

Inland Bathing Water: The Journey So Far

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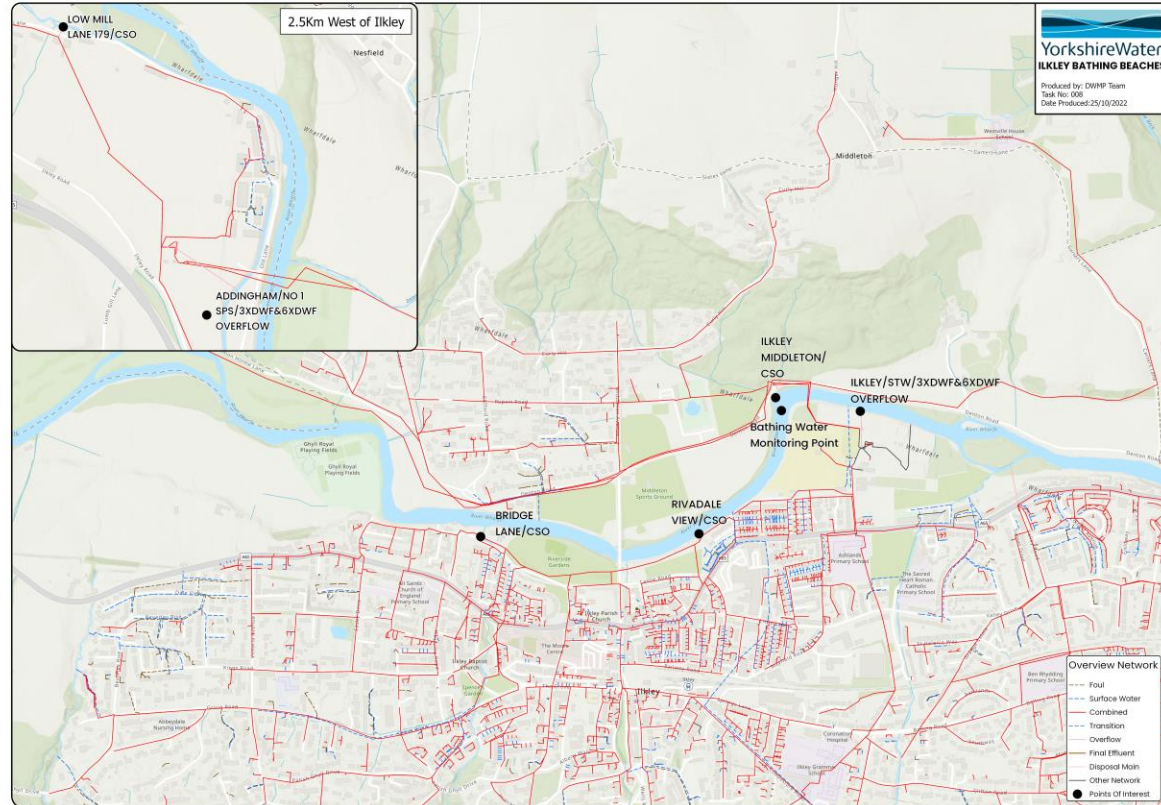
Overview

