

Drainage and Wastewater Management Plans (DWMPs)

Webinar for partner organisations on the BRAVA results and the Additional Planning Objectives

Thursday 7 January 2021



from
**Southern
Water** 

Agenda for today's session

- Purpose of this Webinar
- Our DWMP Programme
- Baseline Risk and Vulnerability Assessment (BRAVA) results
- Additional Planning Objectives
- Next Steps

Purpose of today's webinar

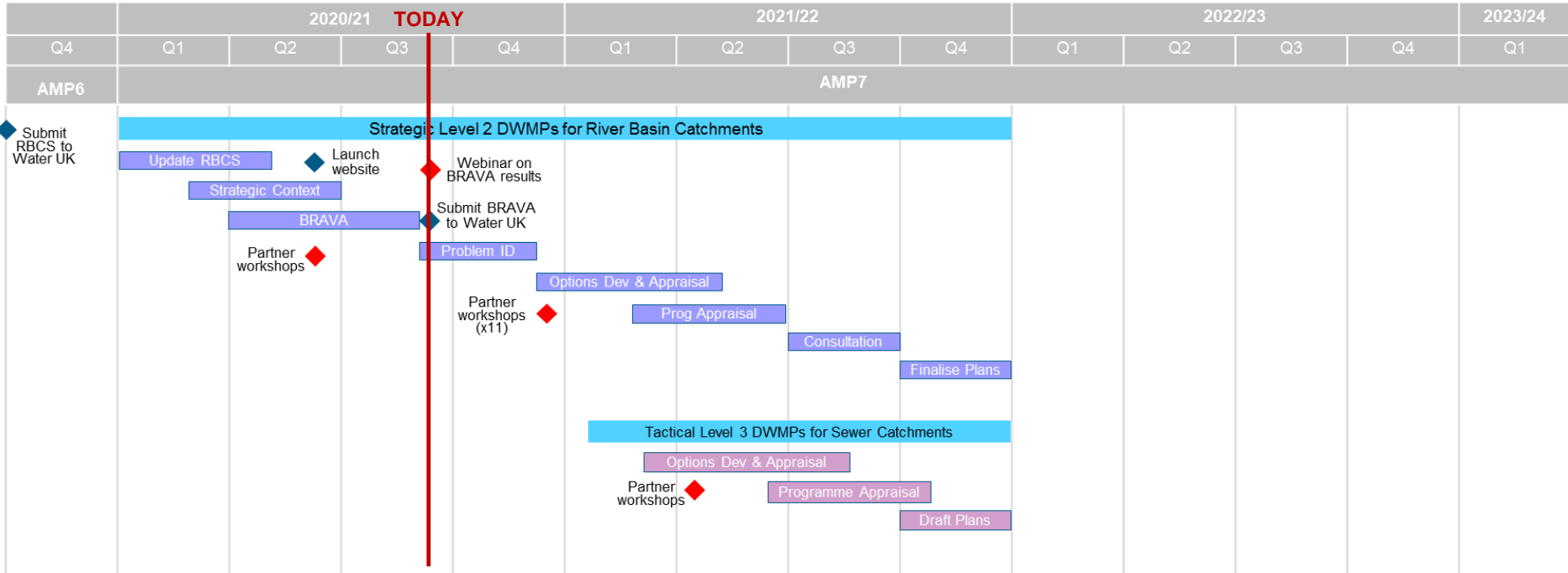
- Clarify where we are in the DWMP process
- Share the initial results of the Baseline Risk and Vulnerability Assessment (BRAVA)
- Explain how to read and understand the BRAVA outputs
- Update on how we have used information you've provided
- Elicit further information from you!



Our DWMP Programme

Where are we now?

DWMP High-Level Delivery Programme



Notes:

1. Level 1 DWMP sets out company policies and strategy for drainage & wastewater
2. Level 2 DWMPs looks strategically across river basin and identifies sewer catchments that need further investment, type of options to be considered and when
3. Level 3 DWMPs consider options and investment choices in detail (first stages of Risk & Value)

Baseline Risk and Vulnerability Assessment (BRAVA) Results

BRAVA Results for the national Planning Objectives

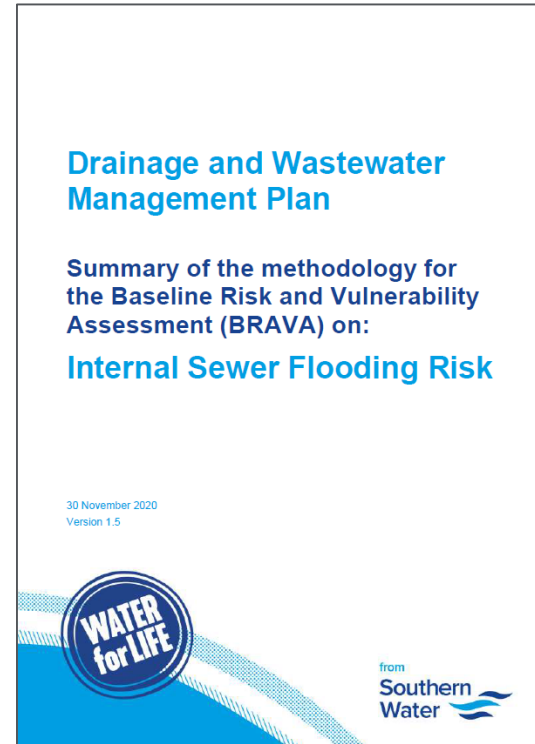
6 Planning Objectives set by Water UK for all water companies to report on:

- Internal Sewer Flooding Risk
- Risk of Sewer Flooding in a 1 in 50 year storm
- Pollution Risk
- Storm Overflow Performance
- Risk of WTW Compliance (Quality)
- Sewer Collapse Risk



BRAVA – Our Approach

- Focused on completing the BRAVA for the 6 national planning objectives for reporting to Water UK in December 2020
- Produced a summary document of the method that we've used for the BRAVA for each planning objective
- Publish the methodology and results on our DWMP webpages



