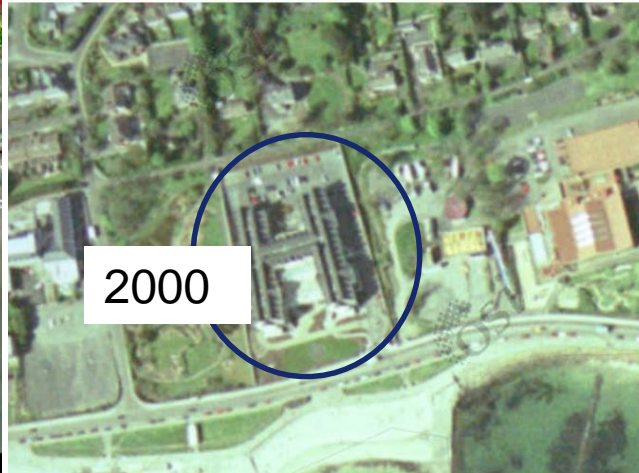
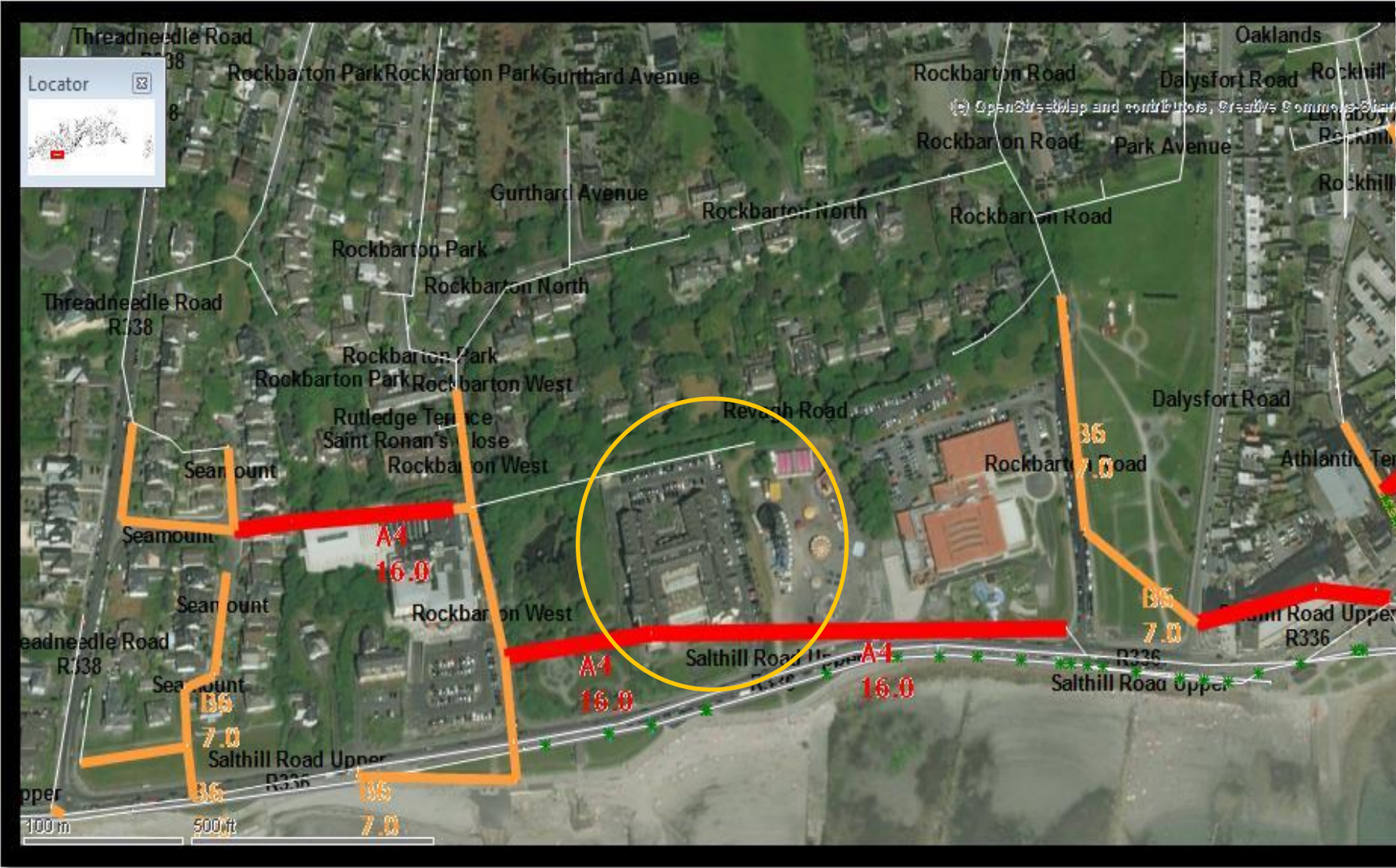


**UISCE**  
ÉIREANN : IRISH  
**WATER**





# Critical Sewer Surveys





# WWPS & Rising Main Programme

## Stage 1

- Database & Information Gathering + 2000 WWPS

## Stage 2

- Prioritisation & Site Selection

## Stage 3

- Specific Site Surveys

## Stage 4

- Risk Assessment, Concept Design & Costing

## Stage 5

- Detailed Design & Delivery



# Thank you

[www.water.ie](http://www.water.ie)

## ervia

Aurora  
TELECOM



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Networks  
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