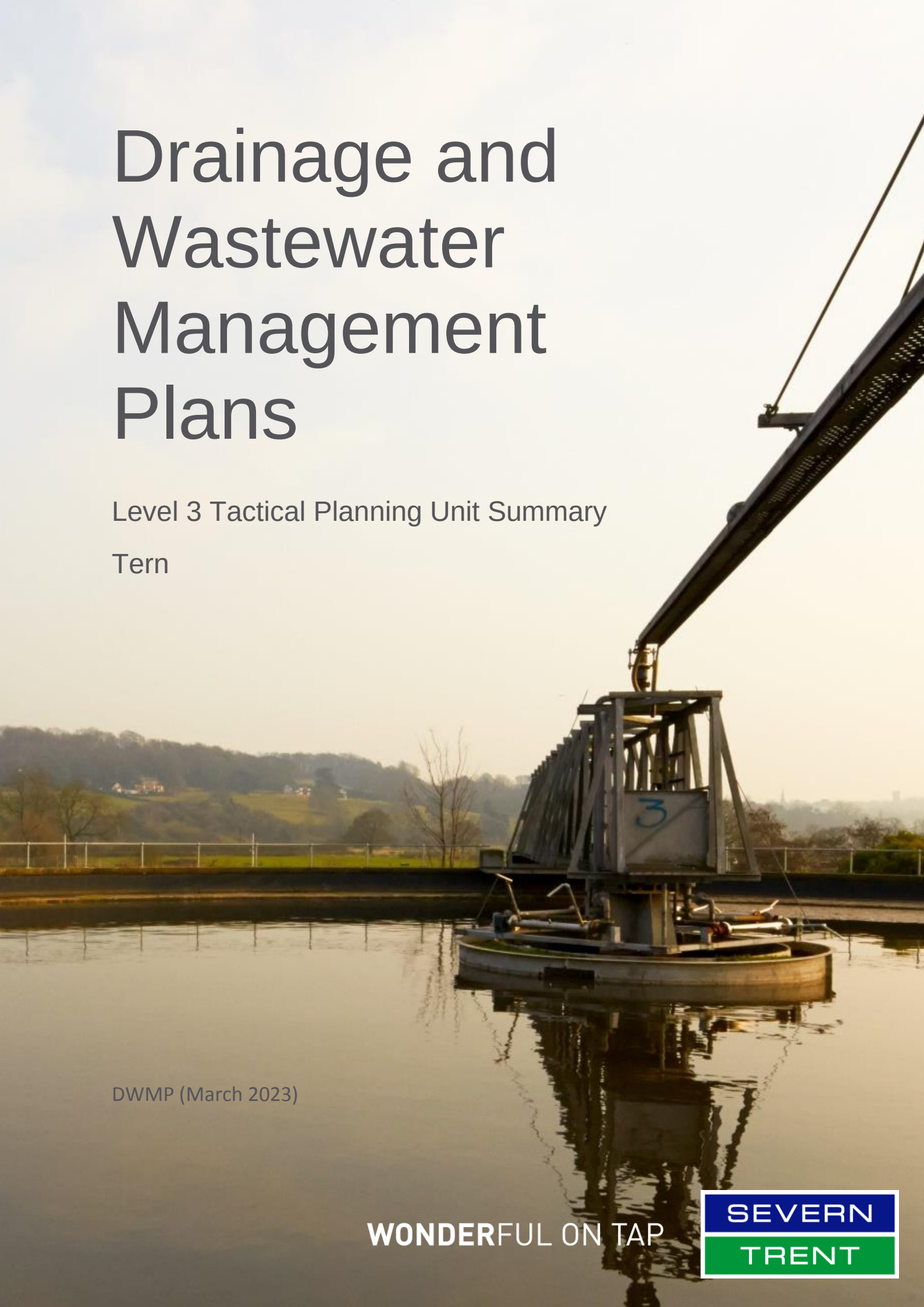
Drainage and Wastewater Management Plans

Level 3 Tactical Planning Unit Summary

Tern



DWMP (March 2023)

WONDERFUL ON TAP

SEVERN TRENT

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ADBASTON (LERRIDGE LANE) (18380)

March 2023

WONDERFUL ON TAP

Overview

Adbaston (Lerridge Lane) WwTW serves a residential population of 12. Treated effluent is discharged to a tributary of the Lonco Brook.

Key Statistics:

- Residential Population Served: 12
- This is our 870th largest catchment across the whole of Severn Trent, and the 77th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

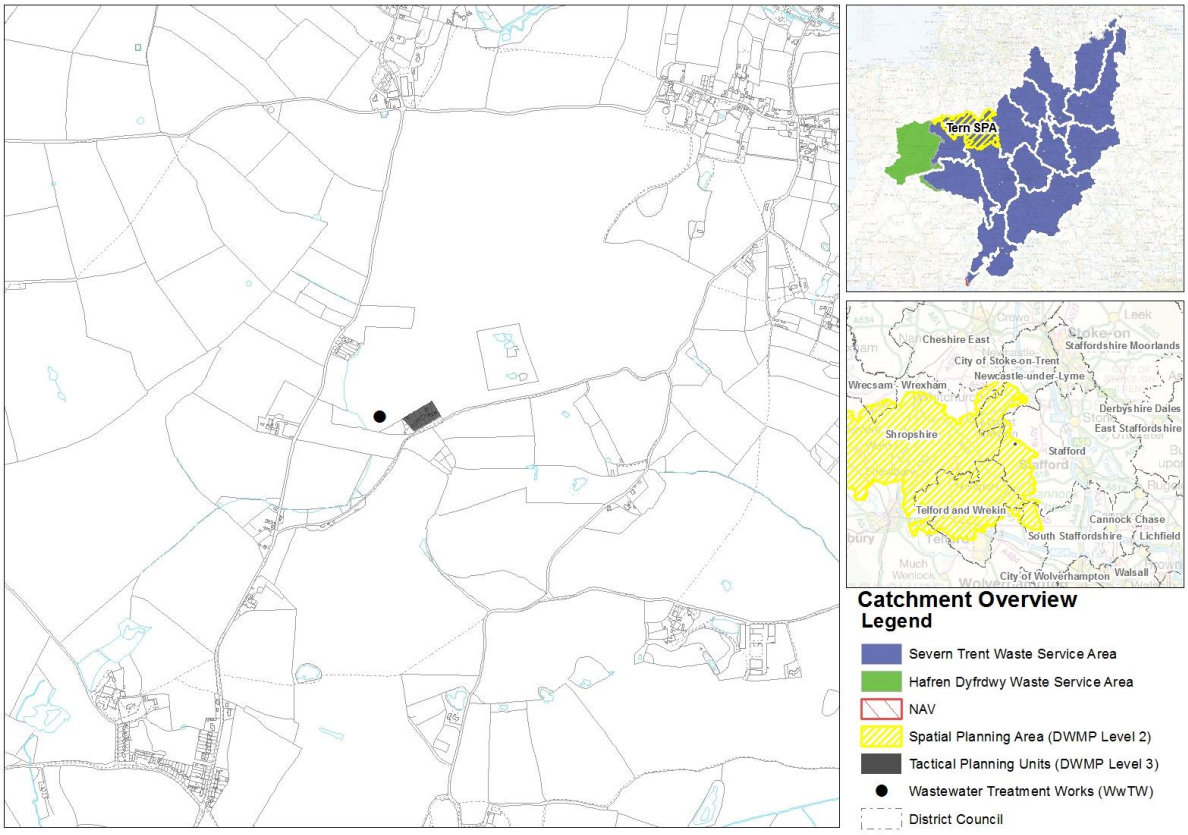
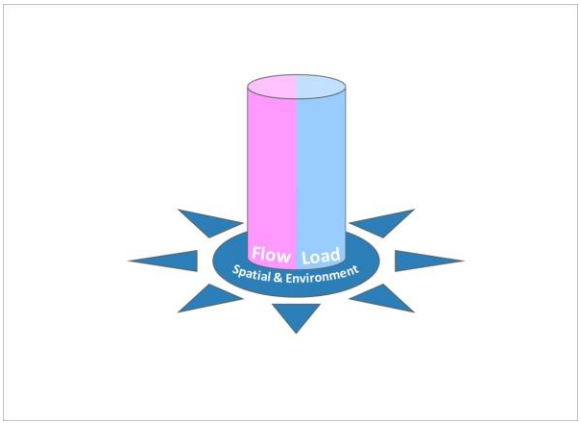


Figure 1 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 2 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 1 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ADBASTON (MAIN ROAD) (18298)

March 2023

WONDERFUL ON TAP

Overview

Adbaston (Main Road) WwTW serves a residential population of 13. Treated effluent is discharged to a tributary of the Lonco Brook.

Key Statistics:

- Residential Population Served: 13
- This is our 857th largest catchment across the whole of Severn Trent, and the 74th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

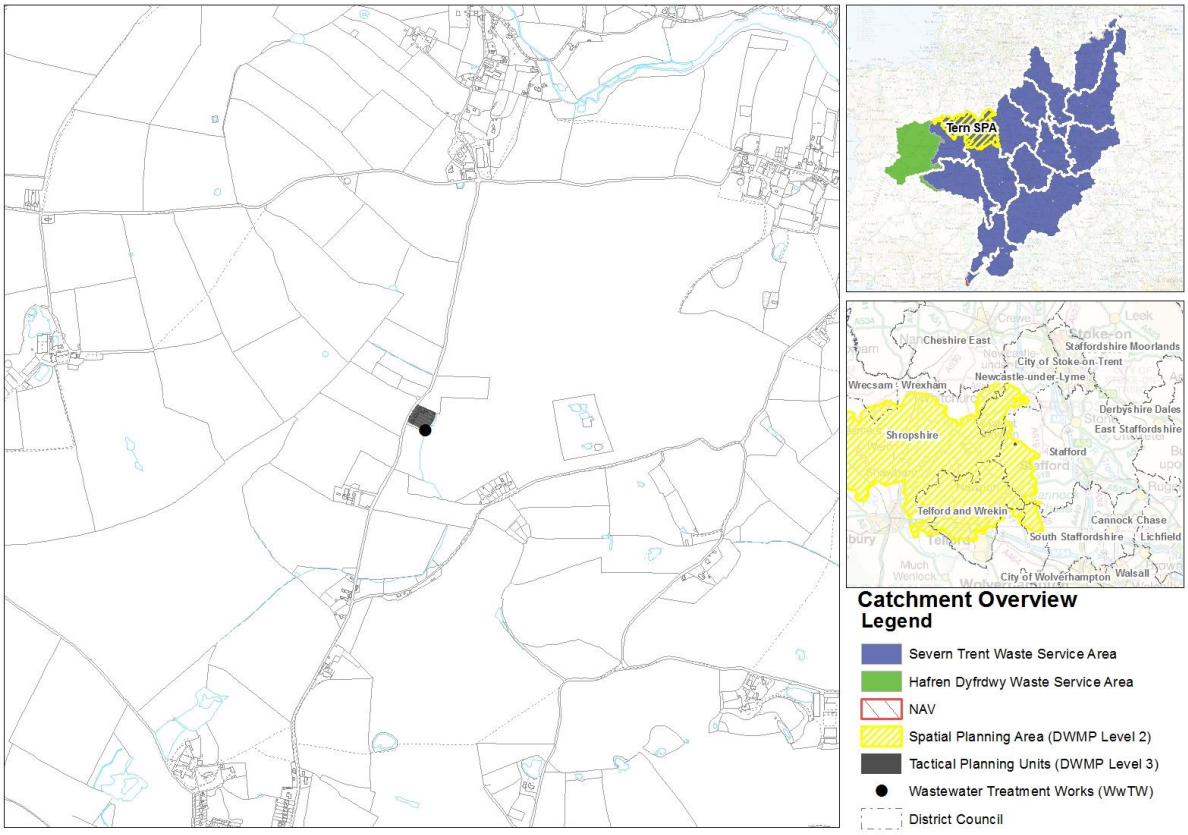
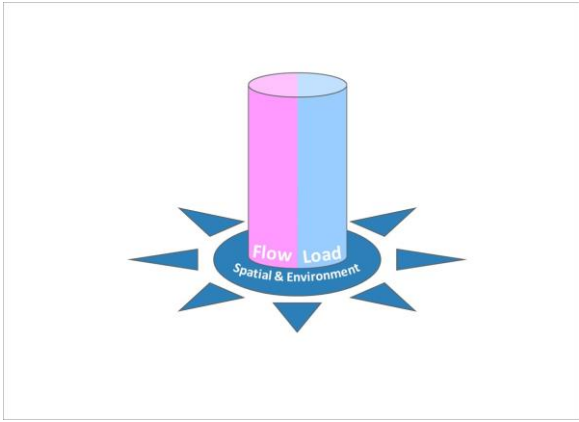


Figure 3 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 4 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 2 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ADBASTON (11005)

March 2023

WONDERFUL ON TAP

Overview

Adbaston WwTW serves a residential population of 148. Treated effluent is discharged to a tributary of the Lonco Brook.

Key Statistics:

- Residential Population Served: 148
- This is our 583rd largest catchment across the whole of Severn Trent, and the 30th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

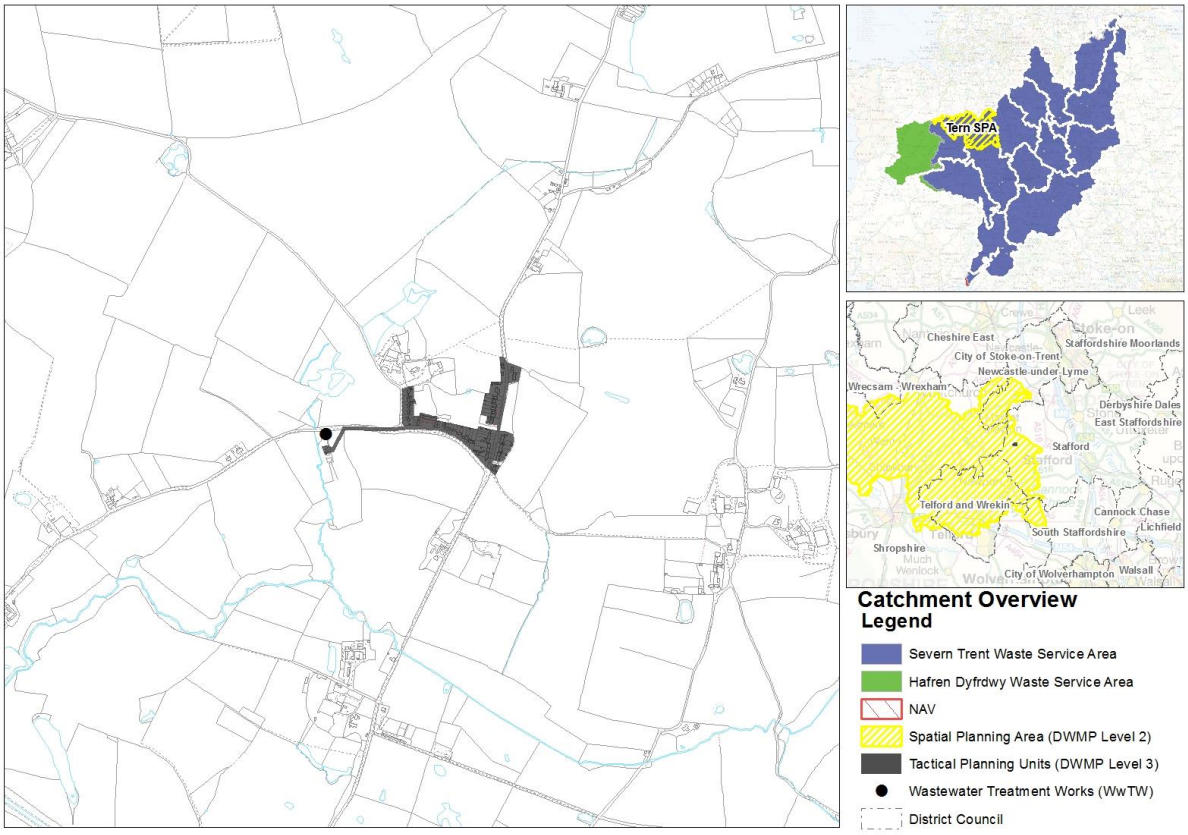
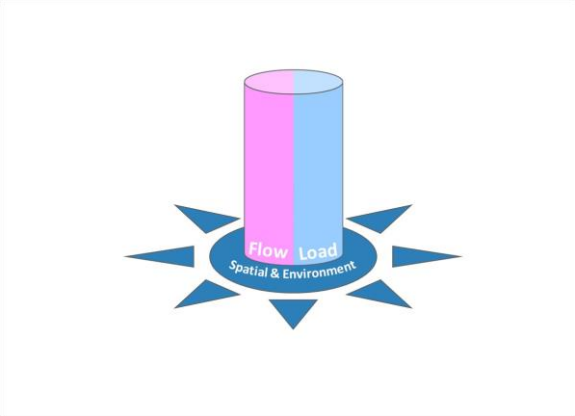


Figure 5 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 6 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 3 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
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This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ASTON NEAR WEM (10574)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Aston Near Wem WwTW serves a residential population of 26. Treated effluent is discharged to the River Roden.

Key Statistics:

- Residential Population Served: 26
- This is our 784th largest catchment across the whole of Severn Trent, and the 53rd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

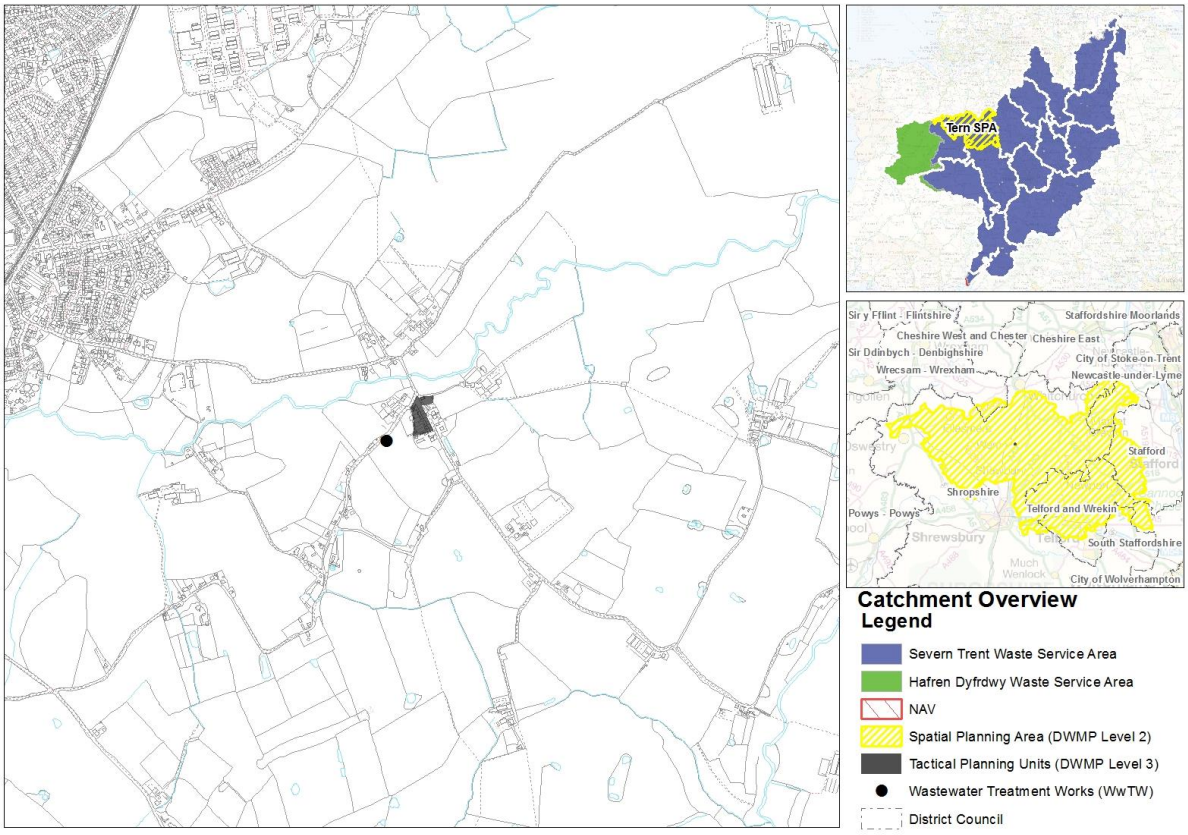
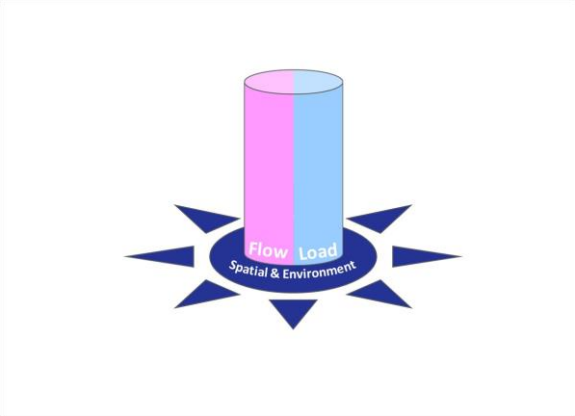


Figure 7 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 8 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 4 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: BASCHURCH (10580)

March 2023

WONDERFUL ON TAP

Overview

Baschurch WwTW is located to the south of Baschurch and serves a residential population of 4,728. In addition to treating flows from Baschurch, it also drains outlying villages of Adcote to south (pumped) and Yeaton to the south east (pumped). The Baschurch catchment receives pumped flows from 16 outlying villages, all located mostly to the north. Treated effluent is discharged to the River Perry.

Key Statistics:

- Residential Population Served: 4,728
- This is our 174th largest catchment across the whole of Severn Trent, and the 5th largest in the Tern Stategic Planning Area making up 2% of its population.
- It has 144.6km of public foul water sewers and 2.8km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

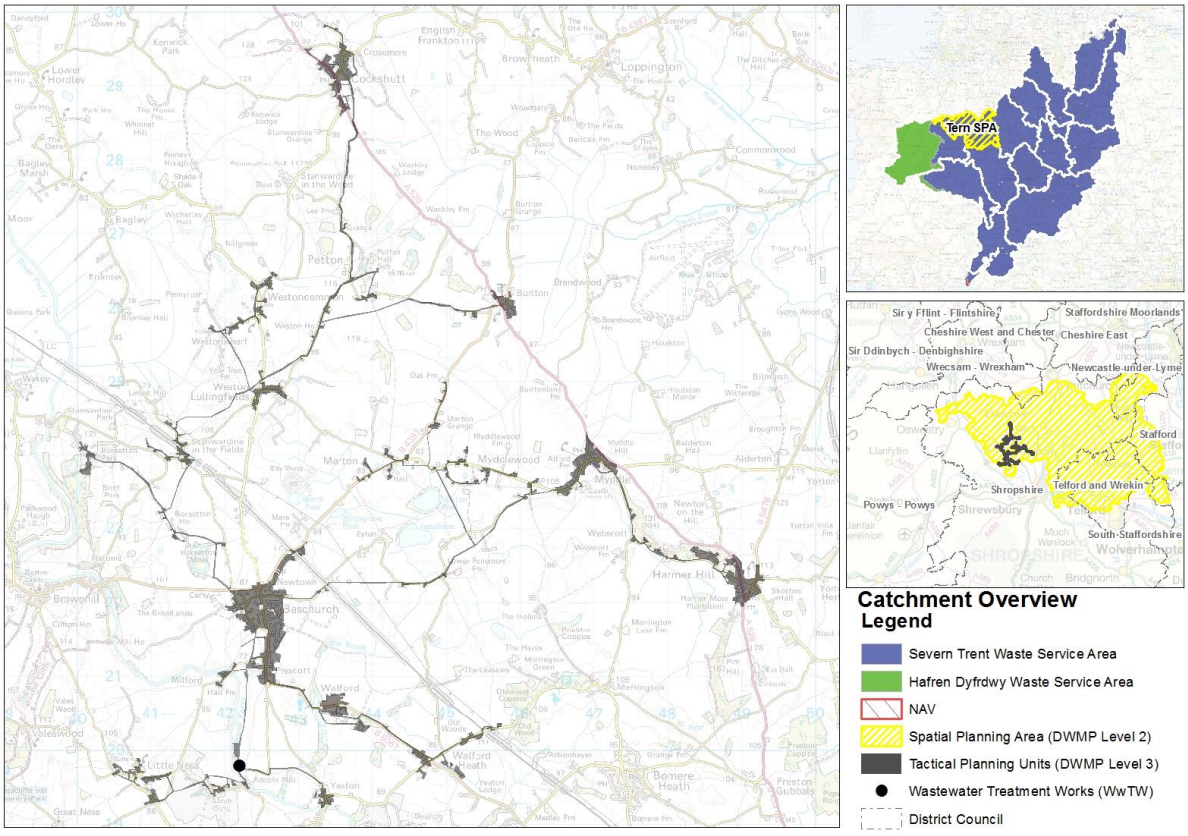
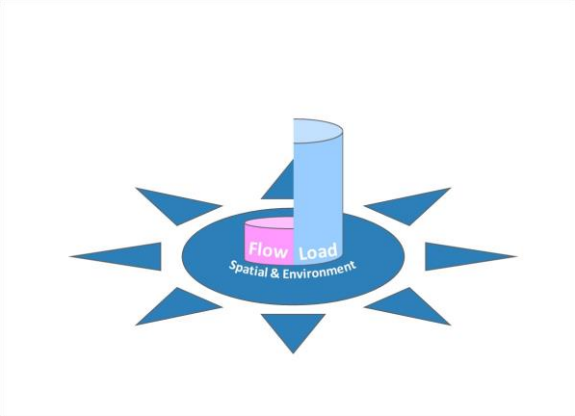


Figure 9 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 10 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 5 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 6 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 7 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 8 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	2	2	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 9 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
BETTON BYEWAYS (10930)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Betton Byeways WwTW serves a residential population of 6. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 6
- This is our 916th largest catchment across the whole of Severn Trent, and the 90th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

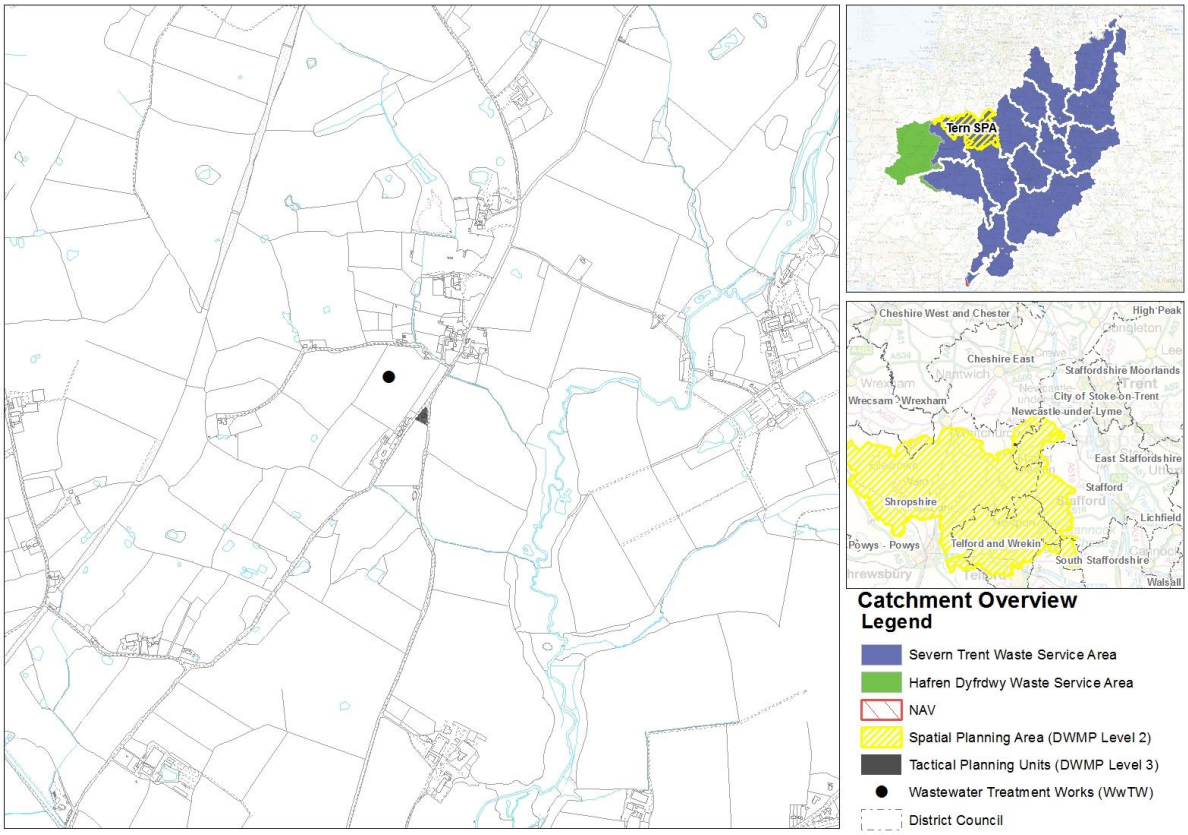
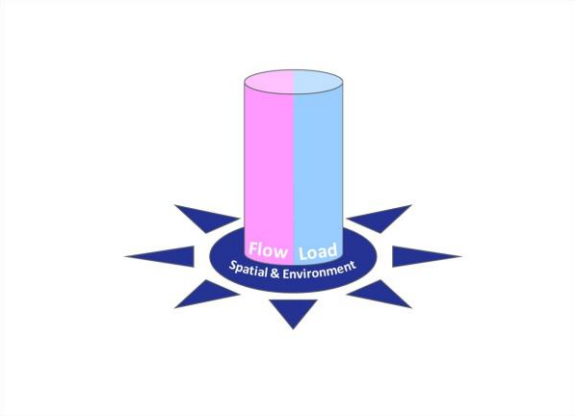


Figure 11 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 12 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 10 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: BLYMHILL (11011)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Blymhill WwTW is located to the north of Blymhill and serves a residential population of 665. Treated effluent is discharged to the Dawford Brook.

Key Statistics:

- Residential Population Served: 665
- This is our 382nd largest catchment across the whole of Severn Trent, and the 19th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 41.4km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

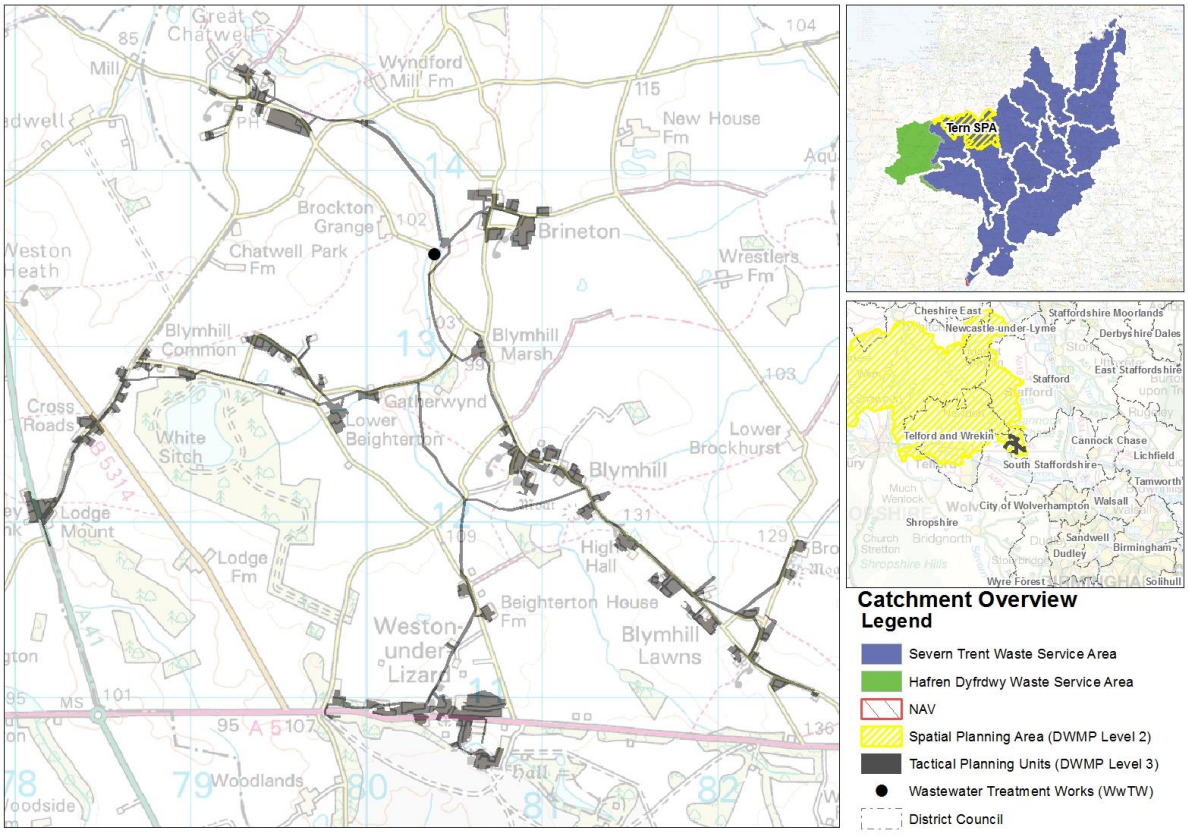
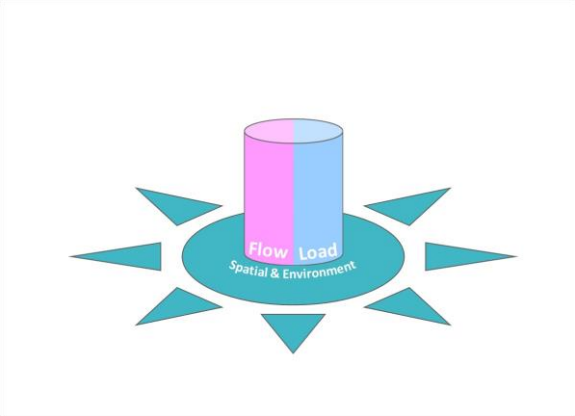


Figure 13 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



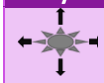
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 14 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 11 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	Yes
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 3 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 12 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 13 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 14 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	2	2	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	1	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 15 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
CHESWARDINE (10883)

March 2023

WONDERFUL ON TAP

SEVERN
TRENT

Overview

Cheswardine WwTW serves a residential population of 629. Treated effluent is discharged to a tributary of the Ellerton Brook.

Key Statistics:

- Residential Population Served: 629
- This is our 388th largest catchment across the whole of Severn Trent, and the 20th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 9.6km of public foul water sewers and 3.4km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

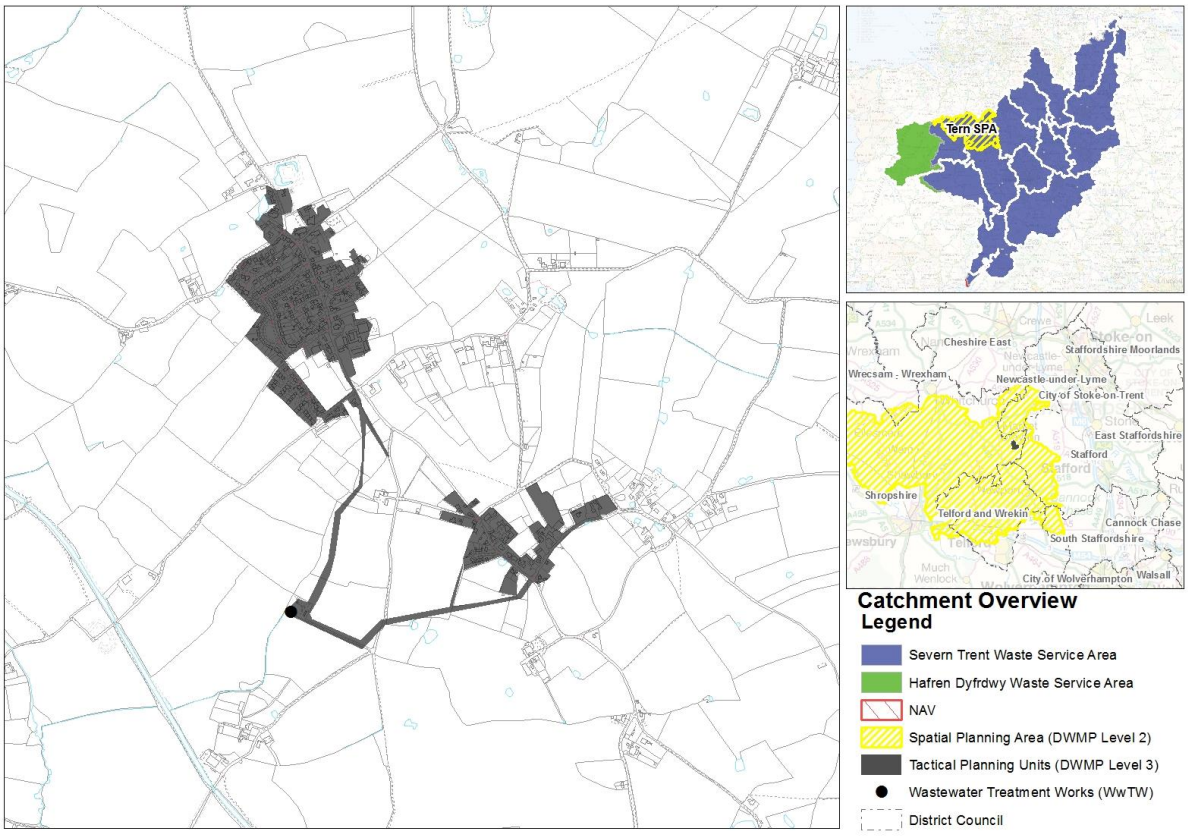
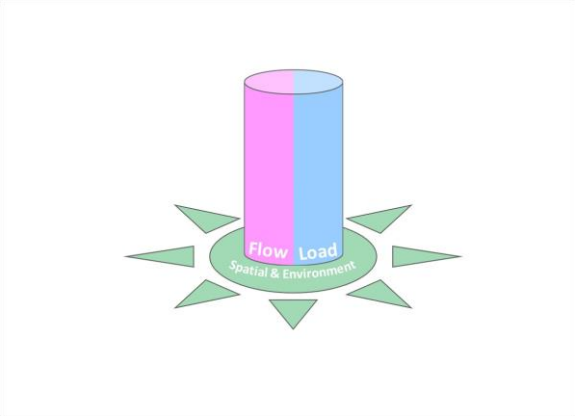


Figure 15 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 16 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 16 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

DWMP: Catchment Overview: CHESWARDINE (10883)

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
CHILDS ERCALL (LEAFIELDS) (10880)

March 2023

WONDERFUL ON TAP

Overview

Childs Ercall (Leafields) WwTW is located to the south east of Childs Ercall village serving a population around 18. Treated effluent is discharged to the Allford Brook.

Key Statistics:

- Residential Population Served: 18
- This is our 822nd largest catchment across the whole of Severn Trent, and the 65th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

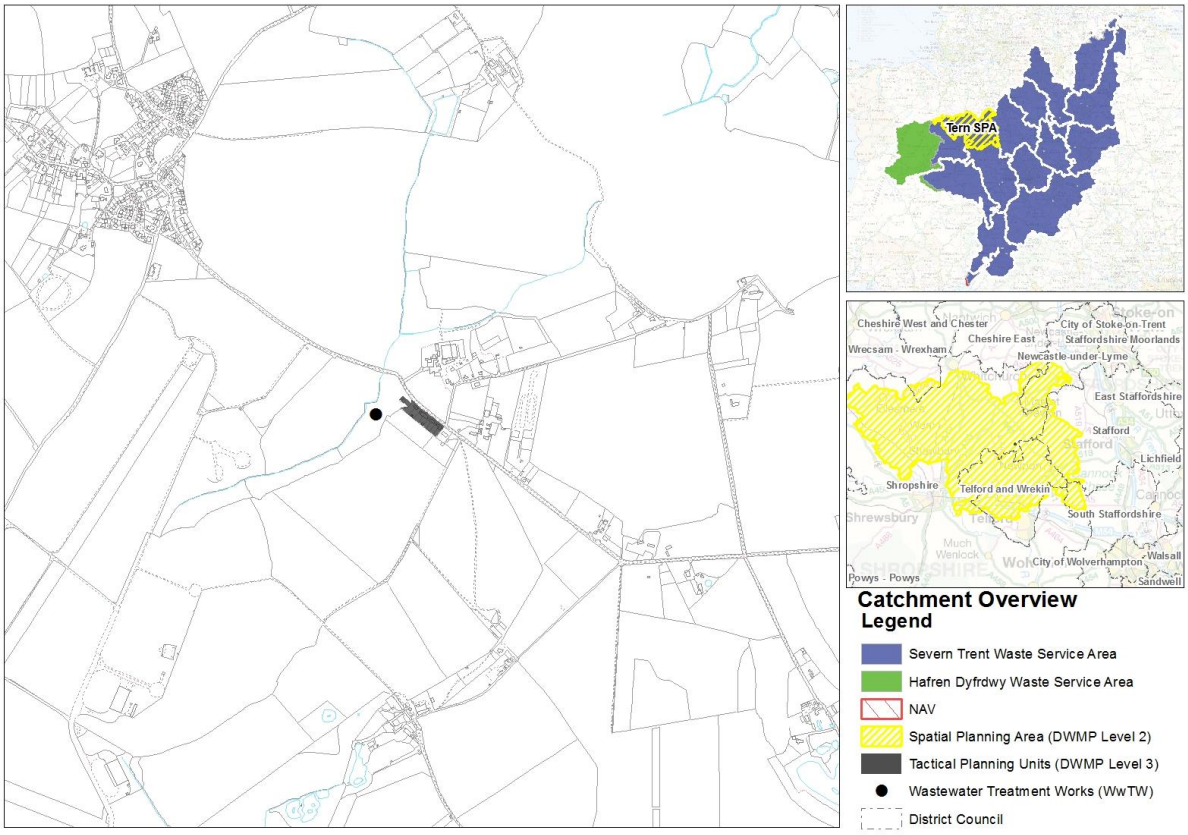
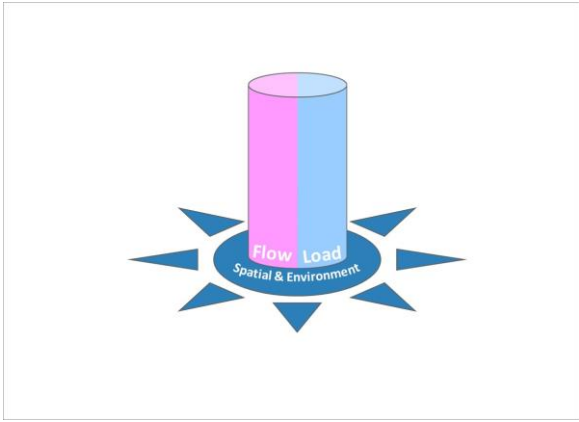


Figure 17 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



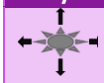
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 18 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 17 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 18 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 19 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 20 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 21 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
CHILDS ERCALL (10881)

March 2023

WONDERFUL ON TAP

Overview

Childs Ercall WwTW is located to the west of Childs Ercall and serves a residential population of 539. Treated effluent is discharged to a tributary of the River Tern. In addition to treating flows from Childs Ercall, the catchment also drains Ollerton to the west (pumped).

Key Statistics:

- Residential Population Served: 539
- This is our 418th largest catchment across the whole of Severn Trent, and the 24th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 8.5km of public foul water sewers and 4.5km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

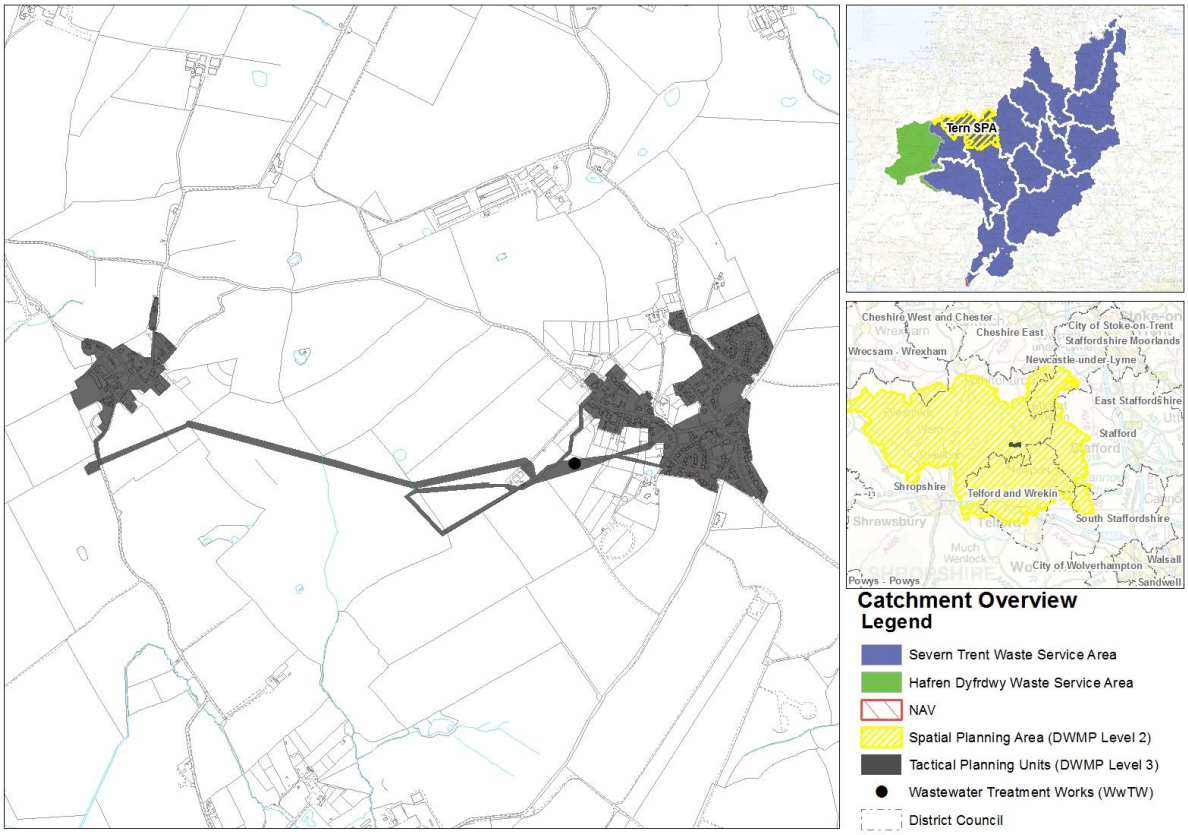
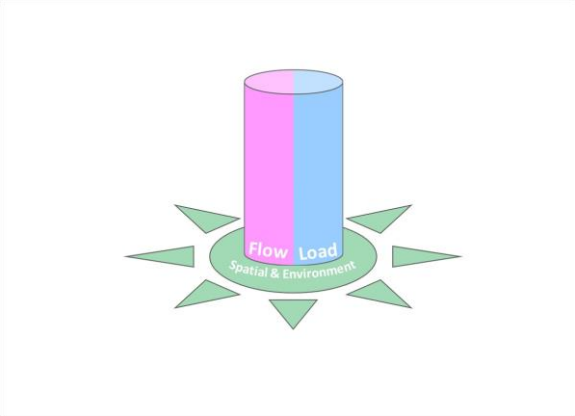


Figure 19 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 20 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 22 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 23 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 24 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 25 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 26 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: CLIVE (10606)

March 2023

WONDERFUL ON TAP

Overview

Clive WwTW serves a residential population of 592. Treated effluent is discharged to the Sundorne Brook.