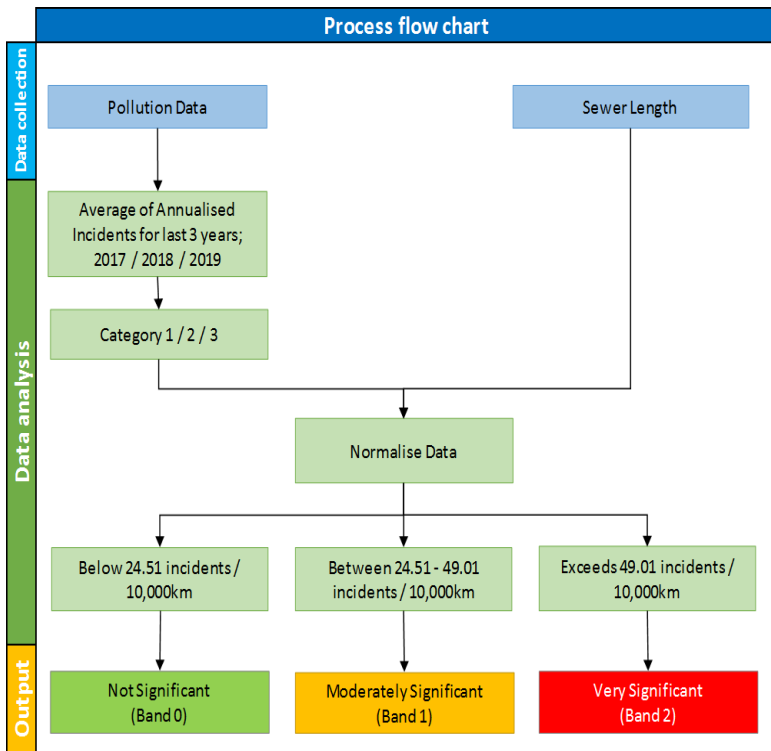
BRAVA – Reporting of Results

Water UK has asked for the results to be categorized and reported in three bands:

| | |
|---|---|
| <p>'Very Significant' (Score = 2)</p> | <p>This indicates that performance in a sewer catchment is below the minimum threshold set by a company. As BRAVA assessments assume a 'do nothing' scenario this categorisation does not take into account interventions to mitigate the challenge posed to a particular planning objective. The solution to remedy the root cause of a planning objective could be relatively simple to resolve, or be more complex, but the findings of BRAVA assessments only indicate there is a risk that warrants more investigation in the Options Development & Appraisal stage of DWMP.</p> |
| <p>Moderately Significant (Score = 1)</p> | <p>'Moderately Significant' catchments are those where the vulnerability of a catchment appears to be borderline and therefore needs further investigation in the Options Development & Appraisal stage of DWMP.</p> |
| <p>Not significant (Score = 0)</p> | <p>'Not significant' means that exceedances have not triggered company specific risk thresholds. Exceedances may occur but, for example, are at a level that represents leading industry performance. Catchments identified as being 'Not significant' are those where the current baseline performance (or projected 2050 performance) is not an issue or concern. Within a catchment there may be some localised issues which need to be addressed as part of 'business as usual' investment decisions. However, when it comes to developing long term DWMP strategies it is not envisaged that a priority needs to be placed on these planning objectives.</p> |



BRAVA Results – Pollution



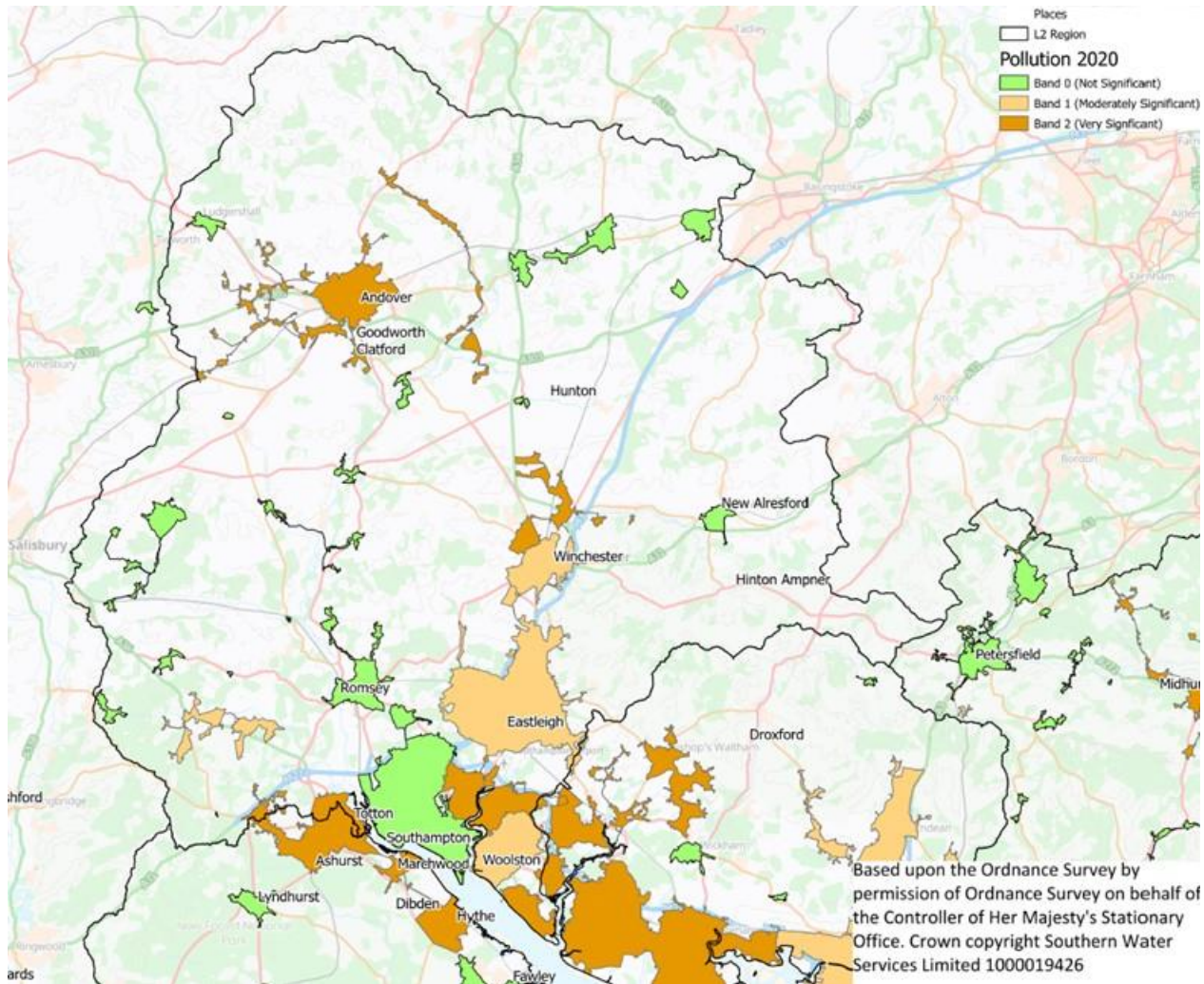
| BAND | No. of Sewer Catchments |
|--------------|-------------------------|
| 0 | 295 |
| 1 | 32 |
| 2 | 54 |
| Total | 381 |