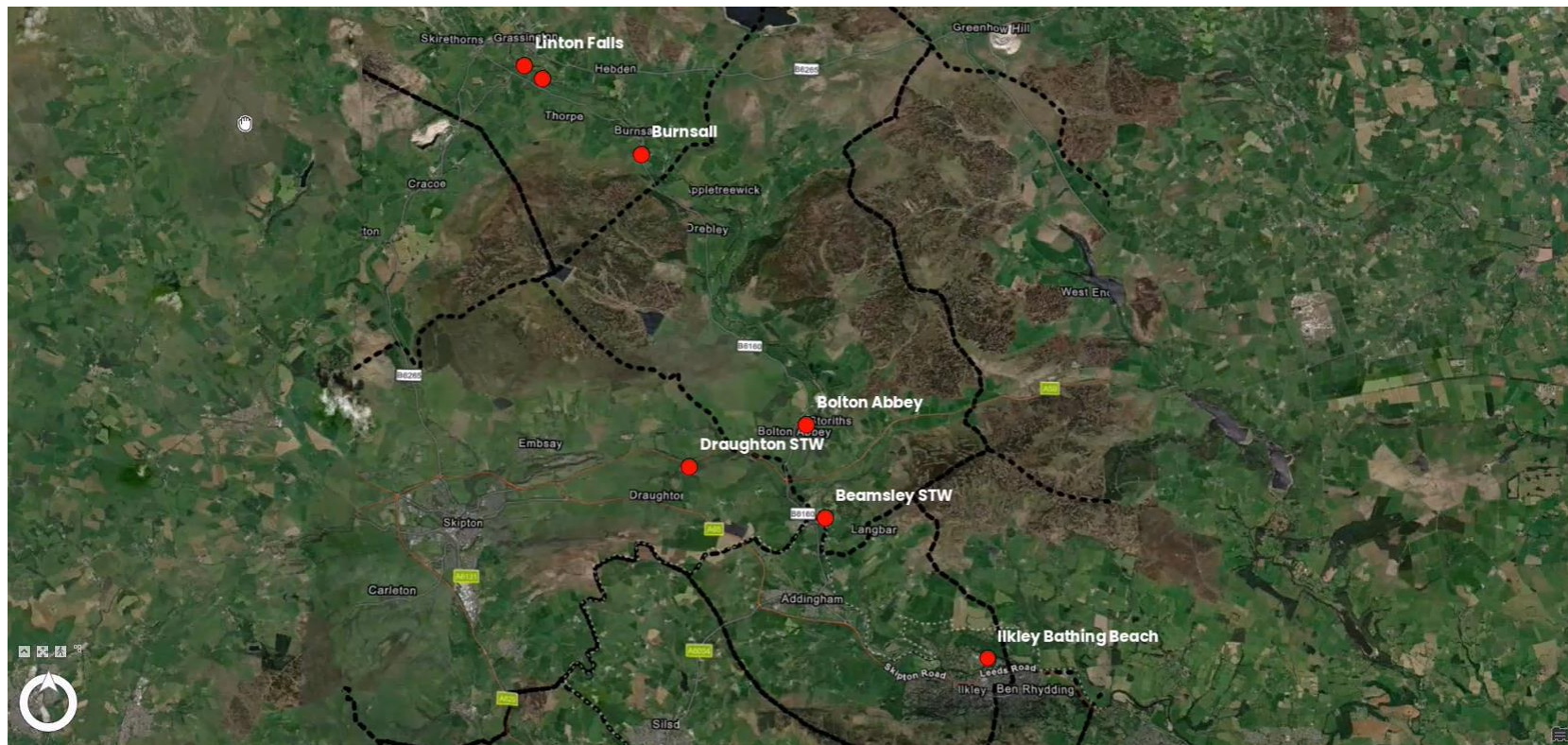
- The bathing water designation at Ilkley
- Bathing Water Directive
- Timeline
- Digital Model
- Our Action Plans: Immediate
- Our Action Plans: PR24



Ilkley Bathing Water

- The River Wharfe in Ilkley became the UK's first designated riverine bathing water in December 2020.
- The application for the bathing water designation was led by the Ilkley Clean River Group, due to local attention on storm overflows within the town.





Bathing Water Directive

- The Bathing Water Directive is a public health directive, which introduces water quality monitoring during the bathing water season for two faecal indicator bacteria (E. coli and Intestinal Enterococci).
- Classifications are issued annually to advise of the water quality:



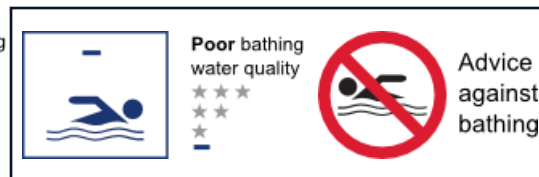
Excellent bathing
water quality
★ ★ ★
★ ★ ★
—