Key Statistics:

- Residential Population Served: 592
- This is our 403rd largest catchment across the whole of Severn Trent, and the 22nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 21.1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

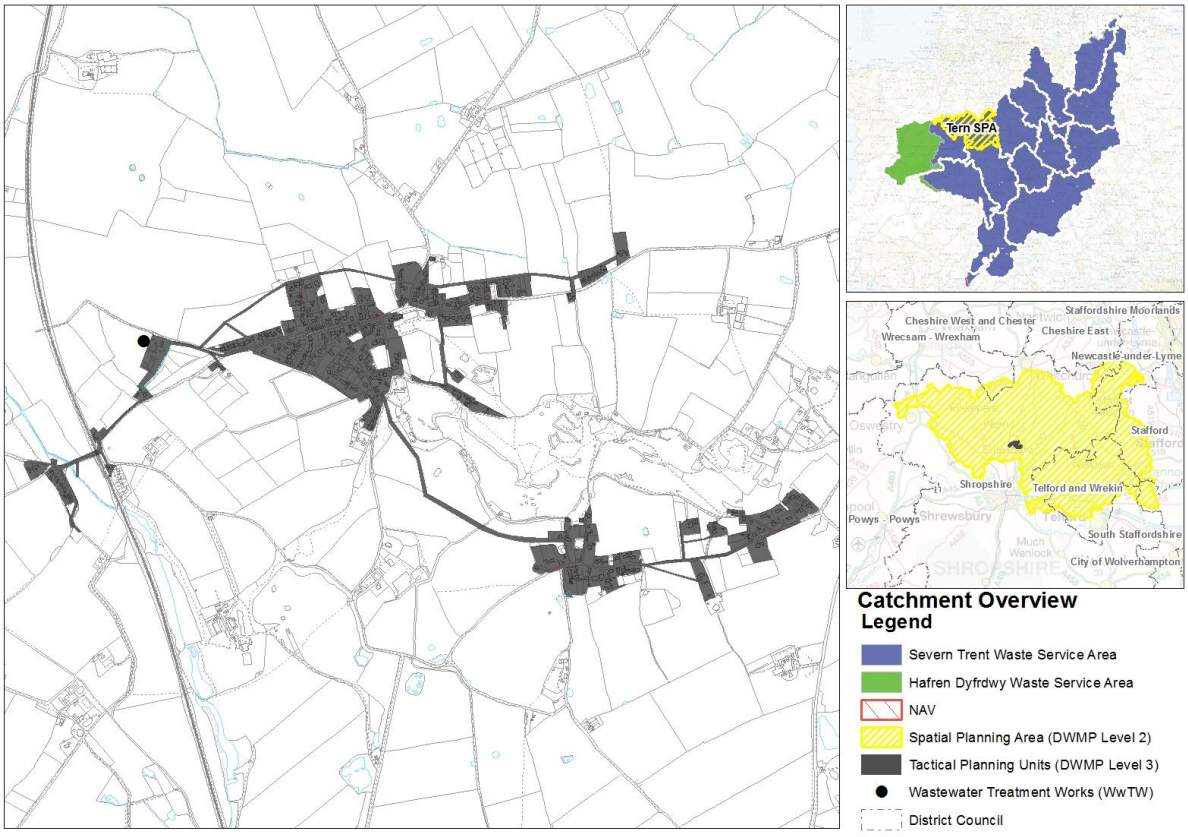
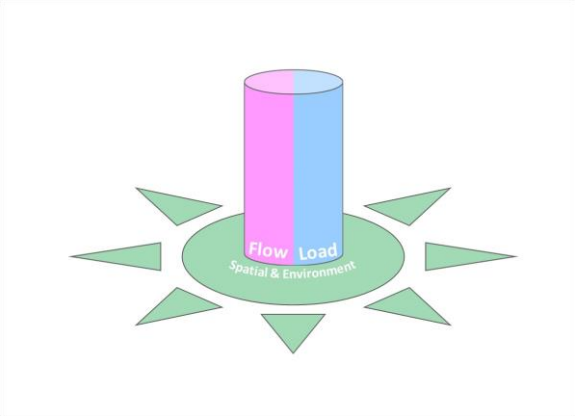


Figure 21 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 22 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 27 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
COTON - PARK VILLAS (10609)

March 2023

WONDERFUL ON TAP

SEVERN
TRENT

Overview

Coton - Park Villas WwTW serves a residential population of 9. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 9
- This is our 895th largest catchment across the whole of Severn Trent, and the 85th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

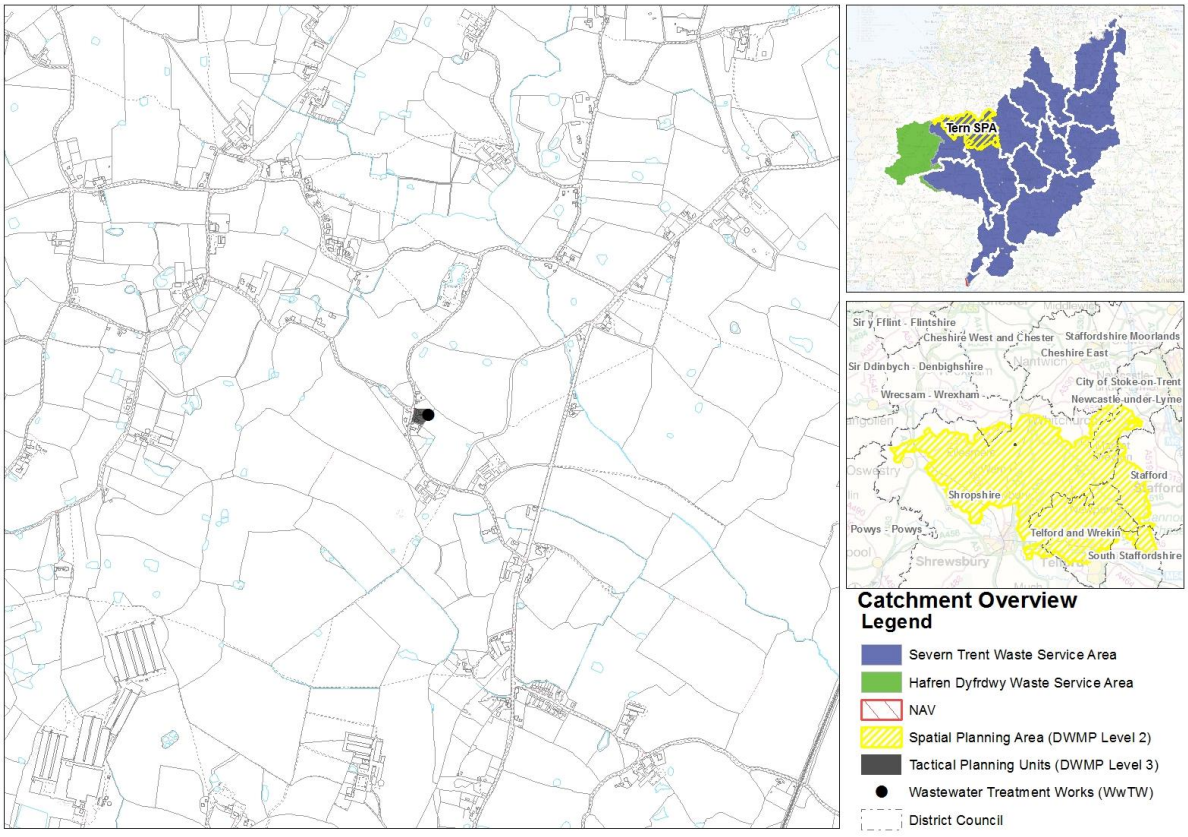
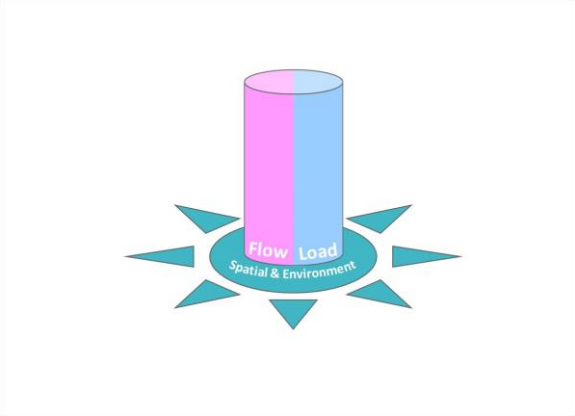


Figure 23 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 24 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 28 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
COTON - WEST VIEW (10610)

March 2023

WONDERFUL ON TAP

Overview

Coton - West View WwTW serves a residential population of 17. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 17
- This is our 825th largest catchment across the whole of Severn Trent, and the 66th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

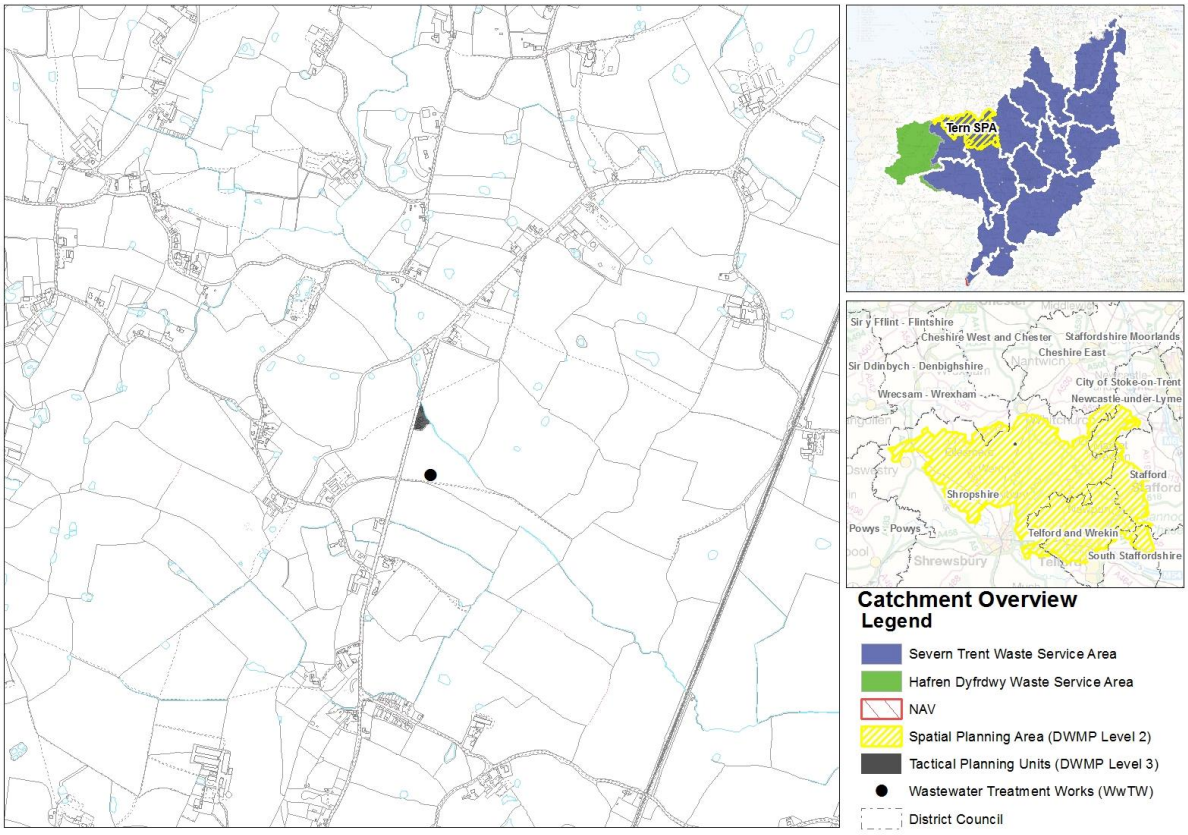
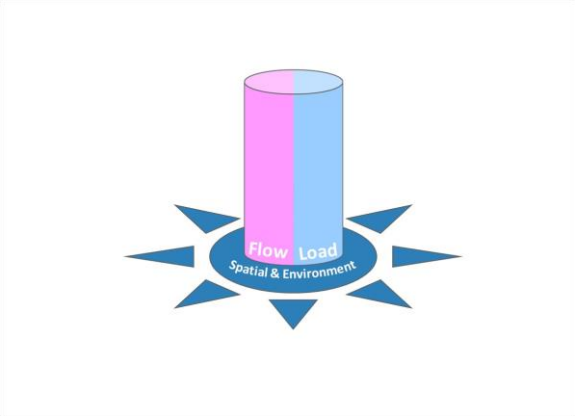


Figure 25 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 26 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 29 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
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This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: CRUDGINGTON (10886)

March 2023

WONDERFUL ON TAP

Overview

Crudgington WwTW serves a residential population of 27. Treated effluent is discharged to the River Strine.

Key Statistics:

- Residential Population Served: 27
- This is our 781st largest catchment across the whole of Severn Trent, and the 52nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

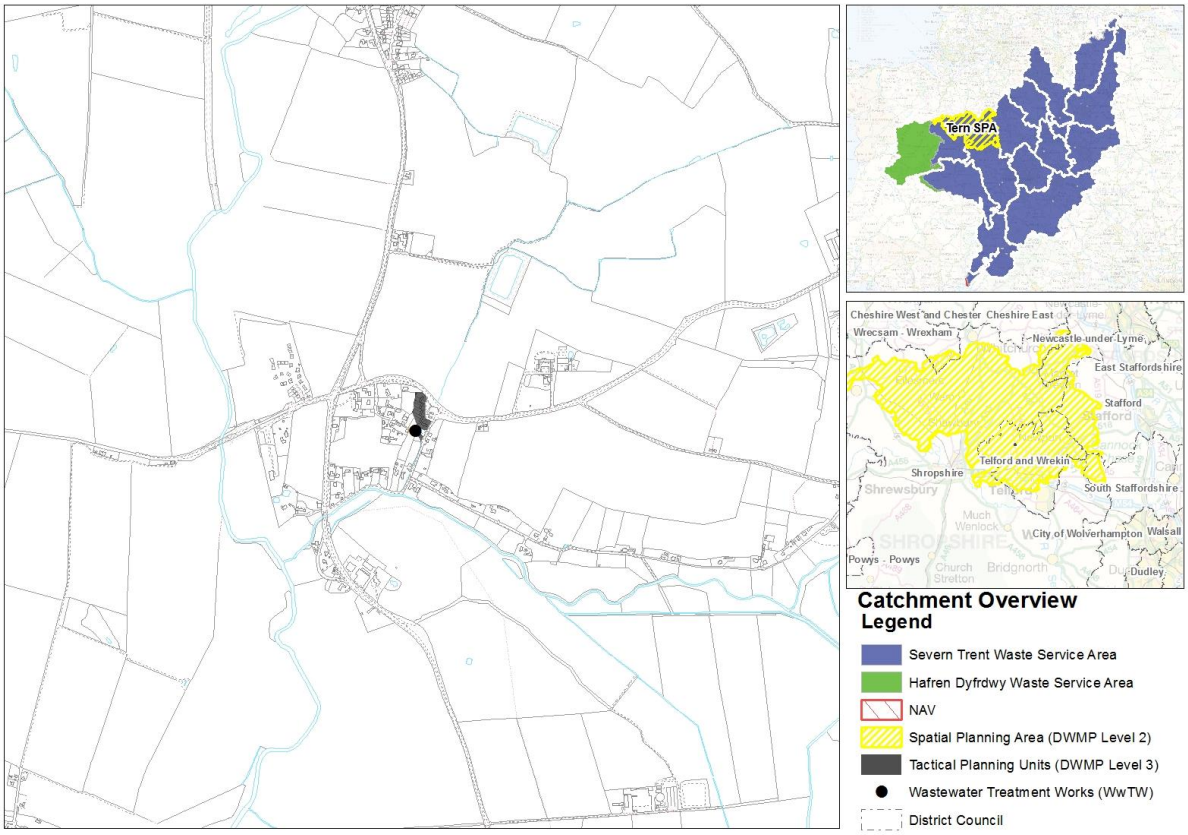
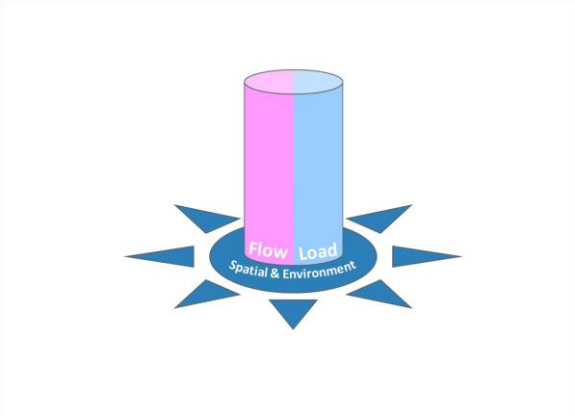


Figure 27 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 28 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 30 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**Yes**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
DUDLESTON HEATH (10619)

March 2023

WONDERFUL ON TAP

Overview

Dudleston Heath WwTW is located to the south of Duddleston Heath and serves a residential population of 696. Treated effluent is discharged to the Newnes Brook.

Key Statistics:

- Residential Population Served: 696
- This is our 374th largest catchment across the whole of Severn Trent, and the 17th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 16.4km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

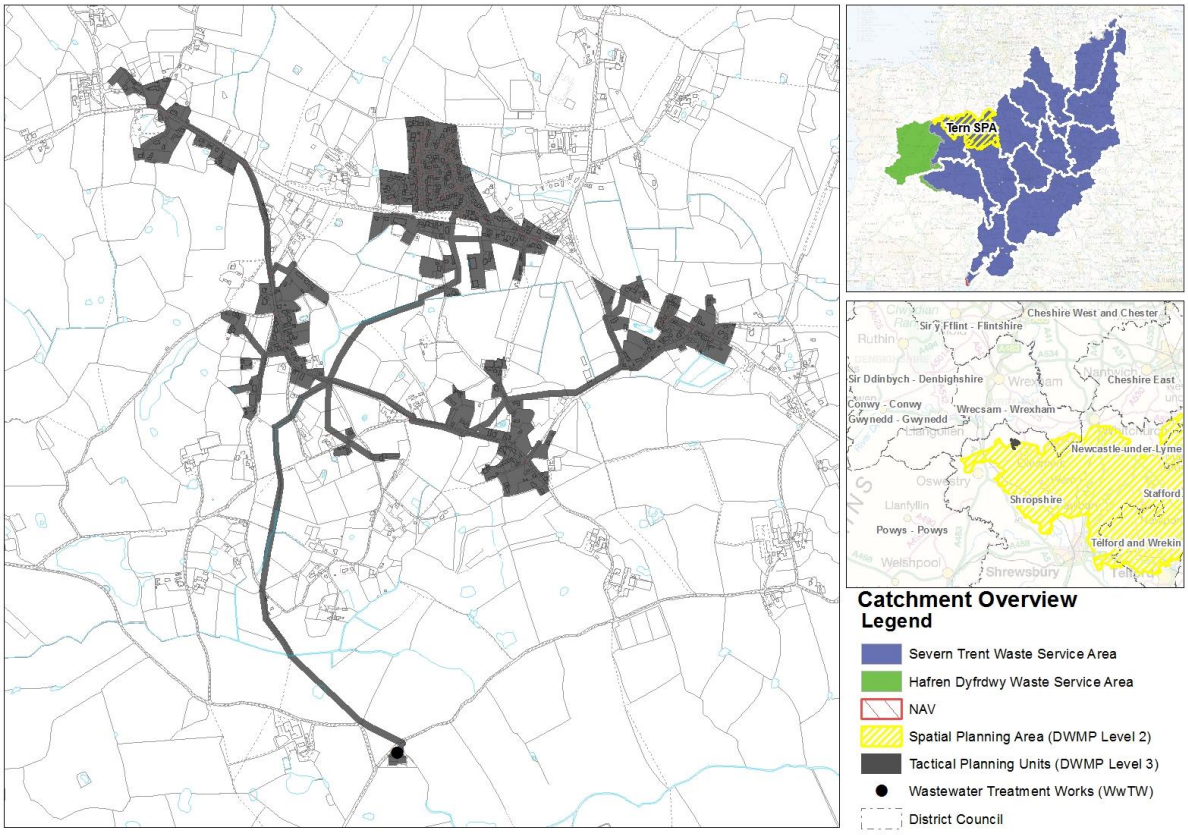
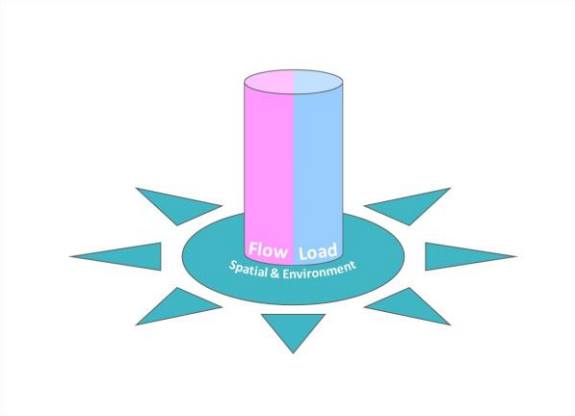


Figure 29 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 30 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 31 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 32 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 33 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 34 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	1	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 35 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: EDGMOND (10887)

March 2023

WONDERFUL ON TAP

Overview

Edgmond WwTW is located to the west of Edgmond and serves a residential population of 2,836. Treated effluent is discharged to a tributary of the River Strine. In addition to treating flows from Edgmond, the catchment also drains Tibberton to the west (pumped) and Cherrington to the west (pumped).

Key Statistics:

- Residential Population Served: 2,836
- This is our 215th largest catchment across the whole of Severn Trent, and the 7th largest in the Tern Stategic Planning Area making up 1% of its population.
- It has 38.6km of public foul water sewers and 2.4km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

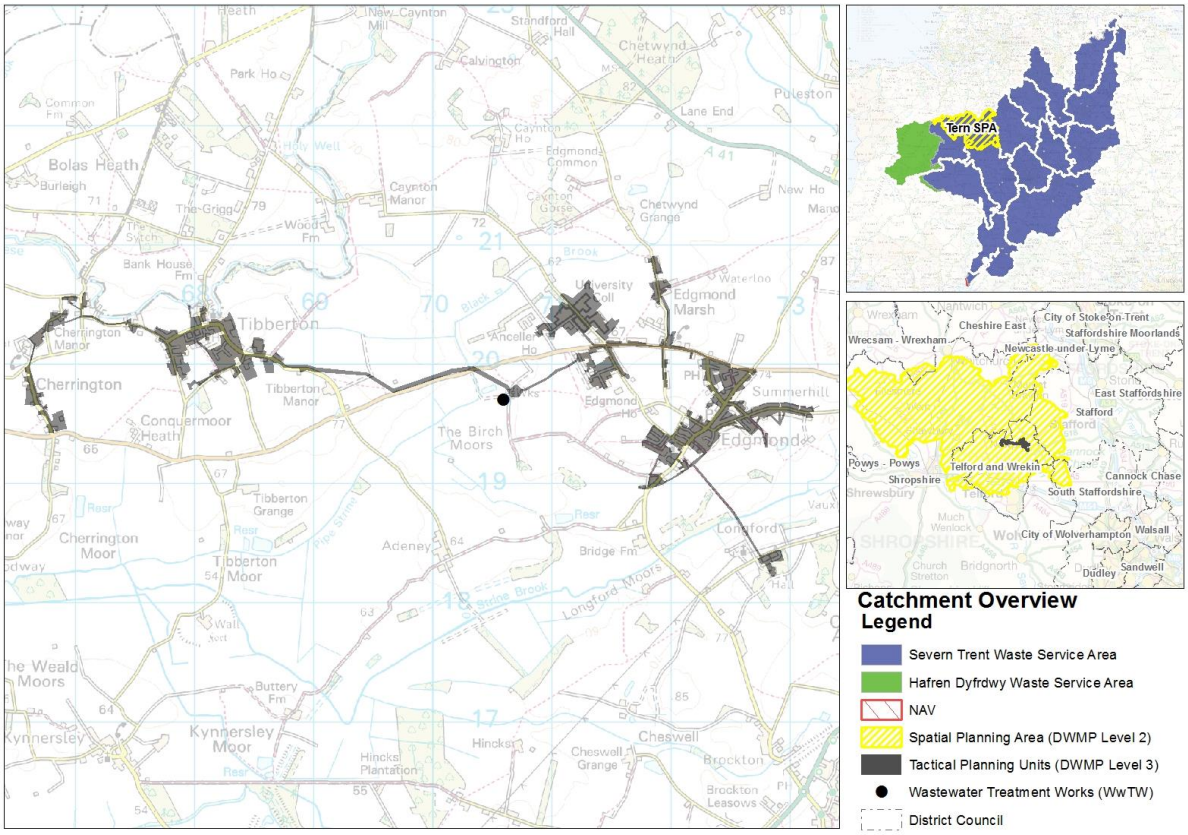
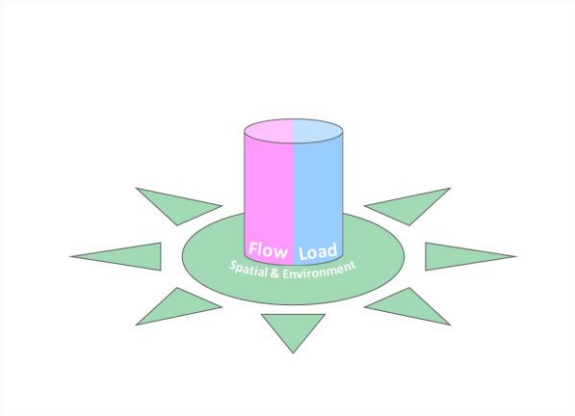


Figure 31 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 32 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 36 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 37 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 38 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 39 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	1	1	1	1	1	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 40 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
EDSTASTON (PEPPER STREET) (10623)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Edstaston (Pepper Street) WwTW serves a residential population of 44. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 44
- This is our 731st largest catchment across the whole of Severn Trent, and the 46th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

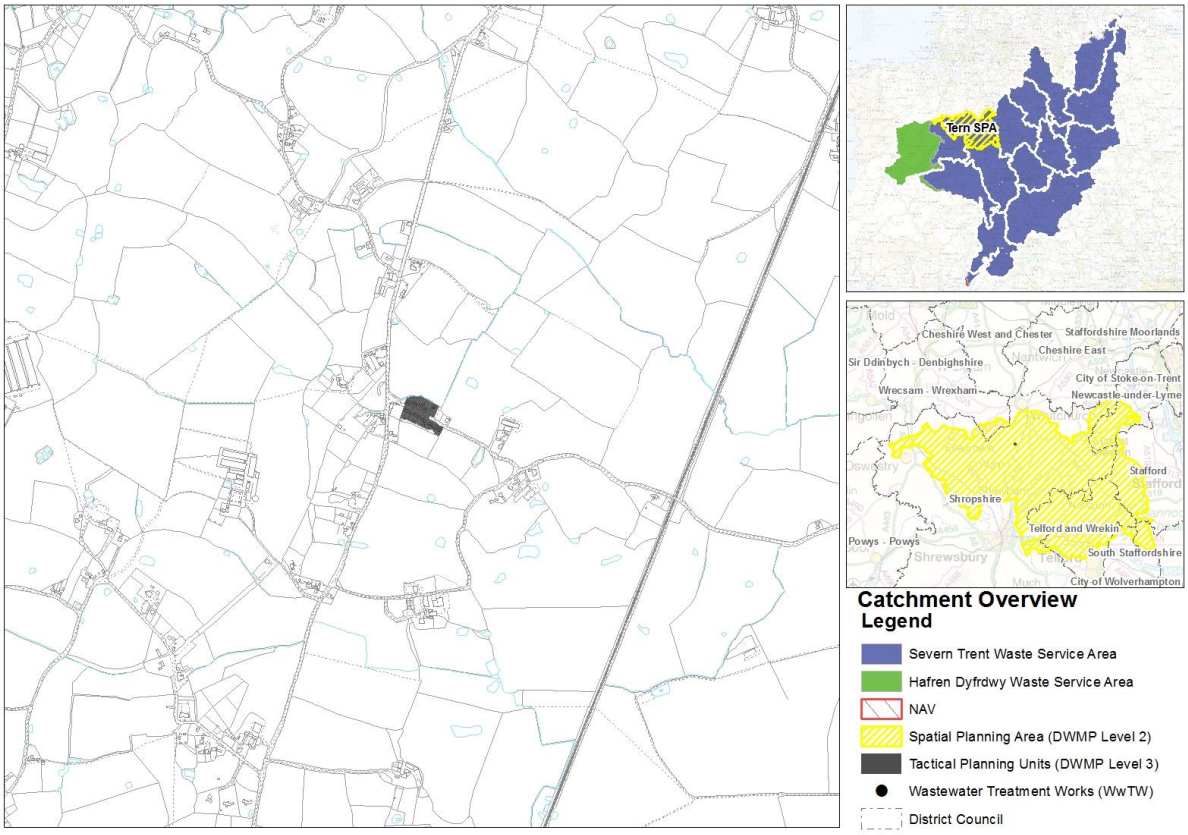
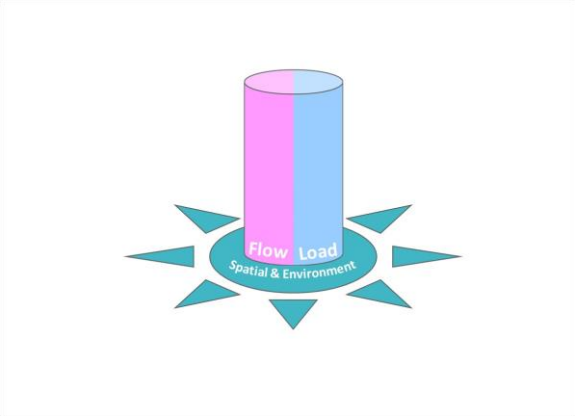


Figure 33 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 34 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 41 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
EDSTASTON PARKFIELDS (10734)

March 2023

WONDERFUL ON TAP

Overview

Edstaston Parkfields WwTW serves a residential population of 13. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 13
- This is our 857th largest catchment across the whole of Severn Trent, and the 74th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

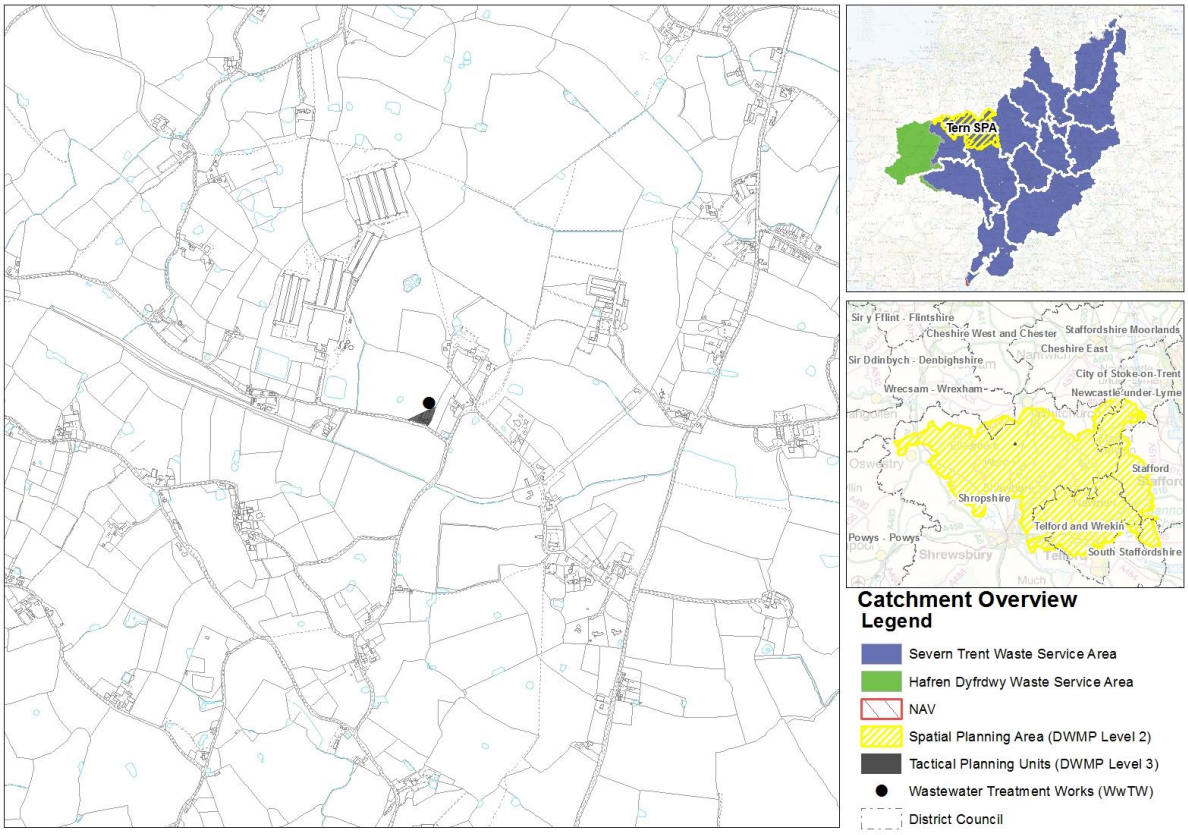
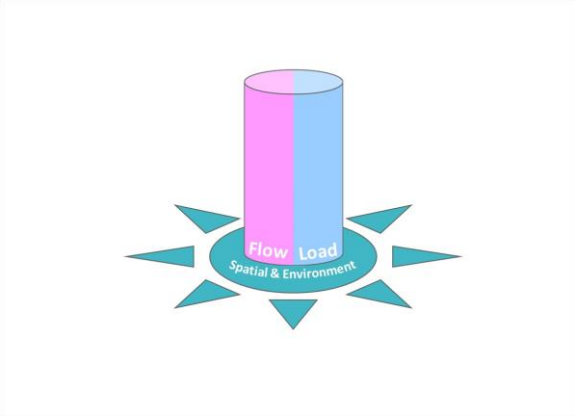


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This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

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As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: ELLERDINE (10888)

March 2023

WONDERFUL ON TAP

Overview

Ellerdine WwTW serves a residential population of 93. Treated effluent is discharged to the Lakemoor Brook.

Key Statistics:

- Residential Population Served: 93
- This is our 639th largest catchment across the whole of Severn Trent, and the 34th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

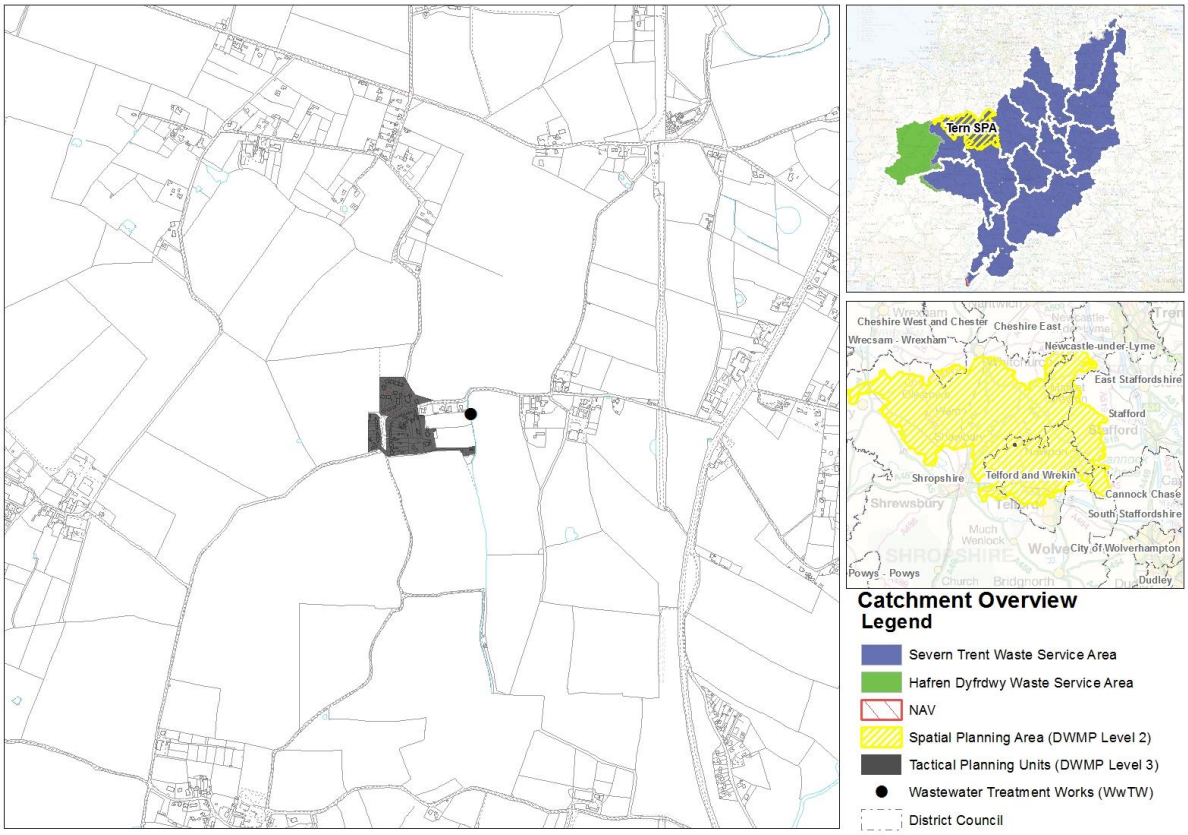
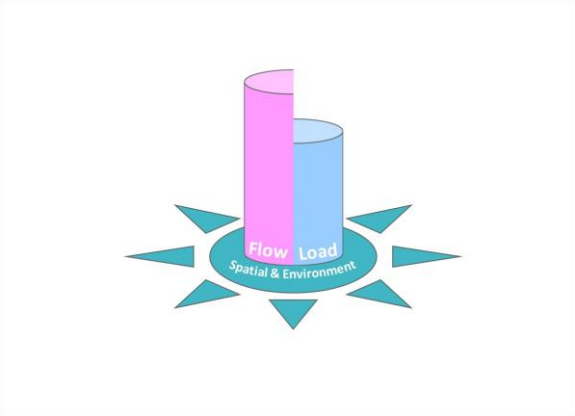


Figure 37 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 38 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 43 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**Yes**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ELLESMERE - WHARF MEADOW (10627)

March 2023

WONDERFUL ON TAP

Overview

Ellesmere - Wharf Meadow WwTW is located to the south of Ellesmere and serves a residential population of 4,619. Treated effluent is discharged to the Tetchill Brook.

Key Statistics:

- Residential Population Served: 4,619
- This is our 178th largest catchment across the whole of Severn Trent, and the 6th largest in the Tern Strategic Planning Area making up 2% of its population.
- It has 45.0km of public foul water sewers and 16.6km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

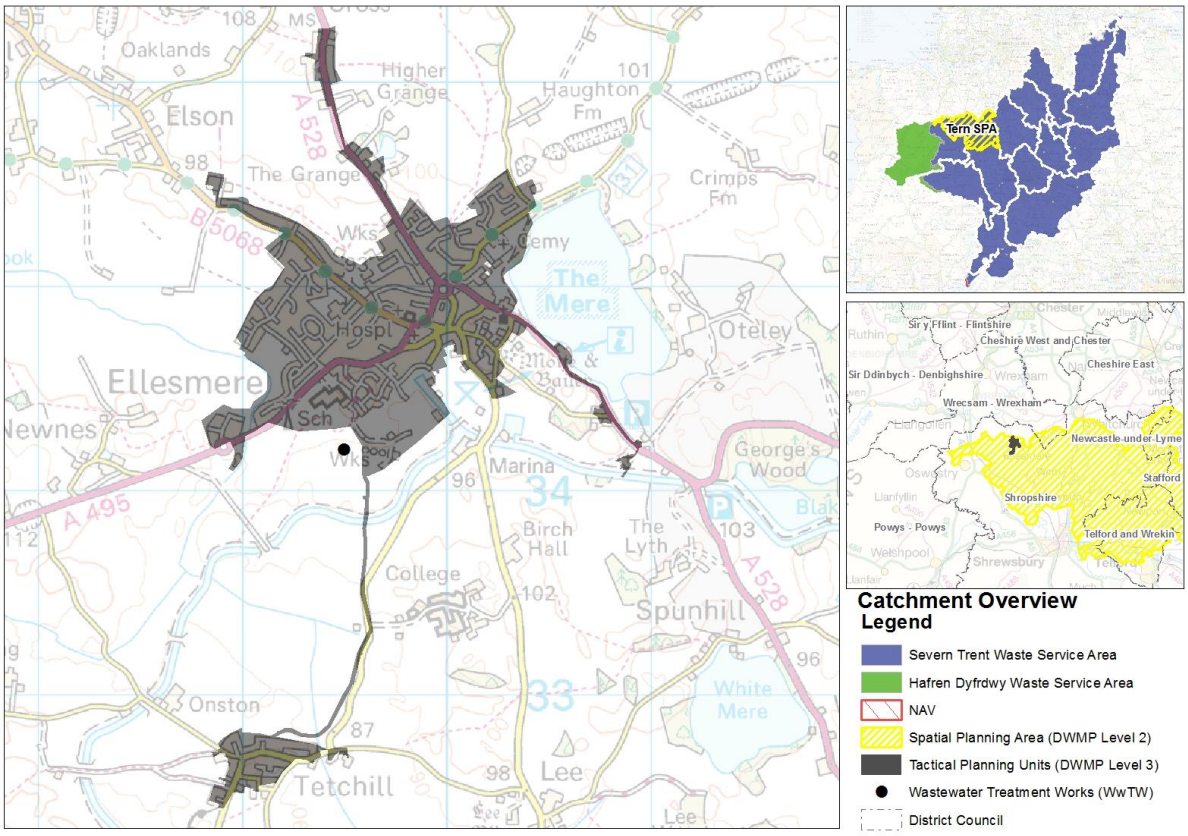
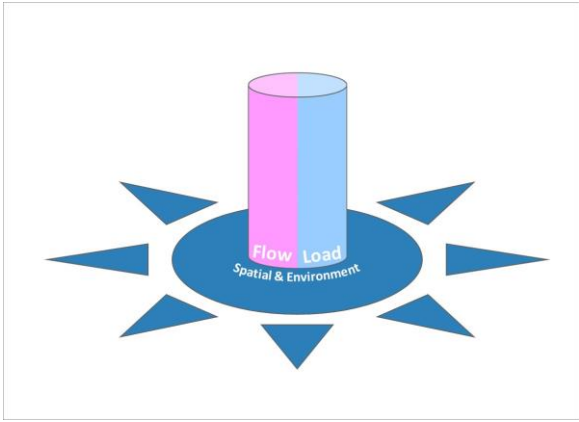


Figure 39 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 40 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 44 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 6 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 45 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 46 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 47 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	1	1	1	1	1	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	2	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	2	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 48 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	•
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ENGLISH FRANKTON (10628)

March 2023

WONDERFUL ON TAP

Overview

English Frankton WwTW serves a residential population of 23. Treated effluent is discharged to a tributary of the Sweat Mere.