| Ref | Sewer Catchment Name | Total Population Equivalent | Baseline (2020) sewer length (km) | Baseline (2020) Score |
|------|-------------------------------|-----------------------------|-----------------------------------|-----------------------|
| ALRE | NEW ALRESFORD | 5,354 | 49.0 | 0 |
| ASBC | BARN CLOSE ASHMANSWORTH | 20 | 0.2 | 0 |
| BAST | BARTON STACEY | 3,853 | 56.9 | 2 |
| BROK | CANTERTON LANE BROOK | 41 | 0.3 | 0 |
| CHEA | CHICKENHALL EASTLEIGH | 100,830 | 922.0 | 1 |
| CHIL | CHILBOLTON | 1,155 | 12.7 | 0 |
| DUNB | DUNBRIDGE | 106 | 1.0 | 0 |
| EAGR | EAST GRATTON | 367 | 1.3 | 0 |
| EGRI | EAST GRIMSTEAD | 2,968 | 61.7 | 0 |
| EVAN | EVANS CLOSE OVER WALLOP | 332 | 0.0 | 0 |
| FULL | FULLERTON | 62,813 | 360.4 | 2 |
| GRAE | GRAEMAR COTTAGES | 88 | 0.0 | 0 |
| HANN | HANNINGTON | 38 | 0.0 | 0 |
| HARE | HARESTOCK | 15,774 | 140.2 | 2 |
| KISO | KINGS SOMBORNE | 2,012 | 38.6 | 0 |
| LUDG | LUDGERSHALL | 4,143 | 30.7 | 0 |
| MILL | MILLBROOK | 133,121 | 1,089.6 | 0 |
| MORE | MORESTEAD ROAD WINCHESTER | 36,625 | 228.5 | 1 |
| NWAL | NORTH WALTHAM | 816 | 5.7 | 0 |
| OAID | IVY DOWN LANE OAKLEY | 5,051 | 37.1 | 0 |
| OVER | OVERTON | 4,477 | 39.4 | 0 |
| POOD | PORTSWOOD | 72,214 | 585.1 | 2 |
| REDL | REDLYNCH | 795 | 15.4 | 0 |
| ROMS | ROMSEY | 18,871 | 209.6 | 0 |
| SACL | SADDLERS CLOSE SUTTON SCOTNEY | 51 | 0.8 | 0 |
| STOC | STOCKBRIDGE | 741 | 13.2 | 0 |
| WELL | WEST WELLOW | 4,341 | 80.7 | 1 |
| WHIT | WHITCHURCH | 4,757 | 32.2 | 0 |
| WHTP | WHITEPARISH | 1,101 | 16.1 | 0 |
| WOOL | WOOLSTON | 63,613 | 534.7 | 1 |