Good bathing
water quality
★ ★ ★
★ ★ ★
—



Sufficient bathing
water quality
★ ★ ★
★ ★ ★
—



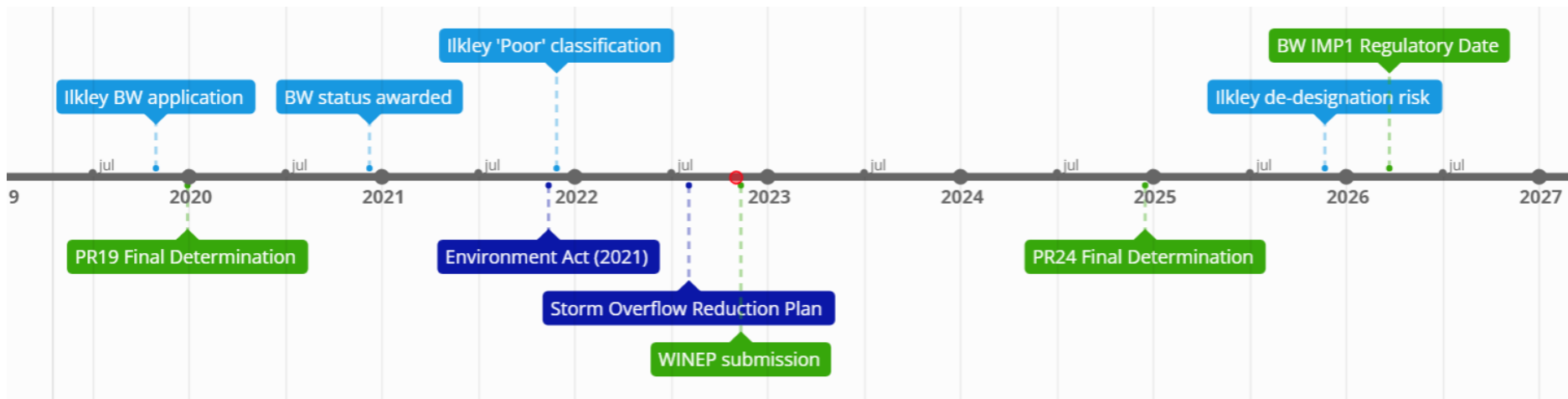
Poor bathing
water quality
★ ★ ★
★ ★ ★
—

Advice
against
bathing

- The classifications are based on either a 90th or 95th percentile analysis of up to 4 years data: therefore, on occasions individual samples can breach the threshold

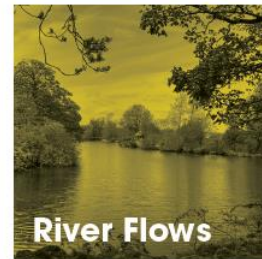
Classification	E. Coli (cfu/100ml)	IE (cfu/100ml)	Confidence Level
Excellent	≤500	≤200	95 th percentile
Good	≤1000	≤400	95 th percentile
Sufficient	≤900	≤330	90 th percentile
Poor	>900	>330	

Timeline



Monitoring and Sampling Programme

The model had to be built off data collected during 2021 bathing season and consider factors such as:



Modelling Approaches

Modelling Needs:

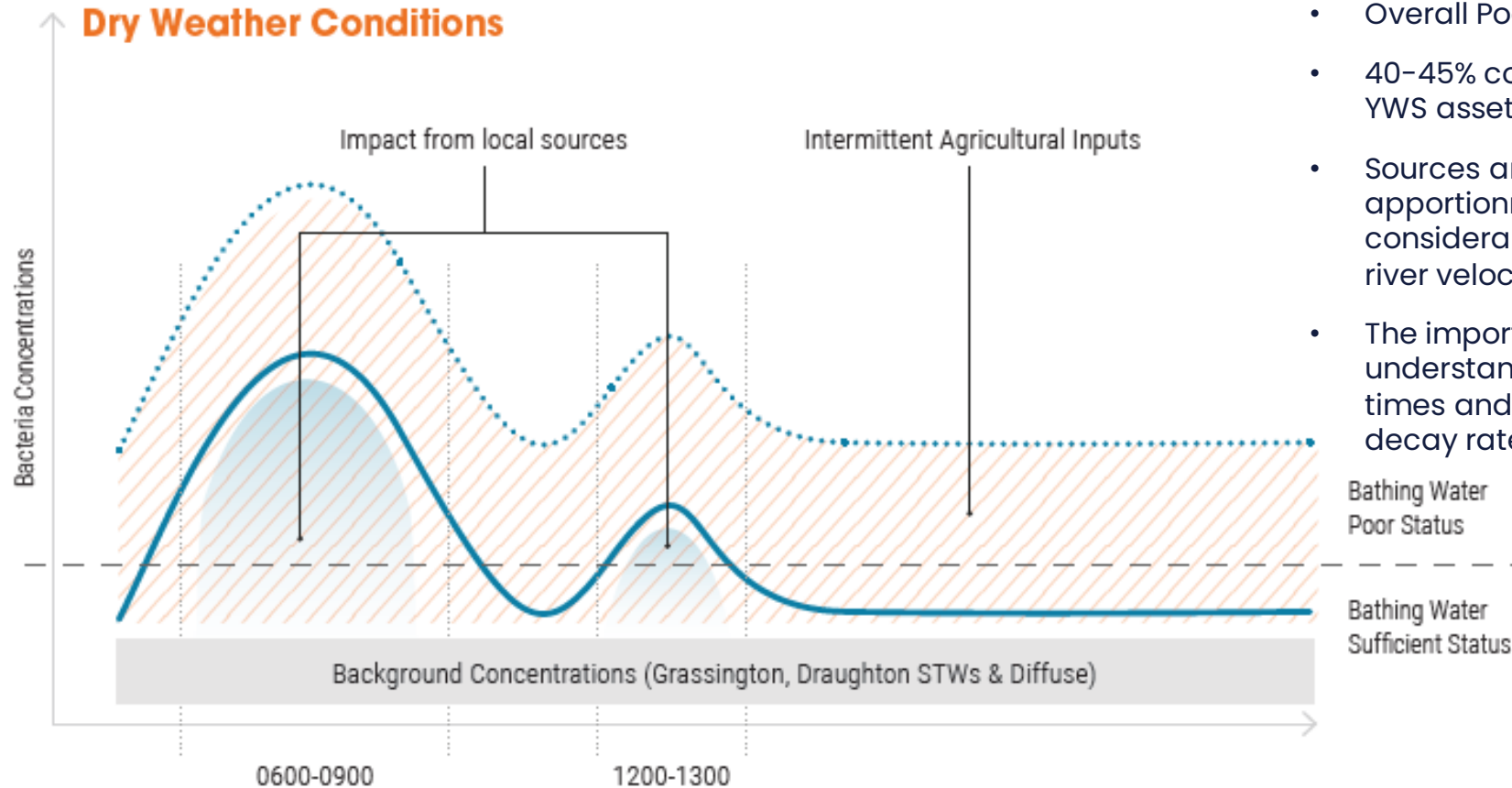
- Accurately assess the existing baseline
- Apportion contribution between sources
- Assess improvement scenarios