Key Statistics:

- Residential Population Served: 23
- This is our 796th largest catchment across the whole of Severn Trent, and the 56th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

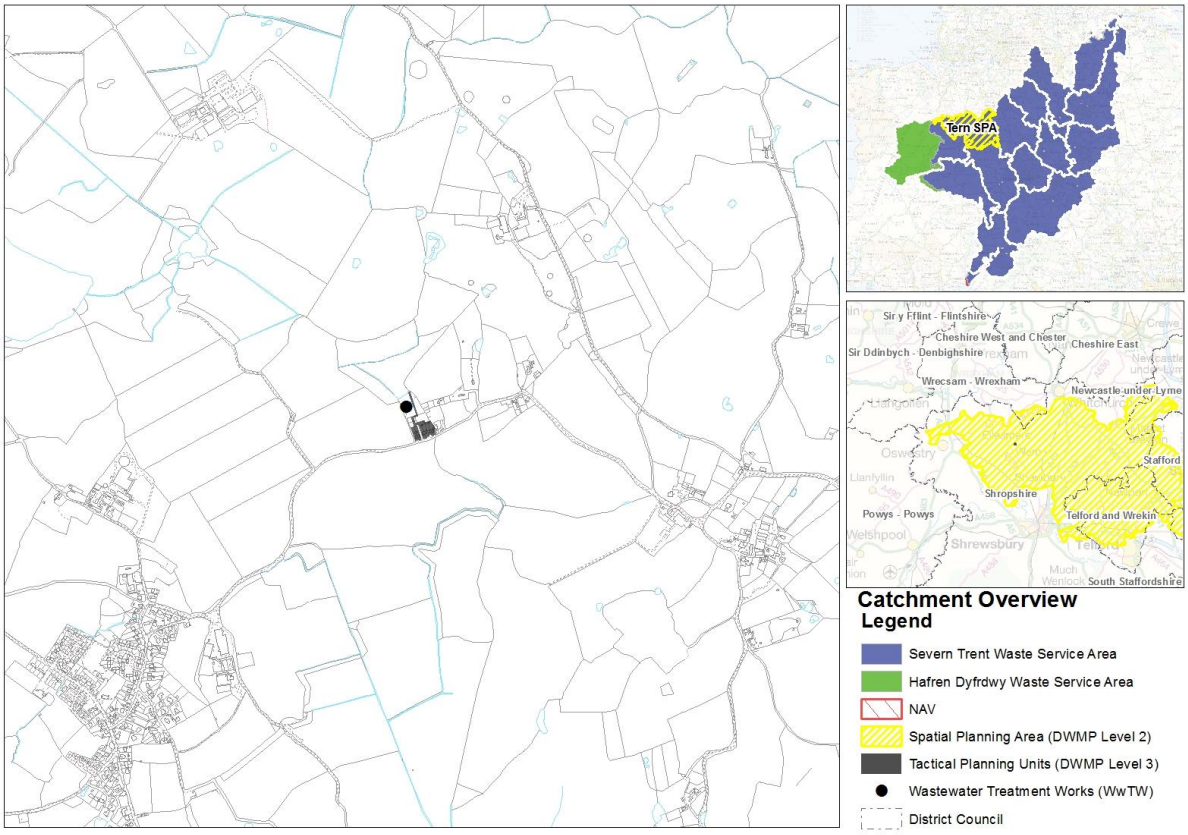
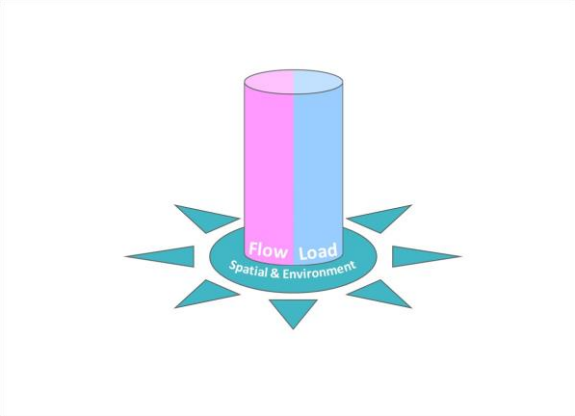


Figure 41 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 42 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 49 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ERCALL HEATH (10889)

March 2023

WONDERFUL ON TAP

Overview

Ercall Heath WwTW serves a residential population of 30. Treated effluent is discharged to a tributary of the River Meese.

Key Statistics:

- Residential Population Served: 30
- This is our 774th largest catchment across the whole of Severn Trent, and the 51st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

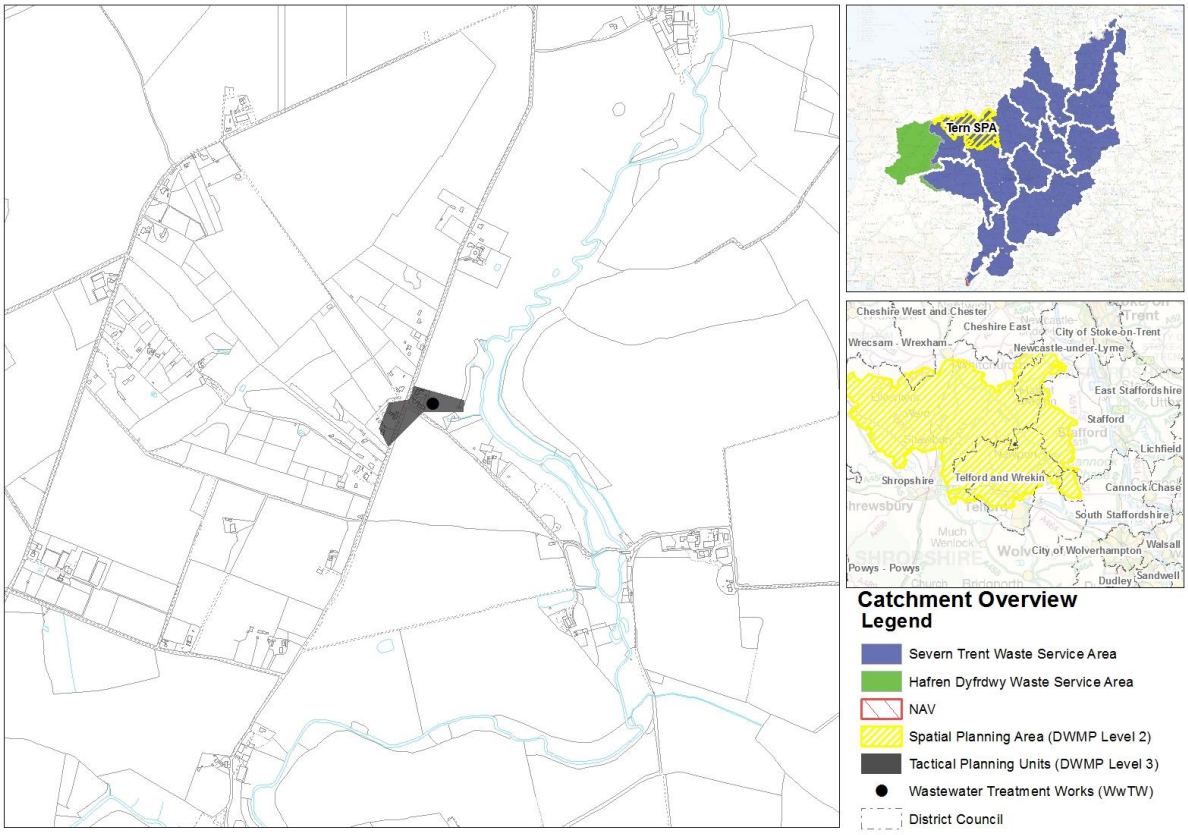
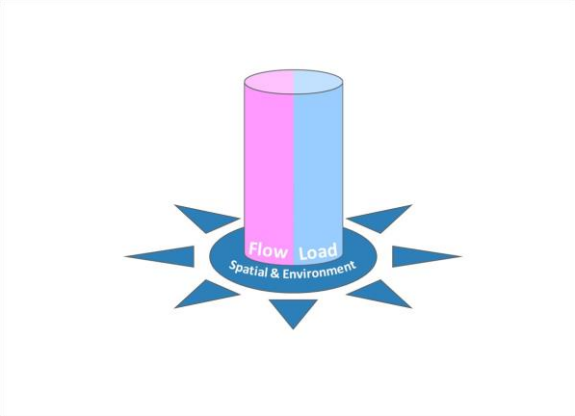


Figure 43 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 44 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 50 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: FORTON (11023)

March 2023

WONDERFUL ON TAP

Overview

Forton WwTW serves a residential population of 97. Treated effluent is discharged to the River Meese.

Key Statistics:

- Residential Population Served: 97
- This is our 631st largest catchment across the whole of Severn Trent, and the 33rd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 2.0km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

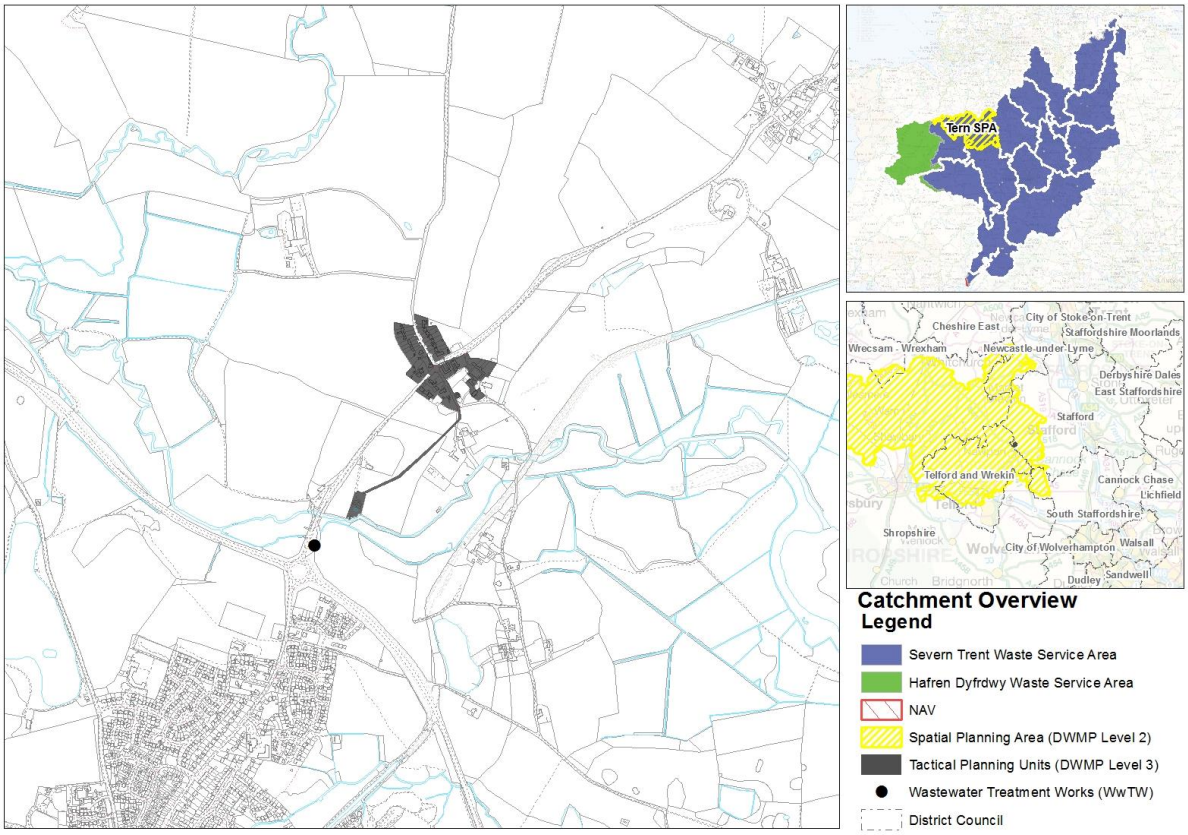
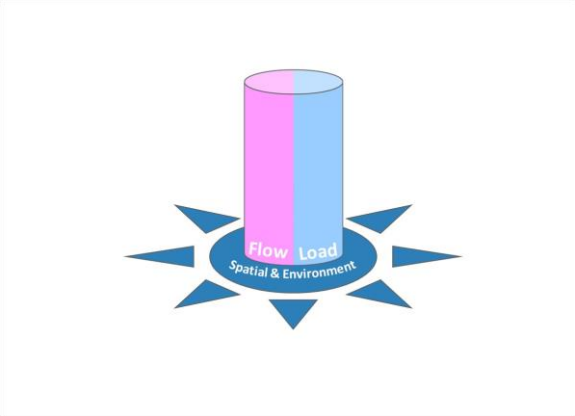


Figure 45 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 46 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 51 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
GOLDSTONE (SPRINGFIELD) (10891)

March 2023

WONDERFUL ON TAP

Overview

Goldstone (Springfield) WwTW serves a residential population of 4. Treated effluent is discharged to the Ellerton Brook.

Key Statistics:

- Residential Population Served: 4
- This is our 939th largest catchment across the whole of Severn Trent, and the 91st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

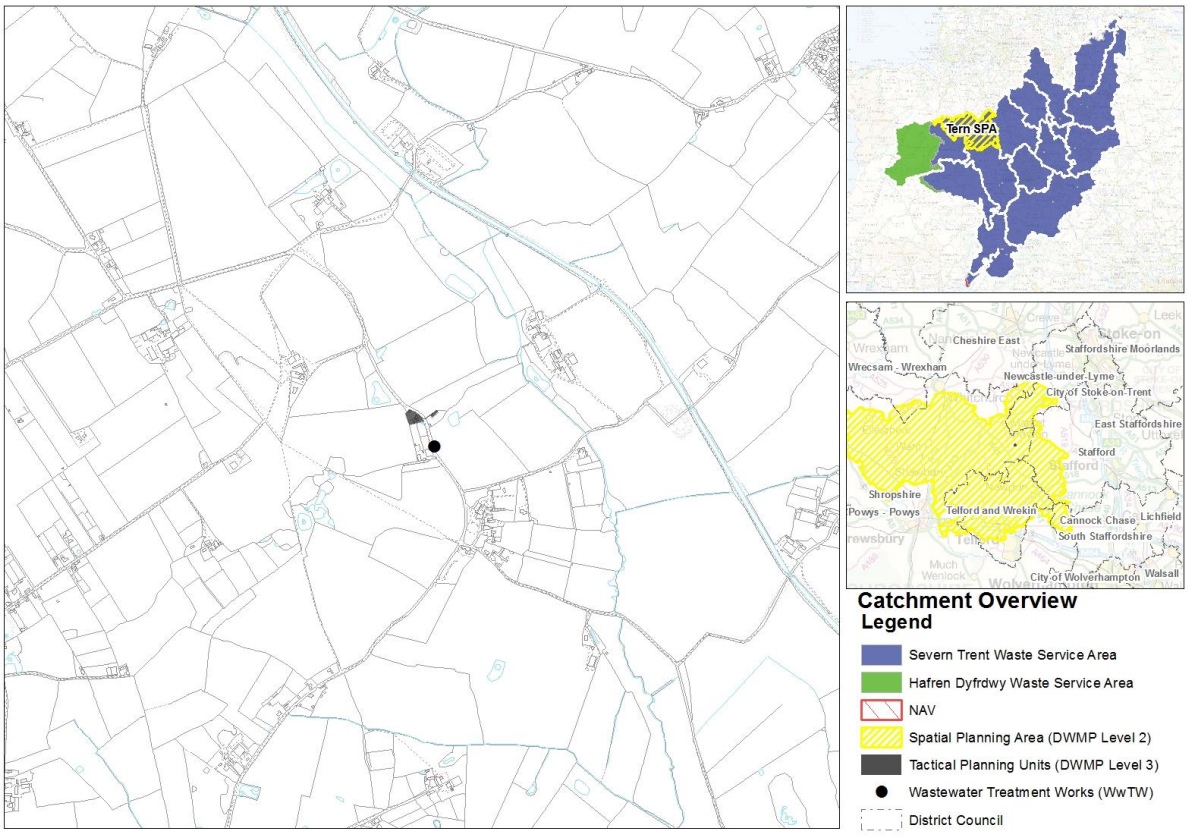
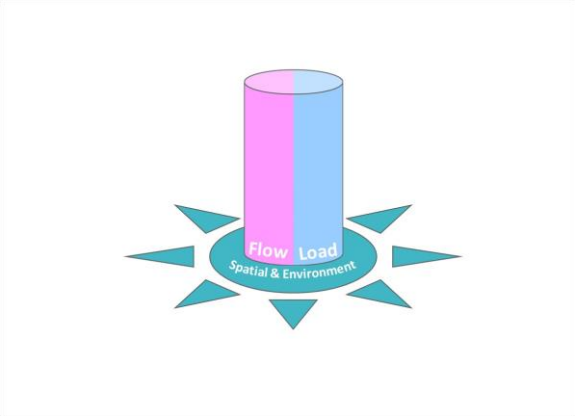


Figure 47 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 48 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 52 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: GRAFTON (10636)

March 2023

WONDERFUL ON TAP

Overview

Grafton WwTW serves a residential population of 62. Treated effluent is discharged to the River Perry.

Key Statistics:

- Residential Population Served: 62
- This is our 694th largest catchment across the whole of Severn Trent, and the 41st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 1.4km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

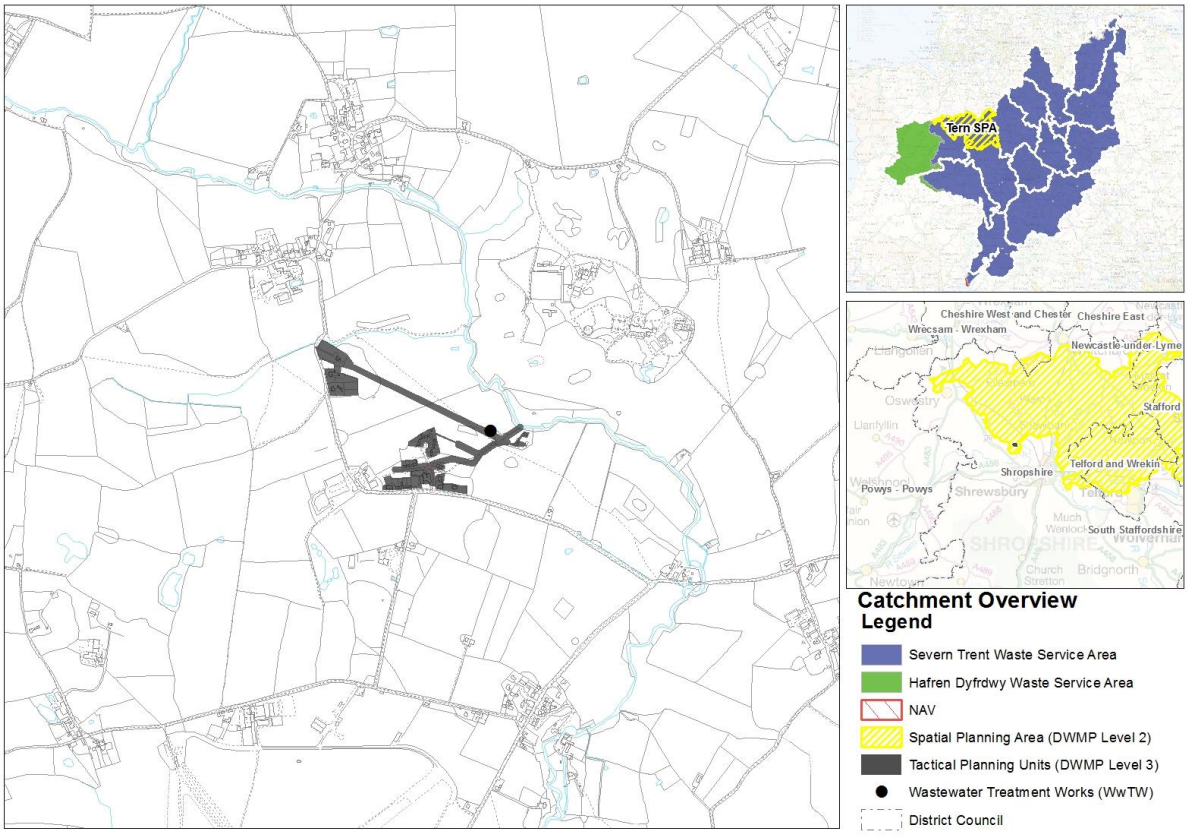
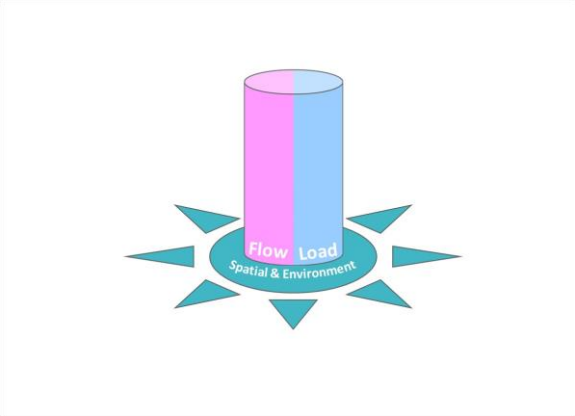


Figure 49 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 50 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 53 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
GREAT BOLAS (10892)

March 2023

WONDERFUL ON TAP

Overview

Great Bolas WwTW is located to the north of Great Bolas village, servicing a population of 40. Treated effluent is discharged to a tributary of the River Tern.

Key Statistics:

- Residential Population Served: 40
- This is our 745th largest catchment across the whole of Severn Trent, and the 47th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

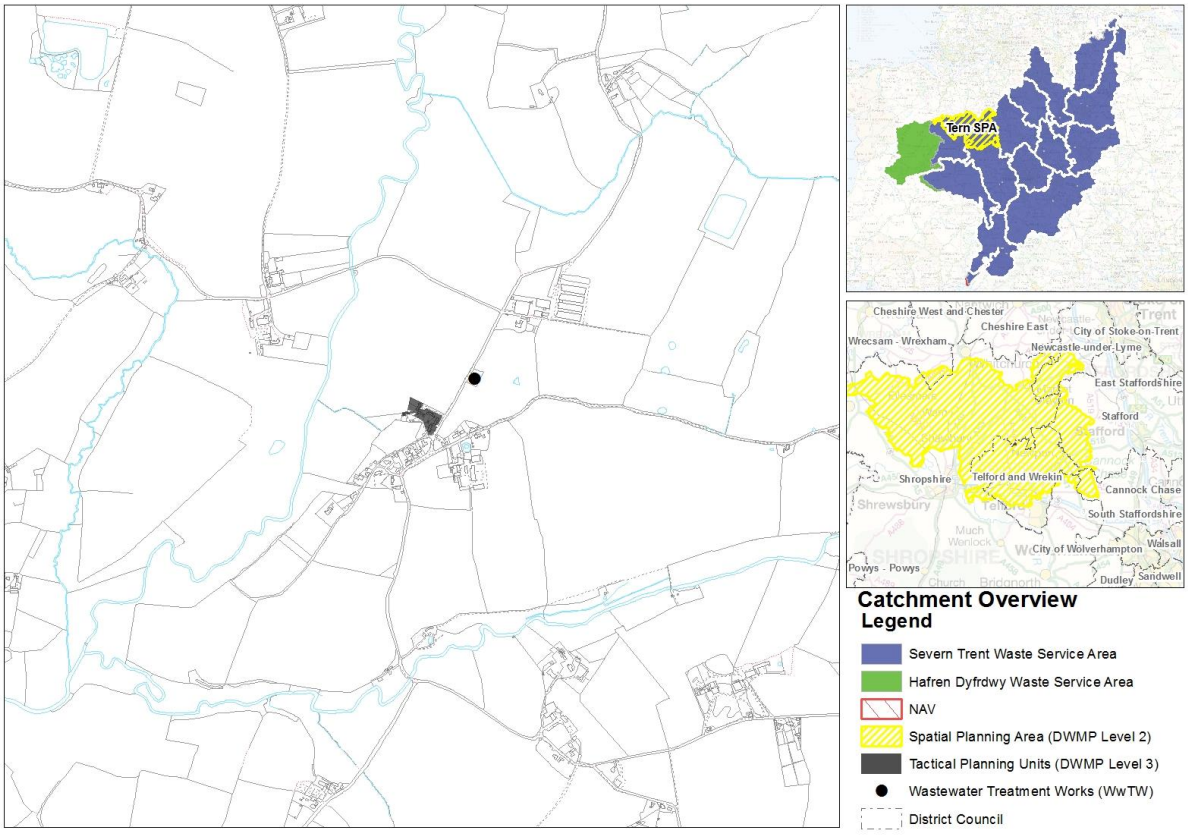
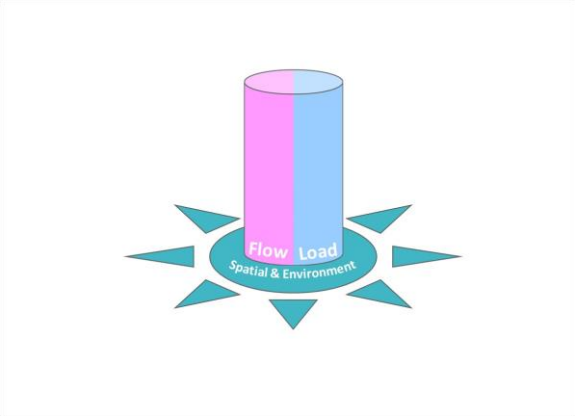


Figure 51 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 52 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 54 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
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Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 55 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 56 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 57 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	1	2	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 58 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	•
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	•
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
GRINSHILL OAKDENE (10741)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Grinshill Oakdene WwTW serves a residential population of 9. Treated effluent is discharged to a tributary of the Sundorne Brook.

Key Statistics:

- Residential Population Served: 9
- This is our 895th largest catchment across the whole of Severn Trent, and the 85th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

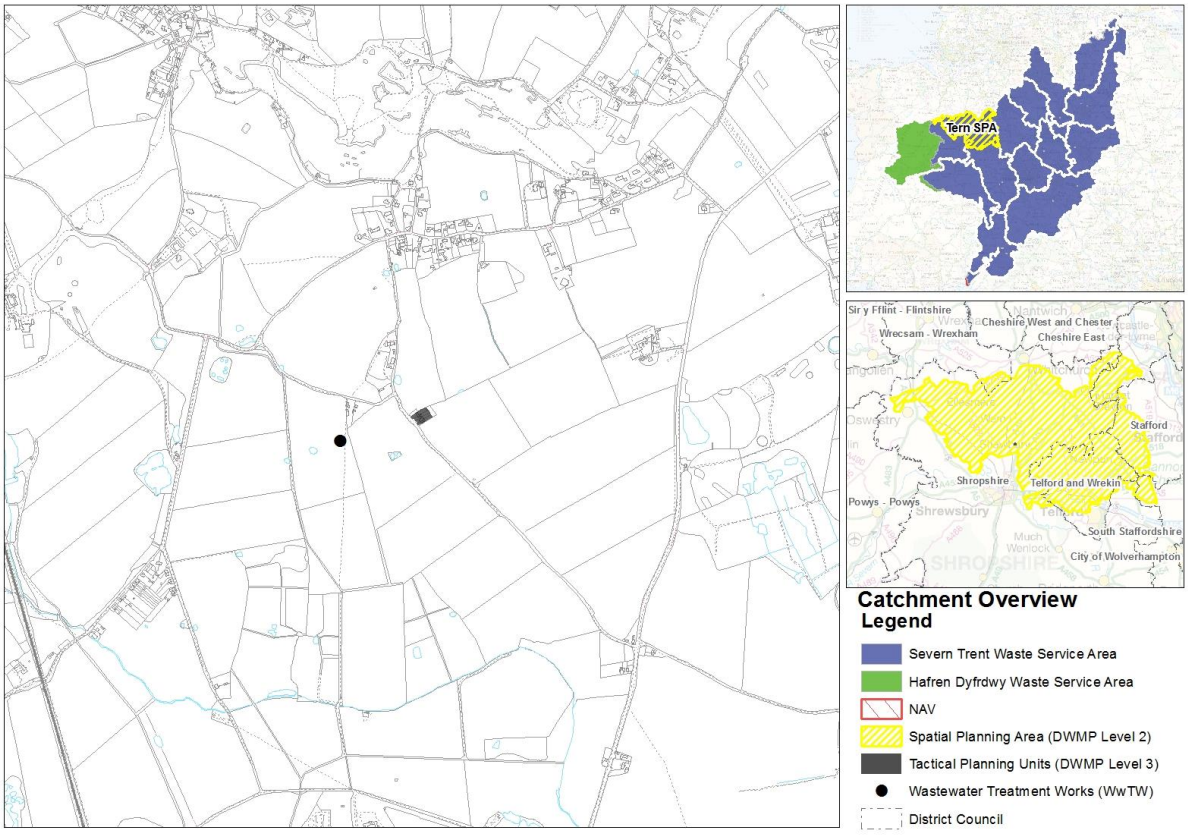
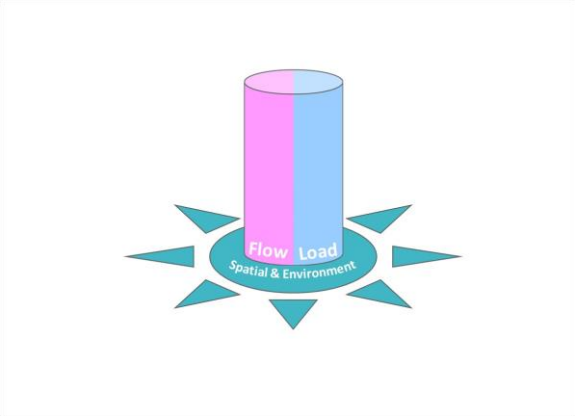


Figure 53 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 54 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 59 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HIGH ERCALL (10893)

March 2023

WONDERFUL ON TAP

Overview

High Ercall WwTW is located to the south of High Ercall village, servicing a population of 684. Treated effluent is discharged to a tributary of the River Roden. In addition to treating flows from High Ercall, the catchment also drains the outlying village of Walton (pumped).

Key Statistics:

- Residential Population Served: 684
- This is our 379th largest catchment across the whole of Severn Trent, and the 18th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 10.5km of public foul water sewers and 2.1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

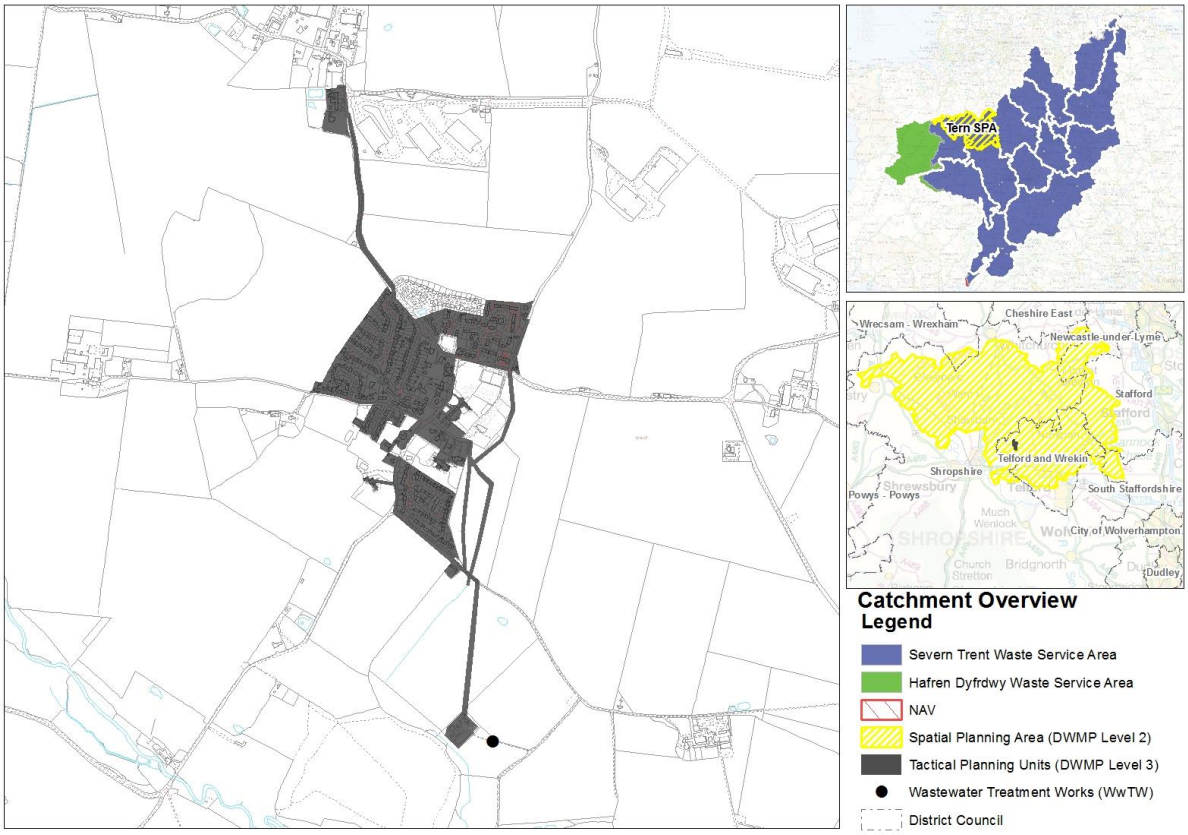
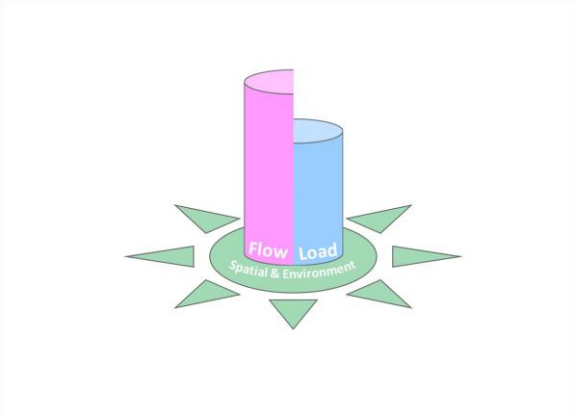


Figure 55 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 56 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 60 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	Yes
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 4 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 61 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 62 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 63 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 64 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HIGH HATTON (10742)

March 2023

WONDERFUL ON TAP

Overview

High Hatton WwTW serves a residential population of 9. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 9
- This is our 895th largest catchment across the whole of Severn Trent, and the 85th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

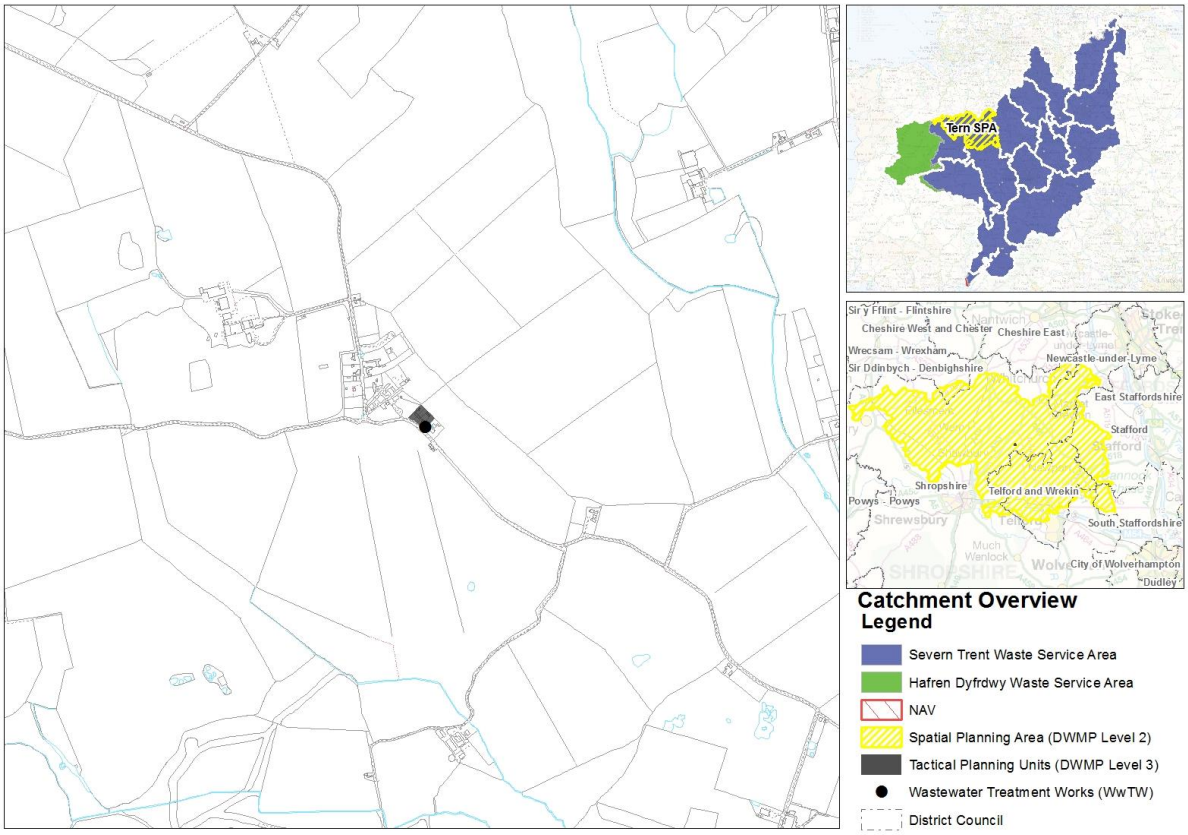
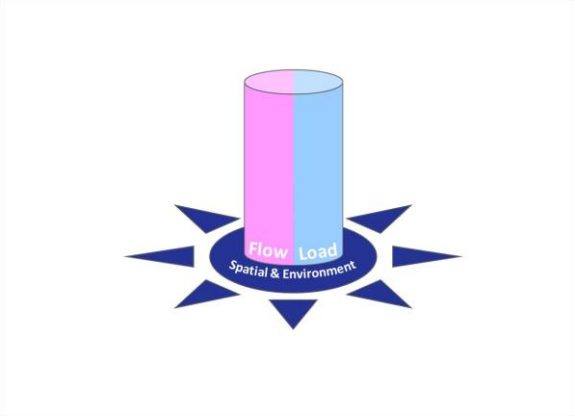


Figure 57 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 58 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 65 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HIGH OFFLEY (TUNSTALL LANE) (18296)

March 2023

WONDERFUL ON TAP

Overview

High Offley (Tunstall Lane) WwTW serves a residential population of 14. Treated effluent is discharged to a tributary of the Lonco Brook.

Key Statistics:

- Residential Population Served: 14
- This is our 845th largest catchment across the whole of Severn Trent, and the 71st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

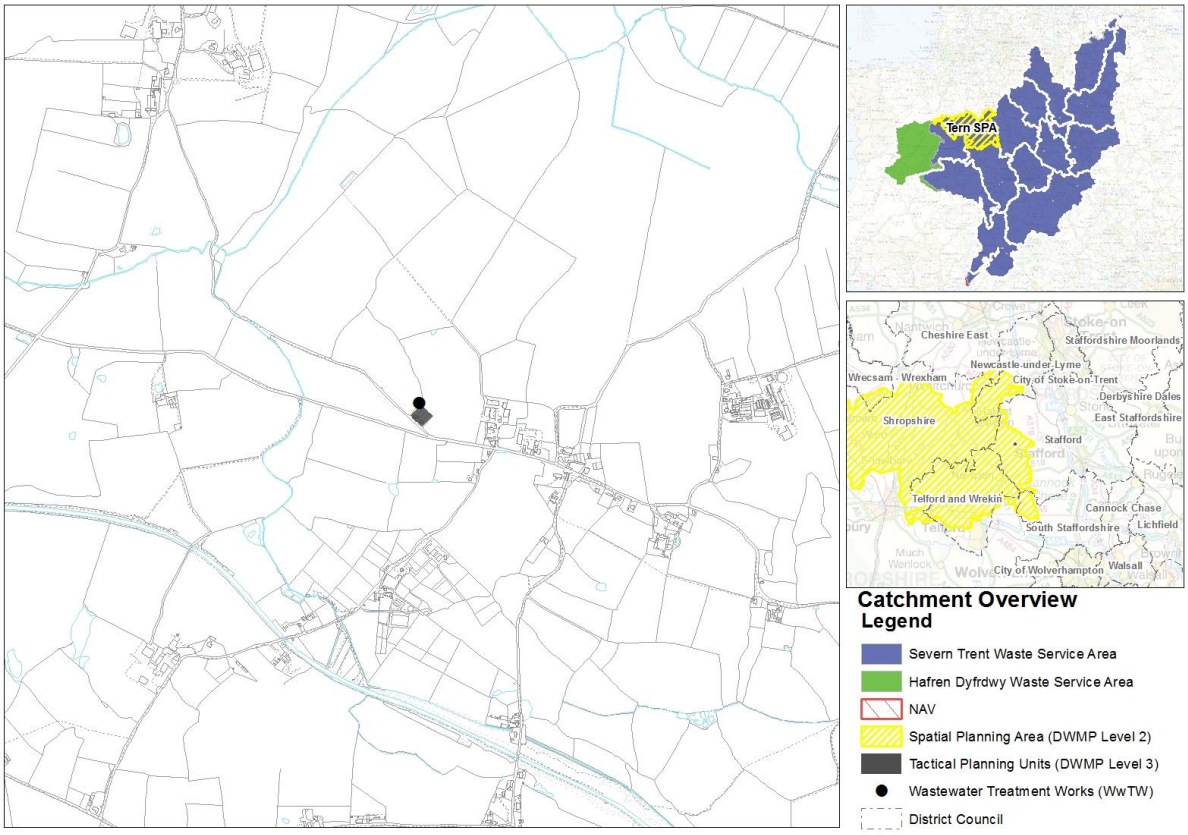
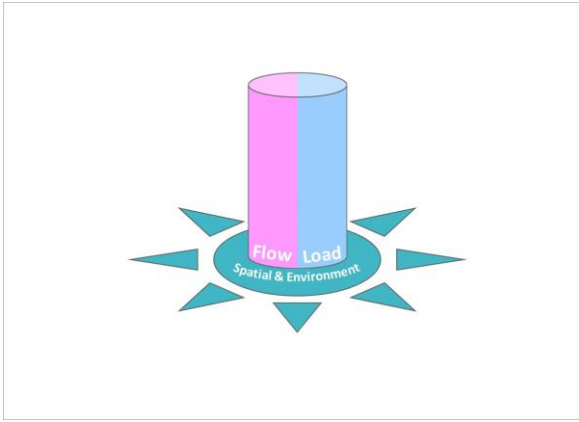


Figure 59 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 60 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 66 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HIGHER HEATH-PREES (10560)

March 2023

WONDERFUL ON TAP

Overview

Higher Heath-Prees WwTW is located to the west of Market Drayton and serves a residential population of 2,220. The WwTW drains Prees Higher Heath to the north (pumped), Prees to the south west (pumped) and Darliston to the south east (pumped). Treated effluent is discharged to a tributary of the Bailey Brook.

Key Statistics:

- Residential Population Served: 2,220
- This is our 242nd largest catchment across the whole of Severn Trent, and the 9th largest in the Tern Stategic Planning Area making up 1% of its population.
- It has 46.3km of public foul water sewers and 2.1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

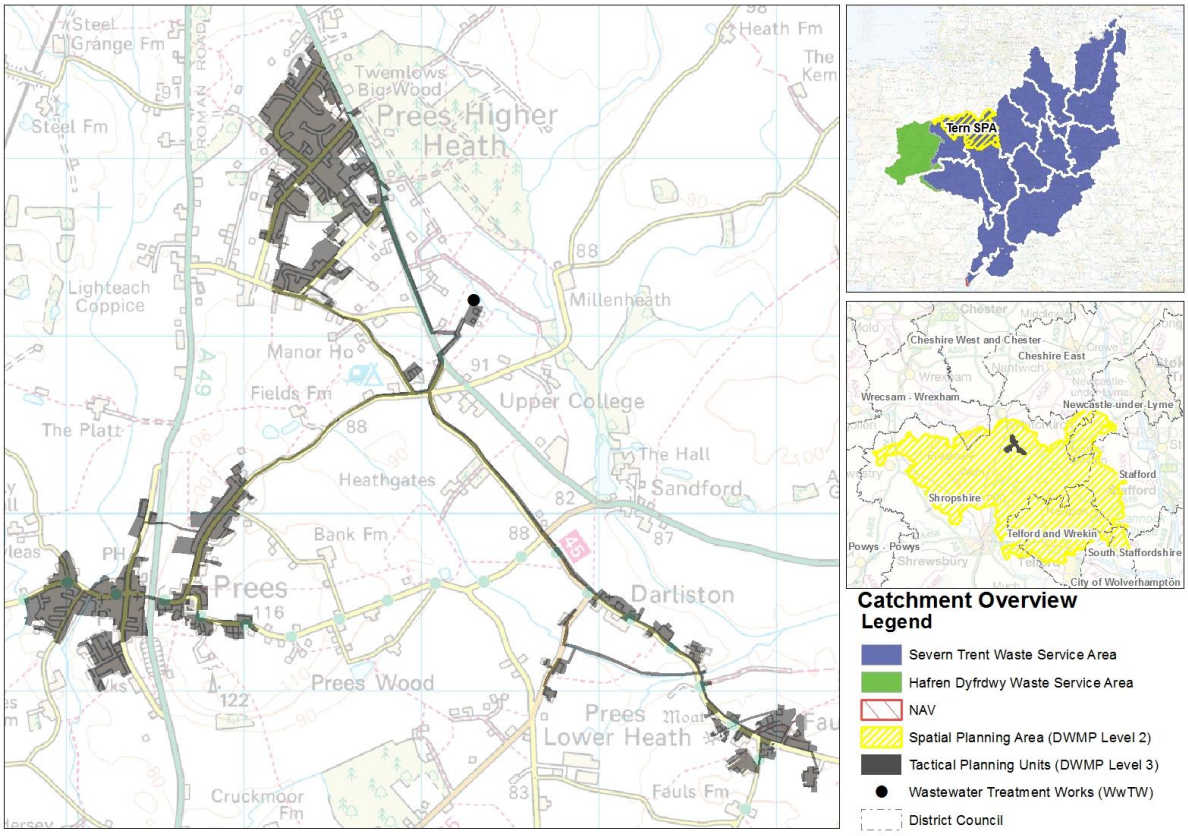
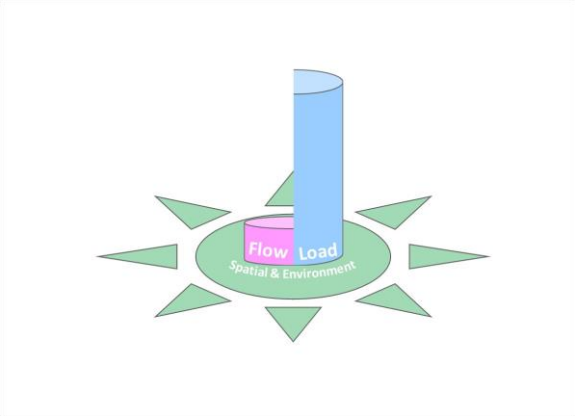


Figure 61 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



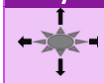
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
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Figure 62 Displays the Wastewater Treatment Works long term constraints.