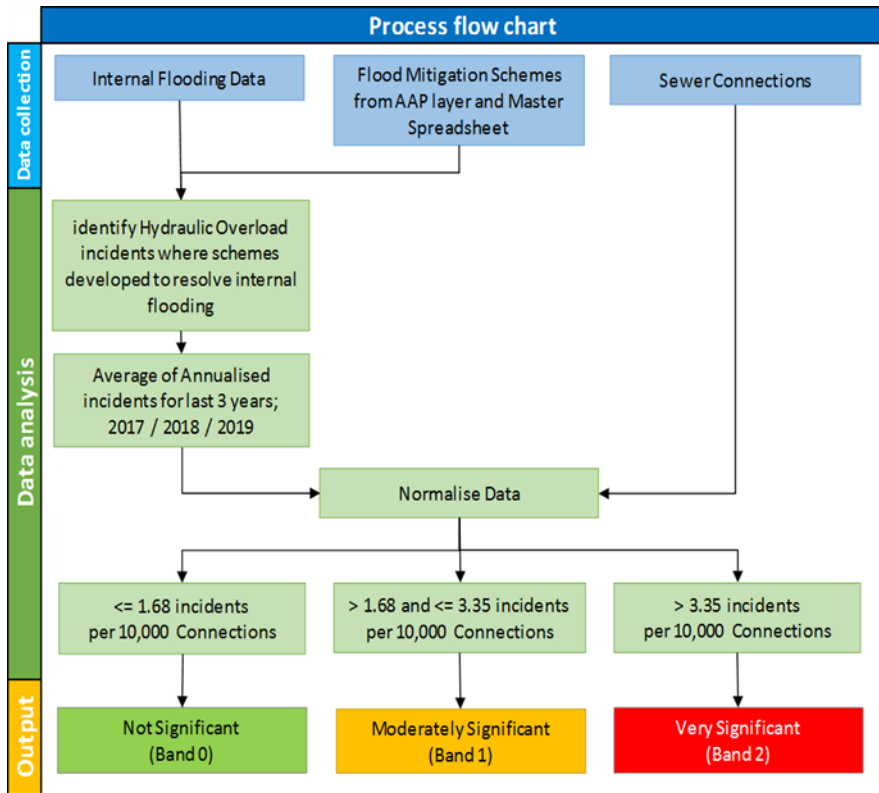
BRAVA Results

Pollution Risks 2020

Test and Itchen River Basin Catchment



BRAVA Results – Internal Flooding from sewers



Results for the River Stour River Basin Catchment

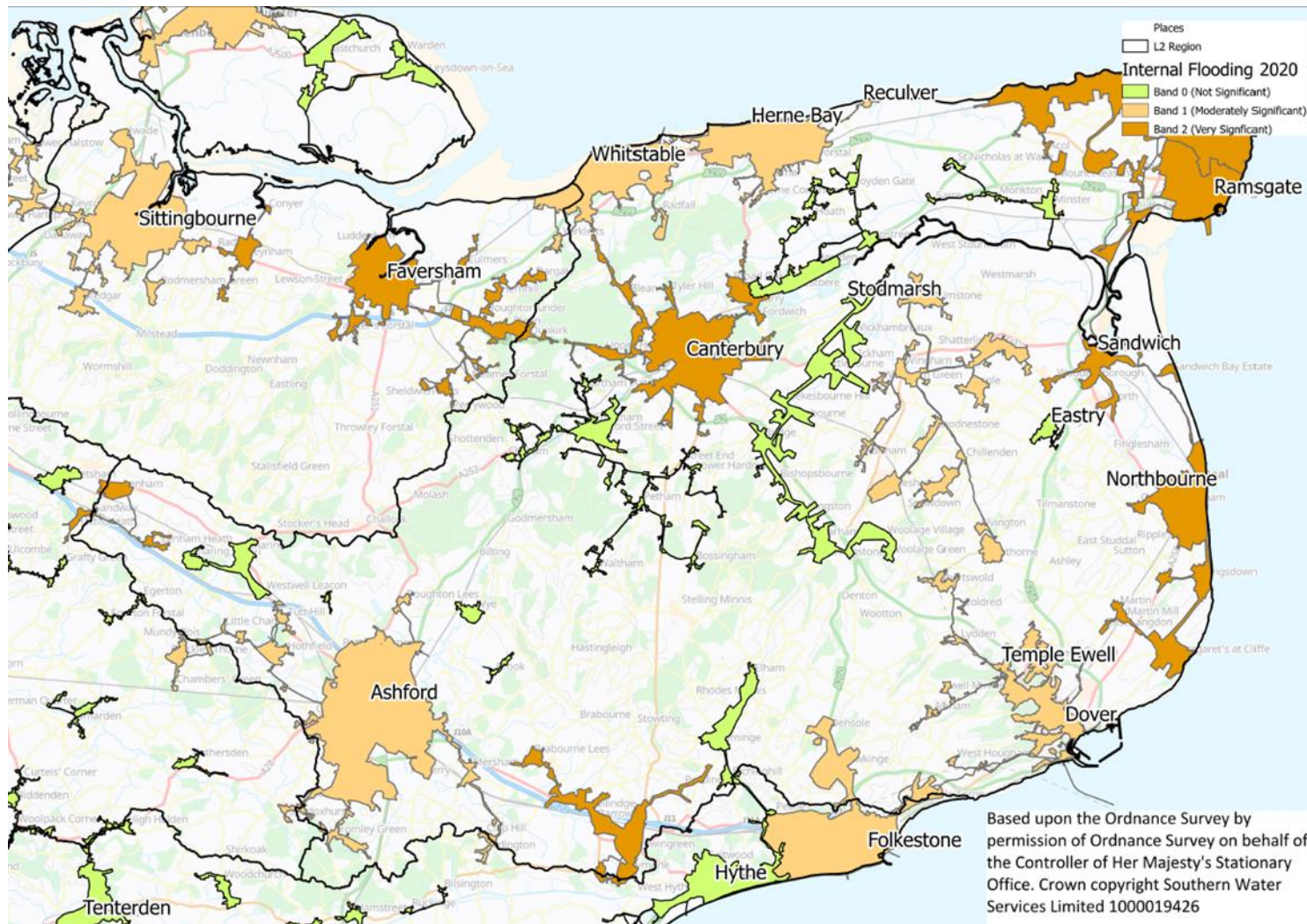
| Ref | Sewer Catchment Name | Total Population Equivalent | Baseline (2020) sewer length (km) | Baseline (2020) Score |
|------|------------------------------|-----------------------------|-----------------------------------|-----------------------|
| ASHF | ASHFORD | 106,104 | 935.1 | 1 |
| BOOK | NATS LANE BROOK | 267 | 5.8 | 0 |
| BROM | BROOMFIELD BANK | 114,216 | 867.6 | 1 |
| CANT | CANTERBURY | 64,462 | 635.3 | 2 |
| CHAM | CHILHAM | 856 | 11.7 | 0 |
| CHAN | CHARING | 2,632 | 27.5 | 0 |
| CHAR | CHARTHAM | 6,160 | 133.6 | 0 |
| DAMB | DAMBRIDGE WINGHAM | 16,906 | 185.6 | 1 |
| ETRY | EASTRY | 2,283 | 16.6 | 0 |
| GOOD | GOOD INTENT COTTAGES EGERTON | 17 | 0.3 | 0 |
| HERN | MAY STREET HERNE BAY | 38,503 | 432.6 | 1 |
| LENH | LENHAM | 2,919 | 43.2 | 2 |
| MINS | MINSTER IOT | 4,247 | 43.2 | 0 |
| NEWN | NEWNHAM VALLEY PRESTON | 6,659 | 146.2 | 0 |
| SELL | SELLINDGE | 4,958 | 92.8 | 2 |
| SWAL | SWALECLIFFE | 32,856 | 387.2 | 1 |
| WBEB | WESTBERE | 5,979 | 87.7 | 0 |
| WEAT | WEATHERLEES HILL | 93,695 | 642.5 | 2 |
| WEHB | MARGATE AND BROADSTAIRS | 88,708 | 606.6 | 2 |
| WWLL | WESTWELL | 194 | 2.2 | 0 |
| WYEW | WYE | 1,909 | 22.1 | 0 |

| Band | No. of Sewer Catchments |
|------|-------------------------|
| 0 | 327 |
| 1 | 36 |
| 2 | 18 |