Modelling Solutions:

- Digital model utilizing
- Skeletal hydraulic river model
- Regression models
- Conceptual models

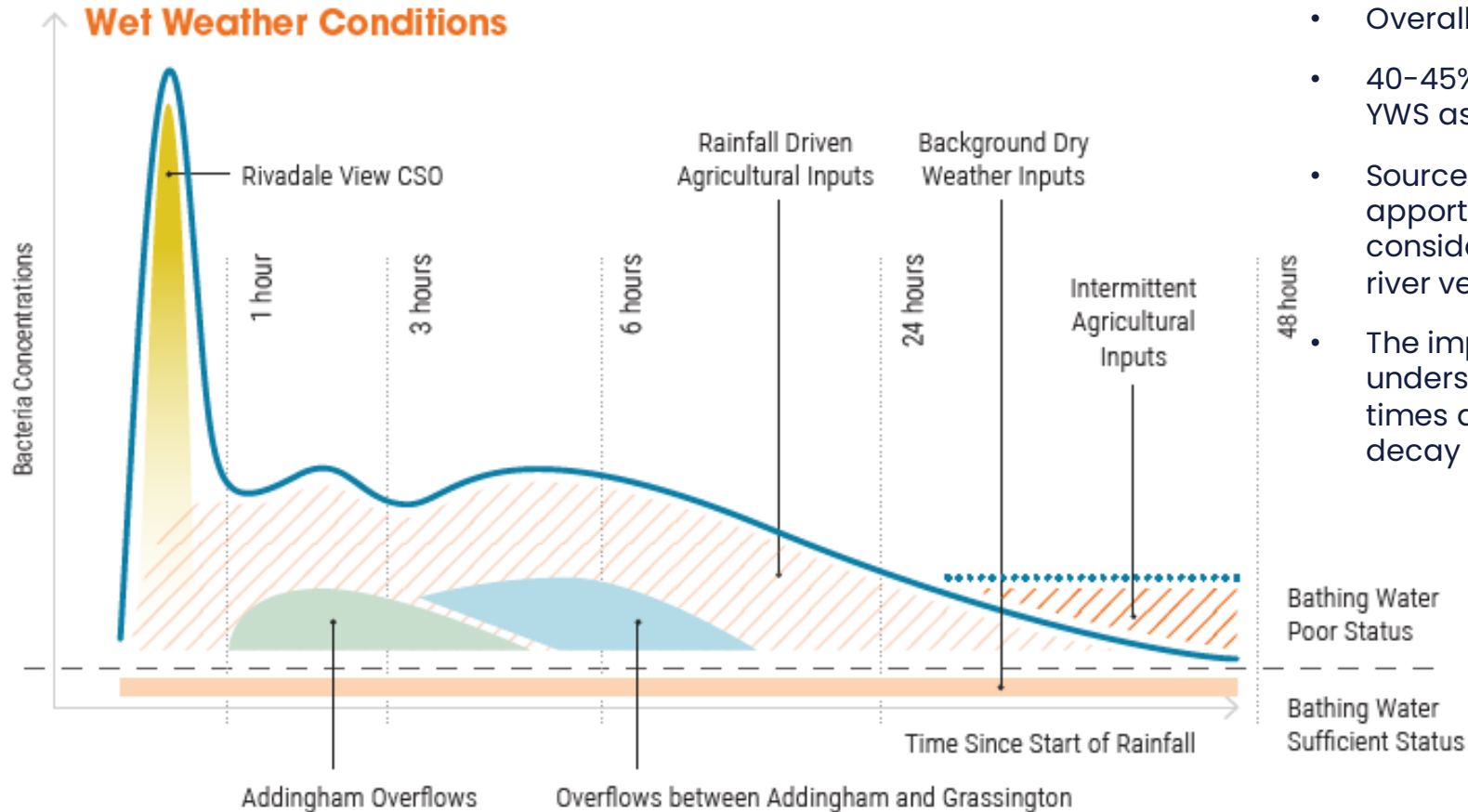


Conclusions and Learning



- Overall Poor classification
- 40–45% contribution from YWS assets
- Sources and apportionment vary considerably in line with river velocities
- The importance of understanding travel times and bacterial decay rates

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Our Action Plans: Immediate

Following on from the ANN findings, the below actions have been taken:

- Disinfection: UV applied at Draughton, Beamsley and Grassington STW

STW Name	T90 (19.5/21.3 hours)		T90 (48 / 72 hours)	
	E. coli	IE	E. coli	IE
Buckden	0%	1%	3%	0%
Starbottan	1%	1%	1%	0%
Kettlewell	0%	0%	4%	5%
Conistone	2%	1%	1%	0%
Grassington	12%	10%	31%	40%
Hebden	7%	7%	9%	1%
Burnsall	5%	4%	5%	1%
Appletreewick	3%	3%	1%	0%
Draughton	19%	16%	16%	2%
Beamsley	25%	21%	4%	0%
Nesfield	2%	1%	0%	0%
Background	26%	33%	25%	49%



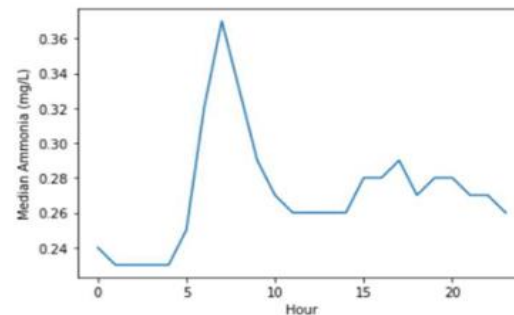
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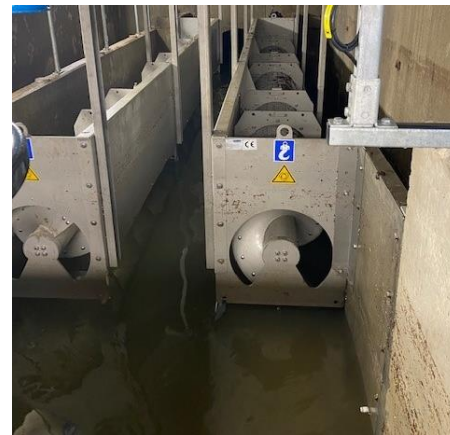
- Misconnection Investigations: focusing on Spicey Beck and Town Beck
- Agricultural engagement: working with the Yorkshire Dales Rivers Trust and the Environment Agency

Additional AMP 7 activities:

- Screen upgrade at Rivadale: 6mm 2D screen
- Ilkley transfer sewer: a transfer sewer to Ilkley STW expected to commence late 2022.



Sonde Data for Spicey Beck



Our Action Plans: PR24

- To protect bathing water status, AMP 8 WINEP schemes have a regulatory compliance date of March 2026 (driven by the bathing water driver guidance)
- For storm overflows, this includes a target of 1 spill per season (May – September) for all storm overflows discharging within 5 km upstream from the compliance monitoring point.
 - For Ilkley, this means
 - Storage – 10,500 m³ storage required across 6 storm overflows.
 - Blue Green – 67 hectares of impermeable area removed + 1550 m³
- We will also be looking to install long term disinfection at the three main contributing sewage treatment works upstream.



Our Action Plans: PR24

Due to the nature of the catchment, a risk of 'Poor' classification may remain at Ilkley:

- Continuing to work in partnership to address diffuse sources – Dales to Vales Rivers Network & EA
- Developing a dynamic river model:
 - To address uncertainty
 - Upstream catchment and potentially ability to assess compliance at other locations