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The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

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No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	Yes
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
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12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
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Due to this catchment triggering on 5 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 68 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 69 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 70 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	2	2	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 71 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HINSTOCK (MILL GREEN) (10939)

March 2023

WONDERFUL ON TAP

Overview

Hinstock (Mill Green) WwTW serves a residential population of 14. Treated effluent is discharged to the Stoke Park Brook.

Key Statistics:

- Residential Population Served: 14
- This is our 845th largest catchment across the whole of Severn Trent, and the 71st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

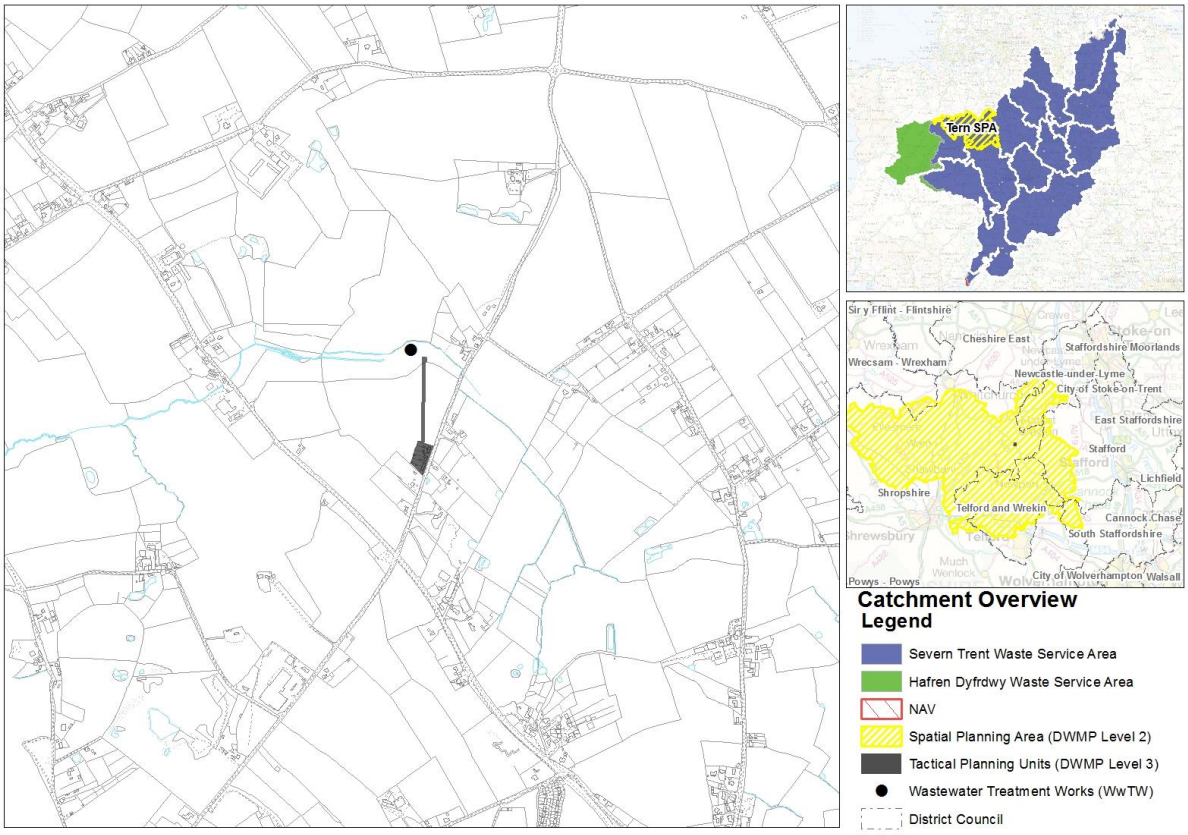
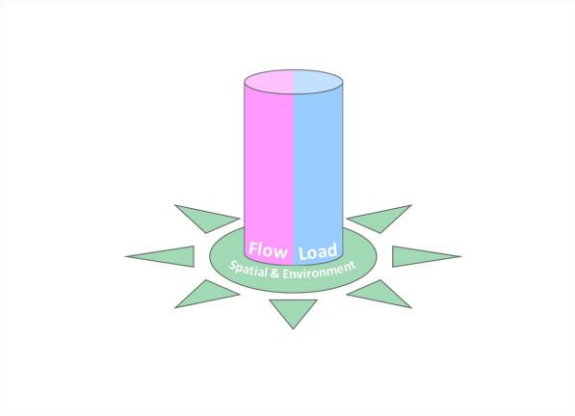


Figure 63 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

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Key	Constraint	Description
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Figure 64 Displays the Wastewater Treatment Works long term constraints.

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Table 72 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: HINSTOCK (10941)

March 2023

WONDERFUL ON TAP

Overview

Hinstock WwTW serves a residential population of 973. Treated effluent is discharged to the Hinstock Brook.

Key Statistics:

- Residential Population Served: 973
- This is our 333rd largest catchment across the whole of Severn Trent, and the 14th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 11.8km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

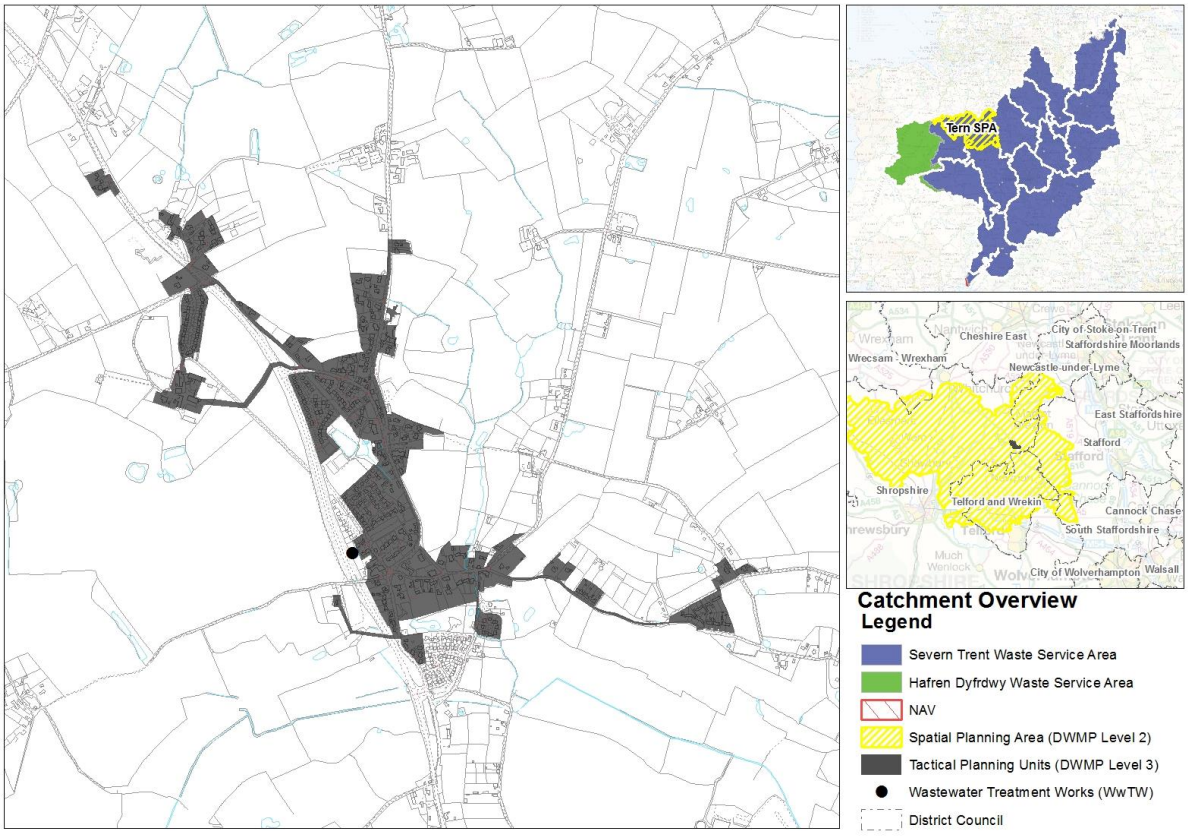
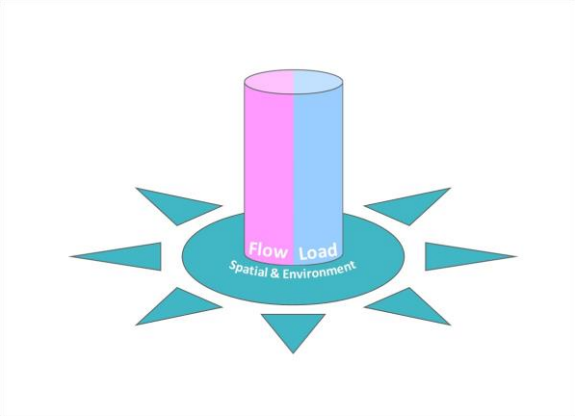


Figure 65 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 66 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 73 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

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Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: HODNET (10938)

March 2023

WONDERFUL ON TAP

Overview

Hodnet WwTW is located to the south east of Hodnet and serves a residential population of 564. Treated effluent is discharged to a tributary of the River Tern.

Key Statistics:

- Residential Population Served: 564
- This is our 412th largest catchment across the whole of Severn Trent, and the 23rd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 9.0km of public foul water sewers and 2.3km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

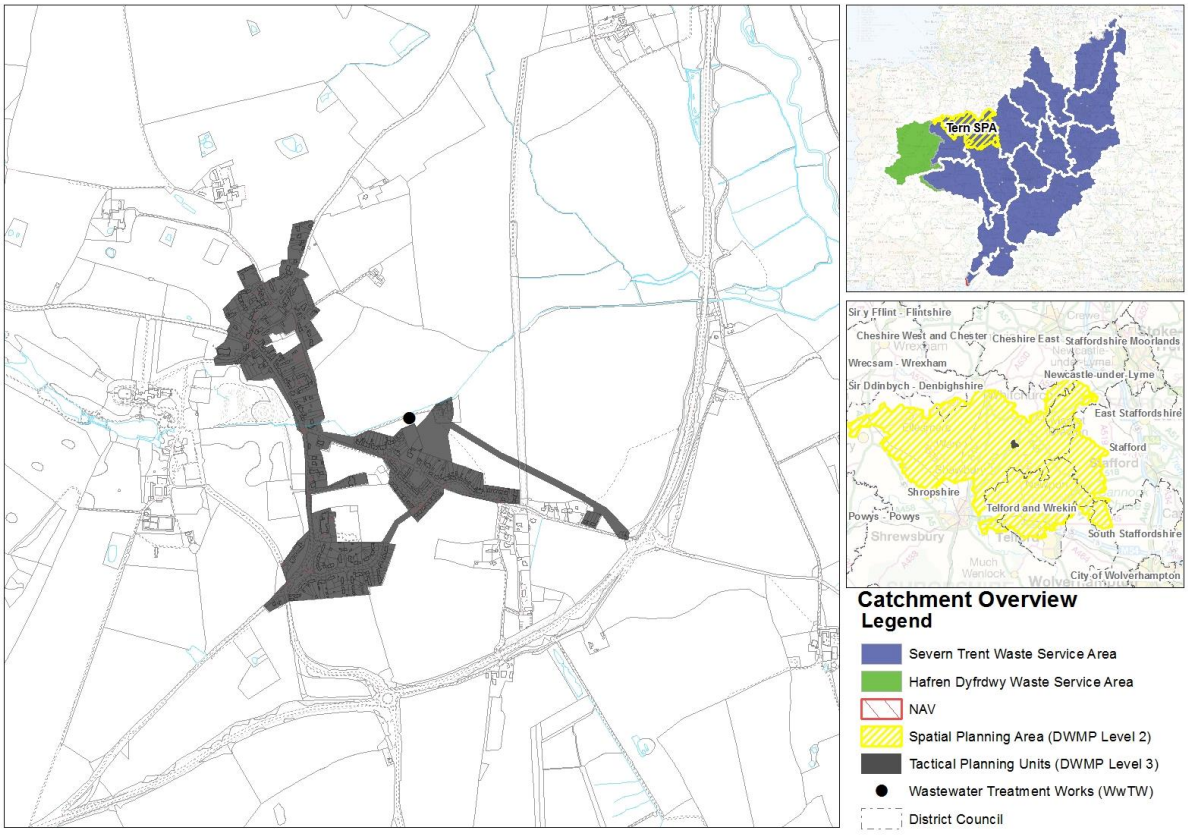
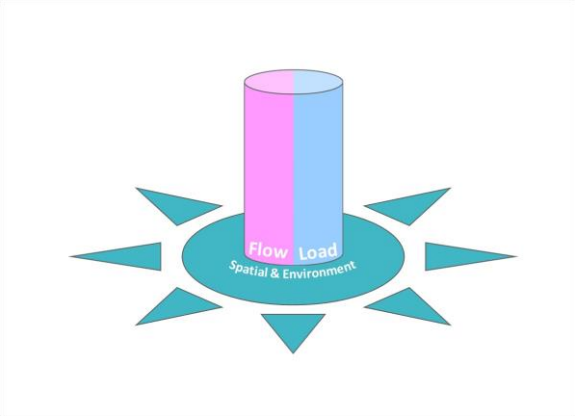


Figure 67 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



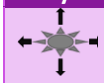
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
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Figure 68 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 74 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 75 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 76 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 77 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	1	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 78 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	•
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HOLLINWOOD (14910)

March 2023

WONDERFUL ON TAP

Overview

Hollinwood WwTW serves a residential population of 114. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 114
- This is our 610th largest catchment across the whole of Severn Trent, and the 32nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 5.3km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

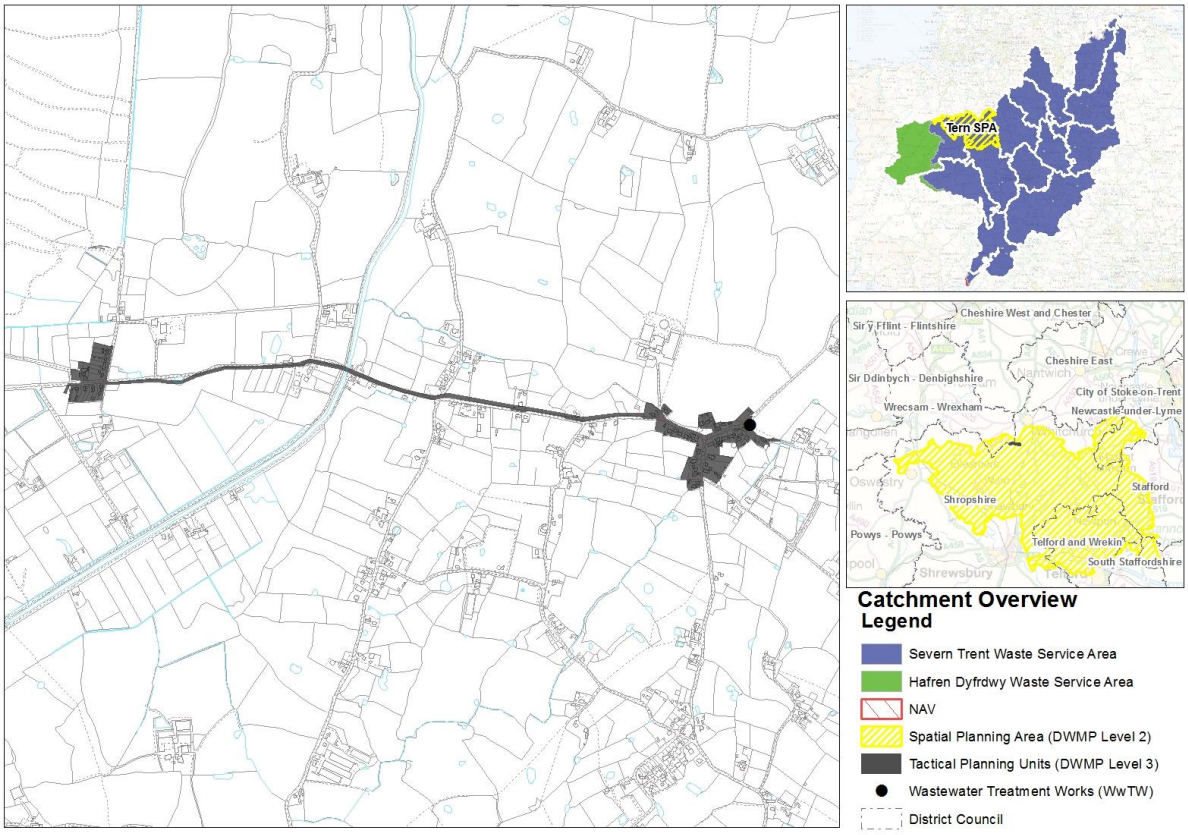
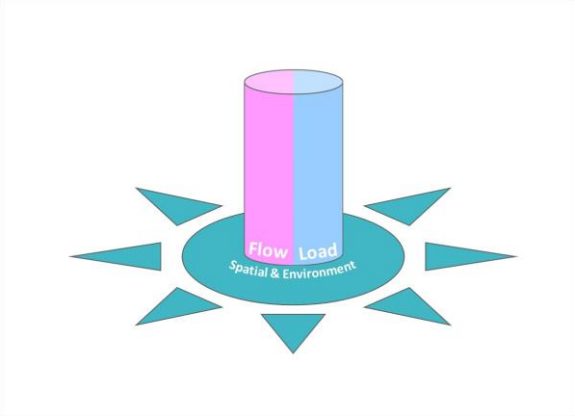


Figure 69 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 70 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 79 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
HORDLEY (SYCAMORE VIEW) (10752)

March 2023

WONDERFUL ON TAP

Overview

Hordley (Sycamore View) WwTW serves a residential population of 65. Treated effluent is discharged to the River Perry.

Key Statistics:

- Residential Population Served: 65
- This is our 685th largest catchment across the whole of Severn Trent, and the 39th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

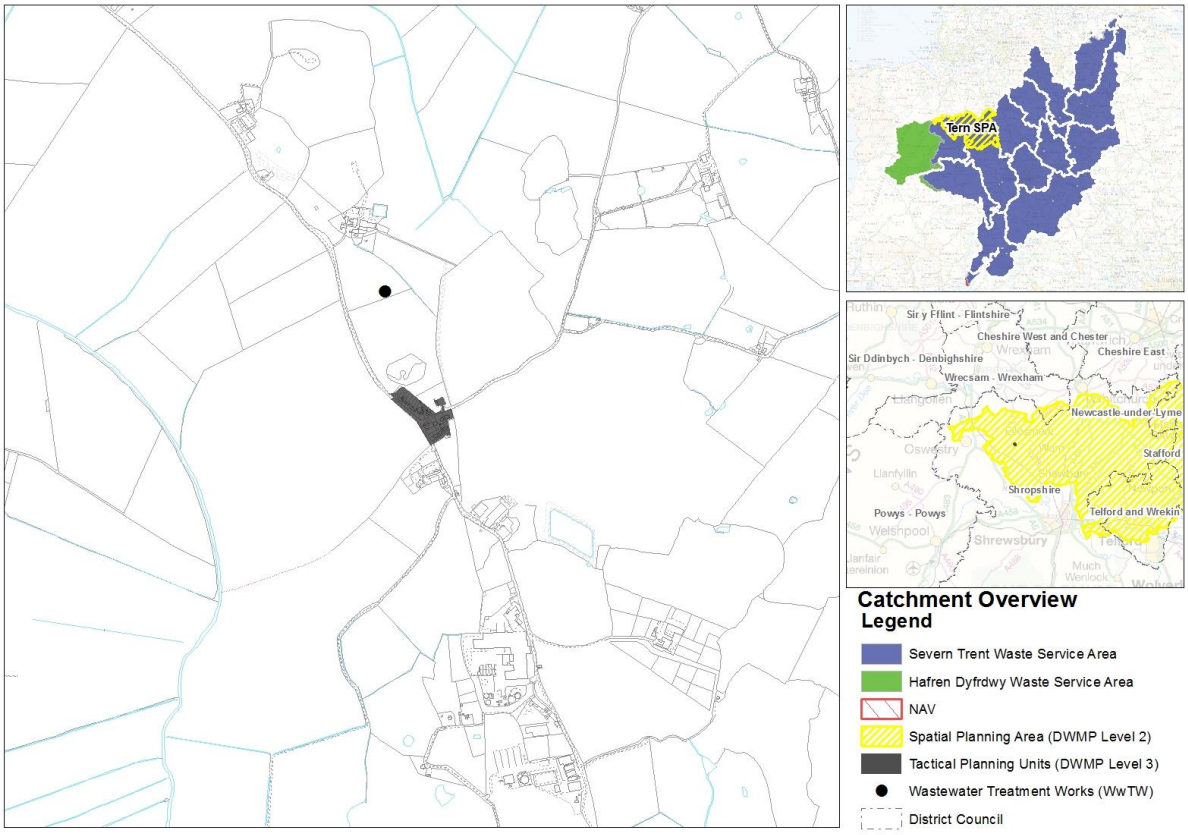
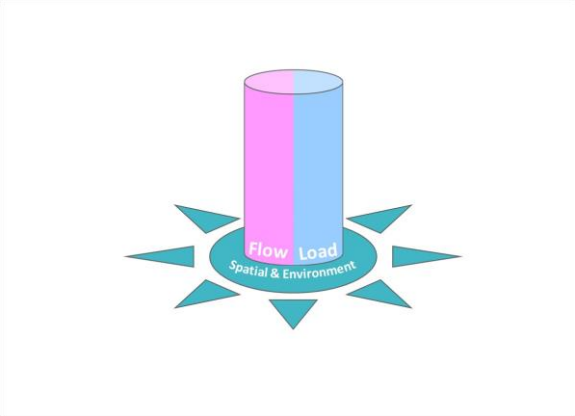


Figure 71 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 72 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 80 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: IGHTFIELD (10940)

March 2023

WONDERFUL ON TAP

Overview

Ightfield WwTW serves a residential population of 237. Treated effluent is discharged to a tributary of the Bailey Brook.

Key Statistics:

- Residential Population Served: 237
- This is our 517th largest catchment across the whole of Severn Trent, and the 27th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 4.2km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

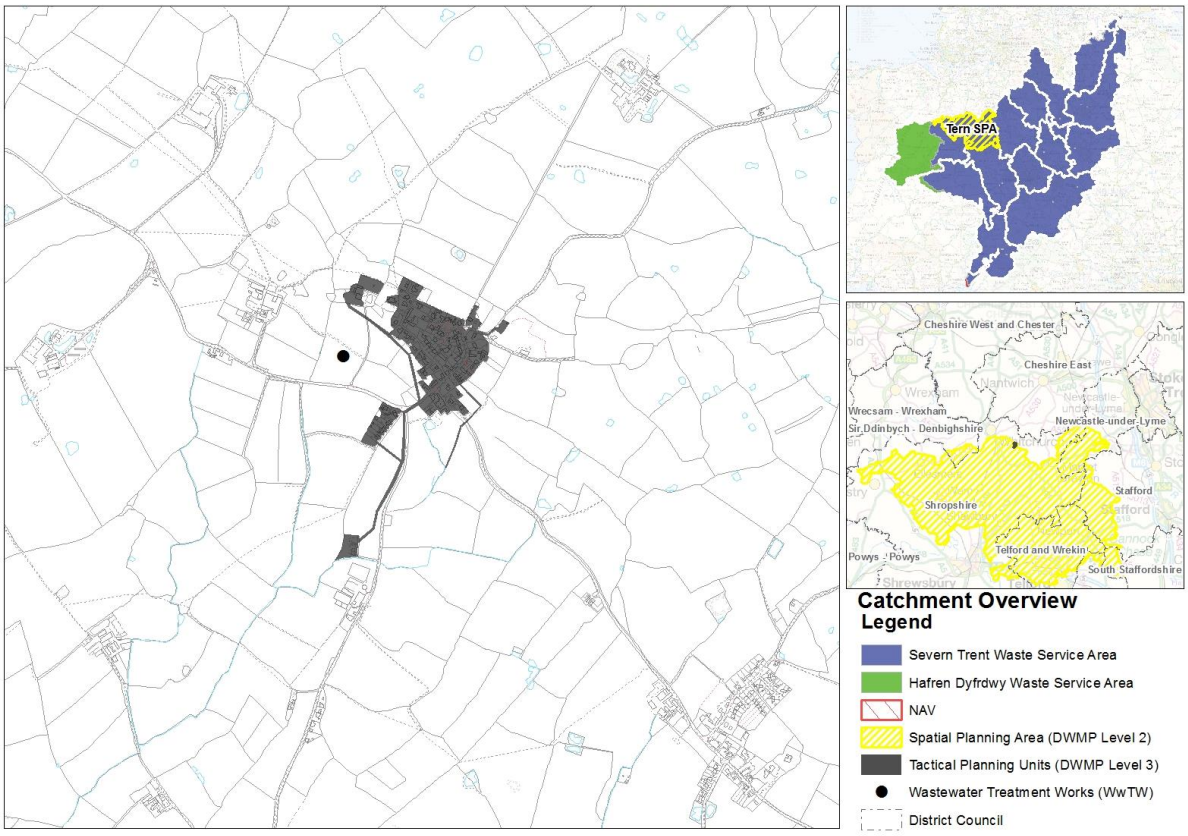
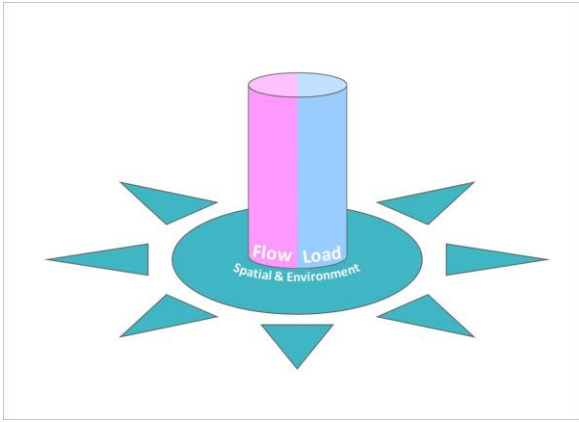


Figure 73 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 74 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 81 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
KENWICK PARK (10753)

March 2023

WONDERFUL ON TAP

Overview

Kenwick Park WwTW serves a residential population of 12. Treated effluent is discharged to a tributary of the Springs Brook.

Key Statistics:

- Residential Population Served: 12
- This is our 870th largest catchment across the whole of Severn Trent, and the 77th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

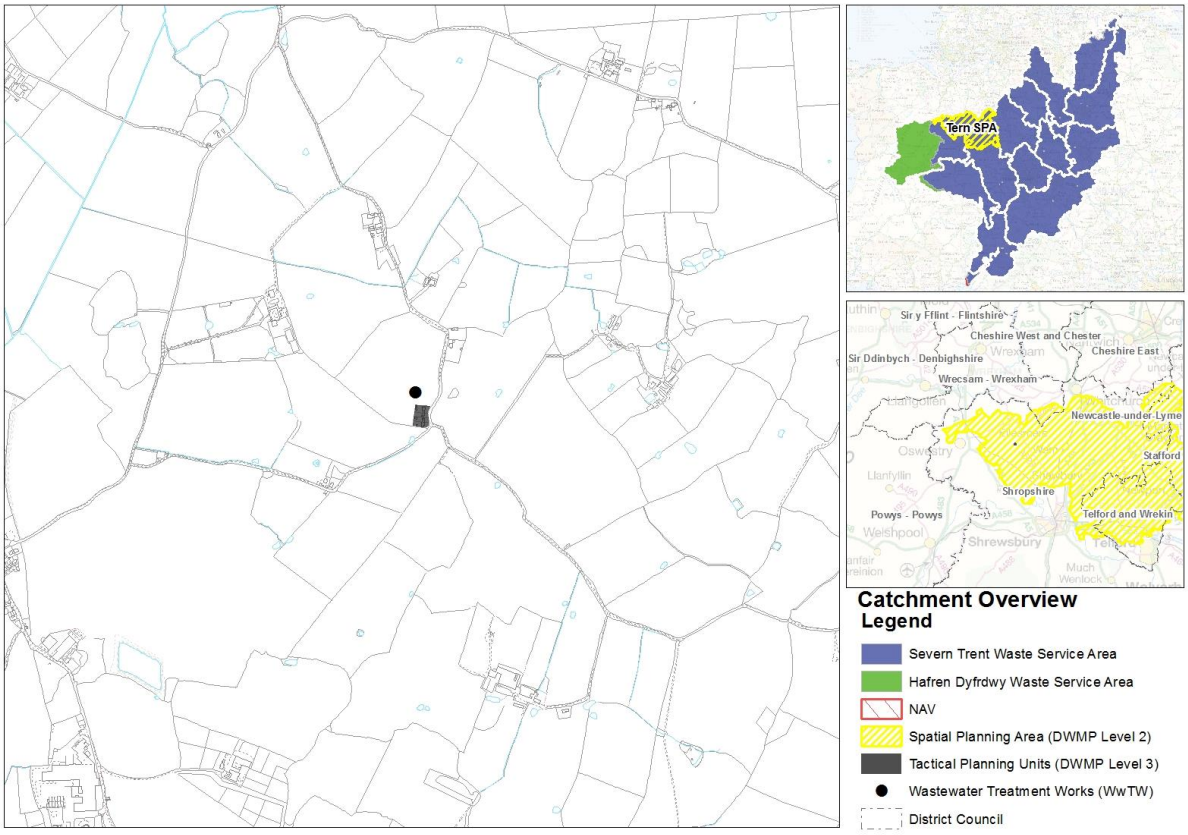
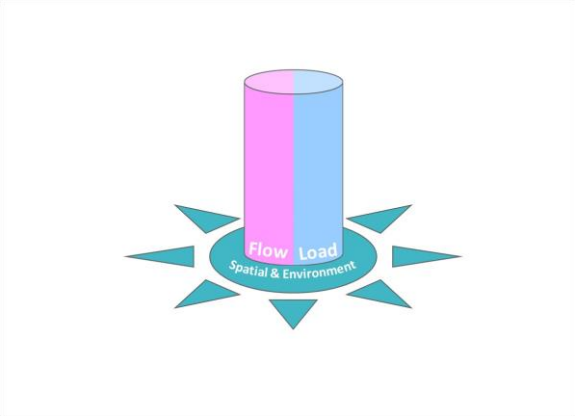


Figure 75 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



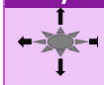
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 76 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 82 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
LOGGERHEADS VILLAGE (10544)

March 2023

WONDERFUL ON TAP

SEVERN
TRENT

Overview

Loggerheads Village WwTW is located to the west of Loggerheads Village and serves a residential population of 1,518. Treated effluent is discharged to the Loggerheads Brook. In addition to Loggerheads Village WwTW there is another WwTW to the south west of the catchment called Loggerheads Sanatorium WwTW.

Key Statistics:

- Residential Population Served: 1,518
- This is our 285th largest catchment across the whole of Severn Trent, and the 11th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 23.2km of public foul water sewers and 6.9km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

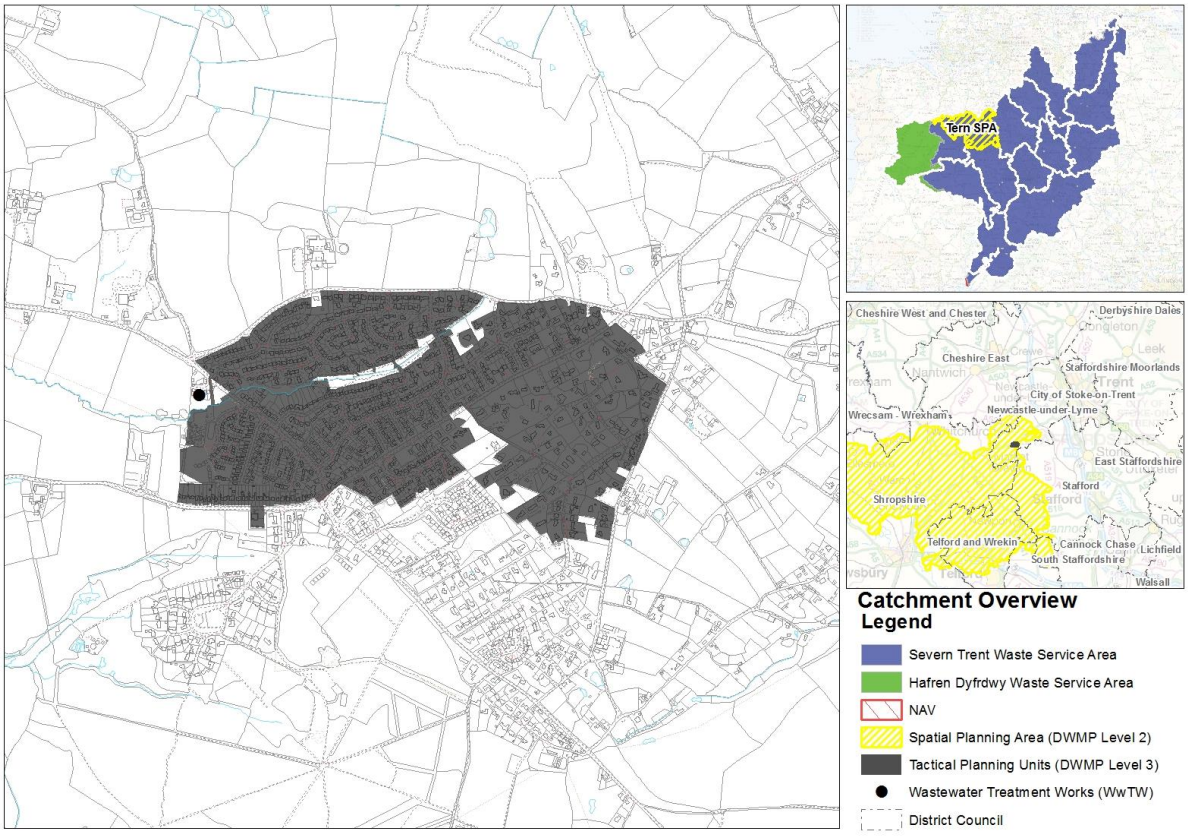
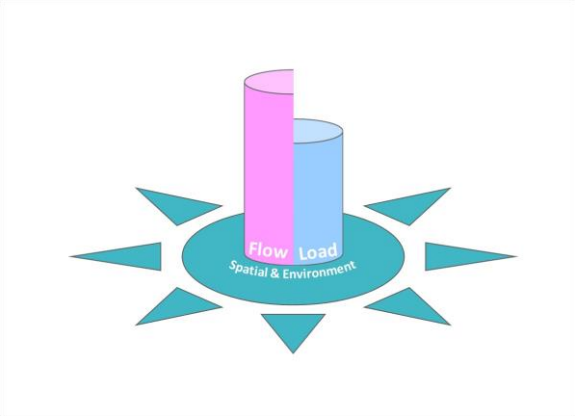


Figure 77 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 78 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 83 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 84 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 85 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 86 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	1	1	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	1	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	1	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 87 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
LOPPINGTON (10760)

March 2023

WONDERFUL ON TAP

Overview

Loppington WwTW serves a residential population of 283. Treated effluent is discharged to the River Roden.

Key Statistics:

- Residential Population Served: 283
- This is our 494th largest catchment across the whole of Severn Trent, and the 26th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 6.9km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

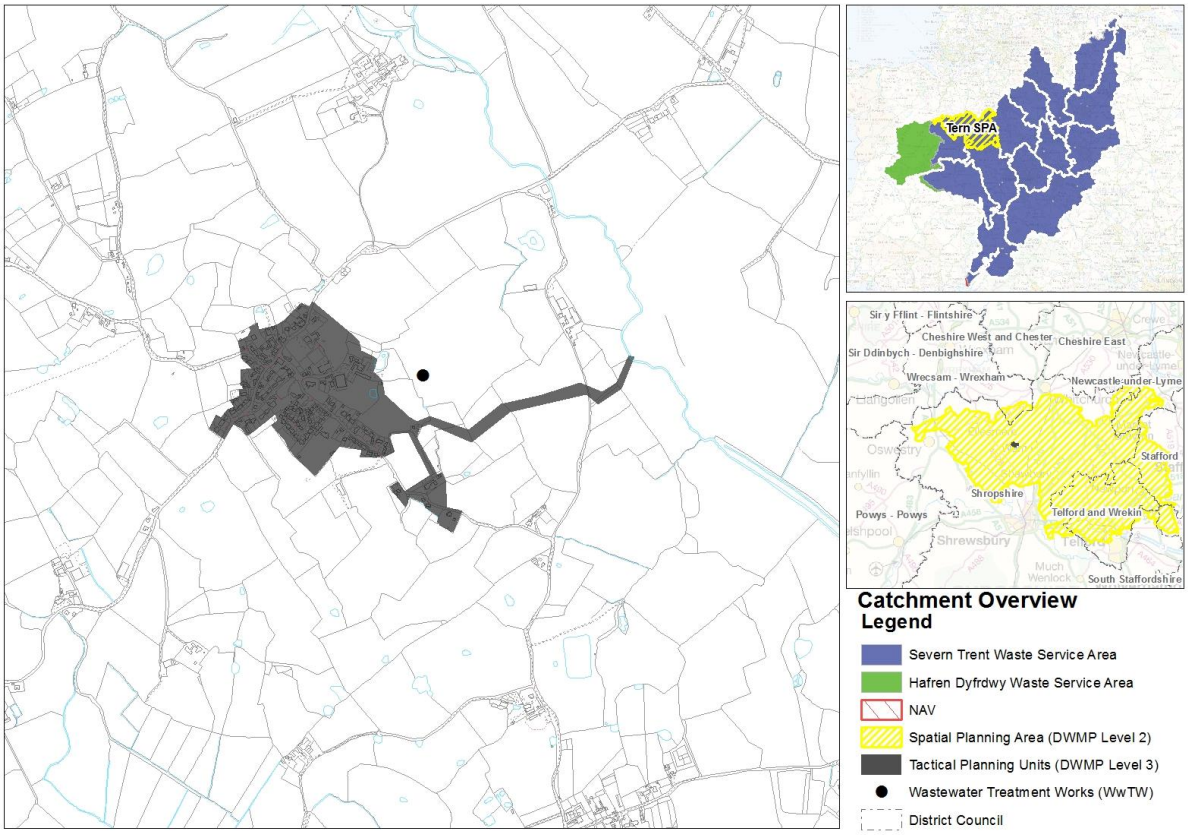
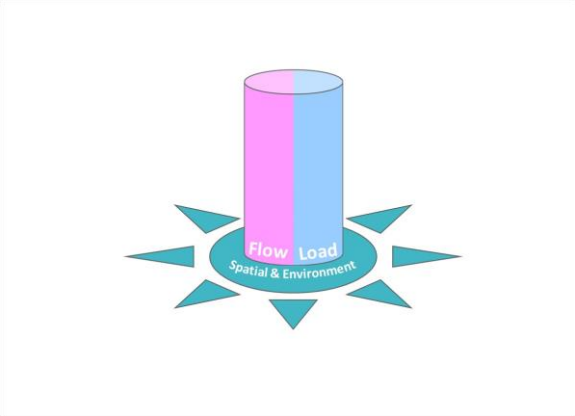


Figure 79 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 80 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 88 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: LYNEAL (10757)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Lyneal WwTW serves a residential population of 65. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 65
- This is our 685th largest catchment across the whole of Severn Trent, and the 39th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 1.5km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

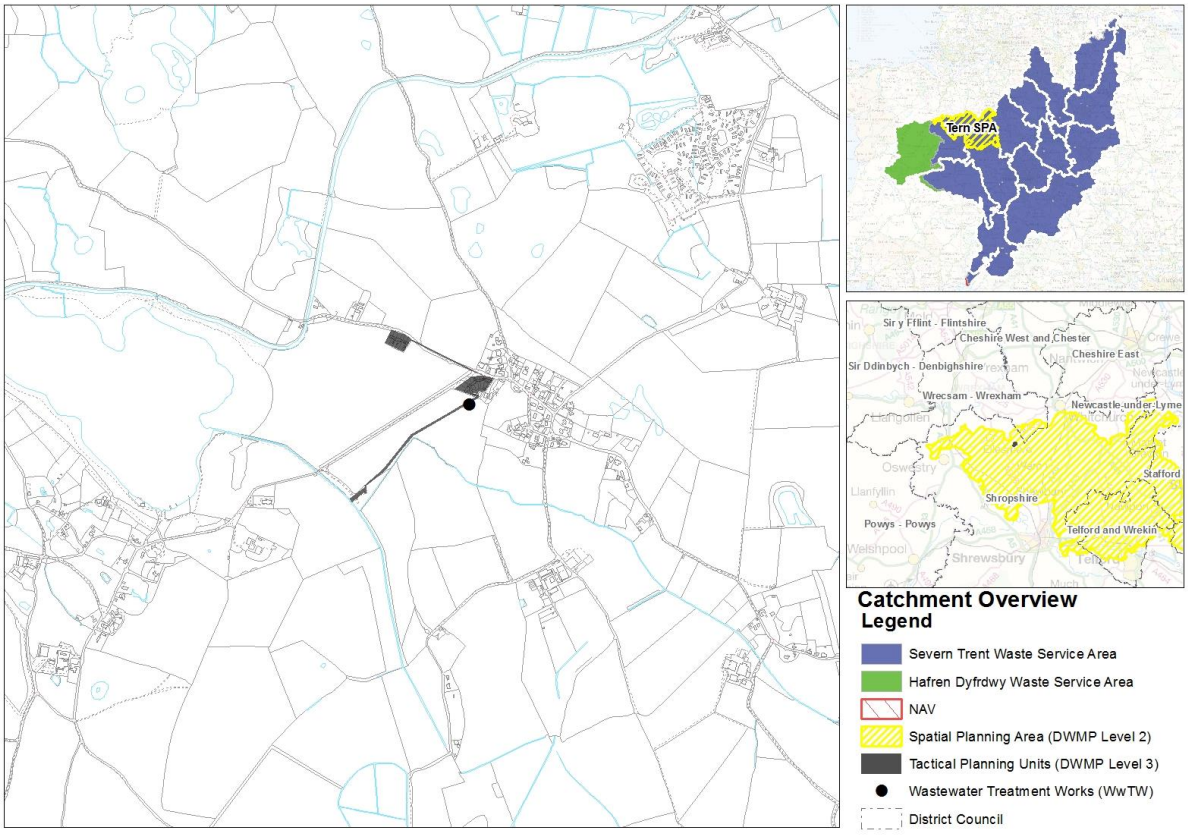
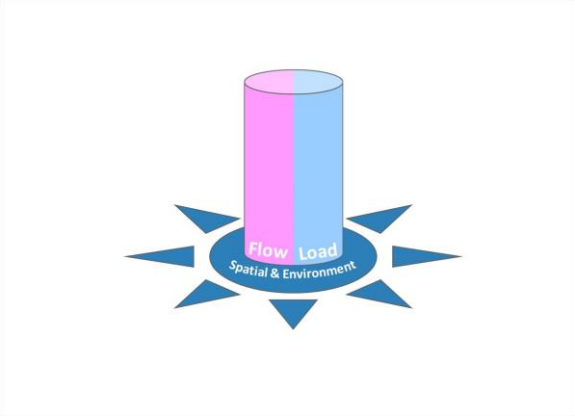


Figure 81 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 82 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 89 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
MARCHAMLEY (EASTLANDS) (10946)

March 2023

WONDERFUL ON TAP

Overview

Marchamley (Eastlands) WwTW serves a residential population of 81. Treated effluent is discharged to a tributary of the River Tern.