BRAVA Results

Internal Flooding Risk 2020

River Stour Catchment

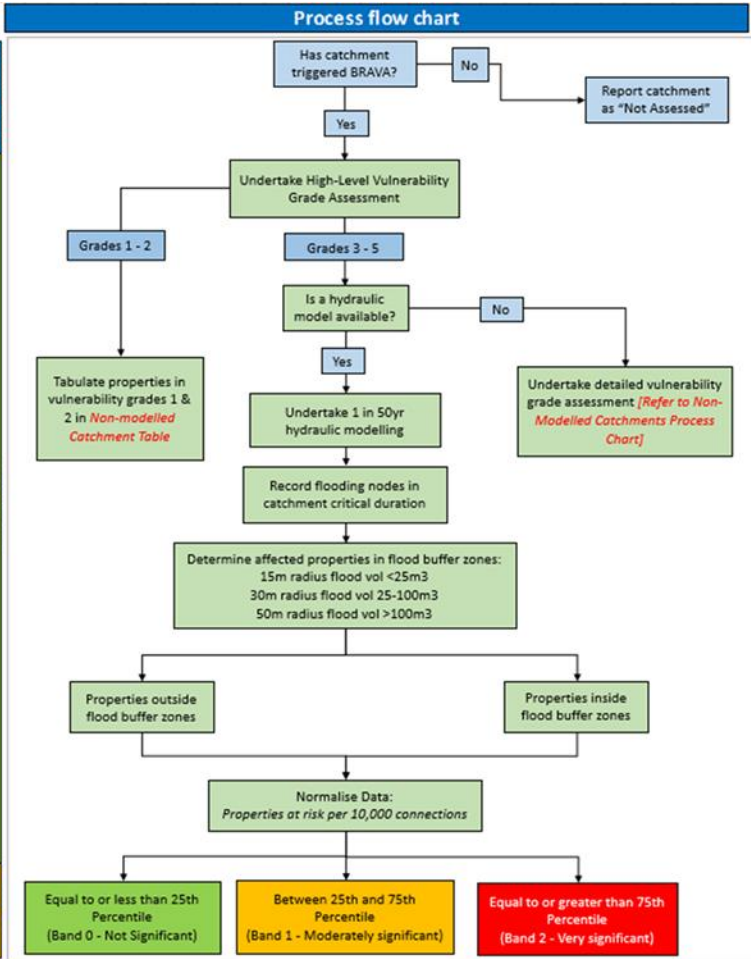


BRAVA Results – 1 in 50 year flood risk

Data collected

Data Analysis

Output



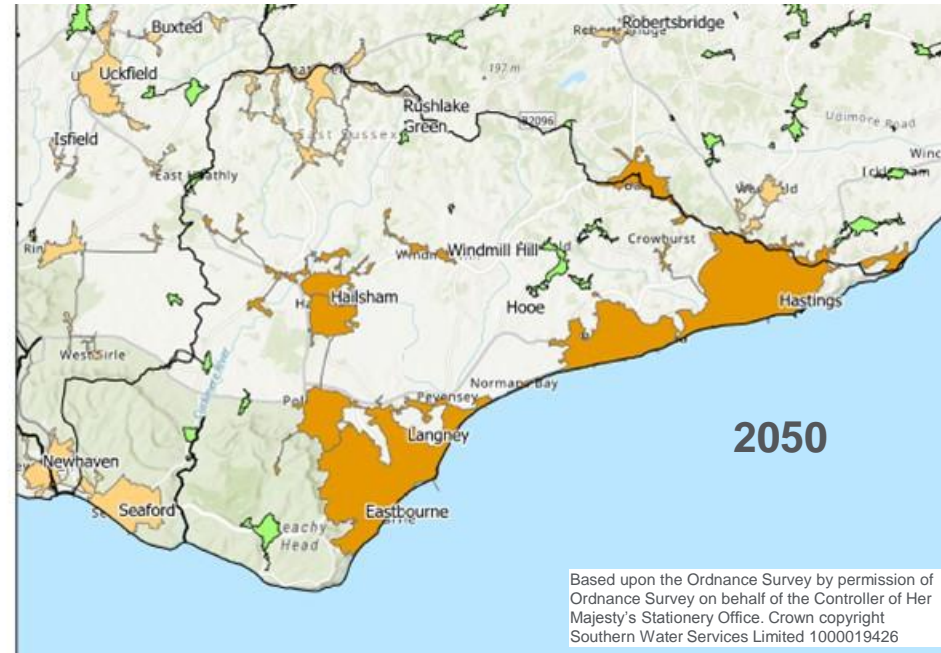
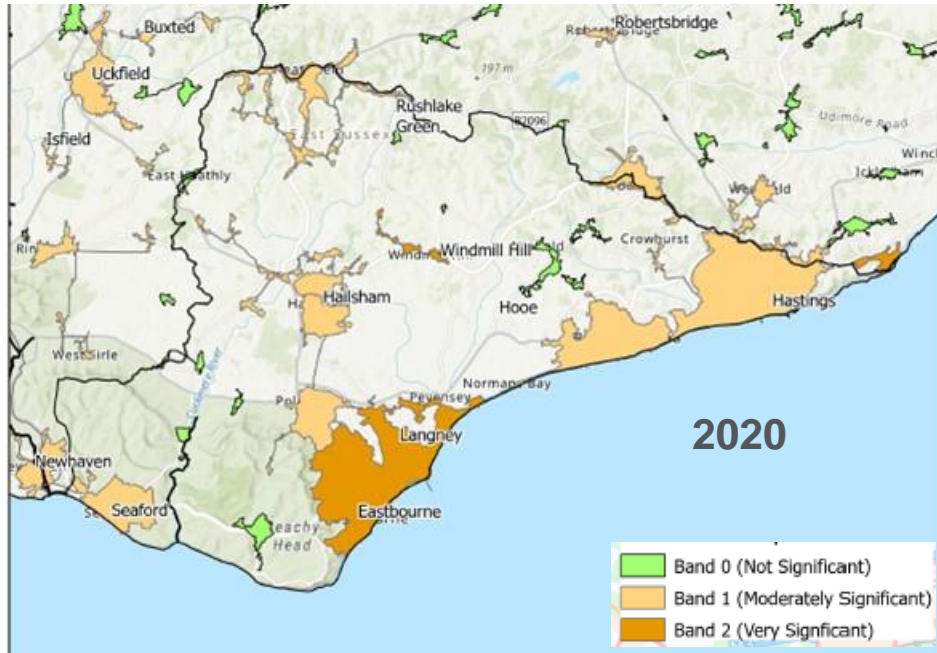
| Ref | Sewer Catchment Name | Total Population Equivalent | Baseline (2020) sewer length (km) | Current (2020) Score Overall | 2050 Score (Future) |
|-------|----------------------------|-----------------------------|-----------------------------------|------------------------------|---------------------|
| ALFR | ALFRISTON | 813 | 10.2 | 0 | 0 |
| BERW | BERWICK | 201 | 10.6 | 0 | 0 |
| BOSG | BODLE STREET GREEN | 95 | 0.8 | 0 | 0 |
| CATS | CATSFIELD | 532 | 9.2 | 0 | 0 |
| EADE | EAST DEAN | 1,563 | 31.9 | 0 | 0 |
| EAOH | EAST HOATHLY | 809 | 7.4 | 0 | 0 |
| EALP | EASTBOURNE | 116,510 | 914.9 | 2 | 2 |
| HABX | BEXHILL AND HASTINGS | 141,227 | 1,225.2 | 1 | 2 |
| HAIN | HAILSHAM NORTH | 16,415 | 100.2 | 1 | 2 |
| H AIS | HAILSHAM SOUTH | 28,533 | 265.0 | 1 | 2 |
| HERS | LIME PARK HERSTMONCEUX | 58 | 0.5 | 0 | 0 |
| HOOE | HOOE | 1,414 | 23.1 | 0 | 0 |
| NINF | LUNSFORDS CROSS | 228 | 5.0 | 0 | 0 |
| RUGR | RUSHLAKE GREEN | 176 | 3.7 | 0 | 0 |
| VINE | VINES CROSS | 13,013 | 163.7 | 1 | 1 |
| WART | WARTLING | 48 | 0.3 | 0 | 0 |
| WILM | WILMINGTON | 199 | 4.1 | 0 | 0 |
| WIND | WINDMILL HILL HERSTMONCEUX | 2,031 | 22.8 | 2 | 2 |

Results for the Cuckmere & Pevensey Levels River Basin Catchment

| Risk Band | Baseline (2020) | Future (2050) |
|-----------|------------------------------|------------------------------|
| | No. of Sewer Catchments (L3) | No. of Sewer Catchments (L3) |
| 0 | 251 | 240 |
| 1 | 89 | 79 |
| 2 | 41 | 62 |
| Total | 381 | 381 |



