United Utilities Water Limited

Who we are and where we operate

United Utilities are the North West's water and wastewater company serving 3.4 million households.

Key Facts

- We look after >55,000 hectares of catchment land
- We manage around 120,000 km of water pipes and sewers
- 570 wastewater treatment works
- 179 reservoirs and 93 water treatment works delivering 1.7bn litres of water a day.

Our vision is to be the best UK water and wastewater company, providing great service to our customers.
United Utilities Integrated Catchment Approach

A developing way of working

• A way of managing integrated *(shared)* risk with external stakeholders
  • **Flood Risk**
    • Sewer flooding linked to other flooding mechanism (surface water, groundwater, fluvial)
  • **Water quality issues**
    • To meet legislative drivers (e.g. Water Framework Directive, Bathing Water Directive, safeguard zones, etc.)
  • **Supply and Demand**
    • Creating capacity in Ww networks and treatment processes to accommodate future development
  • **Resilience**
    • Improved resilience of assets
United Utilities Integrated Catchment Approach

The benefits of an integrated approach

- Delivery of an *affordable* business plan that is inline with customer expectations and UU customer promises

- Realising business and regulatory requirements by:
  - Promoting holistic ways of working, bringing together water quality and quantity drivers in delivery of combined asset and non-asset interventions
  - Prioritised sustainable and innovative solutions delivering more for less
  - Partnership working

- Formation of an evidence-based approach to developing solutions and reducing risk and uncertainty in **partnership**.
Future ways of working
Wastewater network management

System thinking

Customer

Wastewater network

Process

Bioresources

Environment

Situational awareness

Development
Third party assets e.g. highway drainage
Permeable vs hard surfaces
Surface water management
Traders

IDAS

Production line

Compliance
Customer experience
Safety
Optimisation
Clear ownership
Strategic investment

Situational awareness

Watercourses
River levels
Water table
Ground condition
Background to UU Integrated Drainage Area Strategies (IDAS)

The Origins of IDAS

- Guidance for WaSCs to develop a more strategic and collaborative approach to drainage management. Delivering more for less.
- WaSCs cannot develop drainage solutions on their own.

Drainage Strategy Framework

- United Utilities Wastewater Network Management Programme
  - UU strategic initiative with internal focus
  - Back to basics approach to understanding Ww network
  - Introduced principal of Systems Thinking and increased monitoring and control.

United Utilities IDAS

- Risk based approach using network performance data, modelling and operational feedback to assess incidents and develop prioritised ‘catchment’ interventions
- External facing Drainage Plans to be produced including proposed opportunities to manage integrated risks
- Partnership working used as mechanism to prioritise interventions and identify alternative delivery routes.
IDAS – Inputs and Outputs

**Inputs**

- Modelling
- Engineering Support to develop opportunities
- Assessment of development plans
- Operational feedback
- LLFA flood data
- 3rd party investment needs
- Ww Network Performance Data
- UU SuDS opportunity tool
- External Flood Risk Plans
- Feedback from external stakeholders and 3rd parties (e.g. RT NFM modelling)

**Outputs**

- Holistic, sustainable long term plans to inform future investment
- Development of solutions and funding opportunities in collaboration
- Opportunities to remove Surface water from combined sewers
- Opportunities for Flood risk reduction
- Opportunities for Surface water management through SuDS
- Opportunities to increase Asset protection
- Opportunities for Environmental improvements and no deterioration
- Opportunities to feed into Price Review/Business Plan build

**IDAS**

External facing Document

UU SuDS opportunity tool

LLFA flood data

Feedback from external stakeholders and 3rd parties (e.g. RT NFM modelling)
### Development of United Utilities IDAS

#### Activity to date

For 20 pilot IDAS studies

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initialize/prepare</td>
<td>Risk assessment</td>
<td>Options appraisal</td>
<td>Intervention</td>
</tr>
<tr>
<td><strong>COMPLETE</strong></td>
<td><strong>COMPLETE</strong></td>
<td><strong>TO BE COMPLETE</strong></td>
<td><strong>TO BE COMPLETE</strong></td>
</tr>
<tr>
<td>Establish partnership and consultation process</td>
<td>Consultation on risk issues</td>
<td>Consult on options</td>
<td>Aligned delivery &amp; collaborative solutions</td>
</tr>
<tr>
<td>Define uncertainties</td>
<td>Quantify uncertainties</td>
<td>Plan for uncertainties</td>
<td>Innovative and sustainable</td>
</tr>
<tr>
<td>Prepare risk data</td>
<td>Quantify risks</td>
<td>Demonstrate whole life cost and benefit</td>
<td>Live and visible</td>
</tr>
</tbody>
</table>

- Consultants have now completed risk quantification piece to prioritise ‘clusters’ for interventions
- Ops inputs – risk assessments and connectivity review etc.

- Reports due highlighting course interventions to include in PR19 planning
- Stakeholder engagement to identify multi beneficial collaborative solutions (e.g. SW removal) to follow
- Aim to publish IDAS ‘plans’ as live documents on external website
Examples of United Utilities Partnership approach to resolving WwN issues

Gorsefield Avenue

Gorsefield Ave, Wirral – multiple flooding incidents and complaints

• External and highway flooding occurred from our network in Gorsefield Avenue as SW is unable to discharge through outfall. This has lead to a considerable volume of unwanted contact, and increased operational costs.

• A solution has been delivered in partnership, with Wirral BC and Network rail and UU and EA funding.

• UU designed and modelled SW diversion scheme with multi benefits.

• Aspiration to identify similar opportunities across region through IDAS.
Further partnership opportunities to be developed through IDAS

- UU’s IDAS approach provide further opportunities for collaborative working with the EA, The Rivers Trust and CaBA Groups, complimenting existing pieces of work
  - SuDs Studio Tool (SuDS opportunity mapping)
  - Partnership working in the Irwell through NFM opportunities and links to Natural Course project.
  - Opportunities for GI interventions and collaboration

- As IDAS develops – there is a need to further drawn on CaBA network, shared evidence base utilise innovative delivery frameworks.

- Watch this space (PR19 challenge)
Thank you