Key Statistics:

- Residential Population Served: 81
- This is our 661st largest catchment across the whole of Severn Trent, and the 38th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 1.1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

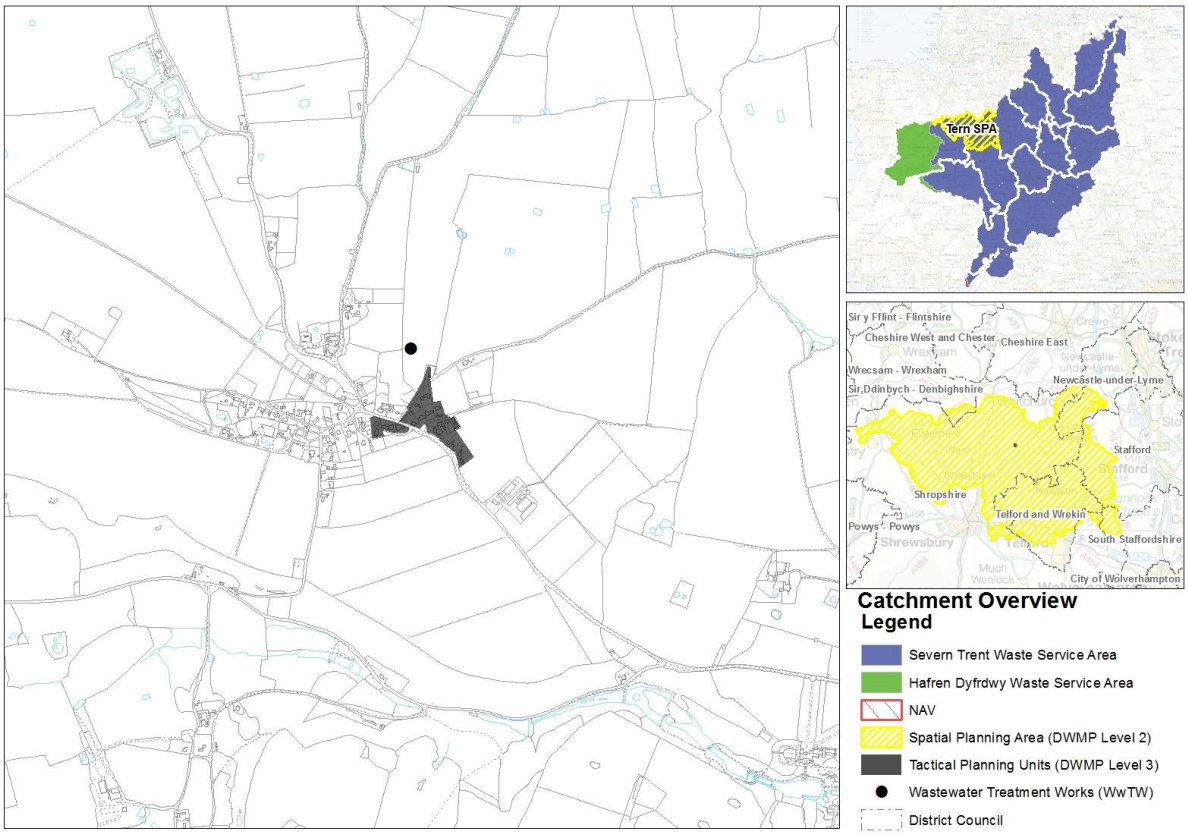
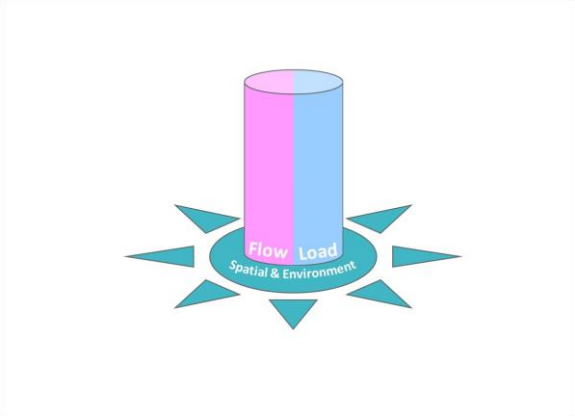


Figure 83 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 84 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 90 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
MARKET DRAYTON (10899)

March 2023

WONDERFUL ON TAP

Overview

Market Drayton WwTW is located to the south of Market Drayton and serves a residential population of 20,068. Treated effluent is discharged to the River Tern.

Key Statistics:

- Residential Population Served: 20,068
- This is our 80th largest catchment across the whole of Severn Trent, and the 2nd largest in the Tern Stategic Planning Area making up 11% of its population.
- It has 70.8km of public foul water sewers and 20.5km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

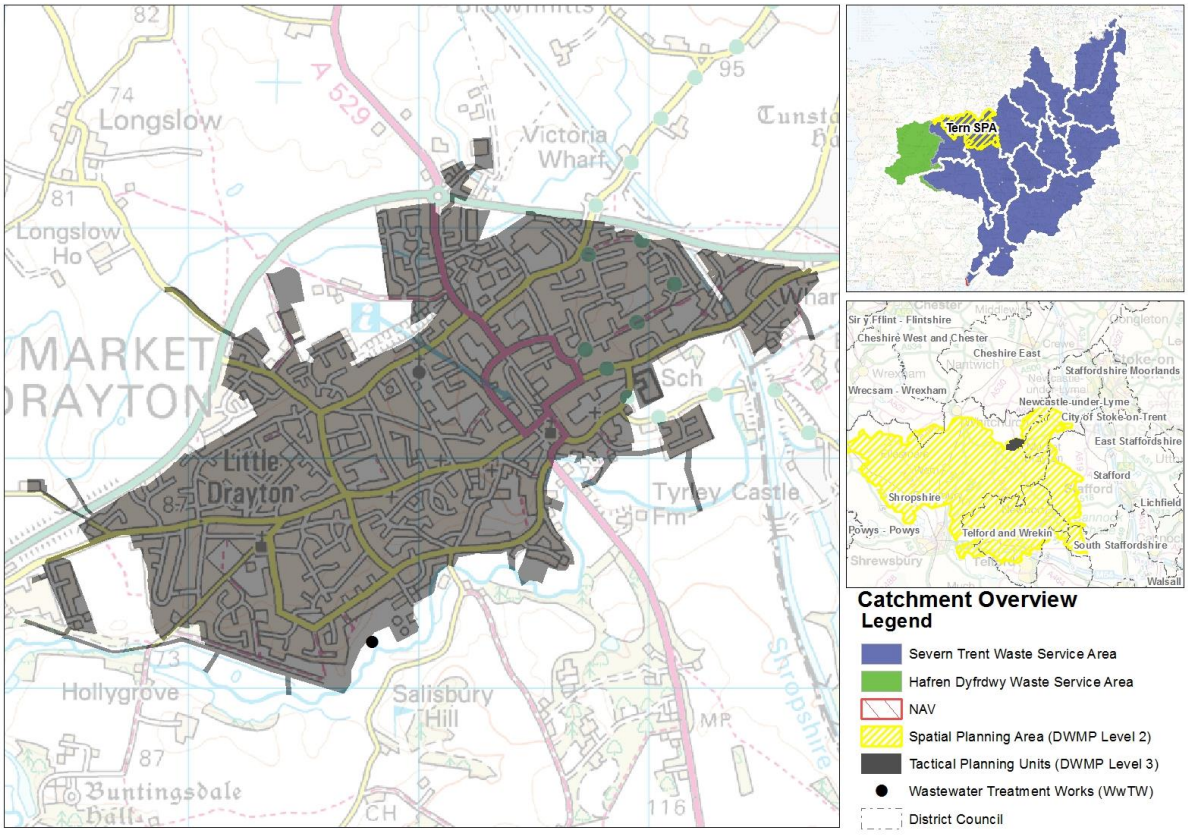
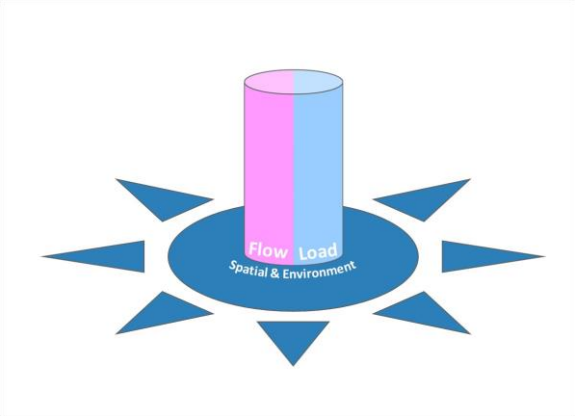


Figure 85 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 86 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 91 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 5 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 92 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 93 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 94 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	1	1	1	1	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 95 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
MORETON SAYE (THE DRUMBLES) (10902)

March 2023

WONDERFUL ON TAP

Overview

Moreton Saye (The Drumbles) WwTW serves a residential population of 16. Treated effluent is discharged to a tributary of the Bailey Brook.

Key Statistics:

- Residential Population Served: 16
- This is our 834th largest catchment across the whole of Severn Trent, and the 67th largest in the Tern Strategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

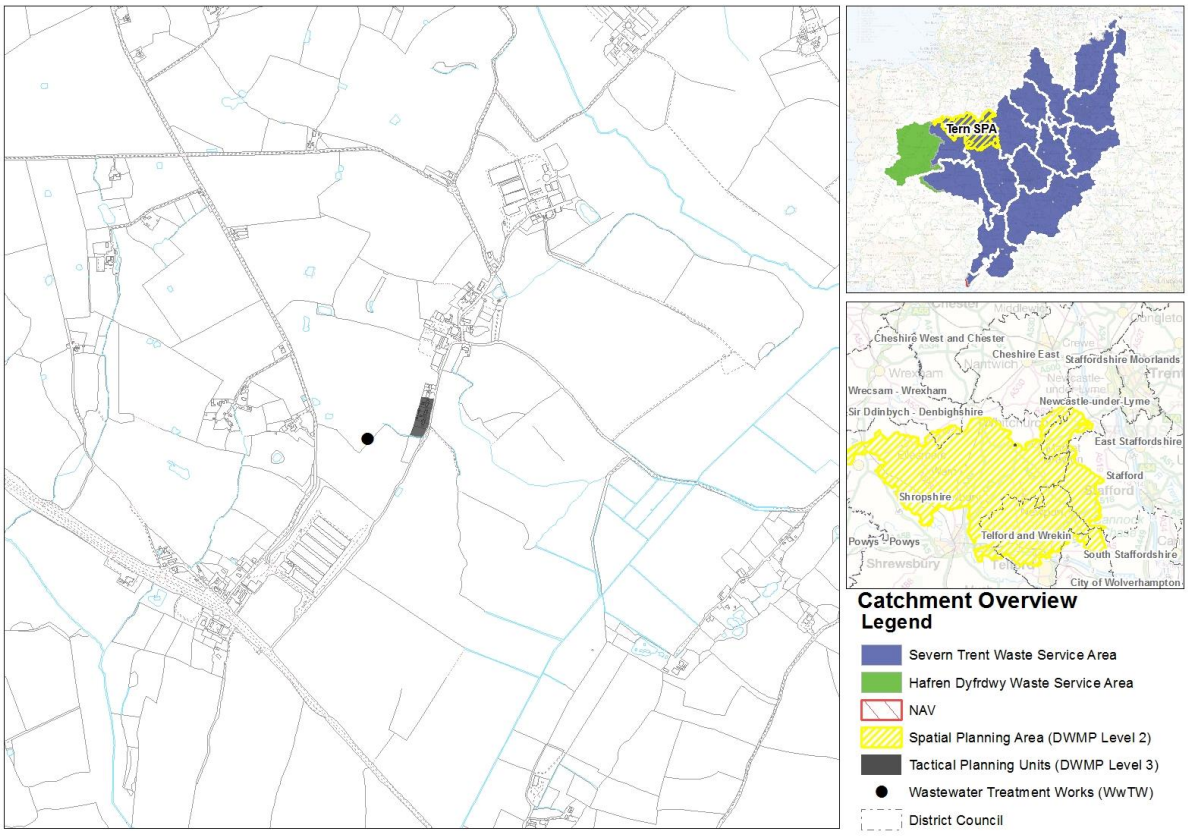
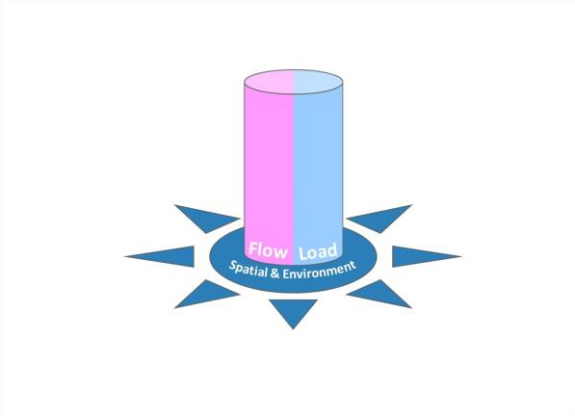


Figure 87 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 88 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 96 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
MORETONWOOD-BLETCHLEY RD (10664)

March 2023

WONDERFUL ON TAP

Overview

Moretonwood-Bletchley Rd WwTW serves a residential population of 11. Treated effluent is discharged to a tributary of the Bailey Brook.

Key Statistics:

- Residential Population Served: 11
- This is our 880th largest catchment across the whole of Severn Trent, and the 80th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

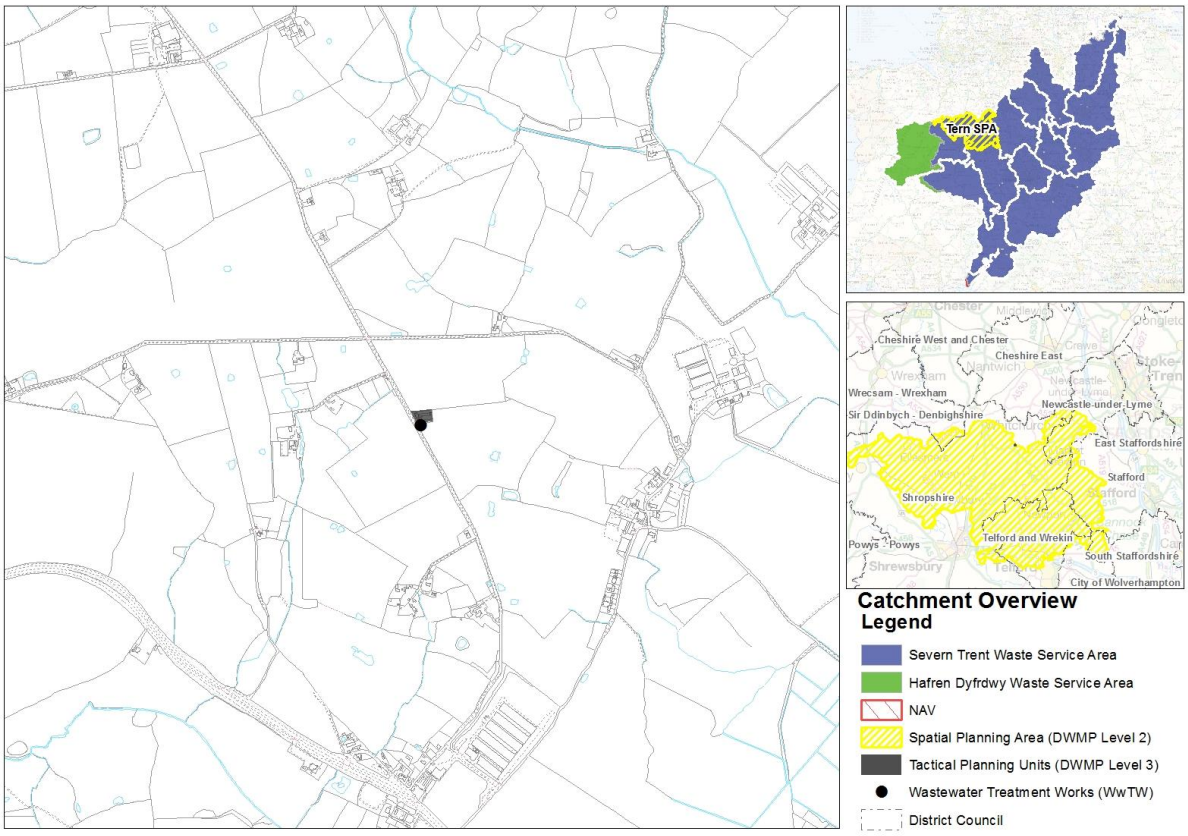
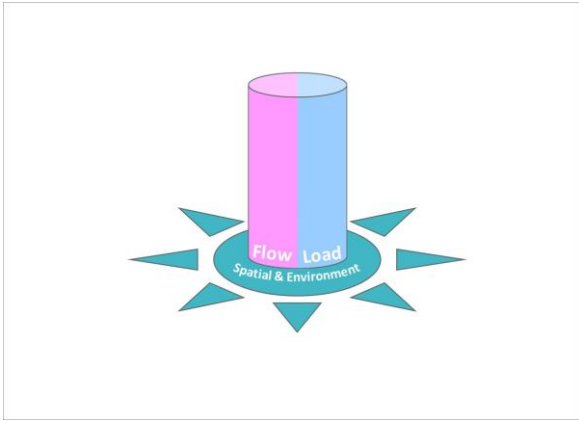


Figure 89 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 90 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 97 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
NEWPORT (TELFORD) (10904)

March 2023

WONDERFUL ON TAP

SEVERN
TRENT

Overview

#N/A

Key Statistics:

- Residential Population Served: 13,902
- This is our 97th largest catchment across the whole of Severn Trent, and the 3rd largest in the Tern Stategic Planning Area making up 7% of its population.
- It has 81.9km of public foul water sewers and 47.8km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

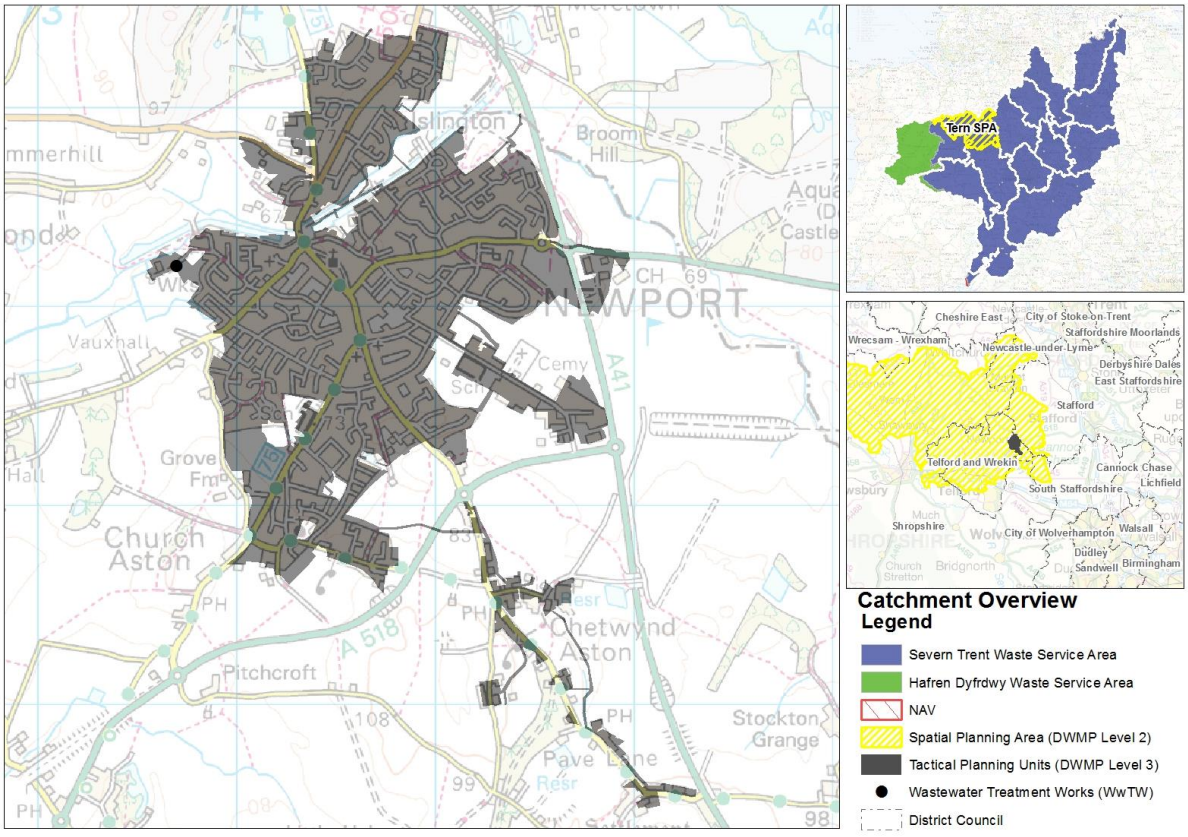
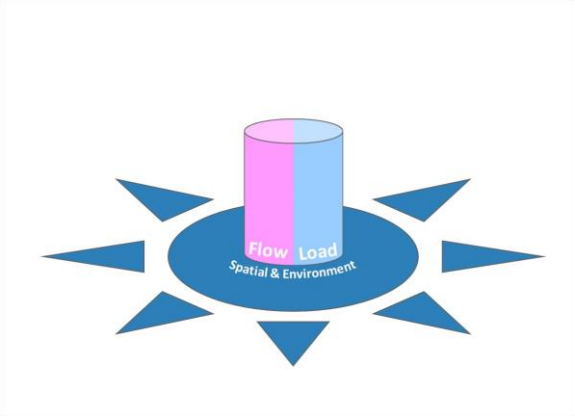


Figure 91 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

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Key	Constraint	Description
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	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 92 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 98 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	Yes

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 7 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 99 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 100 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 101 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	2	2	2	2	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	1	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	2	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 102 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
NEWTOWN SPRINGFIELD (10673)

March 2023

WONDERFUL ON TAP

Overview

Newtown Springfield WwTW serves a residential population of 82. Treated effluent is discharged to the River Severn.

Key Statistics:

- Residential Population Served: 82
- This is our 658th largest catchment across the whole of Severn Trent, and the 37th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 1.9km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

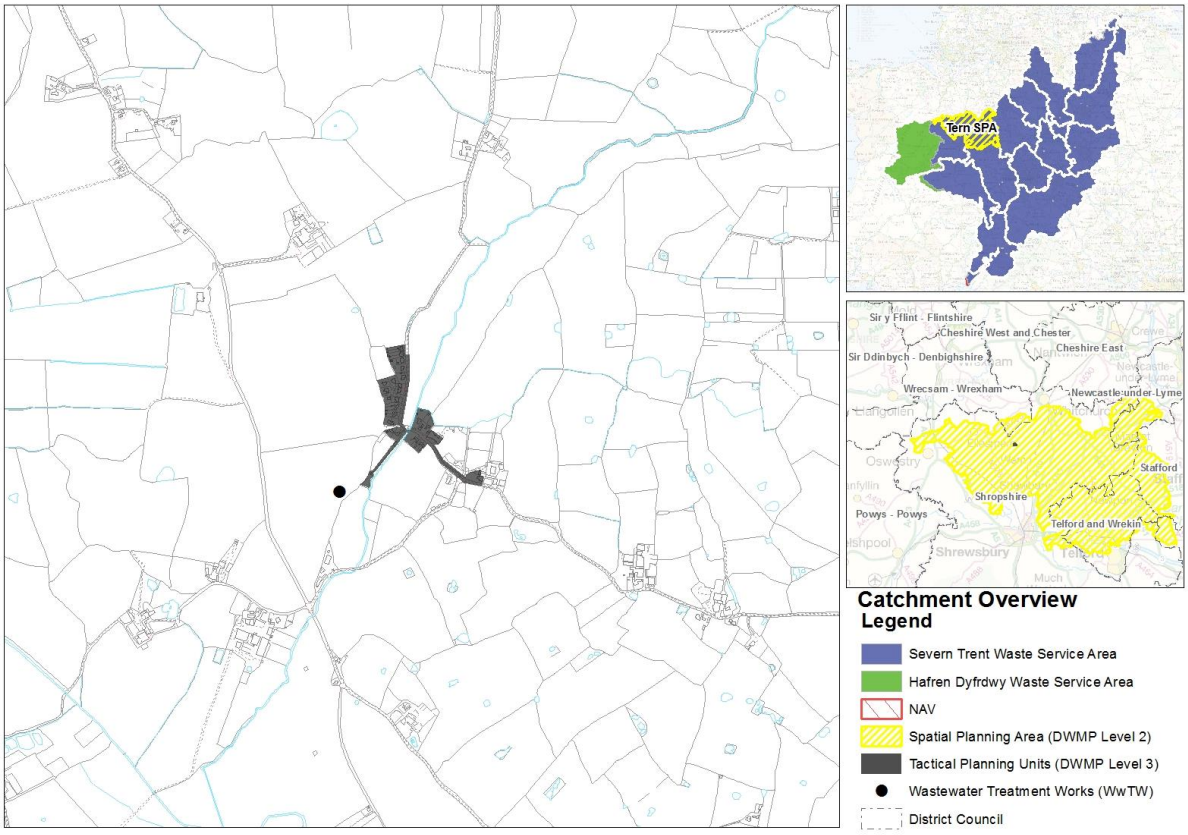
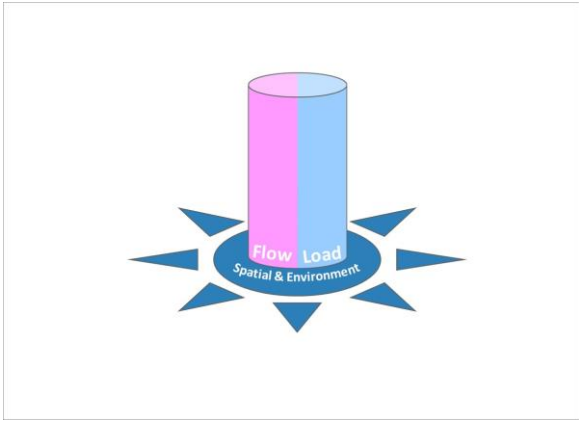


Figure 93 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 94 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 103 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: NORBURY (11031)

March 2023

WONDERFUL ON TAP

Overview

Norbury WwTW is located to the south of Norbury and serves a residential population of 141. Treated effluent is discharged to a tributary of the Wood Brook.

Key Statistics:

- Residential Population Served: 141
- This is our 589th largest catchment across the whole of Severn Trent, and the 31st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 1.6km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

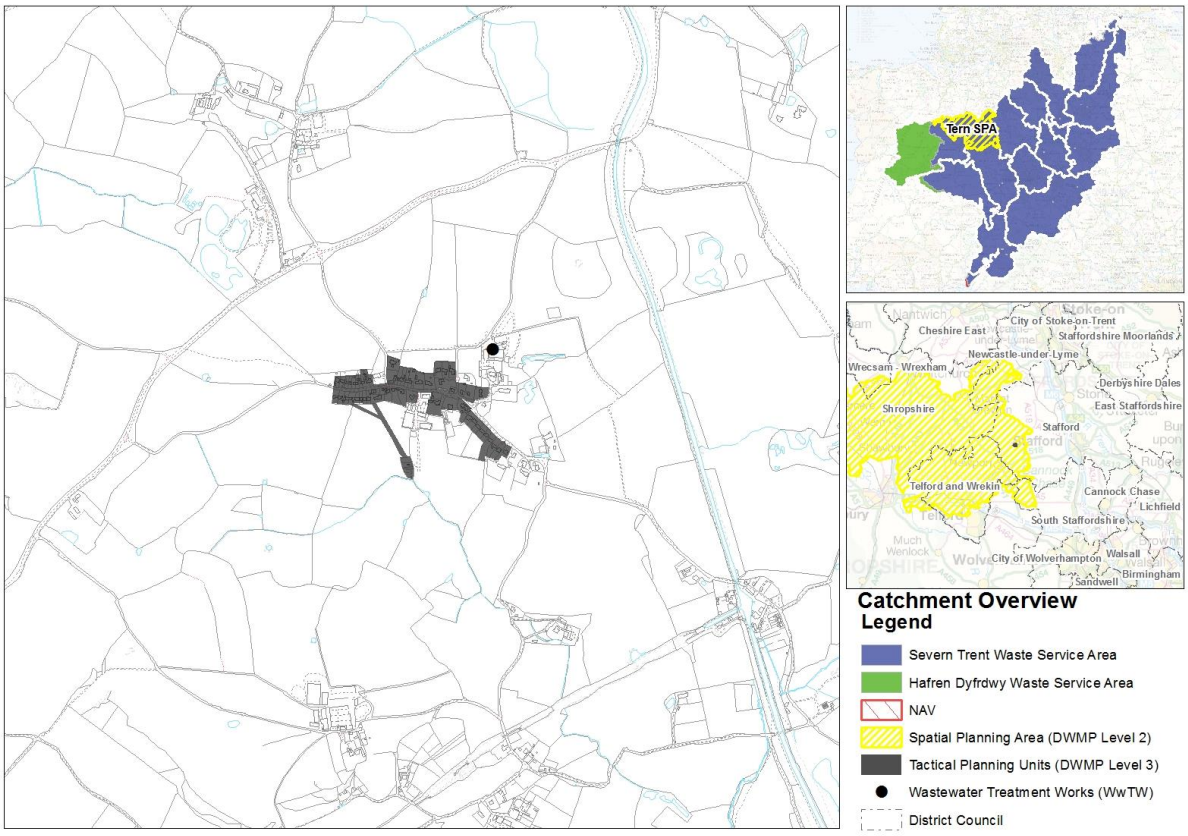
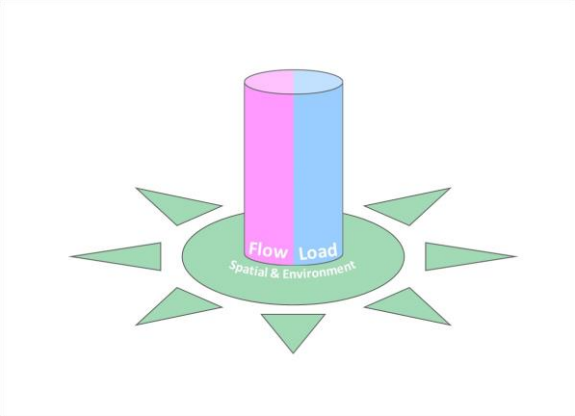


Figure 95 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 96 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 104 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	Yes
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 105 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 106 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 107 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	2	2	2	2	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 108 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
NORTHWOOD - WEM ROAD (10674)

March 2023

WONDERFUL ON TAP

Overview

Northwood - Wem Road WwTW serves a residential population of 10. Treated effluent is discharged locally.

Key Statistics:

- Residential Population Served: 10
- This is our 887th largest catchment across the whole of Severn Trent, and the 82nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

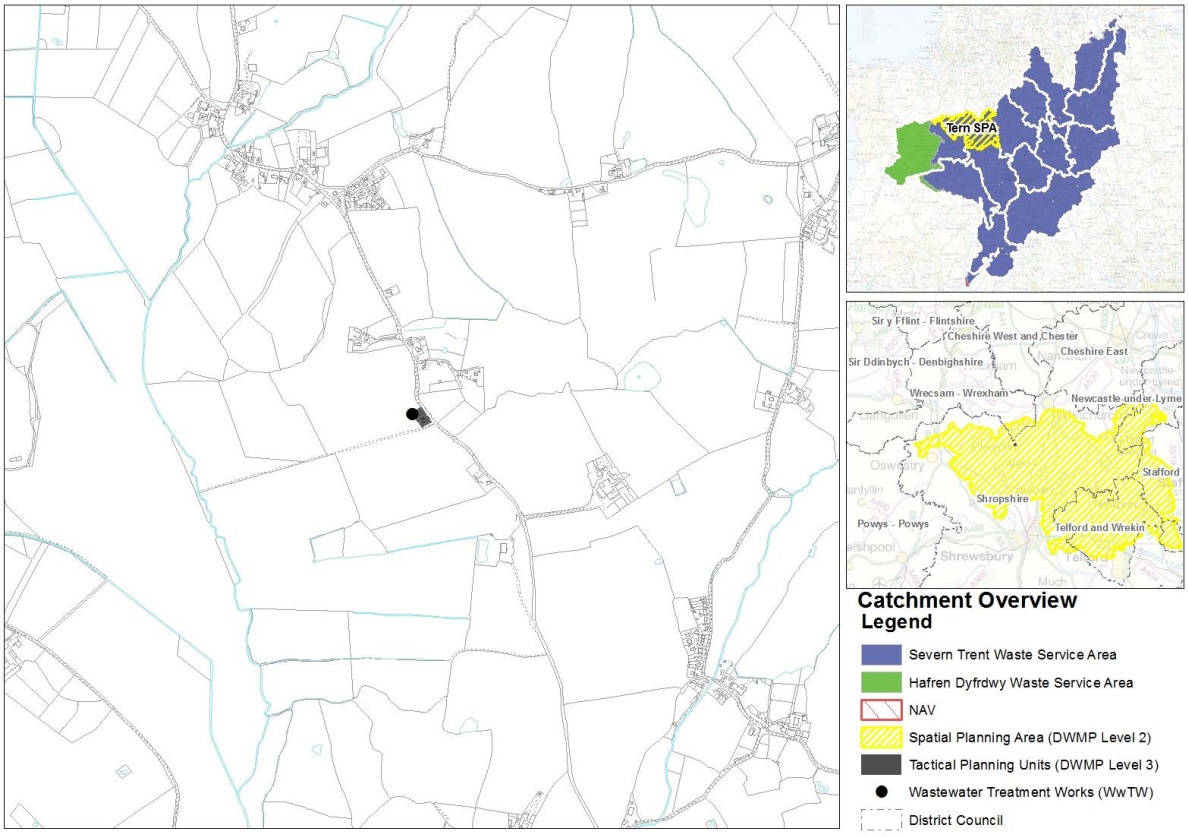
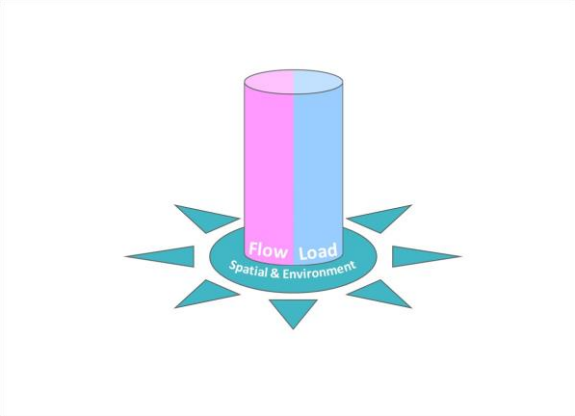


Figure 97 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 98 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 109 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
NORTON-IN-HALES (10905)

March 2023

WONDERFUL ON TAP

Overview

Norton-In-Hales WwTW serves a residential population of 503. Treated effluent is discharged to the River Tern.

Key Statistics:

- Residential Population Served: 503
- This is our 423rd largest catchment across the whole of Severn Trent, and the 25th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 6.6km of public foul water sewers and 2.9km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

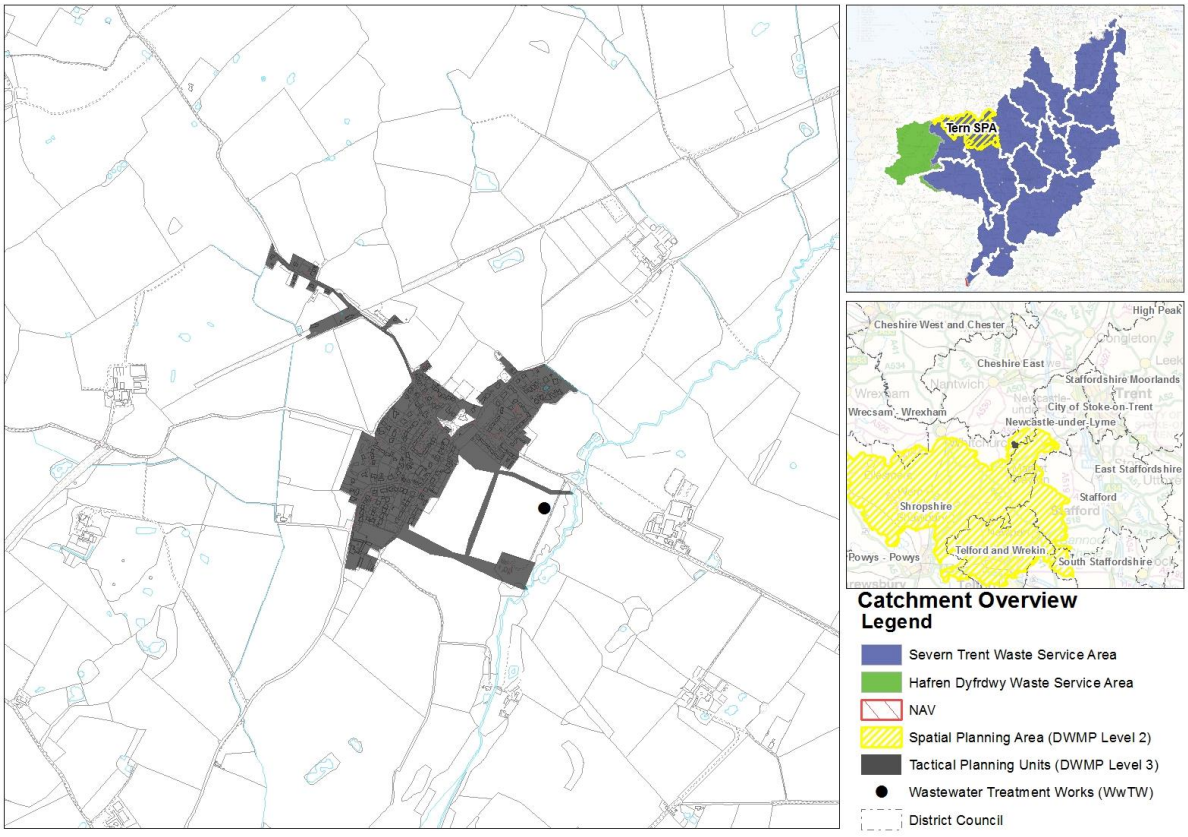
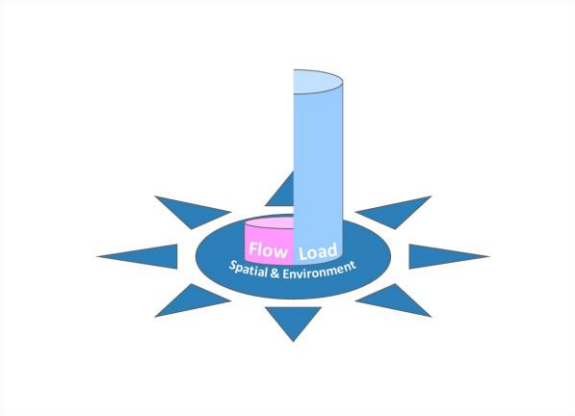


Figure 99 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 100 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 110 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: OSBASTON (10906)

March 2023

WONDERFUL ON TAP

Overview

Osbaston WwTW is located to the south of Osbaston, servicing a population of 54. Treated effluent is discharged to the Lakemoor Brook.

Key Statistics:

- Residential Population Served: 54
- This is our 718th largest catchment across the whole of Severn Trent, and the 43rd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 2.1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

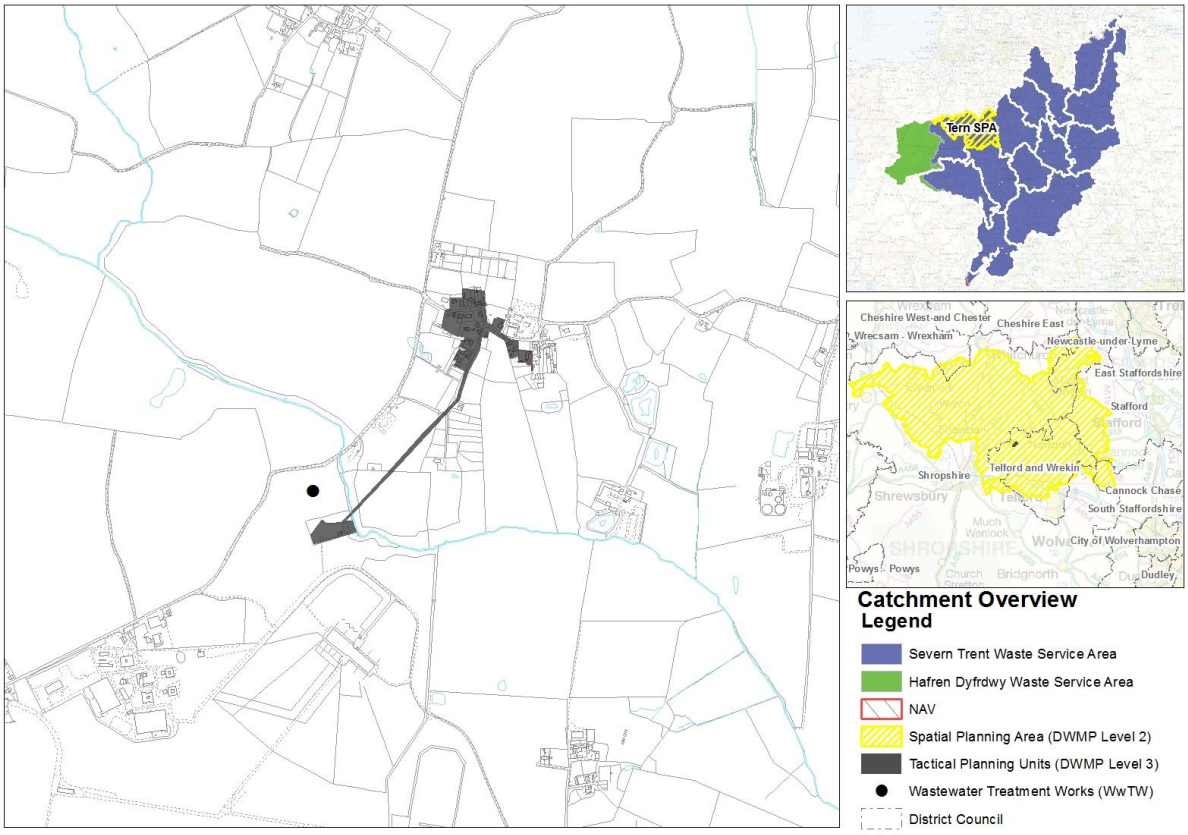
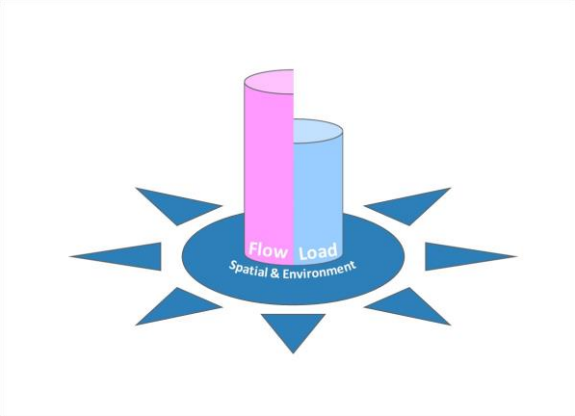


Figure 101 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 102 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 111 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 112 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 113 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 114 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	2	2	2	2	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	1	1	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	1	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 115 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: OXMOOR (10873)

March 2023

WONDERFUL ON TAP

Overview

Oxmoor WwTW serves a residential population of 15. Treated effluent is discharged to the Crow Brook.

Key Statistics:

- Residential Population Served: 15
- This is our 837th largest catchment across the whole of Severn Trent, and the 69th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

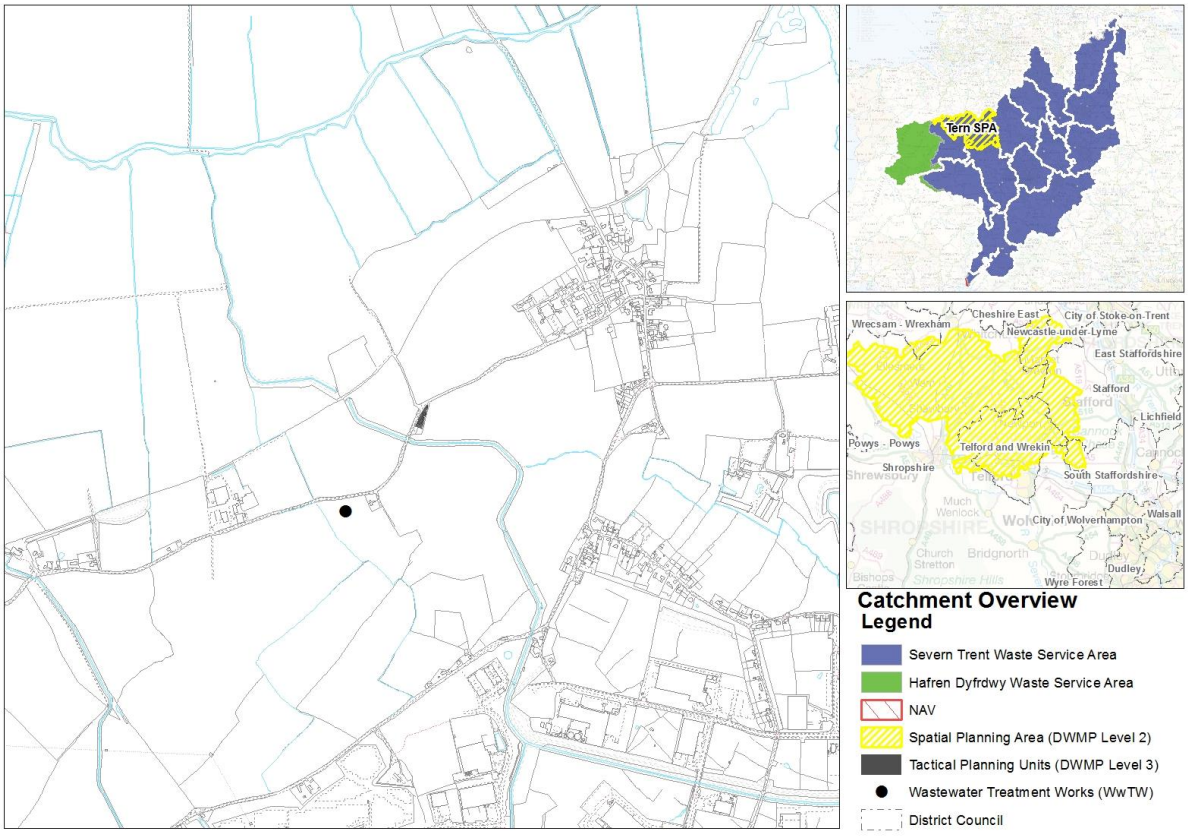
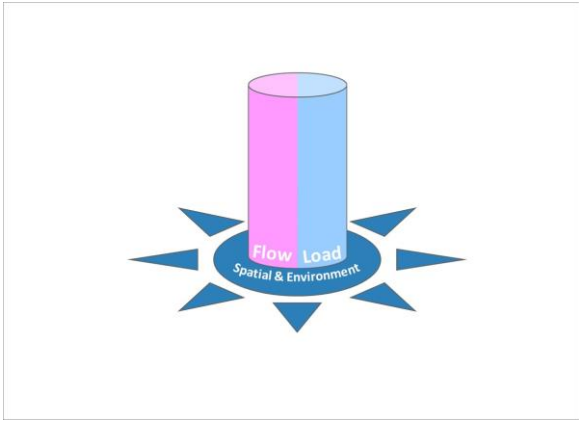


Figure 103 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 104 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 116 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PECKFORTON (14768)

March 2023

WONDERFUL ON TAP

Overview

Peckforton WwTW serves a residential population of 20. Treated effluent is discharged locally.