BRAVA Results - 1 in 50 year Storm Risk



Cuckmere and Pevensey Levels Catchment

BRAVA Results – Level 3 – Sewer Catchment

Water UK template

Test & Itchen River Basin Catchment

| | | PO1 | | PO2 | | PO3 | | PO4 | | | PO5 | | | PO6 | | | | |
|------|-------------------------------|---|-----------------------------------|-------------------------------------|---------|--|---------|---|---------|------------------------------|---|---------|-----------------------|--|---------|-----------------------|---------------------|---------|
| | | Planning Objective - Internal Sewer Flooding Risk | | Planning Objective - Pollution Risk | | Planning Objective - Sewer Collapse Risk | | Planning Objective - Risk of Sewer Flooding in a 1 in 50-year storm | | | Planning Objective - Storm Overflow performance | | | Planning Objective - Risk of WwTW Compliance Failure | | | | |
| Ref | Sewer Catchment Name | Total Population Equivalent | Baseline (2020) sewer length (km) | Baseline (2020) Score | Comment | Baseline (2020) Score | Comment | Baseline (2020) Score | Comment | Current (2020) Score Overall | 2050 Score (Future) | Comment | Baseline (2020) Score | 2050 Score (Future) | Comment | Baseline (2020) Score | 2050 Score (Future) | Comment |
| ALRE | NEW ALRESFORD | 5,354 | 49.0 | 0 | | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | | 0 | 0 | |
| ASBC | BARN CLOSE ASHMANSWORTH | 20 | 0.2 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| BAST | BARTON STACEY | 3,853 | 56.9 | 2 | | 2 | 0 | 0 | 0 | 2 | 2 | | 0 | 0 | | 0 | 1 | |
| BROK | CANTERTON LANE BROOK | 41 | 0.3 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 2 | 2 | |
| CHEA | CHICKENHALL EASTLEIGH | 100,830 | 922.0 | 1 | | 1 | 0 | 0 | 0 | 1 | 1 | | 1 | 1 | | 0 | 0 | |
| CHIL | CHILBOLTON | 1,155 | 12.7 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| DUNB | DUNBRIDGE | 106 | 1.0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| EAGR | EAST GRATTON | 367 | 1.3 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| EGRI | EAST GRIMSTEAD | 2,968 | 61.7 | 0 | | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | | 0 | 0 | |
| EVAN | EVANS CLOSE OVER WALLOP | 332 | 0.0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 2 | |
| FULL | FULLERTON | 62,813 | 360.4 | 0 | | 2 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 1 | |
| GRAE | GRAEMAR COTTAGES | 88 | 0.0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| HANN | HANNINGTON | 38 | 0.0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| HARE | HARESTOCK | 15,774 | 140.2 | 0 | | 2 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | | 0 | 0 | |
| KISO | KINGS SOMBORNE | 2,012 | 38.6 | 0 | | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | | 0 | 0 | |
| LUDG | LUDGERSHALL | 4,143 | 30.7 | 0 | | 0 | 0 | 0 | 0 | 2 | 2 | | 0 | 0 | | 0 | 0 | |
| MILL | MILLBROOK | 133,121 | 1,089.6 | 1 | | 1 | 0 | 0 | 0 | 1 | 1 | | 2 | 2 | | 0 | 0 | |
| MORE | MORESTEAD ROAD WINCHESTER | 36,625 | 228.5 | 1 | | 1 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | | 0 | 0 | |
| NWAL | NORTH WALTHAM | 816 | 5.7 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| OAID | IVY DOWN LANE OAKLEY | 5,051 | 37.1 | 0 | | 0 | 0 | 0 | 0 | 2 | 2 | | 0 | 0 | | 0 | 0 | |
| OVER | OVERTON | 4,477 | 39.4 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| POOD | PORTSWOOD | 72,214 | 585.1 | 1 | | 2 | 0 | 0 | 0 | 1 | 2 | N/A | 2 | 2 | | 1 | 1 | |
| REDL | REDLYNCH | 795 | 15.4 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 2 | 2 | | 0 | 1 | |
| ROMS | ROMSEY | 18,871 | 209.6 | 1 | | 0 | 0 | 0 | 0 | 0 | 1 | | 0 | 0 | | 0 | 2 | |
| SACL | SADDLERS CLOSE SUTTON SCOTNEY | 51 | 0.8 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 2 | 2 | |
| STOC | STOCKBRIDGE | 741 | 13.2 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| WELL | WEST WELLOW | 4,341 | 80.7 | 0 | | 1 | 0 | 0 | 0 | 1 | 1 | | 2 | 2 | | 0 | 0 | |
| WHIT | WHITCHURCH | 4,757 | 32.2 | 0 | | 0 | 0 | 0 | 0 | 2 | 2 | | 0 | 0 | | 0 | 2 | |
| WHTP | WHITEPARISH | 1,101 | 16.1 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 2 | |
| WOOL | WOOLSTON | 63,613 | 534.7 | 1 | | 1 | 0 | 1 | 0 | 2 | 2 | | 2 | 2 | | 0 | 0 | |

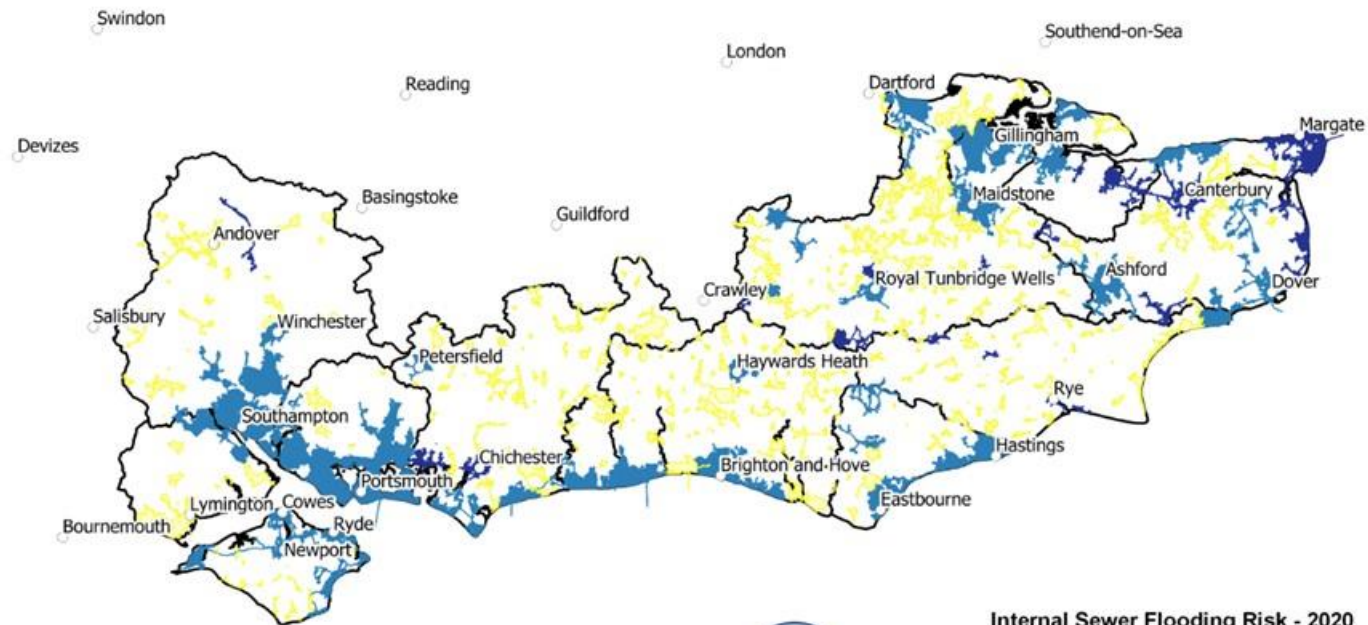
BRAVA Results

Level 3 BRAVA Outputs

Internal Sewer Flooding Risk 2020



Risk of Internal Flooding from sewers 2020



15/12/2020
Revision V0.2

Internal Sewer Flooding Risk - 2020



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Where can I find the BRAVA information?

BRAVA background and methodologies:

<https://www.southernwater.co.uk/dwmp/baseline-risk-and-vulnerability-assessment>

BRAVA results for each river basin catchment are found in the bottom right hand corner of their landing pages, for example the Stour:

<https://www.southernwater.co.uk/dwmp/stour-catchment/brava-for-the-stour-catchment>

Additional Planning Objectives

Additional Planning Objectives

| River Basin Catchment | | | | | | | | | | |
|---|---|---|--|---|---|---|--|---|---|---|
| Cuckmere and Pevensey Levels | East Hampshire | Adur & Ouse | Stour | Medway | Rother | New Forest | Arun & Western Streams | Isle of Wight | Test & Itchen | North Kent |
| Reduce pollution risk in the MCZ | Reduce Pollution, especially Nitrate to secure nutrient neutrality Solent / shellfish beds | Achieve Good Ecological Status (GES/GEP) | Improve surface water management - includes pollution arising from land drainage | Improve surface water management - including pollution arising from land drainage | Reduce impacts of chemicals and plastics | Achieve Good Ecological Status (GES/GEP) | Achieve Good Ecological Status (GES/GEP) | Achieve Good Ecological Status (GES/GEP) | Improve surface water management - including attenuation, water capture and NFM | Improve the quality of bathing and shellfish waters |
| Reduce the impacts of coastal erosion | Improve surface water management - to reduce pollution, especially in extreme events due to capacity issues | Improve surface water management especially in extreme events | Reduce groundwater pollution | Reduce groundwater pollution | Reduce impacts from coastal erosion (move / address issues with assets) | Reduce flooding from "all sources" | Better surface water management - especially in extreme events | Reduce impacts from coastal erosion (move / address issues with assets) | Deliver holistic options that incorporate nutrient neutrality | Reduce groundwater pollution (for example by 1st time sewerage schemes) |
| Secure nutrient neutrality | | Reduce impacts from coastal erosion (identifying the need to move WTWs) | Reduce failure of pumping stations | Reduce CSO discharges | Improve effluent quality in dry weather | Increase natural capital | Reduce CSO impacts on receiving waters | Find innovative solutions that address multiple issues | Reduce impact of droughts on effluent discharge & receiving water quality | Increase surface water separation to reduce CSO discharges |
| Alignment with Defra 25yr plan objectives | | Reduce CSO discharges | Increase water recycling and reuse | Increase water recycling and reuse | Reduce groundwater pollution | Secure nutrient neutrality in the Solent | Reduce pollution, especially Nitrate | Achieve carbon neutrality | Biodiversity net gain | Secure nutrient neutrality in the Estuaries |
| | | Improve bathing waters | Reduce misconconnections | Reduce flooding due to tide locking | | Reduce impact of tourism arising from campsites | Improve bathing and shellfish waters | Biodiversity Net gain | Reduce flooding due to tide locking | Reduce the cumulative impacts of discharges to sensitive waters |
| | | | Secure nutrient neutrality | Secure nutrient neutrality | | | | Ensure the quality of bathing waters remains high | Reduce groundwater pollution | Reduce impacts of chemicals and plastics |
| | | | | | | | | Secure nutrient neutrality in the Solent | Achieve carbon neutrality | |
| | | | | | | | | | Reduce CSO discharges | |

| | | | | |
|--|--|--|--|--|
| (a) Include in 1 st Round: Data is potentially available, method of risk assessment expected to be relatively simple | | | | |
| (b) Included in existing planning objectives (or modified easily), the two bespoke planning objectives SW identified, or the resilience assessment | | | | |
| (c) Defer to Round 2: Data is not readily available, method is complex, or considered important but not urgent | | | | |
| (d) Further Consideration: Objective is a business commitment, generic aim, difficult to quantify/assess, or needs further consideration if it can be included | | | | |



Additional Planning Objectives

Objectives to be explored further for the first round of DWMPs:

1. Secure nutrient neutrality
2. Achieve Good Ecological Status / Potential
3. Reduce groundwater pollution
4. Improve bathing and shellfish waters
5. Improve surface water management
6. Flooding from other storms (e.g. 1 in 20 year)
7. WTW Compliance (dry weather flow)



Additional Planning Objectives – Next Steps

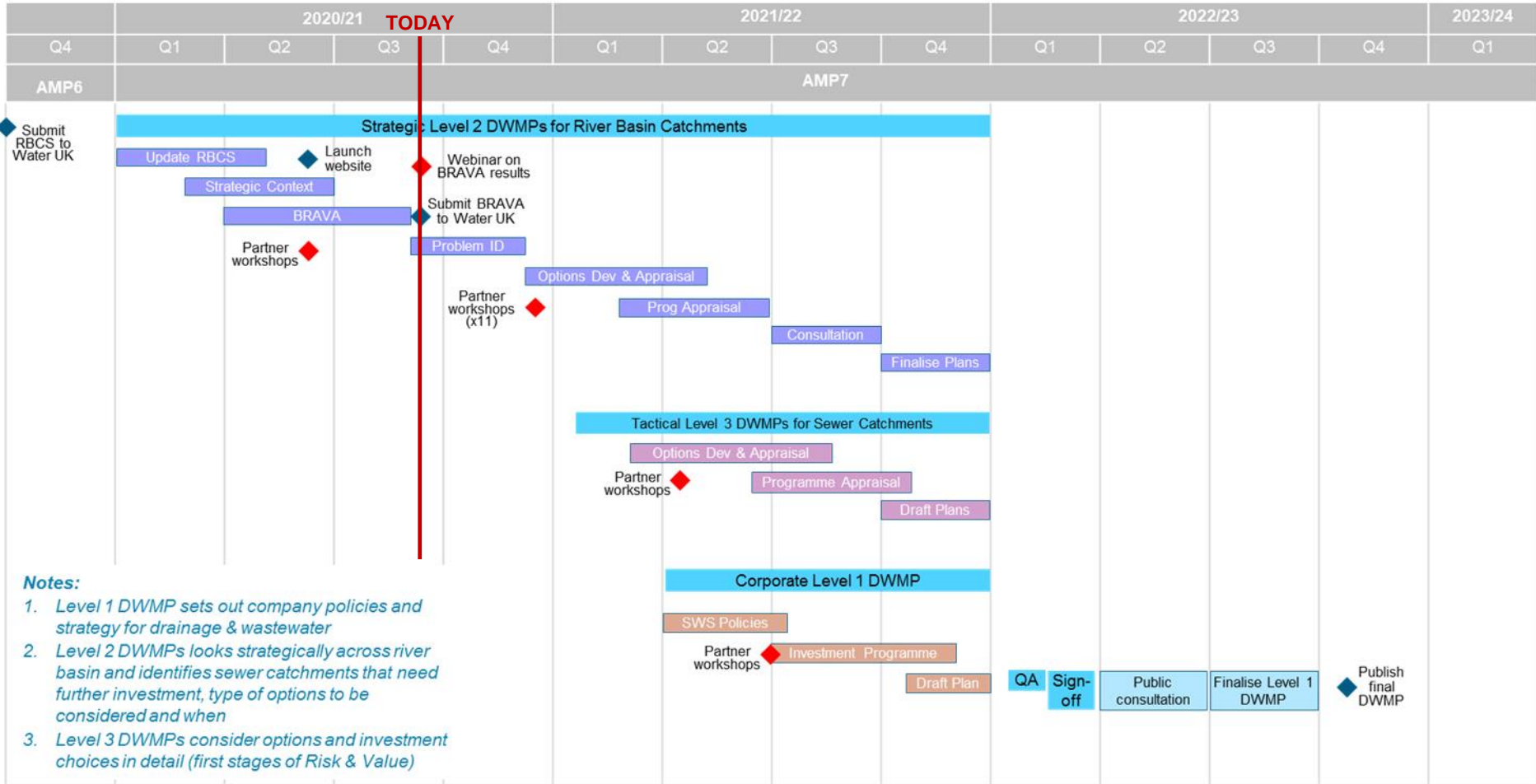
1. Establish data requirements and availability
2. Develop methodology for risk assessment
3. Collate data
4. Test with sample data
5. Discuss test results with small group of partners
6. Complete BRAVA assessment
7. Add methodology and results to others on our website