Key Statistics:

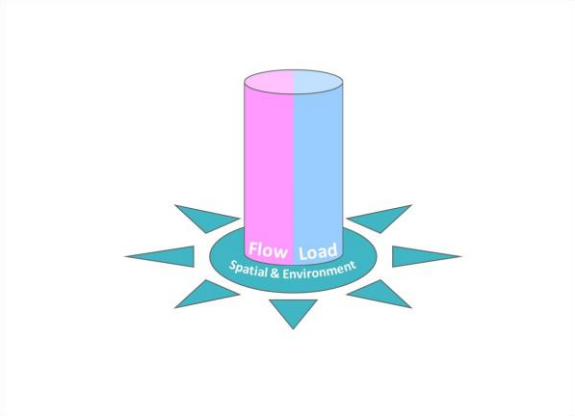
- Residential Population Served: 20
- This is our 811th largest catchment across the whole of Severn Trent, and the 61st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).



Figure 105 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 106 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 117 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: PEPLOW (10874)

March 2023

WONDERFUL ON TAP

Overview

Peplow WwTW serves a residential population of 9. Treated effluent is discharged to the Greenhurst Brook.

Key Statistics:

- Residential Population Served: 9
- This is our 895th largest catchment across the whole of Severn Trent, and the 85th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

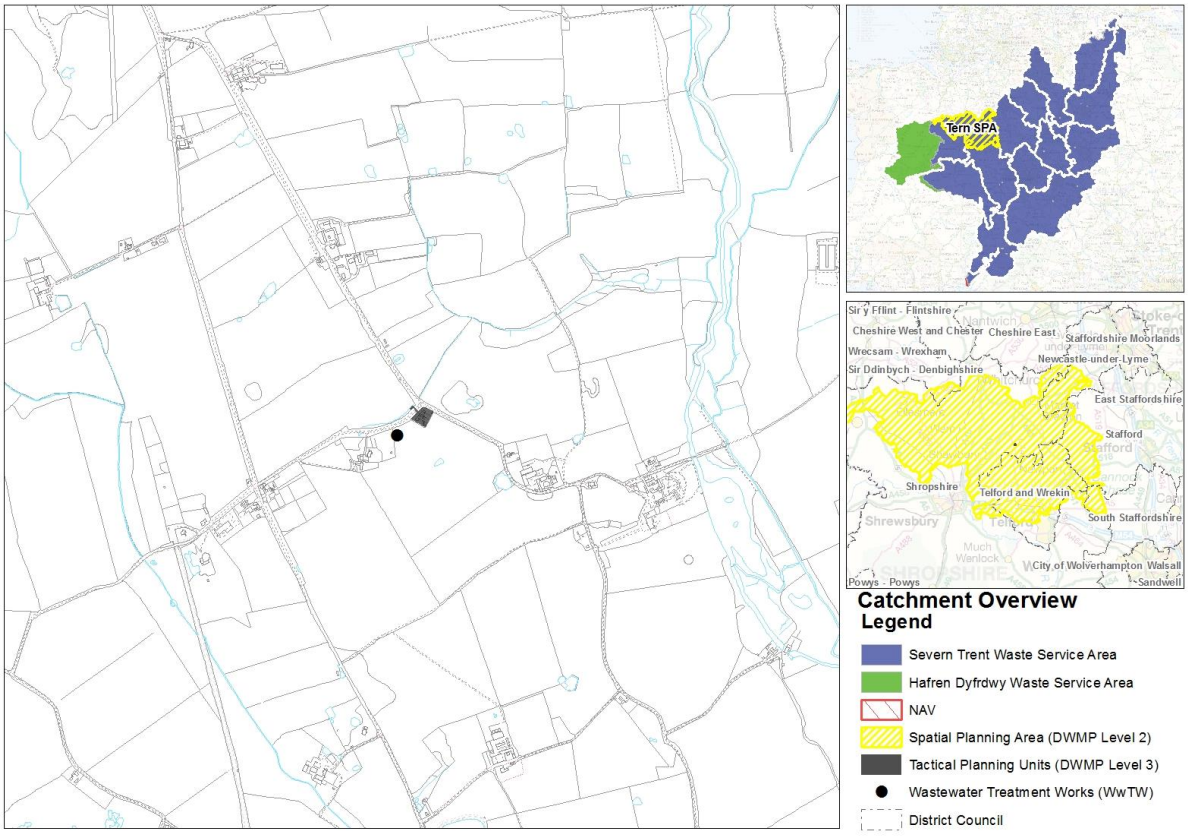
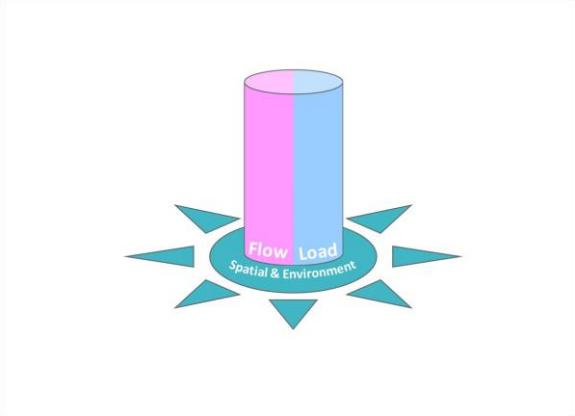


Figure 107 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



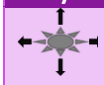
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 108 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 118 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PERTHY - WINDY RIDGE (10554)

March 2023

WONDERFUL ON TAP

Overview

Perthy - Windy Ridge WwTW serves a residential population of 14. Treated effluent is discharged to a tributary of the Newnes Brook.

Key Statistics:

- Residential Population Served: 14
- This is our 845th largest catchment across the whole of Severn Trent, and the 71st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

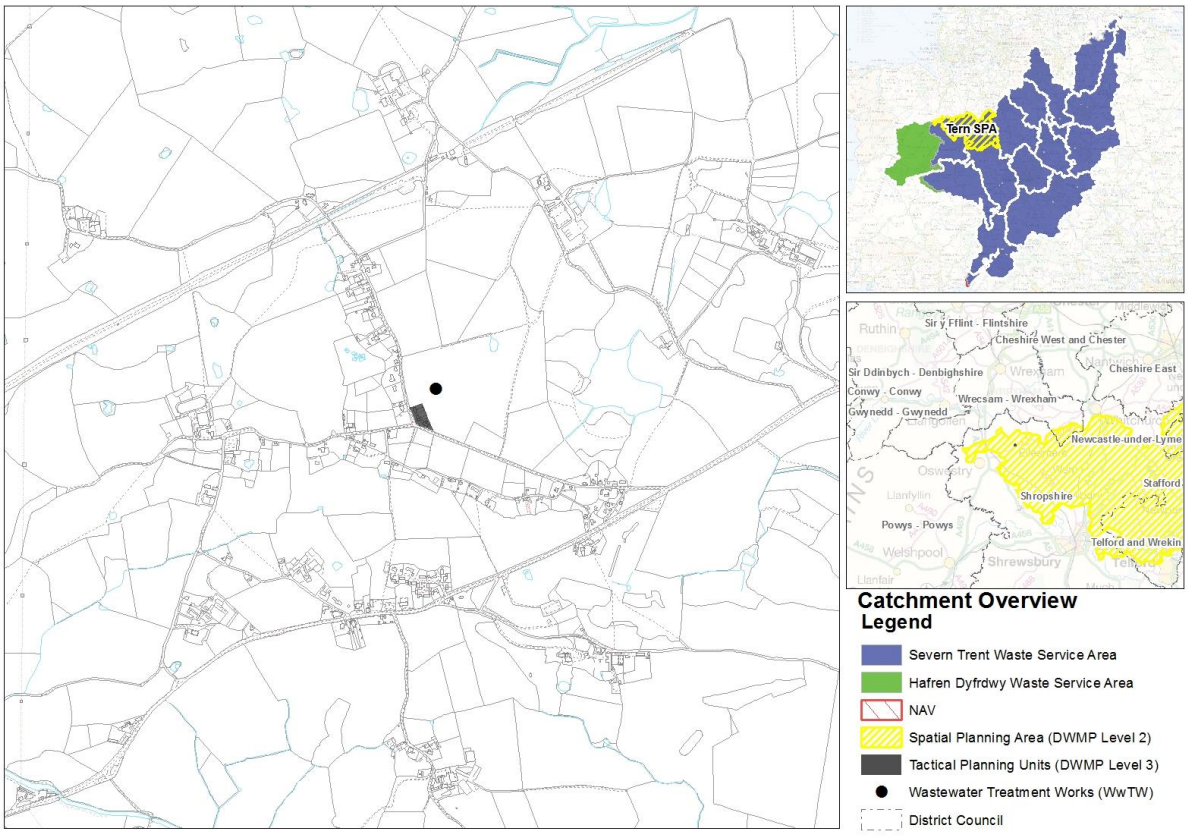
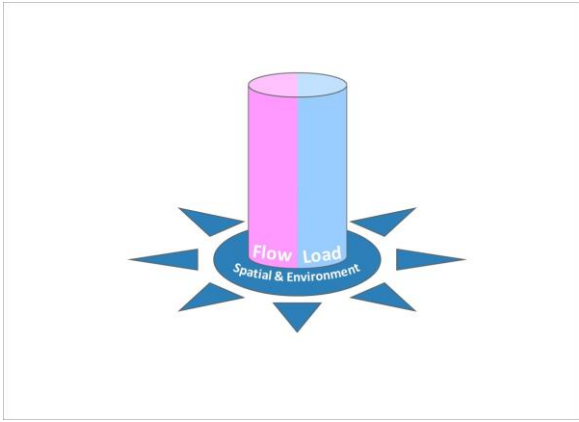


Figure 109 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 110 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 119 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PREES (GOLFHOUSE LANE) (10561)

March 2023

WONDERFUL ON TAP

Overview

Prees (Golfhouse Lane) WwTW serves a residential population of 816. Treated effluent is discharged to the Soulton Brook.

Key Statistics:

- Residential Population Served: 816
- This is our 352nd largest catchment across the whole of Severn Trent, and the 16th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 23.1km of public foul water sewers and 1.9km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

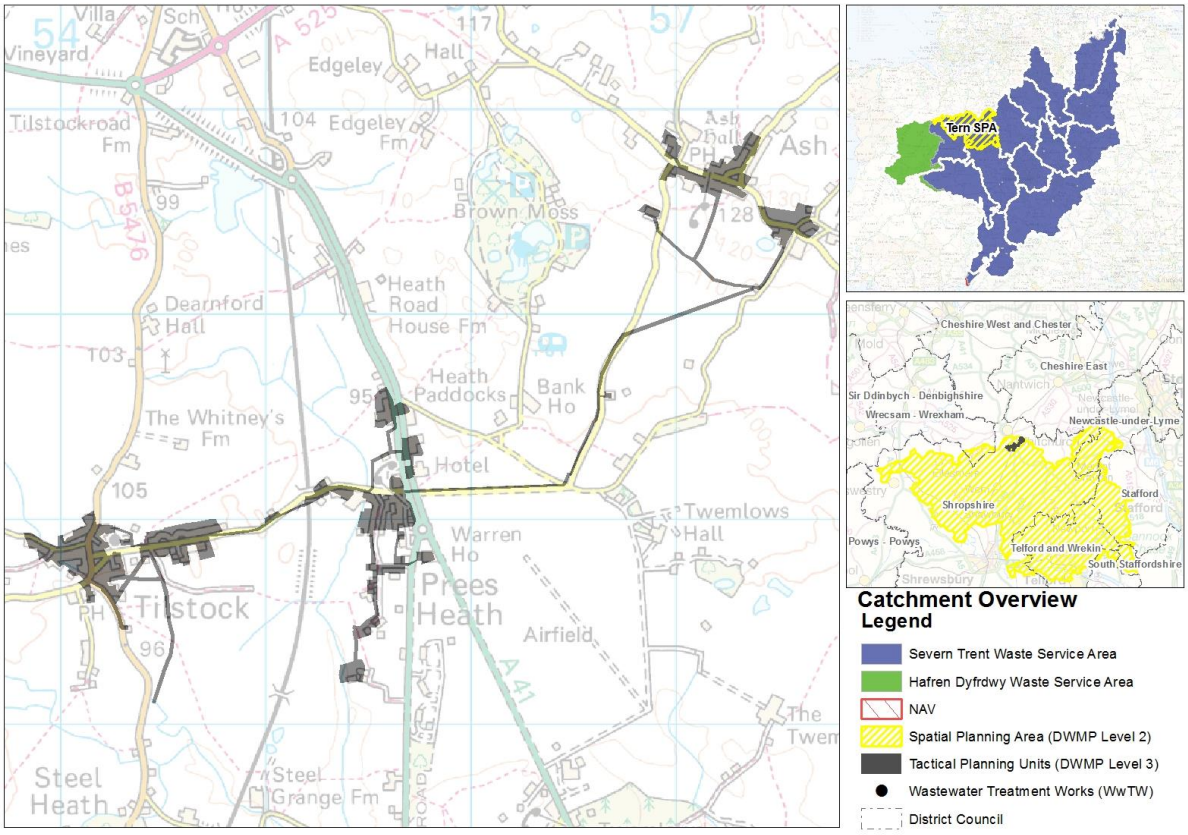
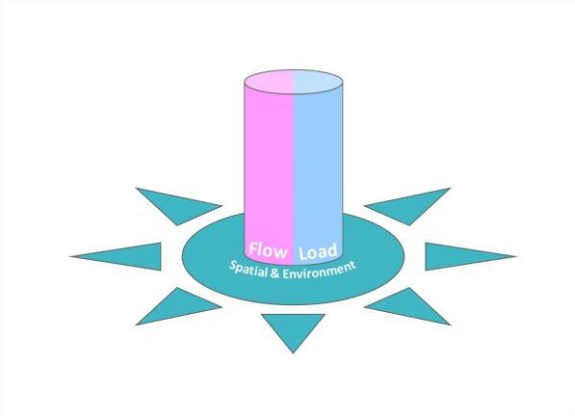


Figure 111 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 112 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 120 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PREES - HILLSIDE (10562)

March 2023

WONDERFUL ON TAP

Overview

Prees - Hillside WwTW serves a residential population of 24. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 24
- This is our 793rd largest catchment across the whole of Severn Trent, and the 55th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

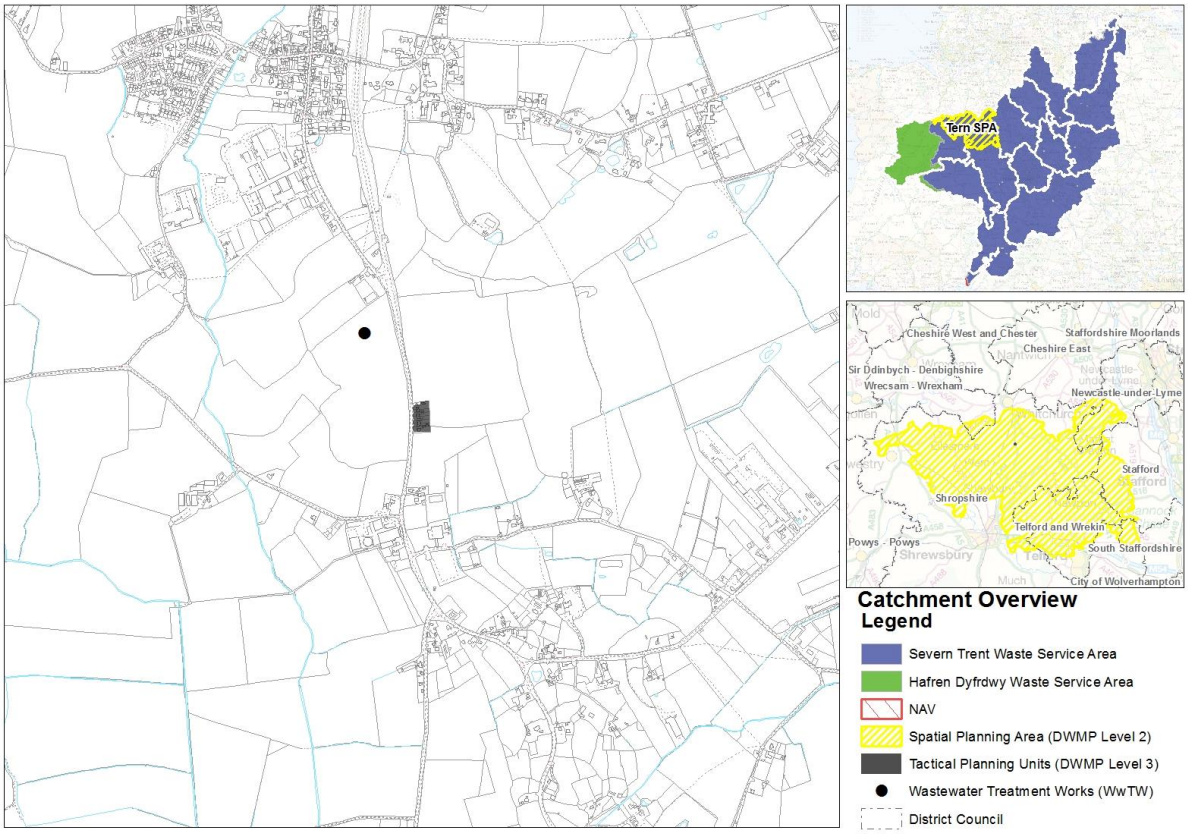
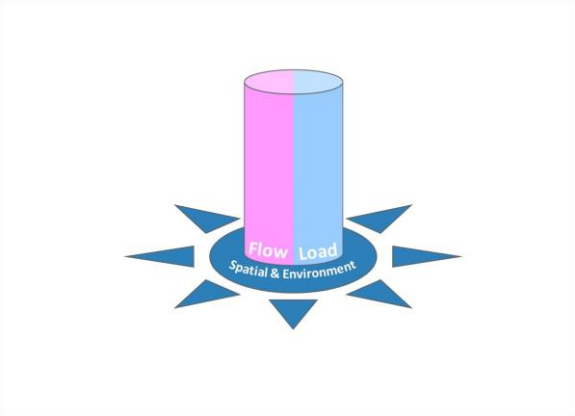


Figure 113 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 114 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 121 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PRESTON BROCKHURST (10677)

March 2023

WONDERFUL ON TAP

Overview

Preston Brockhurst WwTW serves a residential population of 57. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 57
- This is our 708th largest catchment across the whole of Severn Trent, and the 42nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 2.5km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

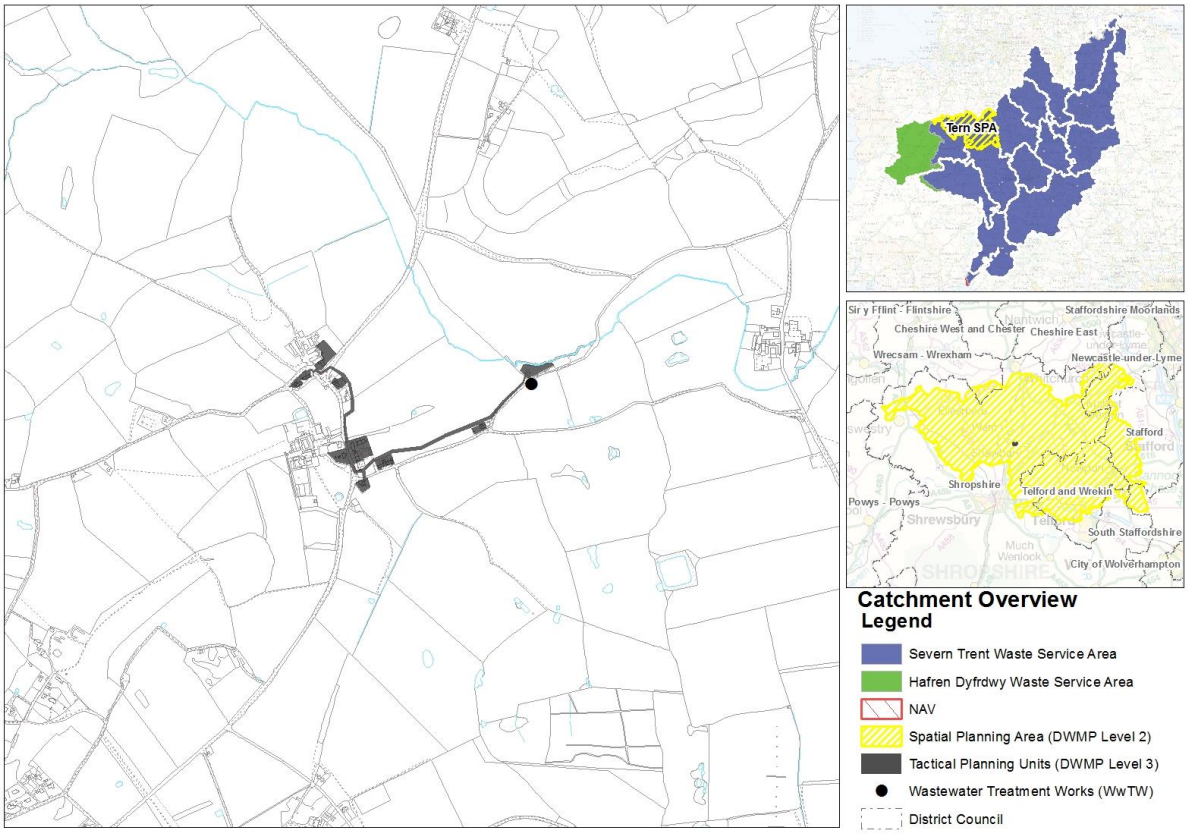
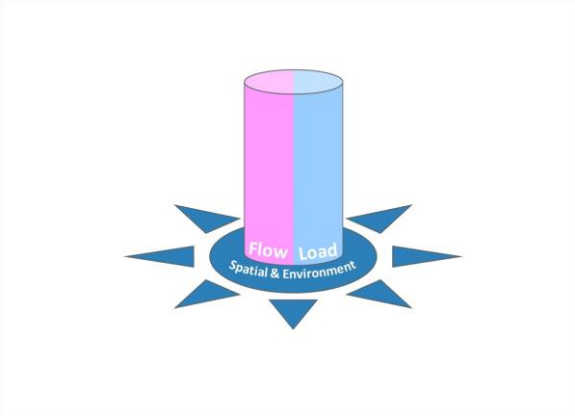


Figure 115 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 116 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 122 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
PULESTON (10907)

March 2023

WONDERFUL ON TAP

Overview

Puleston WwTW is located to the west of Puleston, serving a population of 83. Treated effluent is discharged to a tributary of the River Meese.

Key Statistics:

- Residential Population Served: 83
- This is our 654th largest catchment across the whole of Severn Trent, and the 36th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

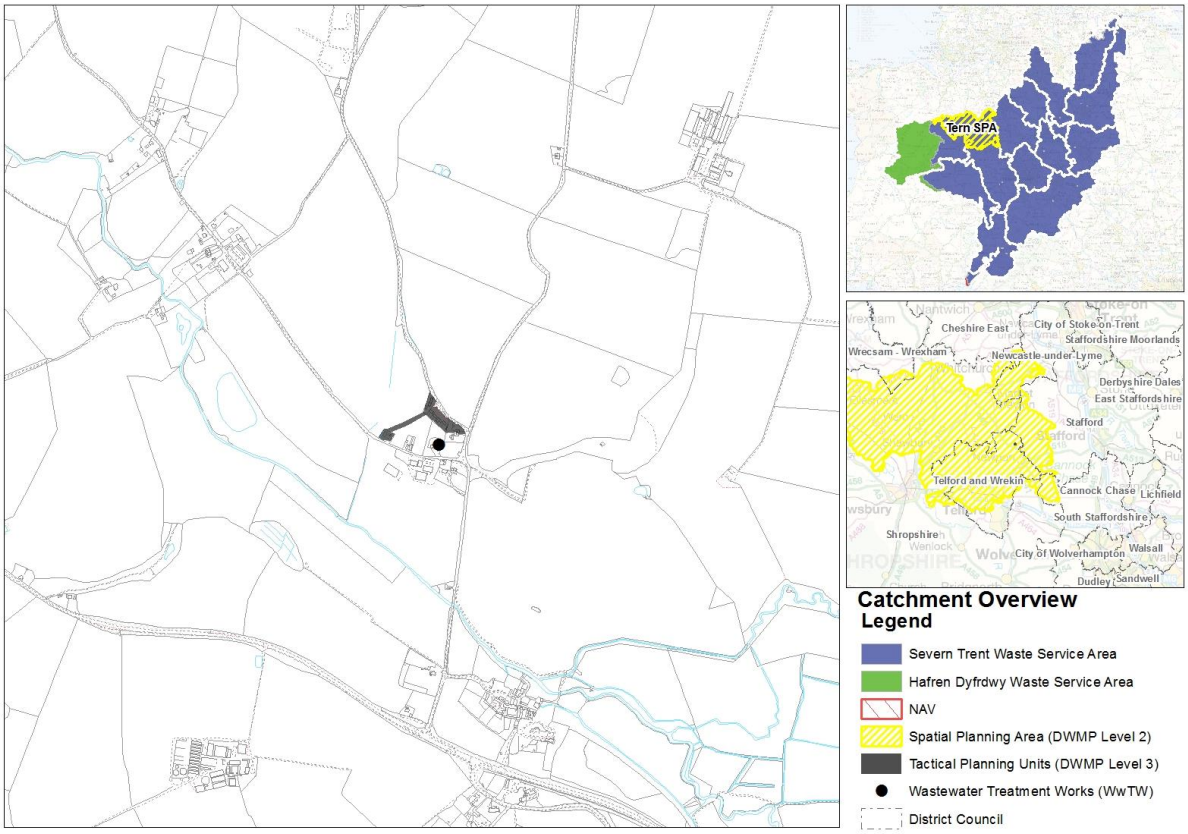
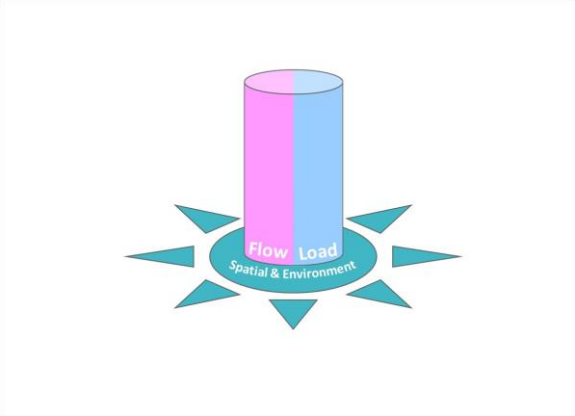


Figure 117 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 118 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 123 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 124 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 125 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 126 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 127 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	•
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
ROCKHALL VILLAS (10680)

March 2023

WONDERFUL ON TAP

Overview

Rockhall Villas WwTW serves a residential population of 22. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 22
- This is our 800th largest catchment across the whole of Severn Trent, and the 57th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

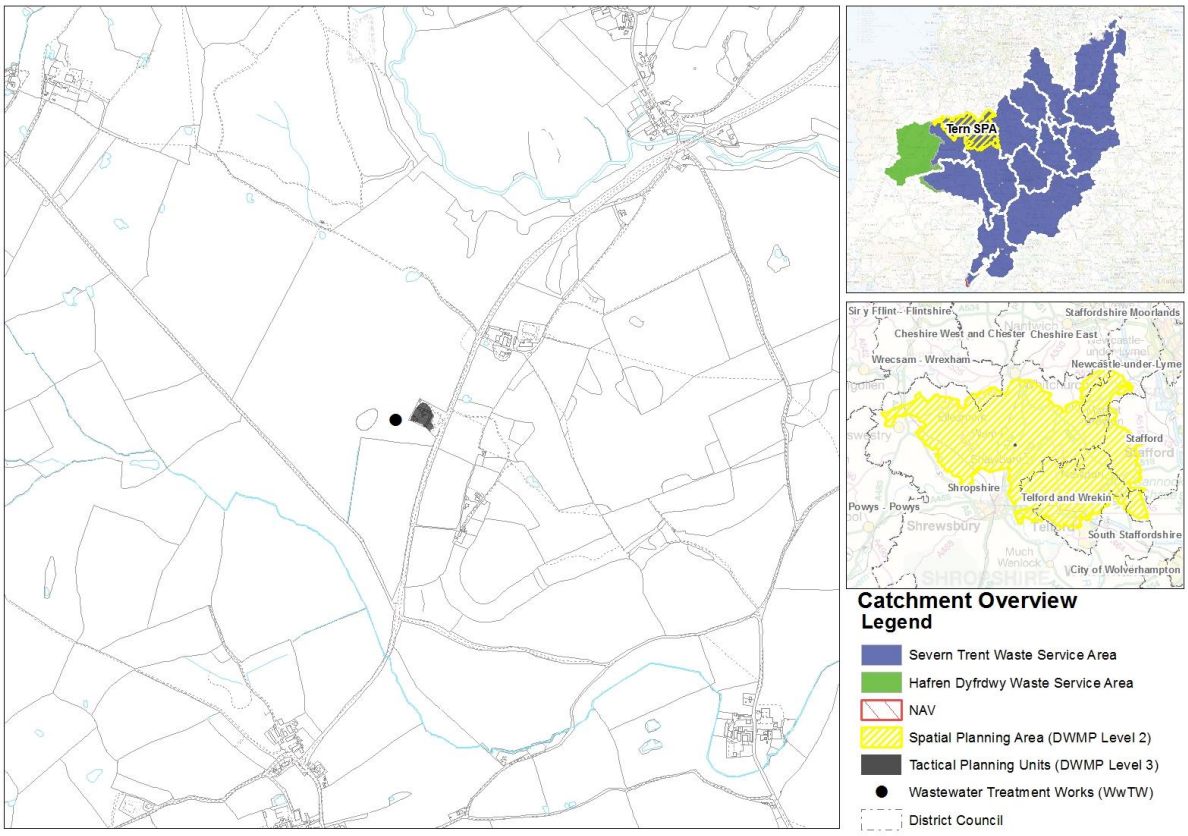
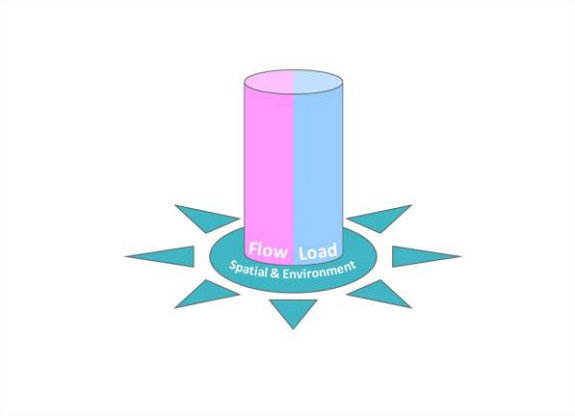


Figure 119 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 120 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 128 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: RODEN (10908)

March 2023

WONDERFUL ON TAP

Overview

Roden WwTW is located to the north of Roden and serves a residential population of 229. Treated effluent is discharged to the River Roden.

Key Statistics:

- Residential Population Served: 229
- This is our 524th largest catchment across the whole of Severn Trent, and the 28th largest in the Tern Strategic Planning Area making up <1% of its population.
- It has 3.1km of public foul water sewers and 1.2km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

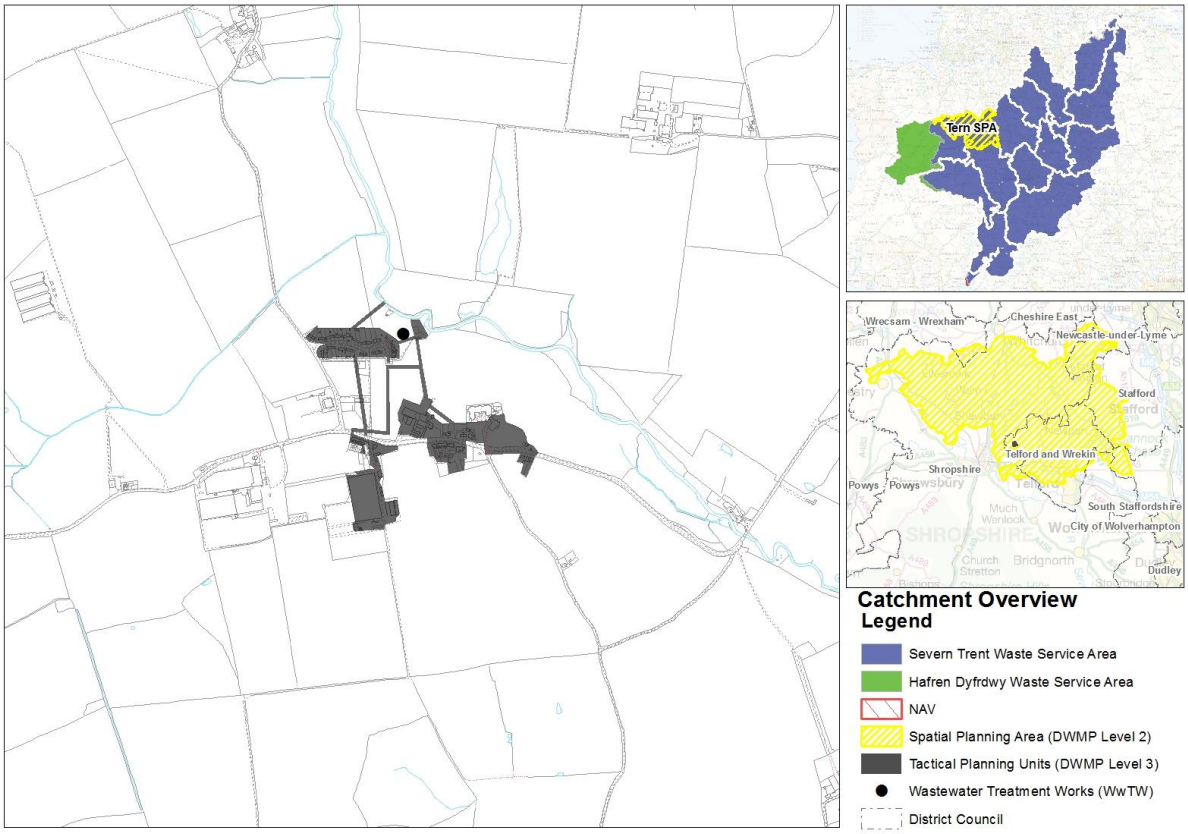
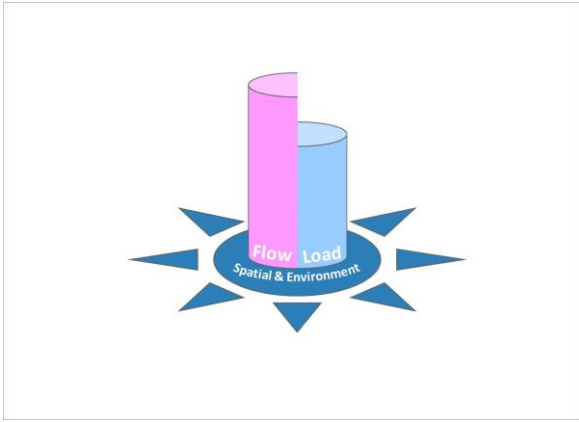


Figure 121 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 122 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 129 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 130 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 131 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 132 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	1	1	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 133 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	•
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: RUEWOOD (10681)

March 2023

WONDERFUL ON TAP

Overview

Ruewood WwTW serves a residential population of 10. Treated effluent is discharged to the Sleap Brook.

Key Statistics:

- Residential Population Served: 10
- This is our 887th largest catchment across the whole of Severn Trent, and the 82nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

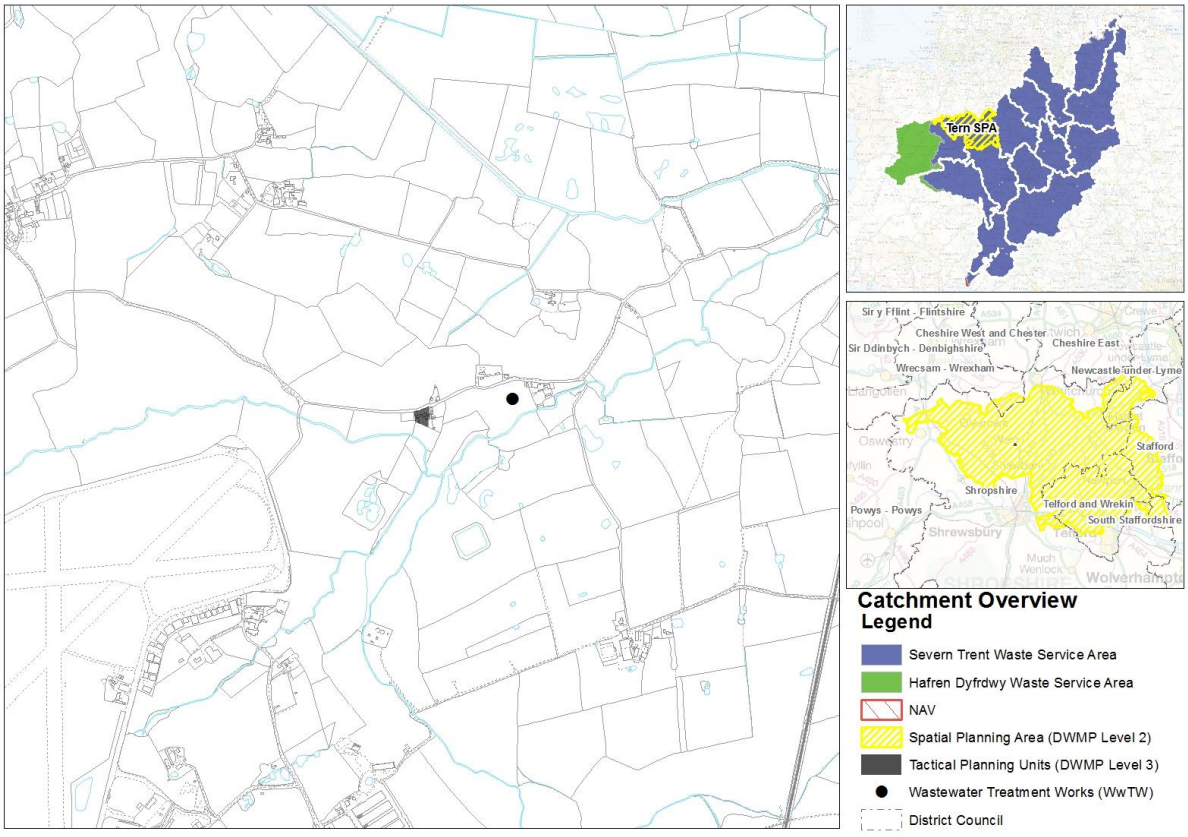
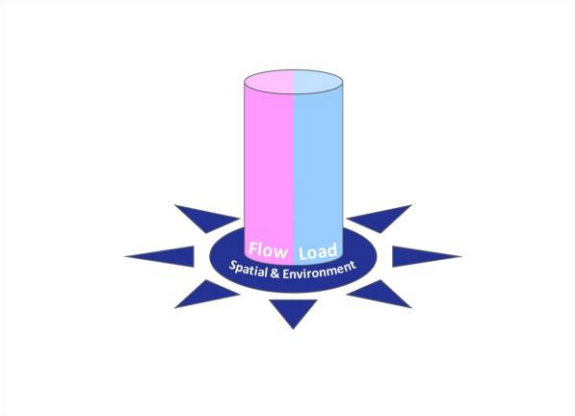


Figure 123 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 124 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 134 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
RUSHMOOR (TELFORD) (10910)

March 2023

WONDERFUL ON TAP

Overview

Rushmoor (Telford) WwTW is located to the west of Telford and serves a residential population of 115,896. Treated effluent is discharged to the River Tern. In addition to treating flows from Telford, and the incorporated towns of Wellington and Arleston the catchment also drains the outlying villages of Walcot (pumped) to the west, Kynnersley, Preston Upon The Weald Moors (pumped to the north and Brockton, Honnington and Lilleshall (pumped) to the north east, and Longden Upon Tern, and Bratton (gravity) to the north west.

Key Statistics:

- Residential Population Served: 115,896
- This is our 14th largest catchment across the whole of Severn Trent, and the largest in the Tern Stategic Planning Area making up 61% of its population.
- It has 696.1km of public foul water sewers and 362.7km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

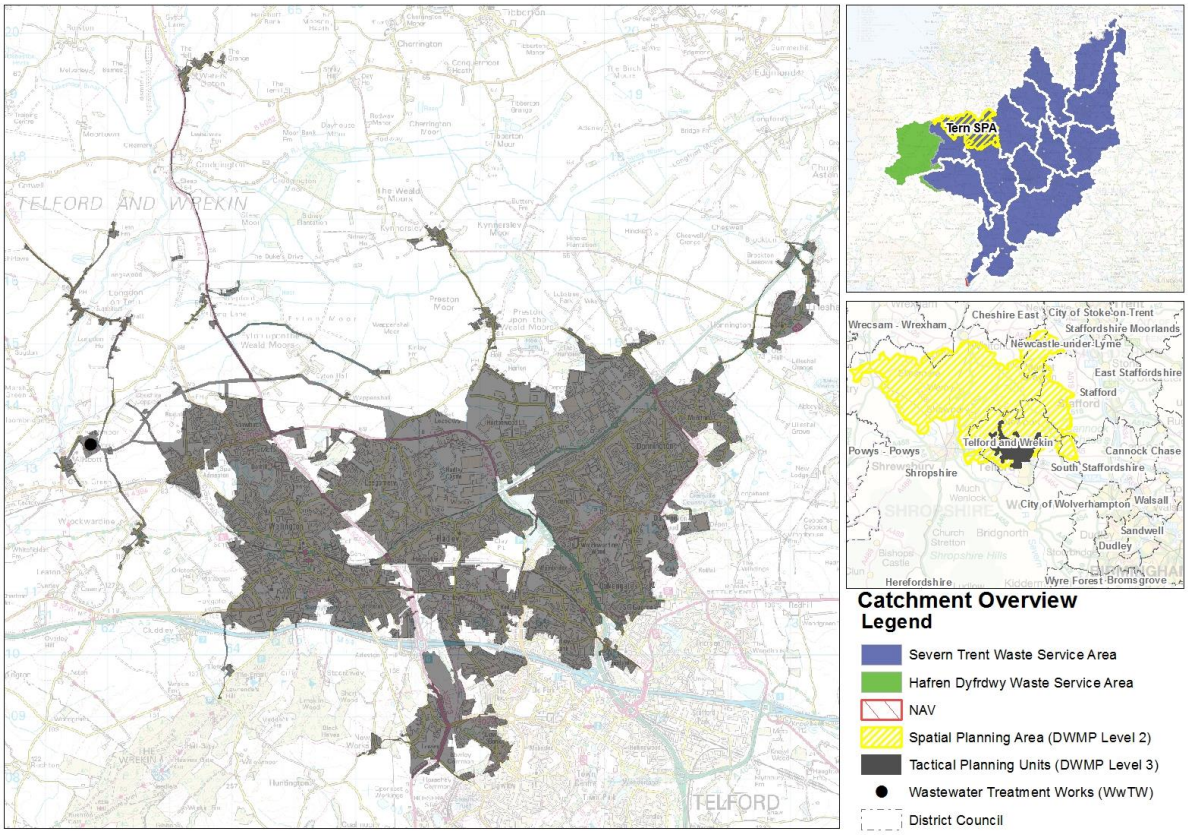
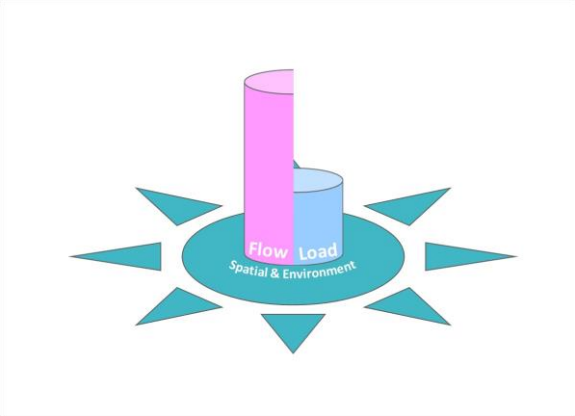


Figure 125 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



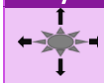
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 126 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 135 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	Yes
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	Yes
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	Yes
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 7 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 136 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 137 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 138 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	1	1	1	1	1	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	2	2	2	2	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	1	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	2	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 139 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
RUYTON XI TOWNS (10679)

March 2023

WONDERFUL ON TAP

Overview

Ruyton Xi Towns WwTW is located to the east of Ruyton XI Towns and serves a residential population of 935. Treated effluent is discharged to the River Perry.