Where can I find the information on Additional Planning Objectives?

<https://www.southernwater.co.uk/dwmp/planning-objectives>

Next Steps

DWMP High-Level Delivery Programme

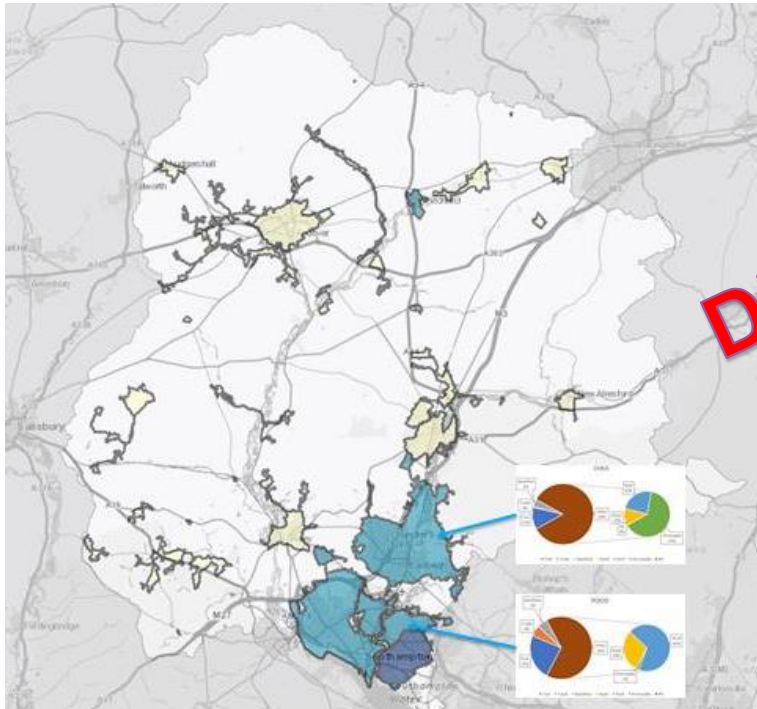


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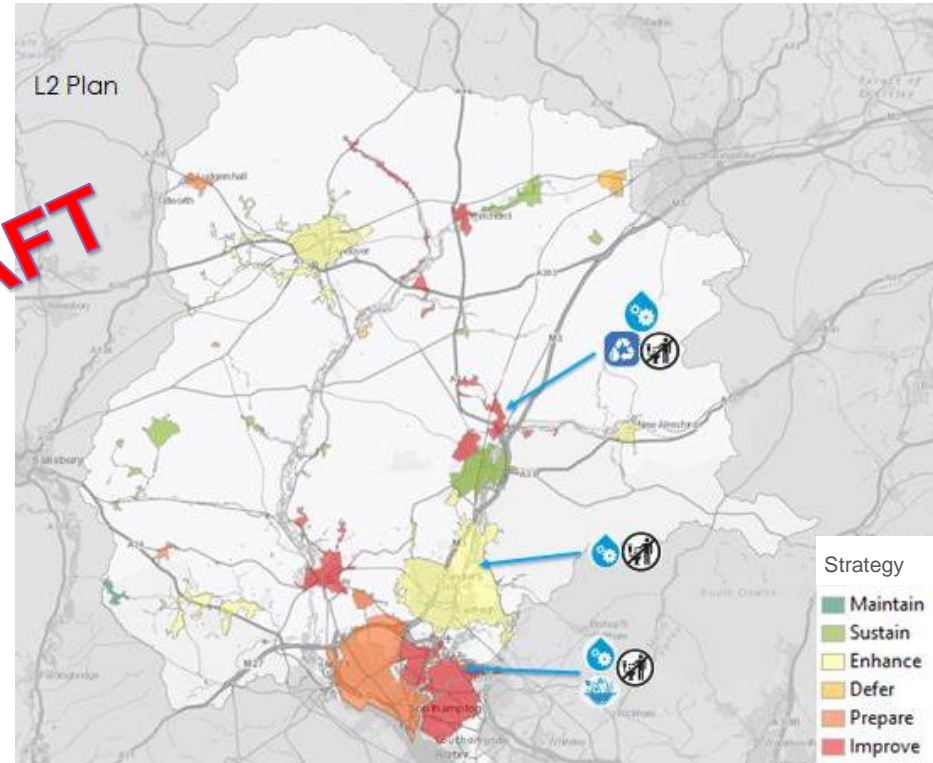
1. Level 1 DWMP sets out company policies and strategy for drainage & wastewater
2. Level 2 DWMPs looks strategically across river basin and identifies sewer catchments that need further investment, type of options to be considered and when
3. Level 3 DWMPs consider options and investment choices in detail (first stages of Risk & Value)

Update on Next Steps

Problem Characterisation



Options Development and Appraisal



Questions?



Drainage and Wastewater Management Plans (DWMPs)

Webinar for partner organisations on the BRAVA results and the Additional Planning Objectives

www.southernwater.co.uk/dwmp

Contact us: DWMP@southernwater.co.uk



from
**Southern
Water** 

The logo graphic for Southern Water, featuring three stylized blue waves of varying lengths, with the longest wave on the right.