Key Statistics:

- Residential Population Served: 935
- This is our 338th largest catchment across the whole of Severn Trent, and the 15th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 10.8km of public foul water sewers and 1.2km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

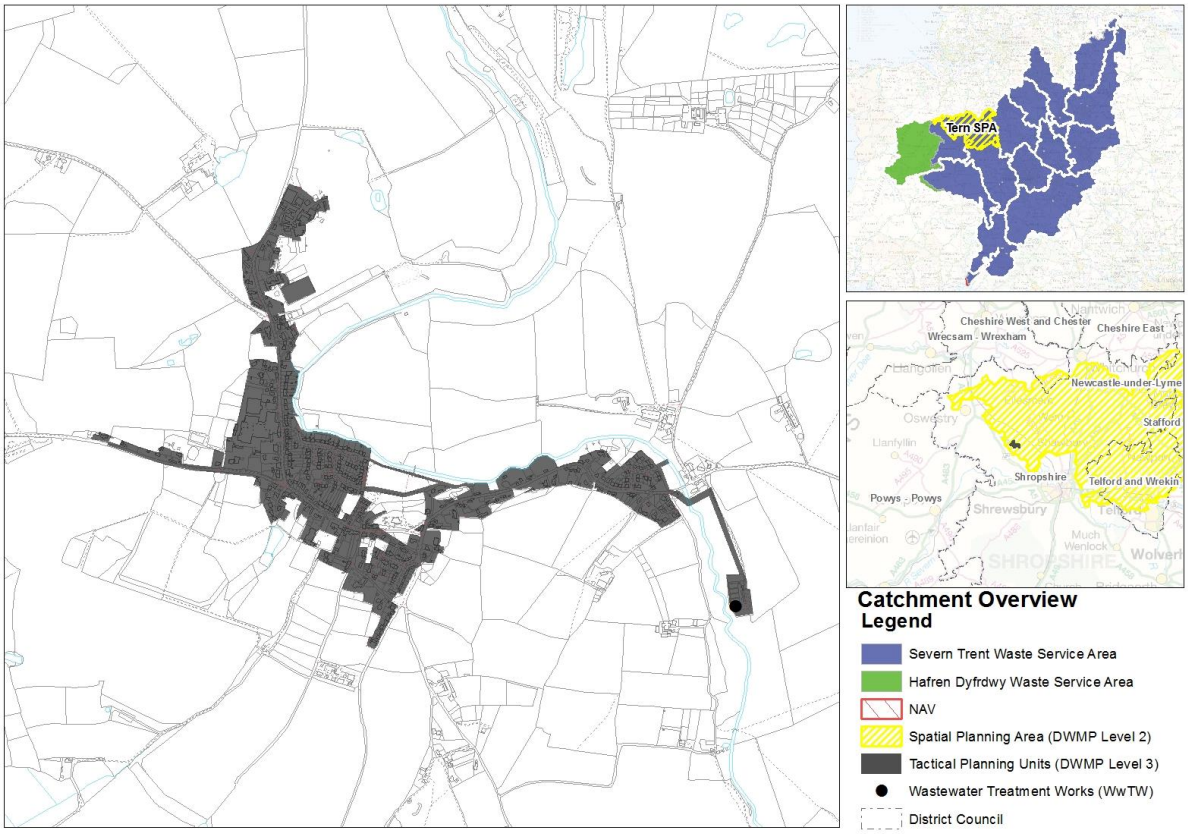
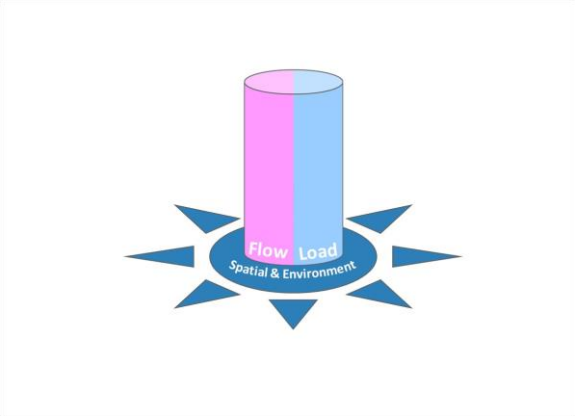


Figure 127 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



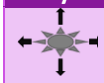
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 128 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 140 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 141 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 142 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 143 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	1	1	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	0	0	0	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 144 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	•
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	•
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: SAMBROOK (10911)

March 2023

WONDERFUL ON TAP

Overview

Sambrook WwTW is located to the south of Sambrook village, servicing a population of 206. Treated effluent is discharged to the River Meese.

Key Statistics:

- Residential Population Served: 206
- This is our 543rd largest catchment across the whole of Severn Trent, and the 29th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 4.6km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

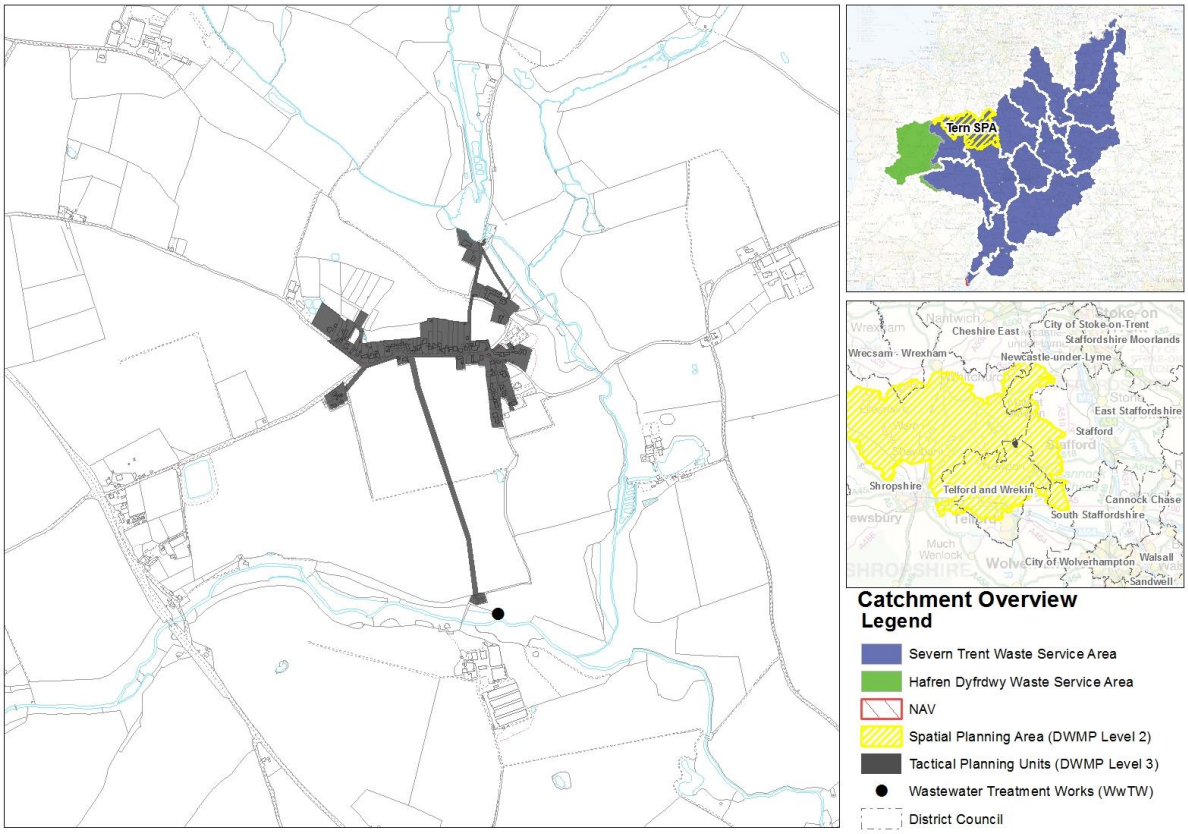
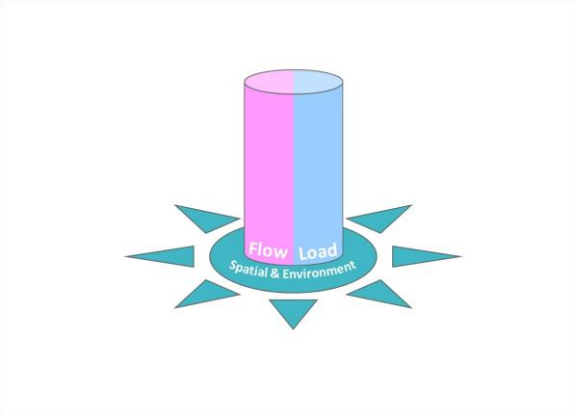


Figure 129 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 130 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 145 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 2 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 146 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 147 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 148 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	1	1	1	1	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	1	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	1	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	2	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 149 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	•
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	•
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	•
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
SHAWBURY (10686)

March 2023

WONDERFUL ON TAP

Overview

Shawbury WwTW is located to the north east of Shawbury and serves a residential population of 2,686. Treated effluent is discharged to the River Roden. In addition to treating flows from Shawbury, it also treats flows from Stanton upon Hine Heath (pumped), Moreton Corbet (pumped) and Edgebolton (gravity).

Key Statistics:

- Residential Population Served: 2,686
- This is our 222nd largest catchment across the whole of Severn Trent, and the 8th largest in the Tern Stategic Planning Area making up 1% of its population.
- It has 36.0km of public foul water sewers and 5.4km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

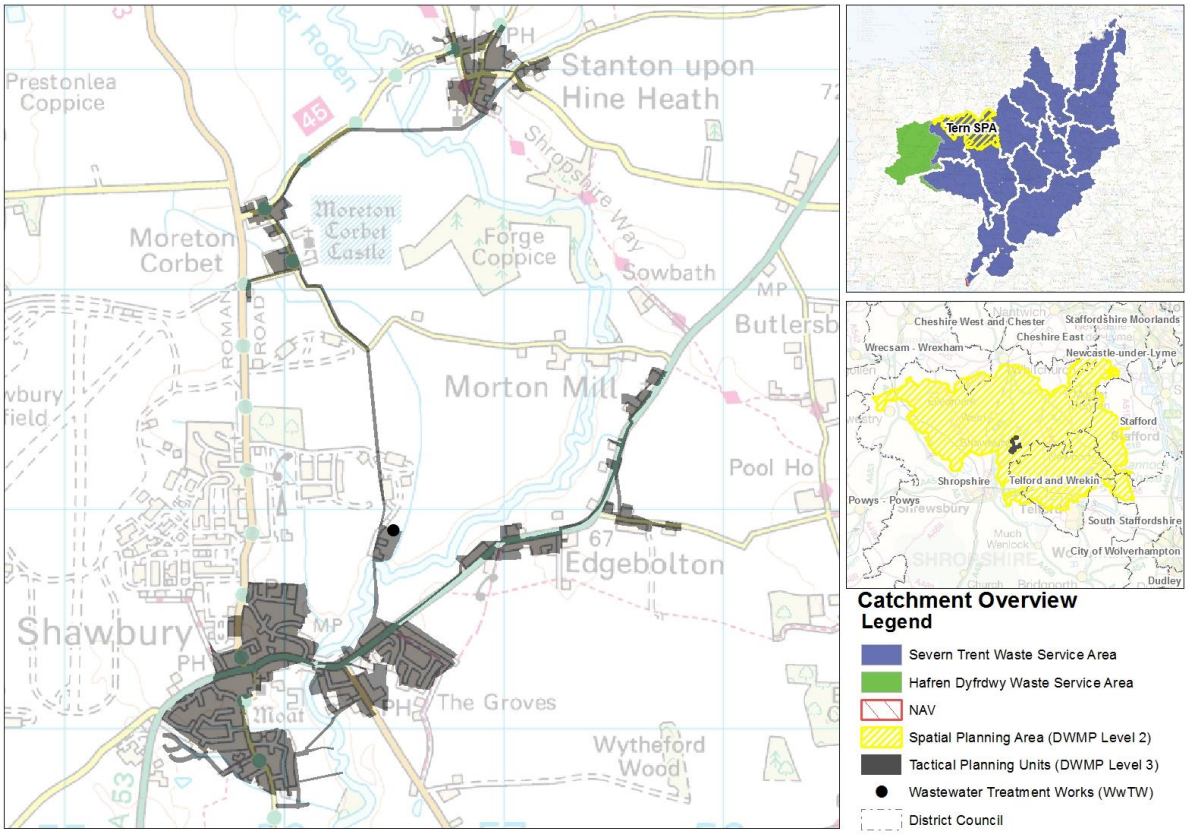
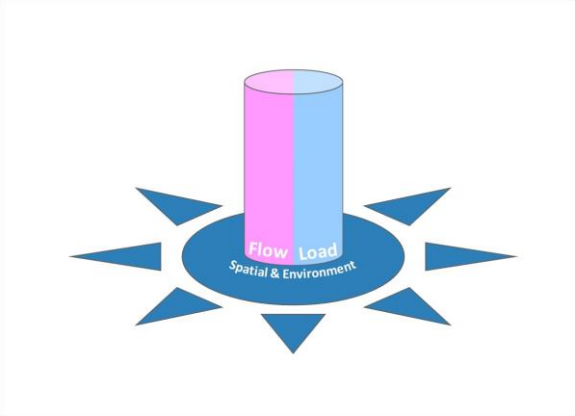


Figure 131 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 132 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 150 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	Yes
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 4 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 151 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 152 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 153 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	N/A	N/A	N/A	N/A	N/A	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	1	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	2	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 154 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	•
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
STOKE HEATH (10918)

March 2023

WONDERFUL ON TAP

Overview

Stoke Heath WwTW is located to the east of Stoke Heath and serves a residential population of 1,919. Treated effluent is discharged to a tributary of the River Tern. In addition to treating flows from Stoke Heath, the catchment also drains Buntingsdale to the north (pumped)

Key Statistics:

- Residential Population Served: 1,919
- This is our 260th largest catchment across the whole of Severn Trent, and the 10th largest in the Tern Stategic Planning Area making up 1% of its population.
- It has 27.1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

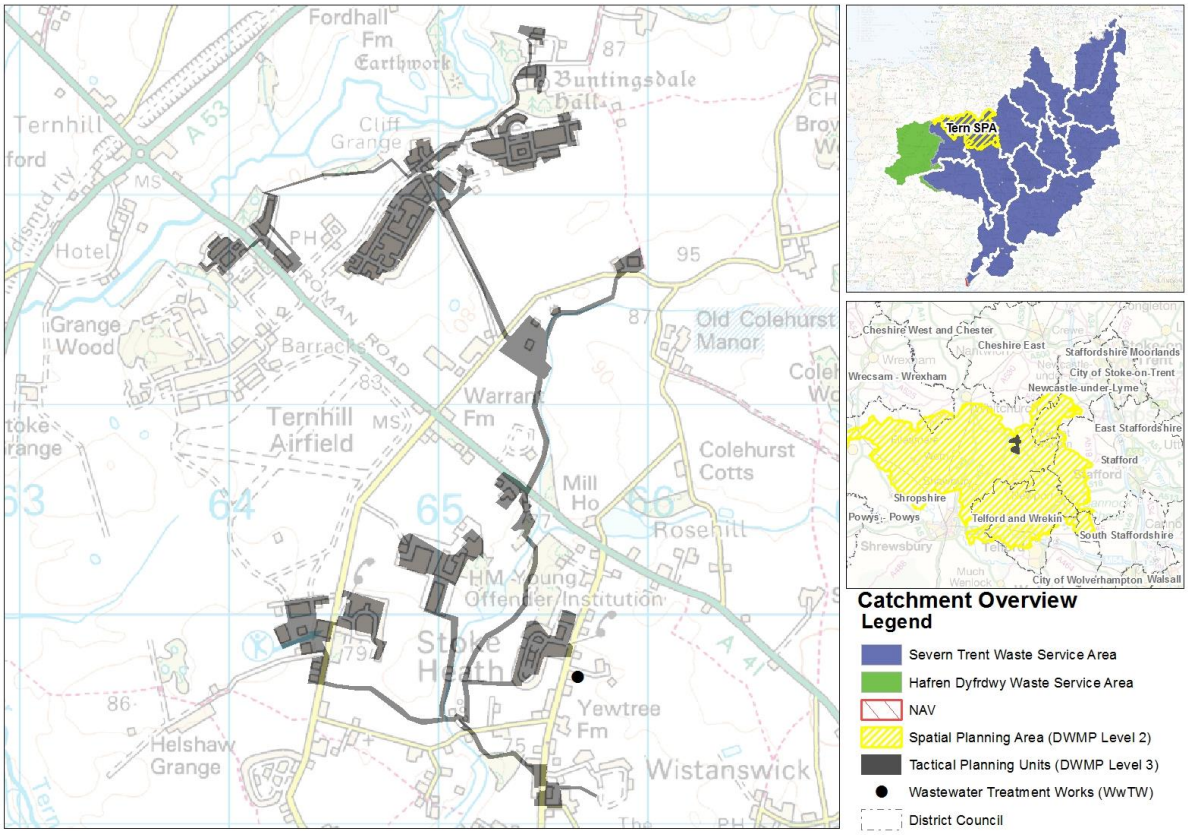
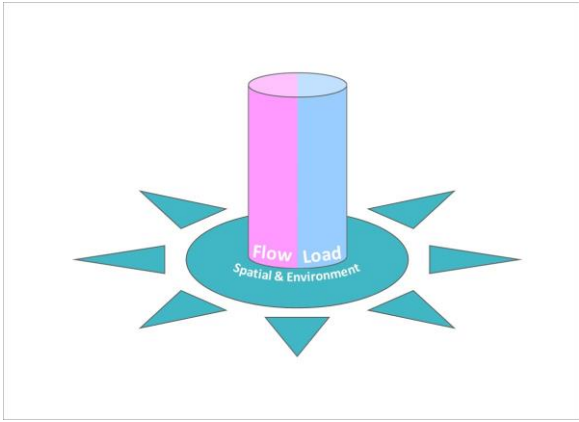


Figure 133 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



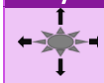
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 134 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 155 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**Yes**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 156 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 157 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 158 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	0	0	1	1	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 159 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓✓✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
STOKE ON TERN (MAYFIELDS) (10745)

March 2023

WONDERFUL ON TAP

Overview

Stoke On Tern (Mayfields) WwTW serves a residential population of 16. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 16
- This is our 834th largest catchment across the whole of Severn Trent, and the 67th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

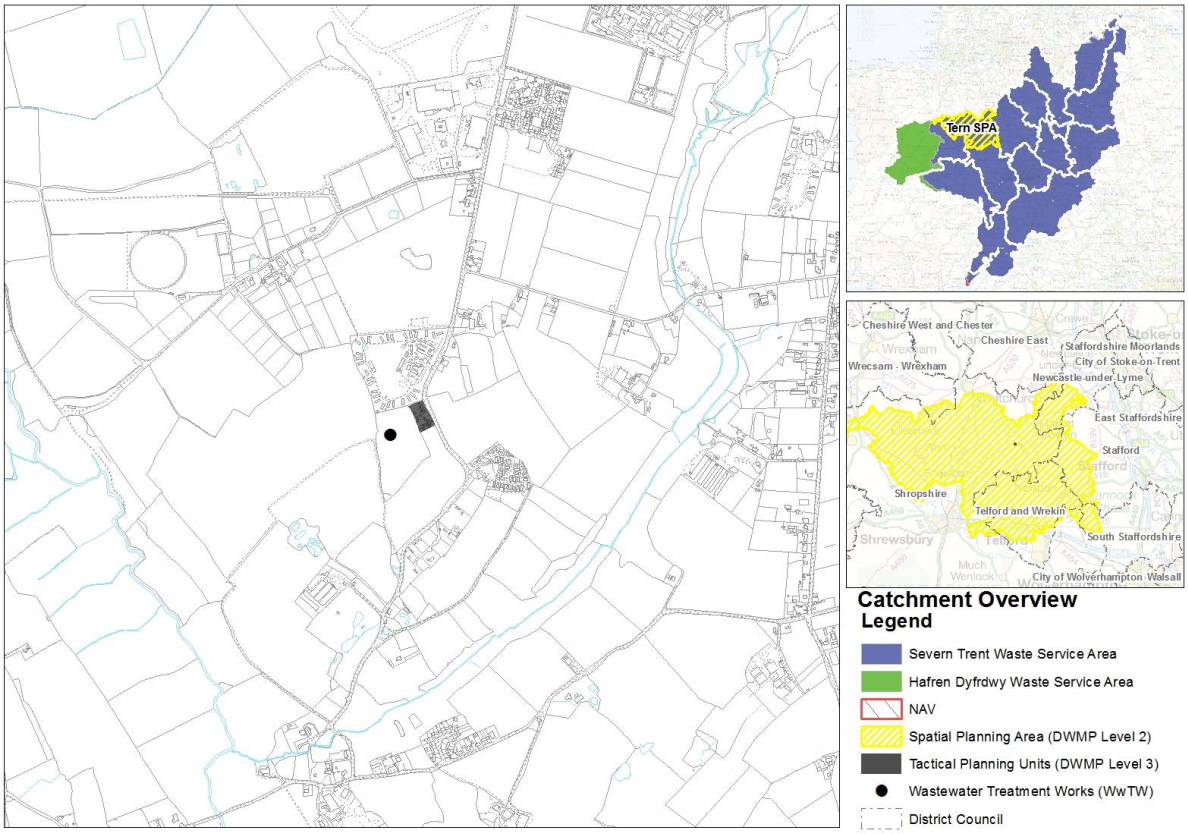
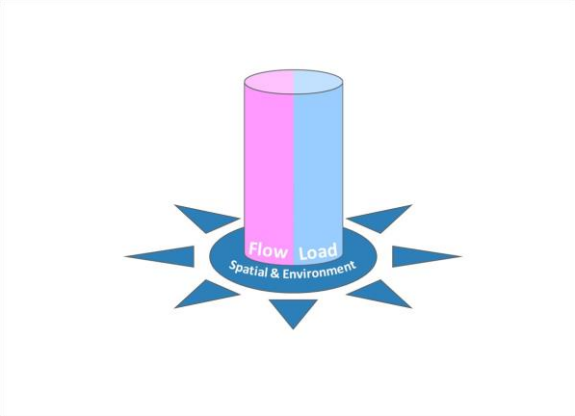


Figure 135 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 136 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 160 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
STOKE-ON-TERN/LANGLEYDALE (10916)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Stoke-On-Tern/Langleydale WwTW serves a residential population of 89. Treated effluent is discharged to the Stoke Brook.

Key Statistics:

- Residential Population Served: 89
- This is our 645th largest catchment across the whole of Severn Trent, and the 35th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

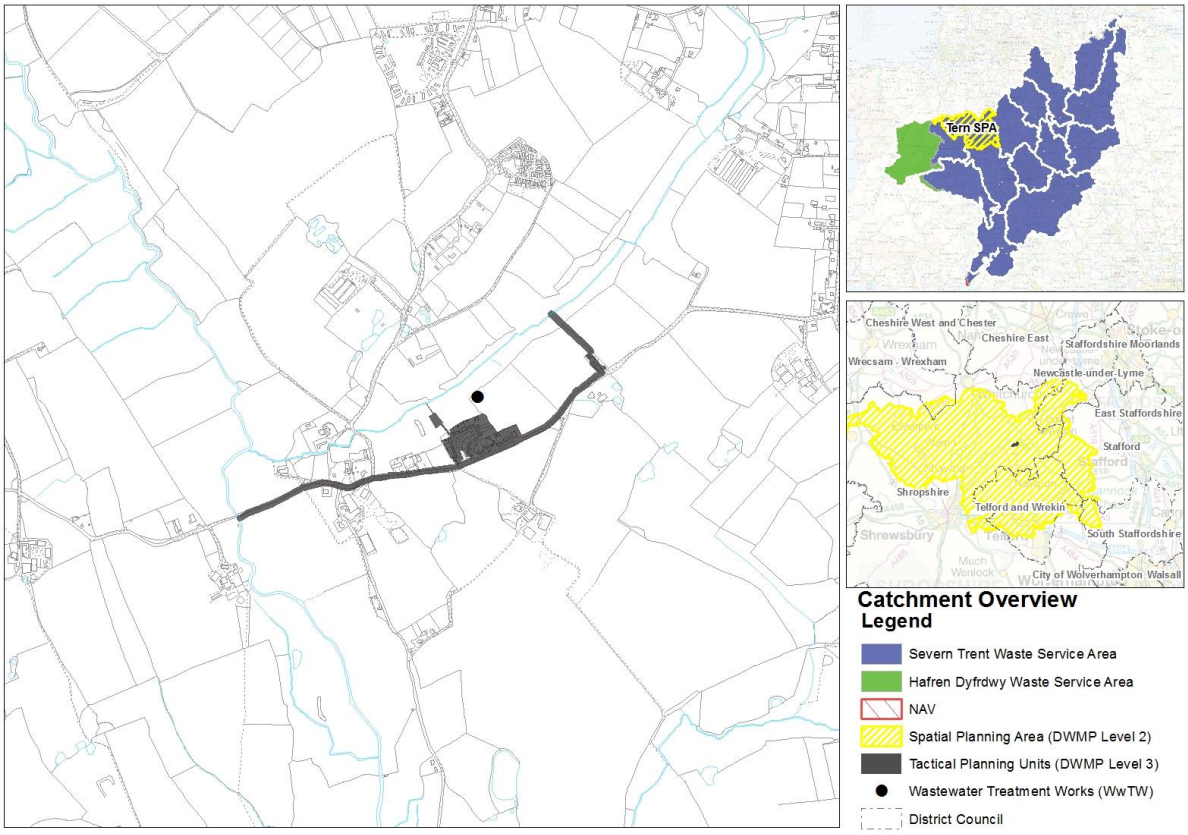
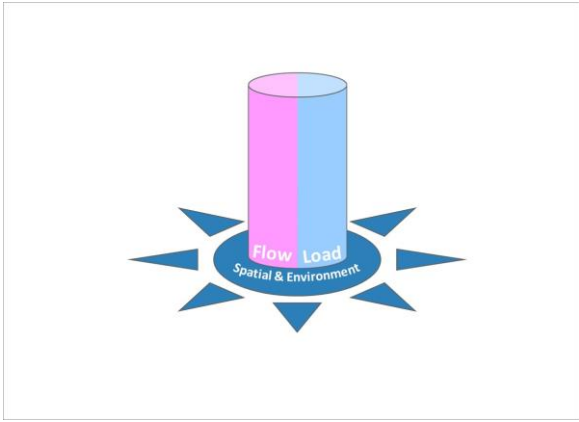


Figure 137 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 138 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 161 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: SUGDON (10919)

March 2023

WONDERFUL ON TAP

Overview

Sugdon WwTW serves a residential population of 22. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 22
- This is our 800th largest catchment across the whole of Severn Trent, and the 57th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

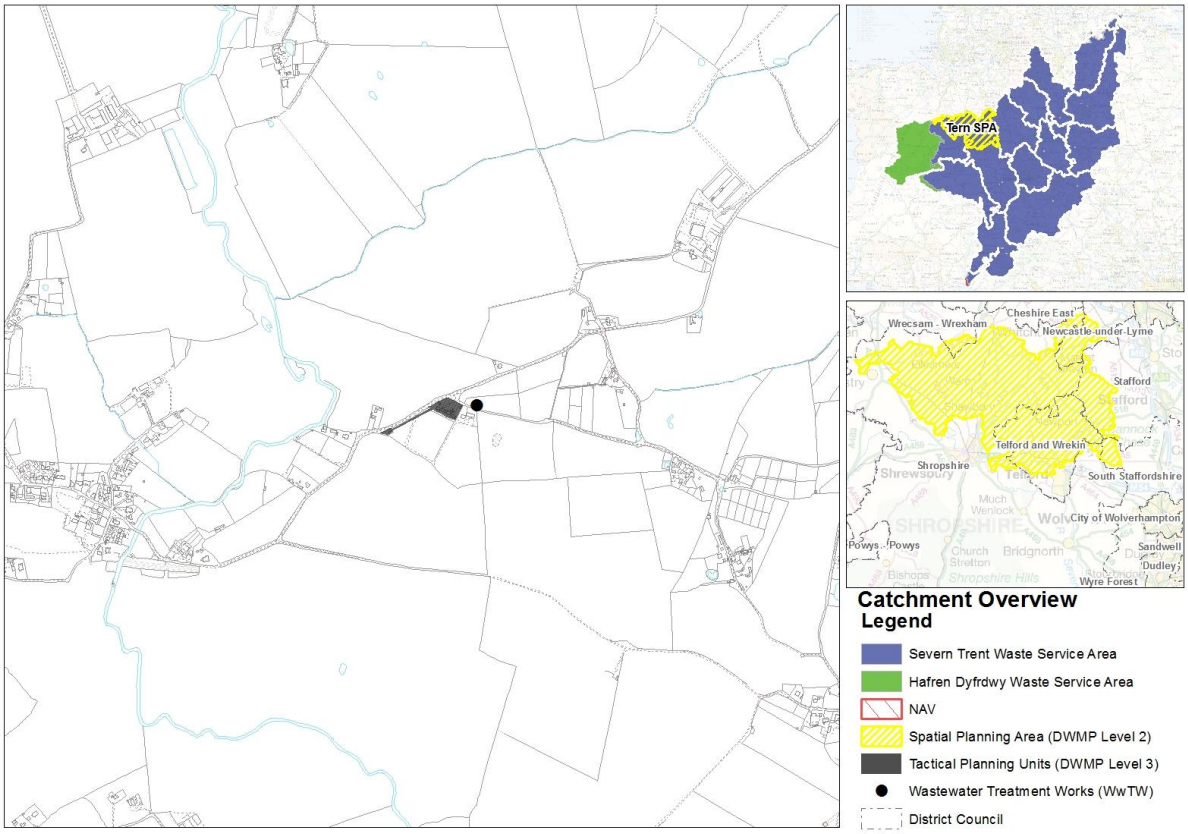
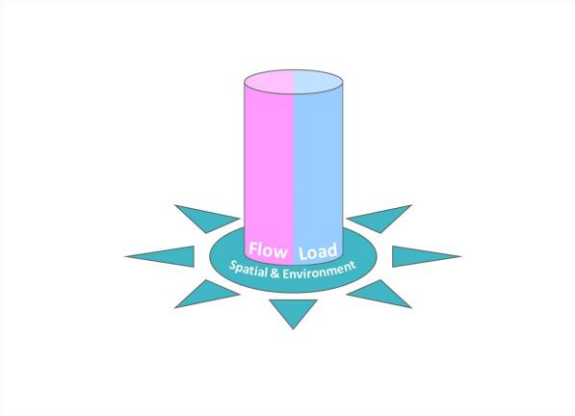


Figure 139 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



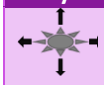
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 140 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 162 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

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Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: WALCOT (10925)

March 2023

WONDERFUL ON TAP

Overview

Walcot WwTW serves a residential population of 50. Treated effluent is discharged to a tributary of the River Tern.

Key Statistics:

- Residential Population Served: 50
- This is our 726th largest catchment across the whole of Severn Trent, and the 44th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

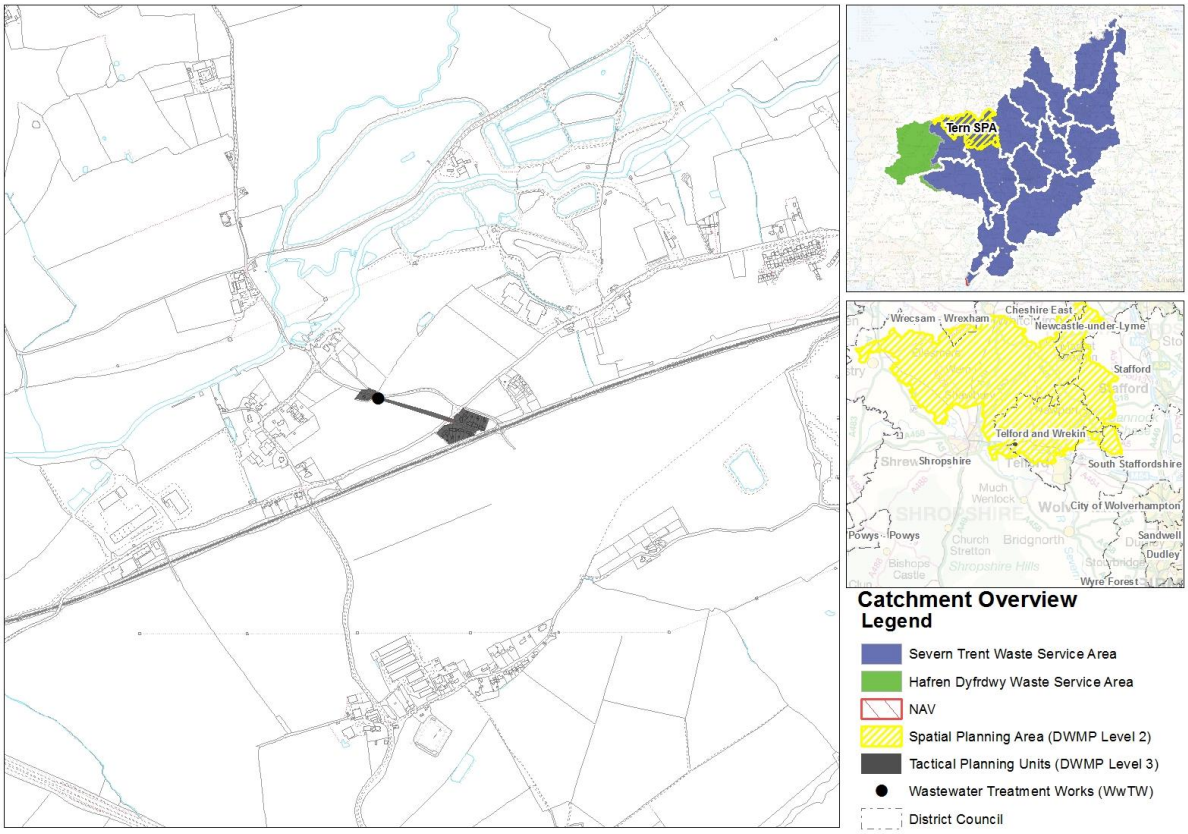
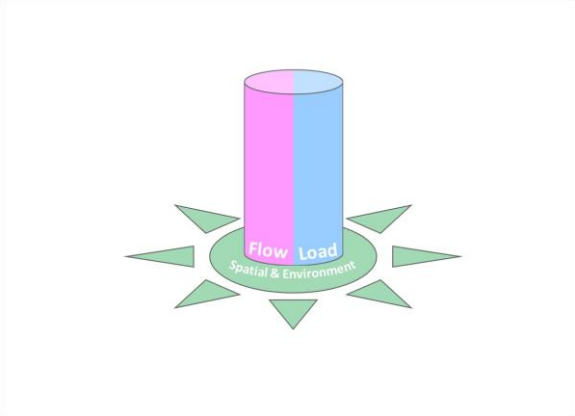


Figure 141 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 142 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 163 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WATERS UPTON (SYTCH LANE) (10935)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Waters Upton (Sytch Lane) WwTW serves a residential population of 31. Treated effluent is discharged locally.

Key Statistics:

- Residential Population Served: 31
- This is our 769th largest catchment across the whole of Severn Trent, and the 50th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

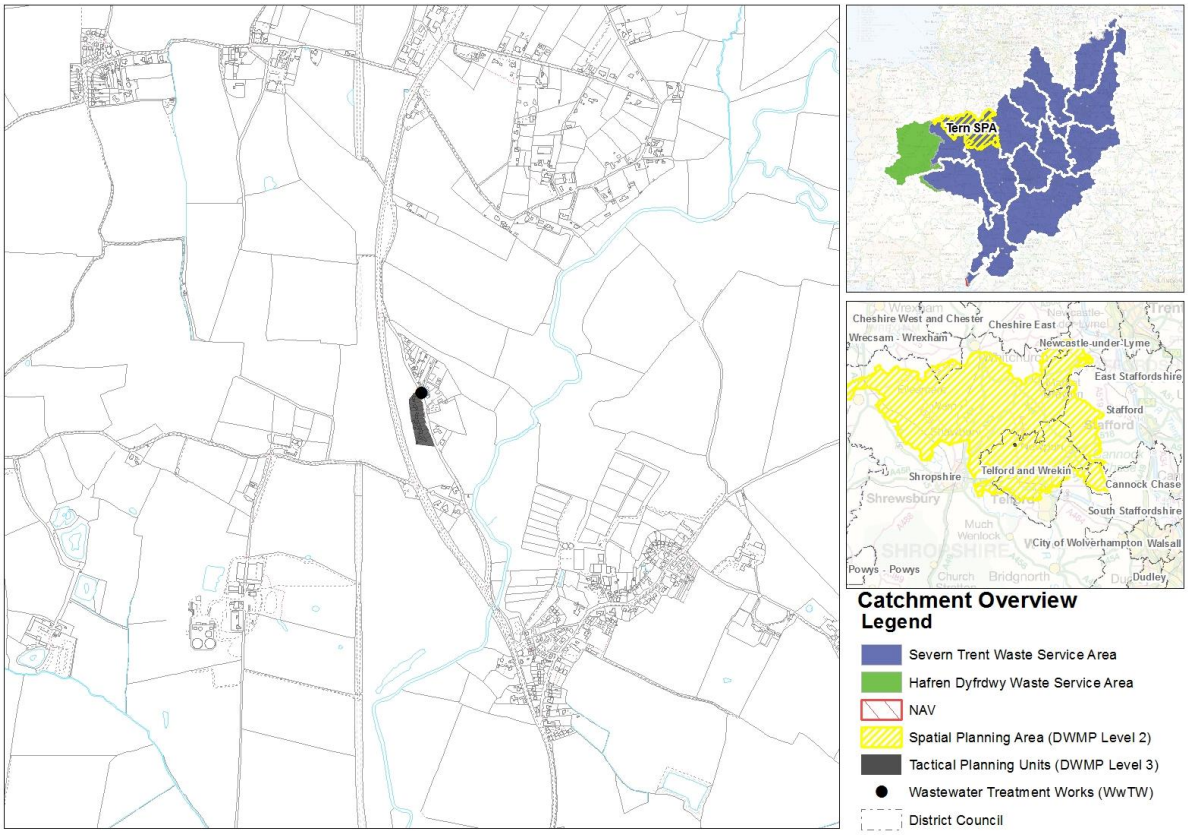
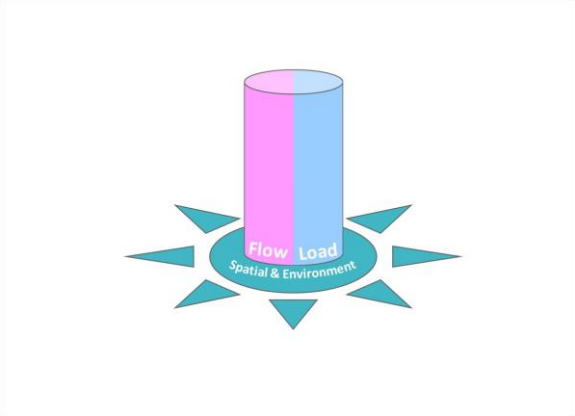


Figure 143 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 144 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 164 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WELSHAMPTON (BALME CRESCENT) (10747)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Welshampton (Balme Crescent) WwTW serves a residential population of 19. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 19
- This is our 819th largest catchment across the whole of Severn Trent, and the 64th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

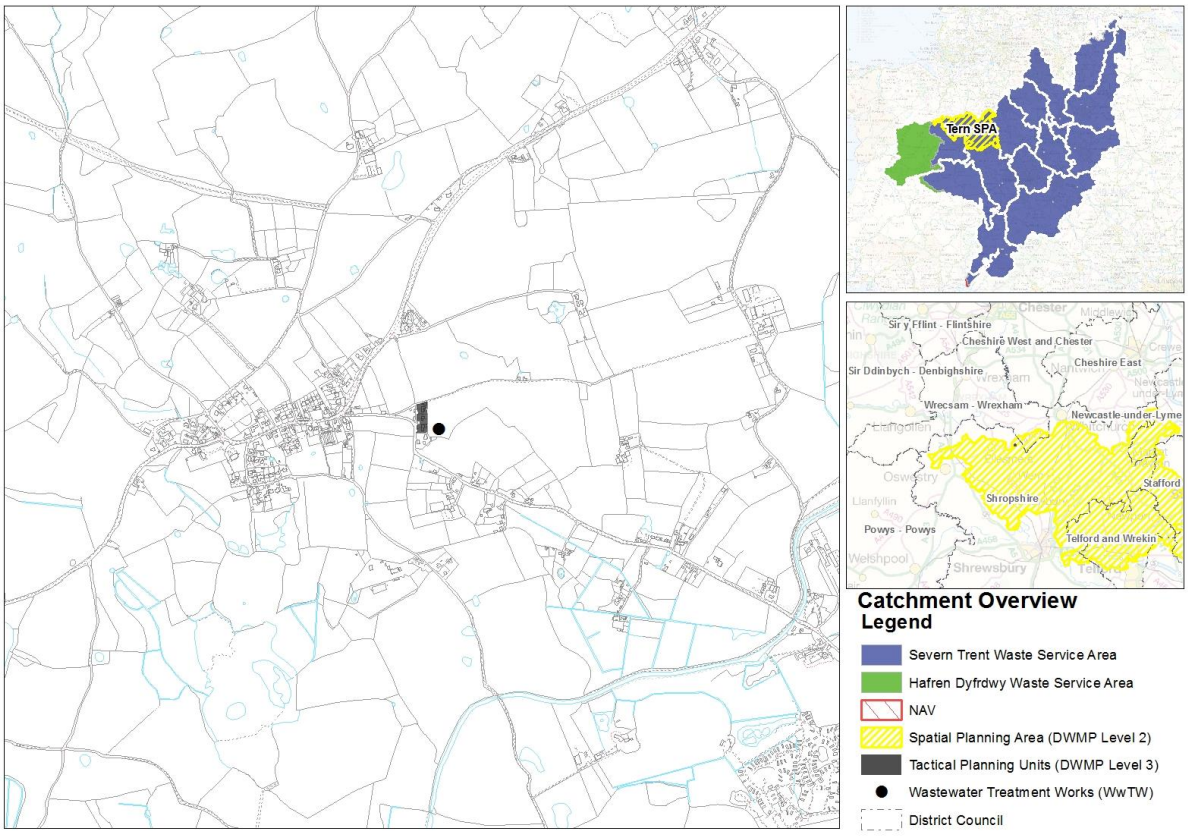
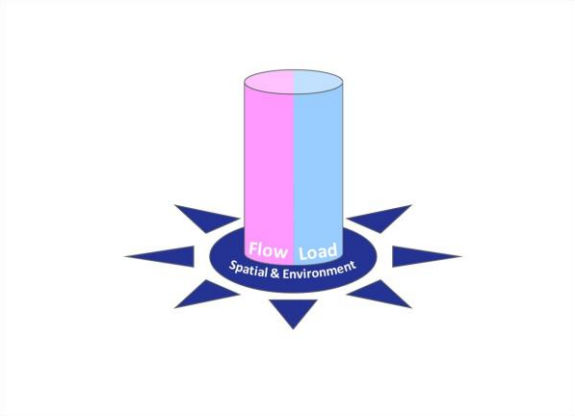


Figure 145 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 146 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 165 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WEM (ASTON ROAD) (10710)

March 2023

WONDERFUL ON TAP

Overview

Wem (Aston Road) WwTW is located to the south east of Wem village and serves a residential population of 6,439. Treated effluent is discharged to the River Roden.

Key Statistics:

- Residential Population Served: 6,439
- This is our 152nd largest catchment across the whole of Severn Trent, and the 4th largest in the Tern Stategic Planning Area making up 3% of its population.
- It has 47.9km of public foul water sewers and 17.0km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

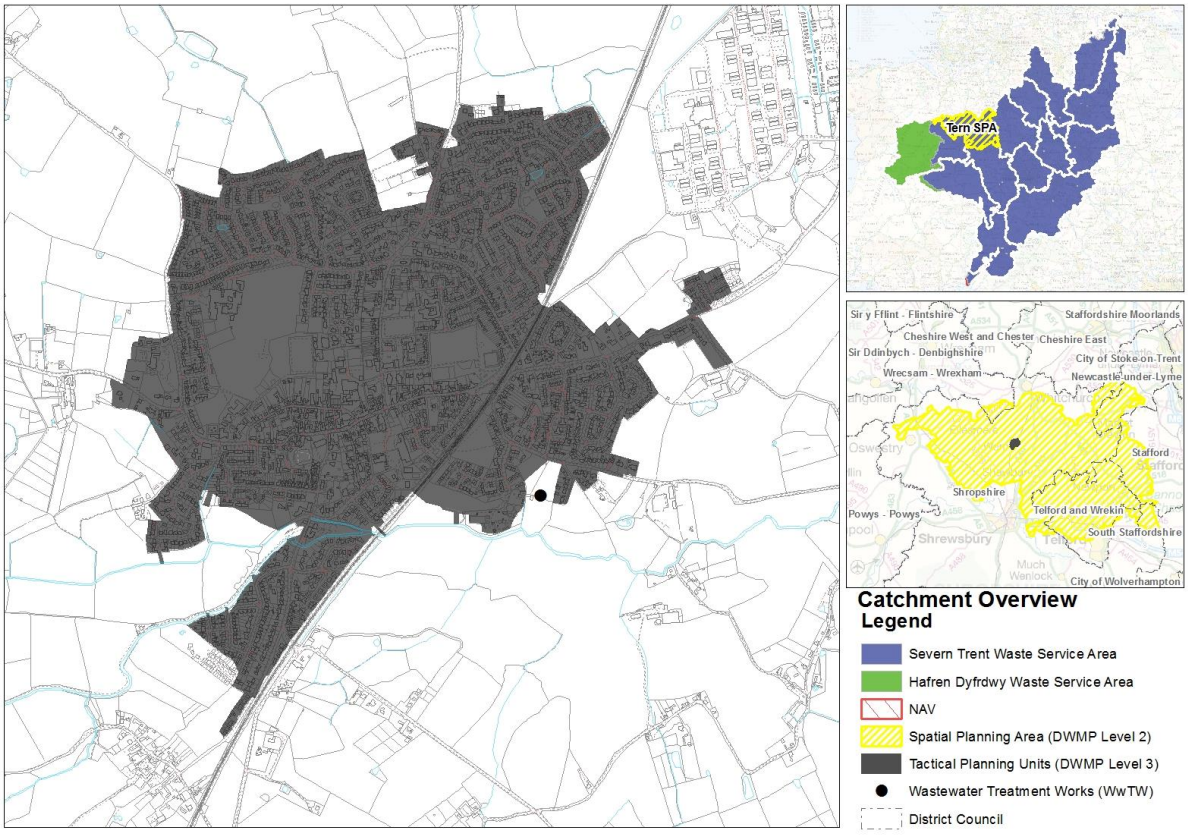
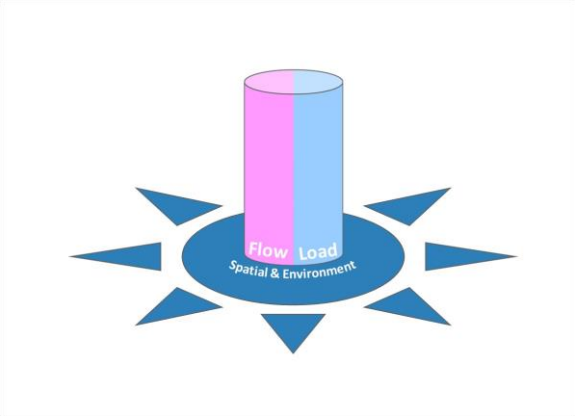


Figure 147 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



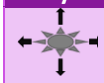
Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
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Figure 148 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 166 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	Yes
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	Yes
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Due to this catchment triggering on 3 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 167 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 168 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 169 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	2	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	0	0	0	0	0	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	1	1	1	1	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	1	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 170 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	✓
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WEM (SOULTON VILLAS) (10714)

March 2023

WONDERFUL ON TAP

Overview

Wem (Soulton Villas) WwTW serves a residential population of 12. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 12
- This is our 870th largest catchment across the whole of Severn Trent, and the 77th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

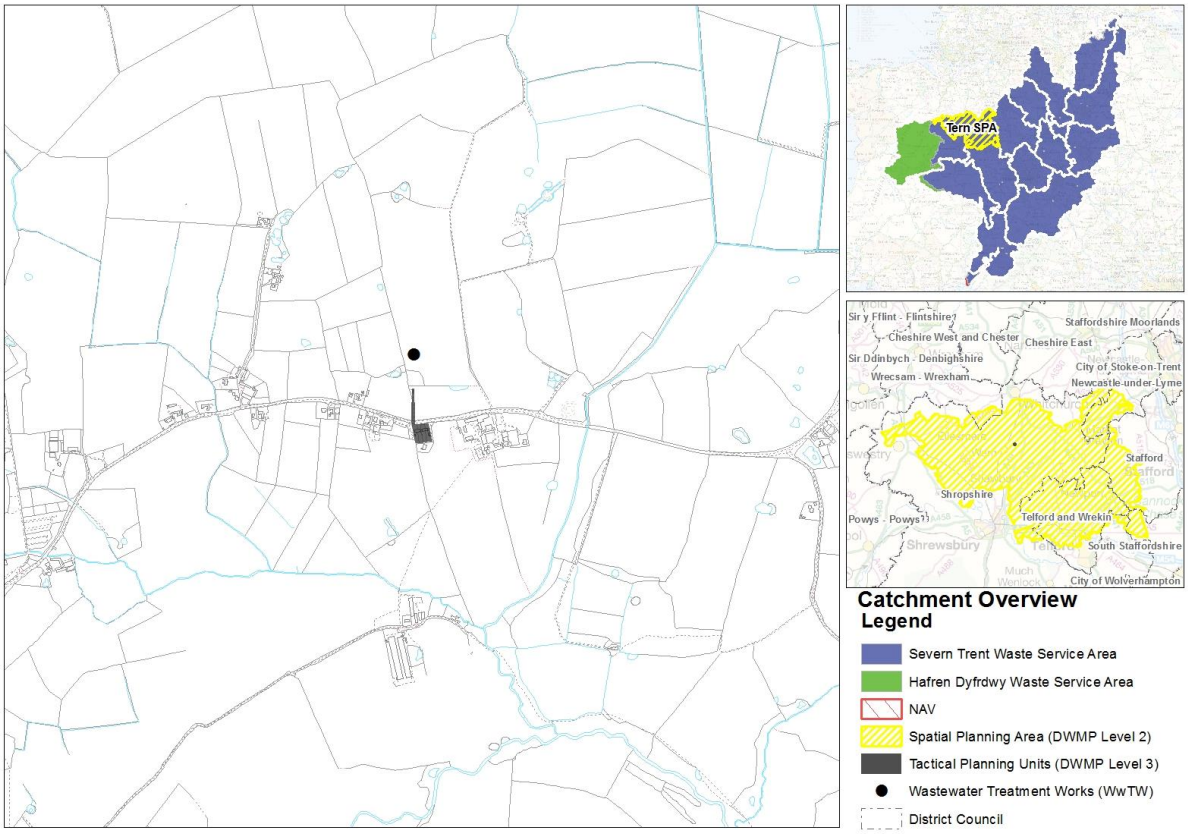
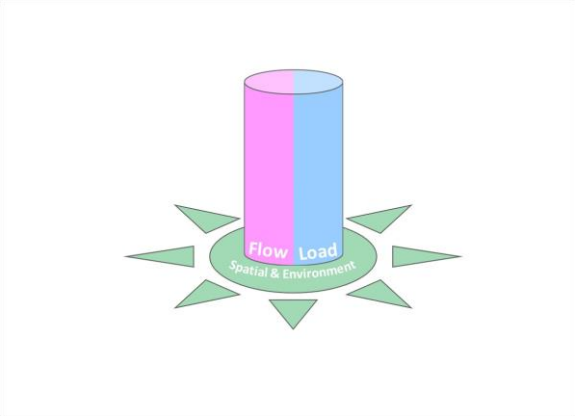


Figure 149 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 150 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 171 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WESTON (GUINEA LANE) (10719)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Weston (Guinea Lane) WwTW serves a residential population of 25. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 25
- This is our 788th largest catchment across the whole of Severn Trent, and the 54th largest in the Tern Strategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

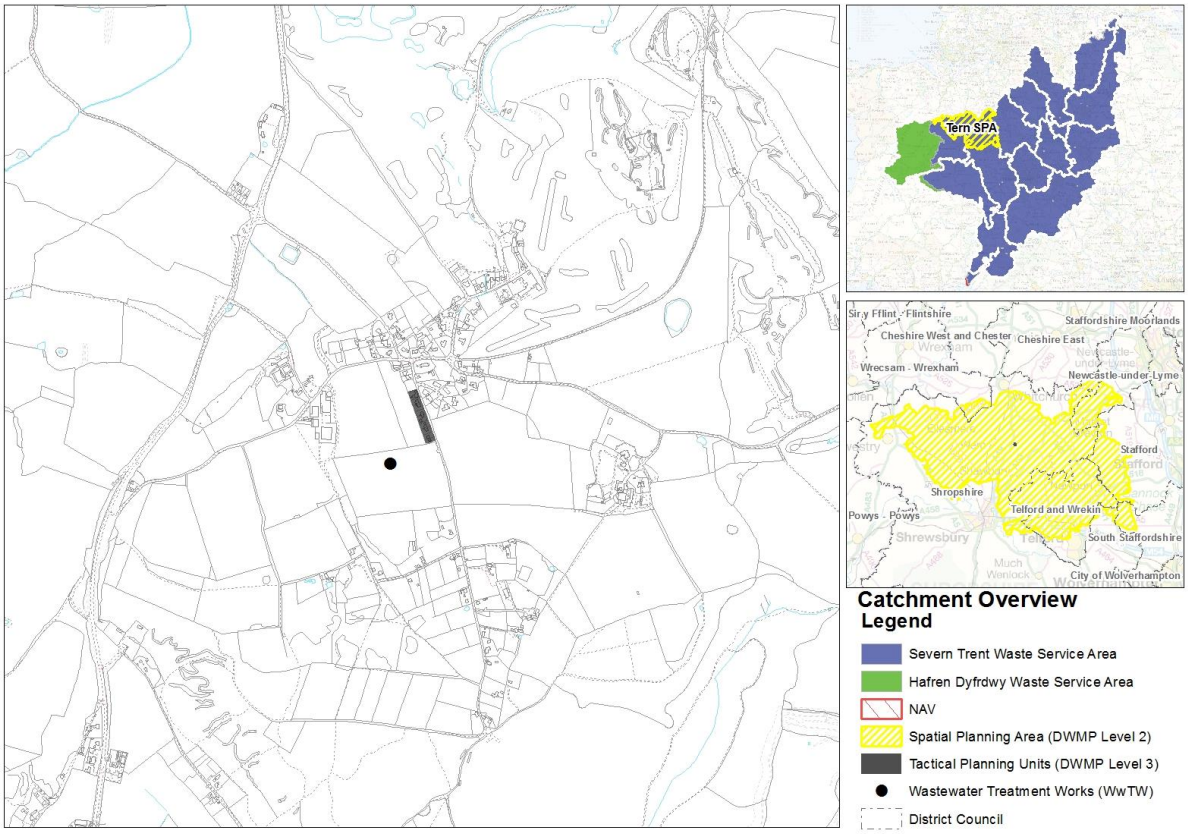
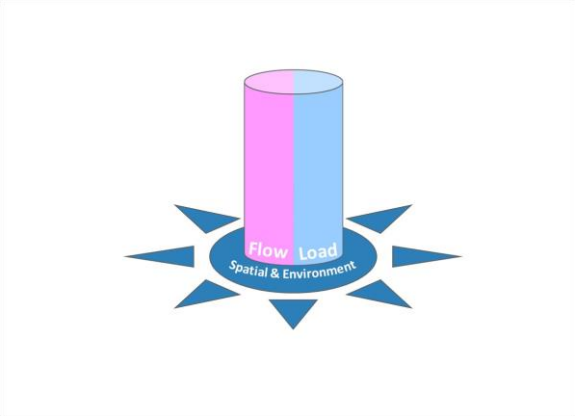


Figure 151 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 152 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 172 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WESTON (HAWKESTONE COURT) (10720)

March 2023

WONDERFUL ON TAP

Overview

Weston (Hawkestone Court) WwTW serves a residential population of 21. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 21
- This is our 804th largest catchment across the whole of Severn Trent, and the 59th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

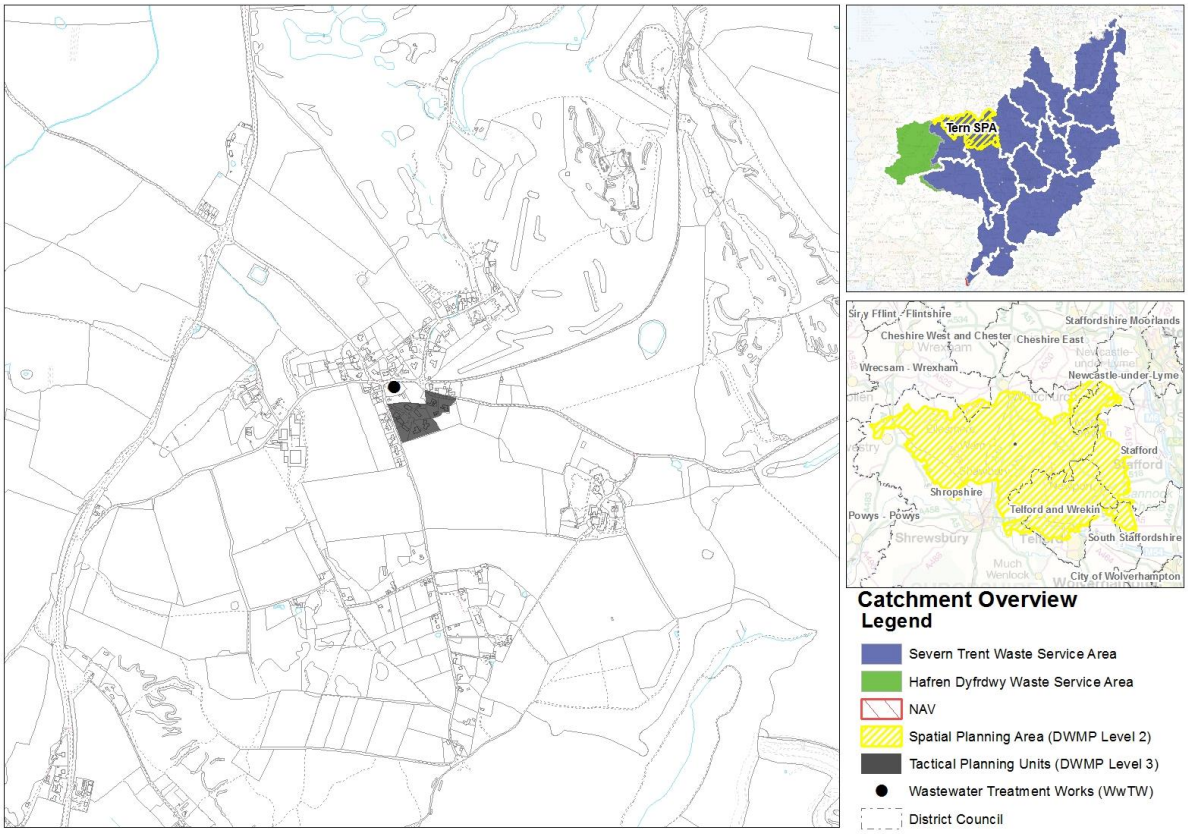
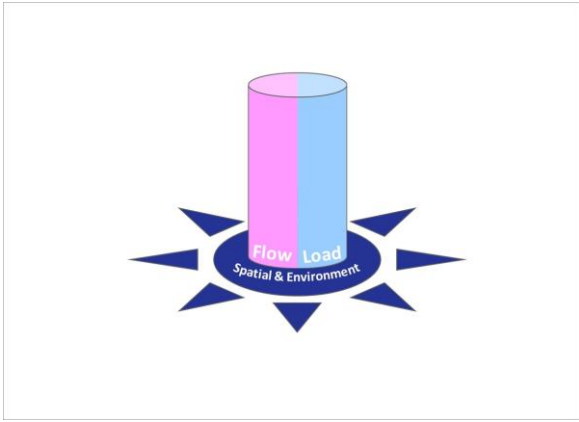


Figure 153 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

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Figure 154 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

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Table 173 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WESTON (THE ELMS) (10748)

March 2023

WONDERFUL ON TAP

Overview

Weston (The Elms) WwTW serves a residential population of 15. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 15
- This is our 837th largest catchment across the whole of Severn Trent, and the 69th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

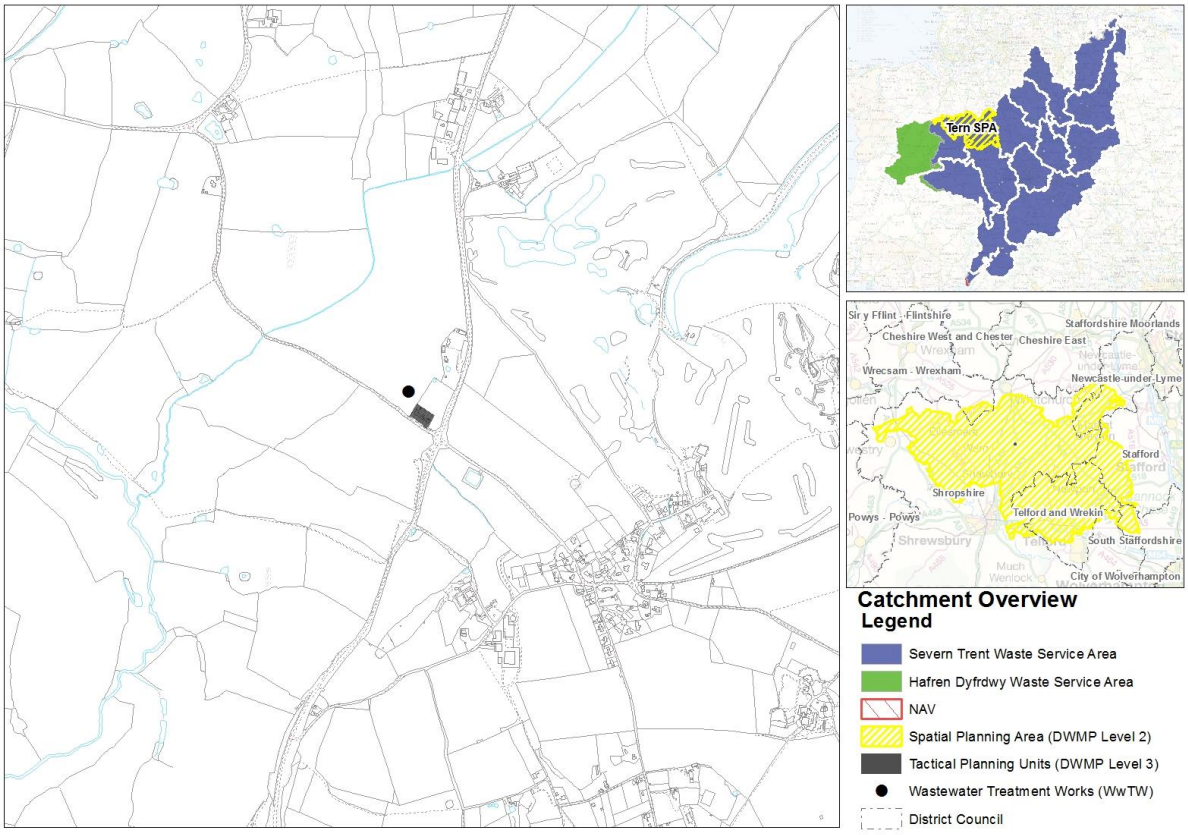
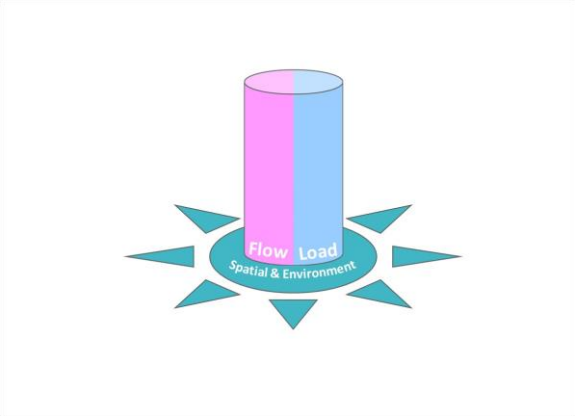


Figure 155 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 156 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 174 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WHIXALL (MOSSLEIGH) (10724)

March 2023

WONDERFUL ON TAP

Overview

Whixall (Mossleigh) WwTW serves a residential population of 9. Treated effluent is discharged locally.

Key Statistics:

- Residential Population Served: 9
- This is our 895th largest catchment across the whole of Severn Trent, and the 85th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

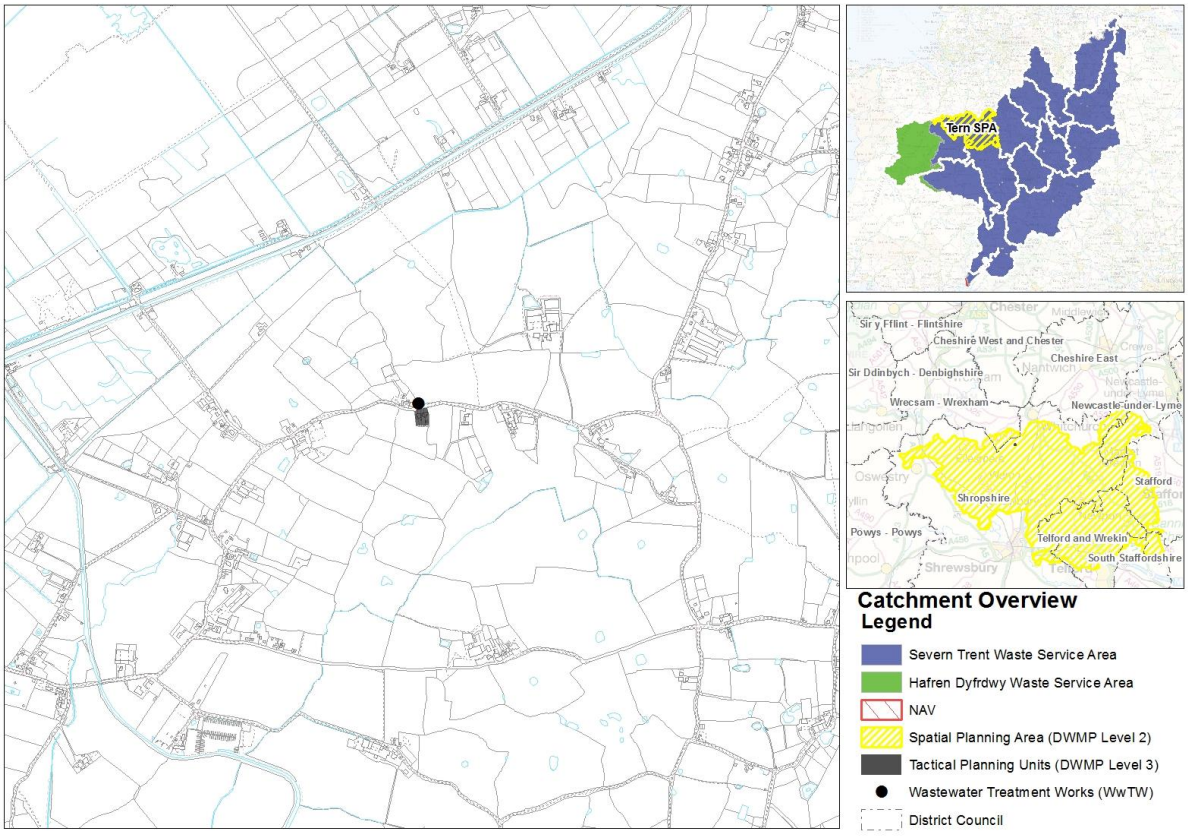
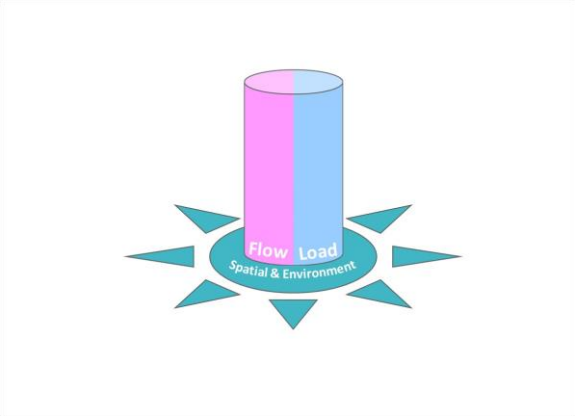


Figure 157 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 158 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 175 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WHIXALL (SANDY BANK) (10725)

March 2023

WONDERFUL ON TAP

Overview

Whixall (Sandy Bank) WwTW serves a residential population of 11. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 11
- This is our 880th largest catchment across the whole of Severn Trent, and the 80th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

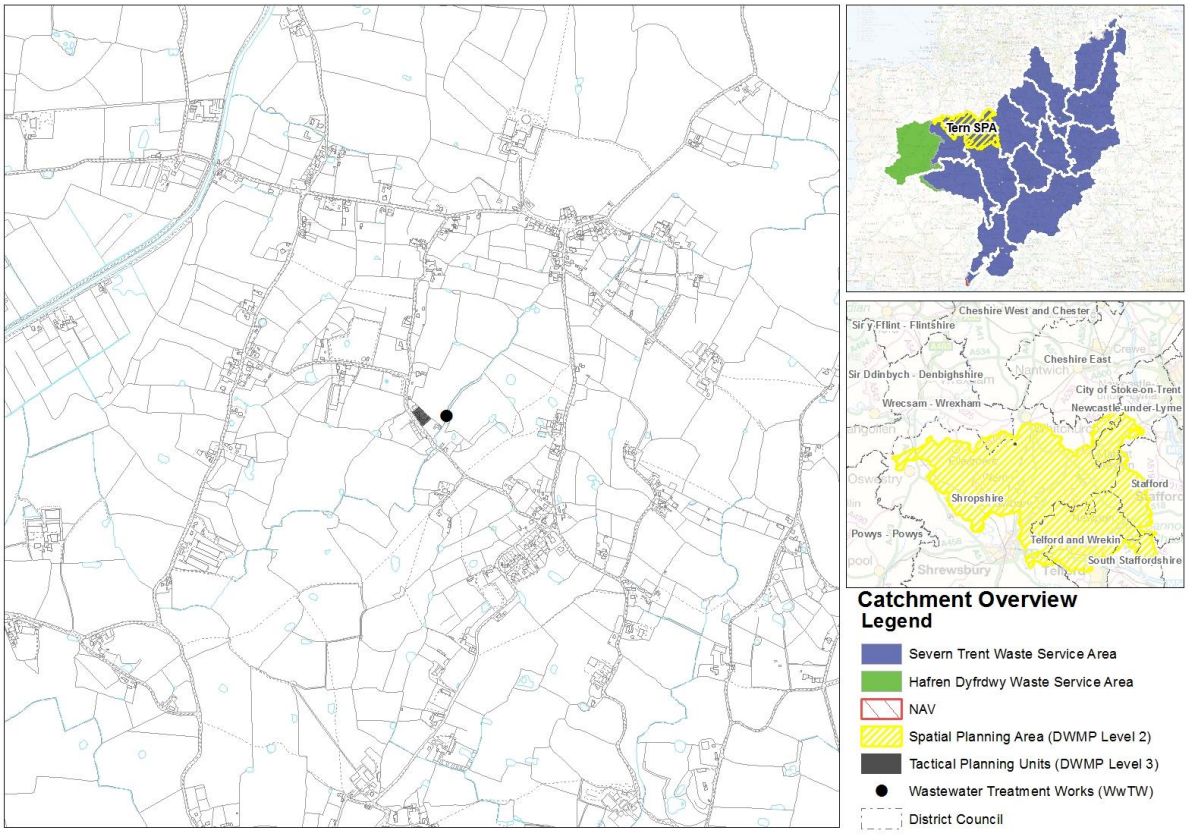
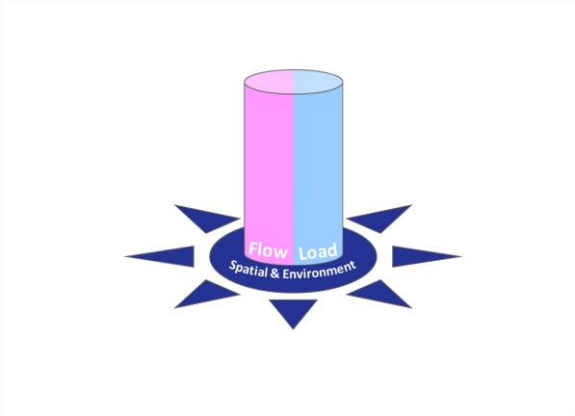


Figure 159 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 160 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 176 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WHIXALL (WINDMILL GARDENS) (10726)

March 2023

WONDERFUL ON TAP

Overview

Whixall (Windmill Gardens) WwTW serves a residential population of 45. Treated effluent is discharged to a tributary of the Soulton Brook.

Key Statistics:

- Residential Population Served: 45
- This is our 729th largest catchment across the whole of Severn Trent, and the 45th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

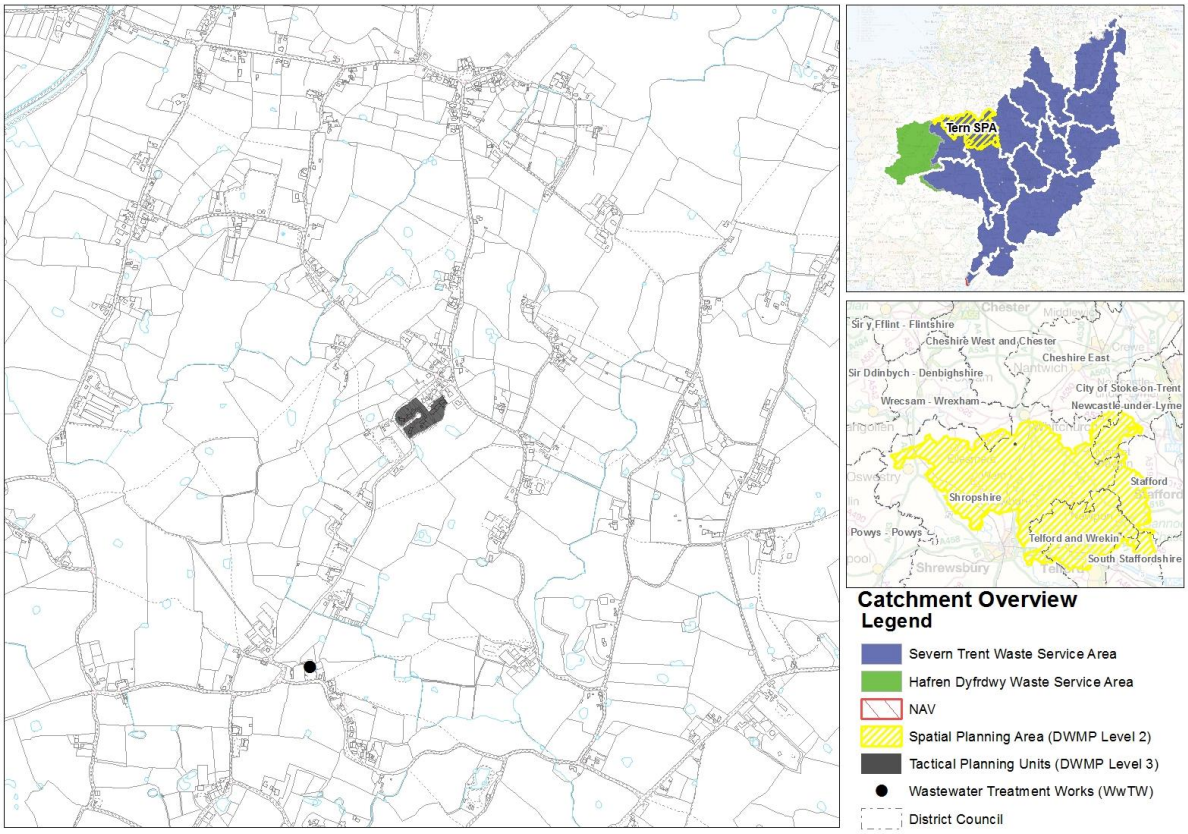
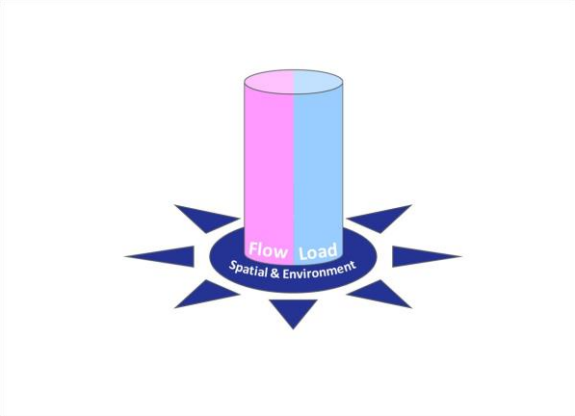


Figure 161 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 162 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 177 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WHIXHALL (RACK LANE) (10749)

March 2023

WONDERFUL ON TAP

Overview

Whixhall (Rack Lane) WwTW serves a residential population of 13. Treated effluent is discharged to a tributary of the River Roden.

Key Statistics:

- Residential Population Served: 13
- This is our 857th largest catchment across the whole of Severn Trent, and the 74th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

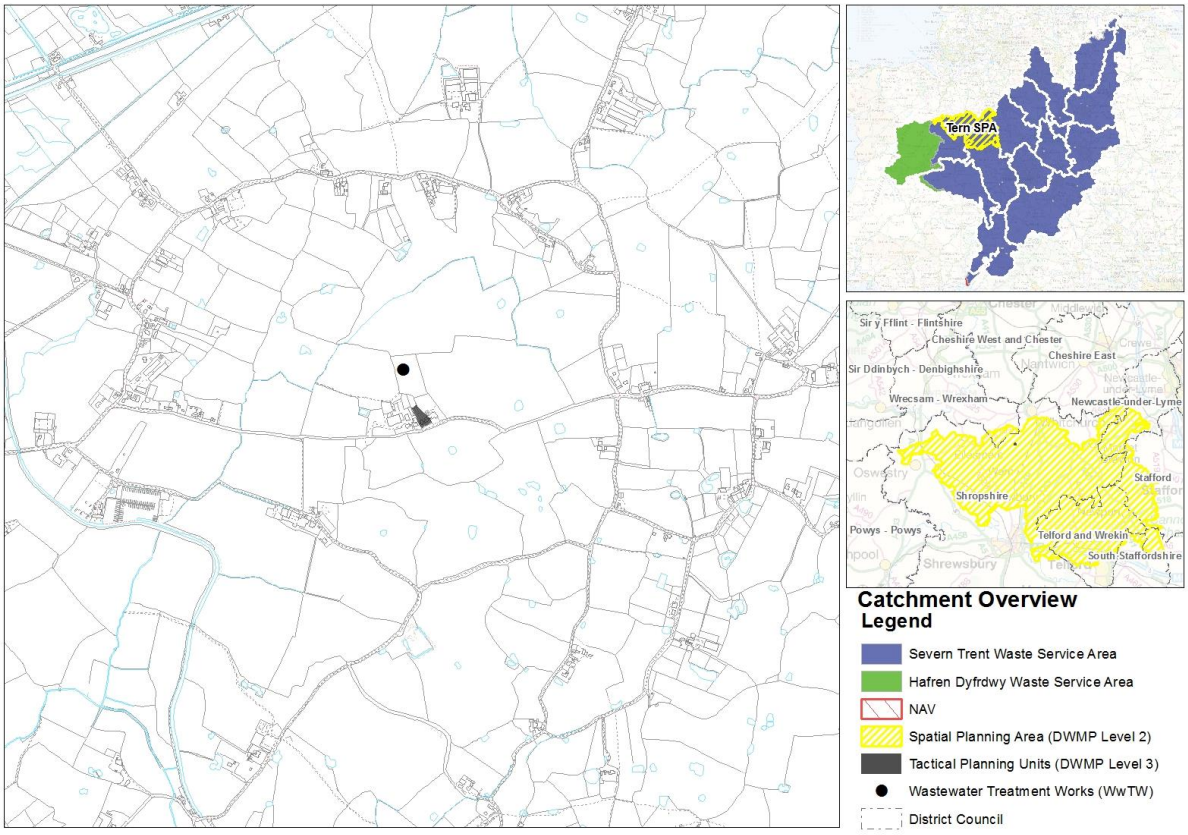
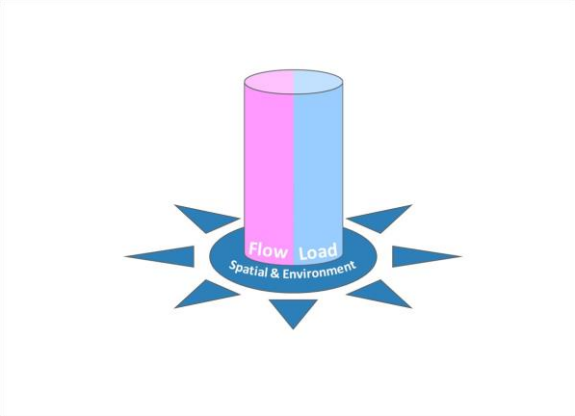


Figure 163 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 164 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 178 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WINDSMOOR (CHESWARDINE) (10882)

March 2023

WONDERFUL ON TAP

Overview

Windsmoor (Cheswardine) WwTW serves a residential population of 20. Treated effluent is discharged to a tributary of the Ellerton Brook.

Key Statistics:

- Residential Population Served: 20
- This is our 811th largest catchment across the whole of Severn Trent, and the 61st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

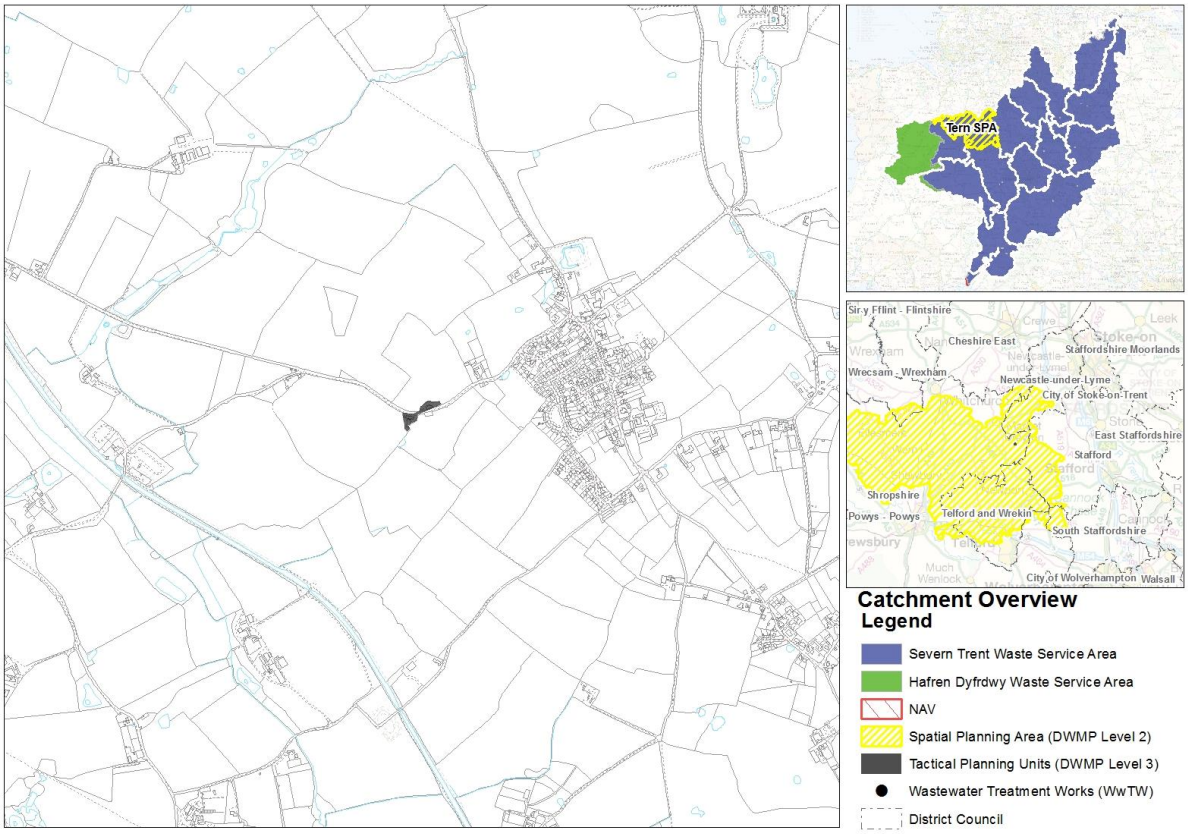
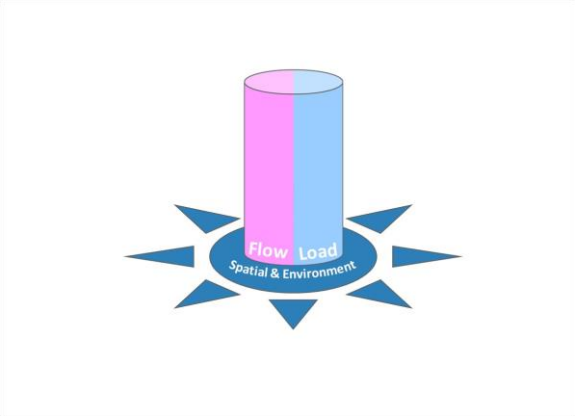


Figure 165 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 166 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 179 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

Whilst the catchment triggered through the RBCS assessment, a pre-BRAVA review of the catchment indicated that the triggers were miss-representative of the long-term catchment risk. A decision was subsequently taken to downgrade the RBCS risk, resulting in the catchment not progressing any further along the DWMP process.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WISTANSWICK (CRICKMERRY BROOK) (10885)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Wistanswick (Crickmerry Brook) WwTW serves a residential population of 20. Treated effluent is discharged to the ground.

Key Statistics:

- Residential Population Served: 20
- This is our 811th largest catchment across the whole of Severn Trent, and the 61st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

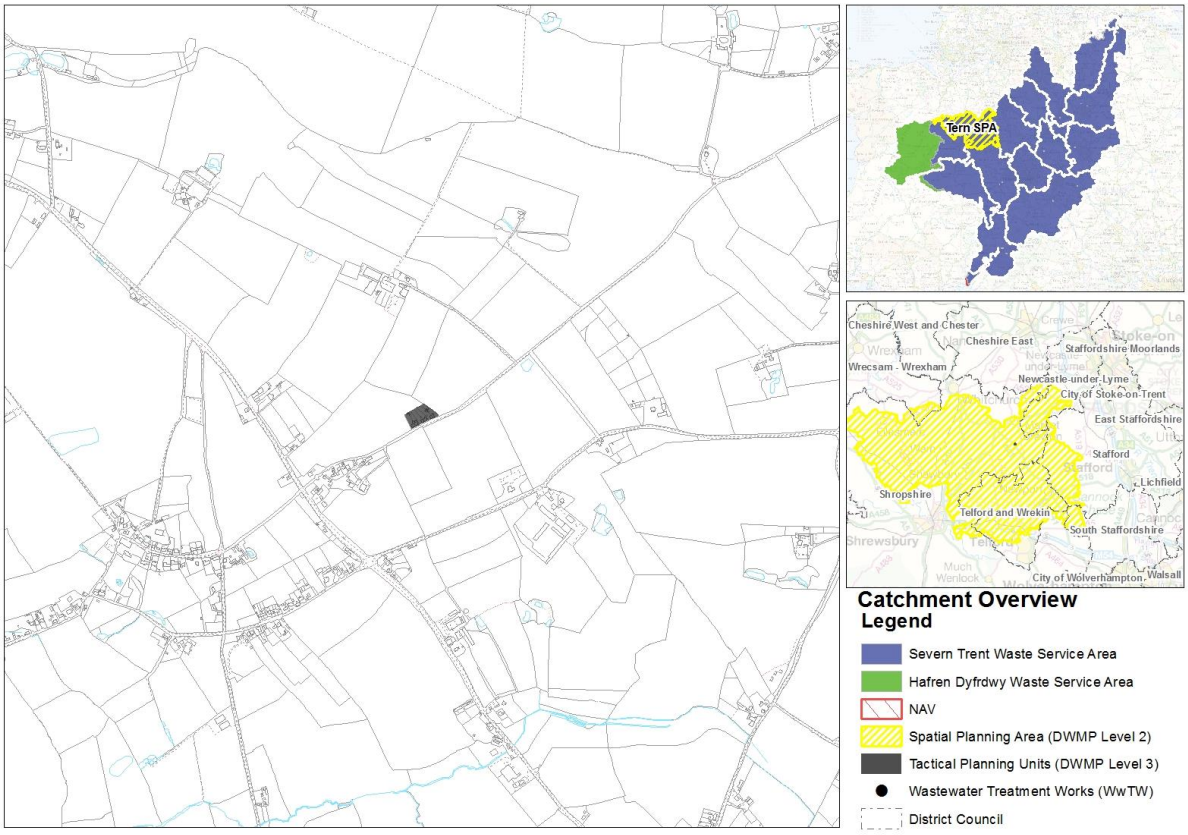
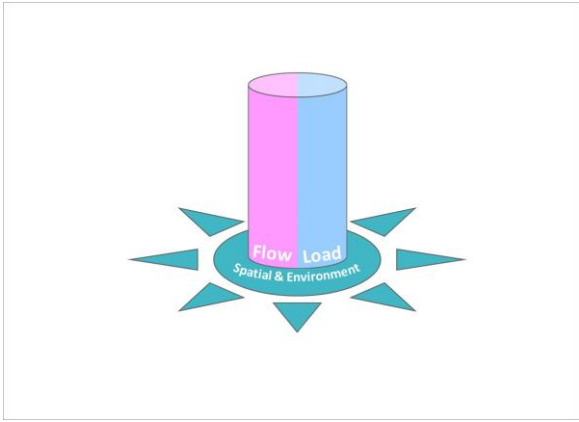


Figure 167 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 168 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 180 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.



Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WISTANWICK EASTLEA (10937)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Wistanwick Eastlea WwTW serves a residential population of 21. Treated effluent is discharged locally.

Key Statistics:

- Residential Population Served: 21
- This is our 804th largest catchment across the whole of Severn Trent, and the 59th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

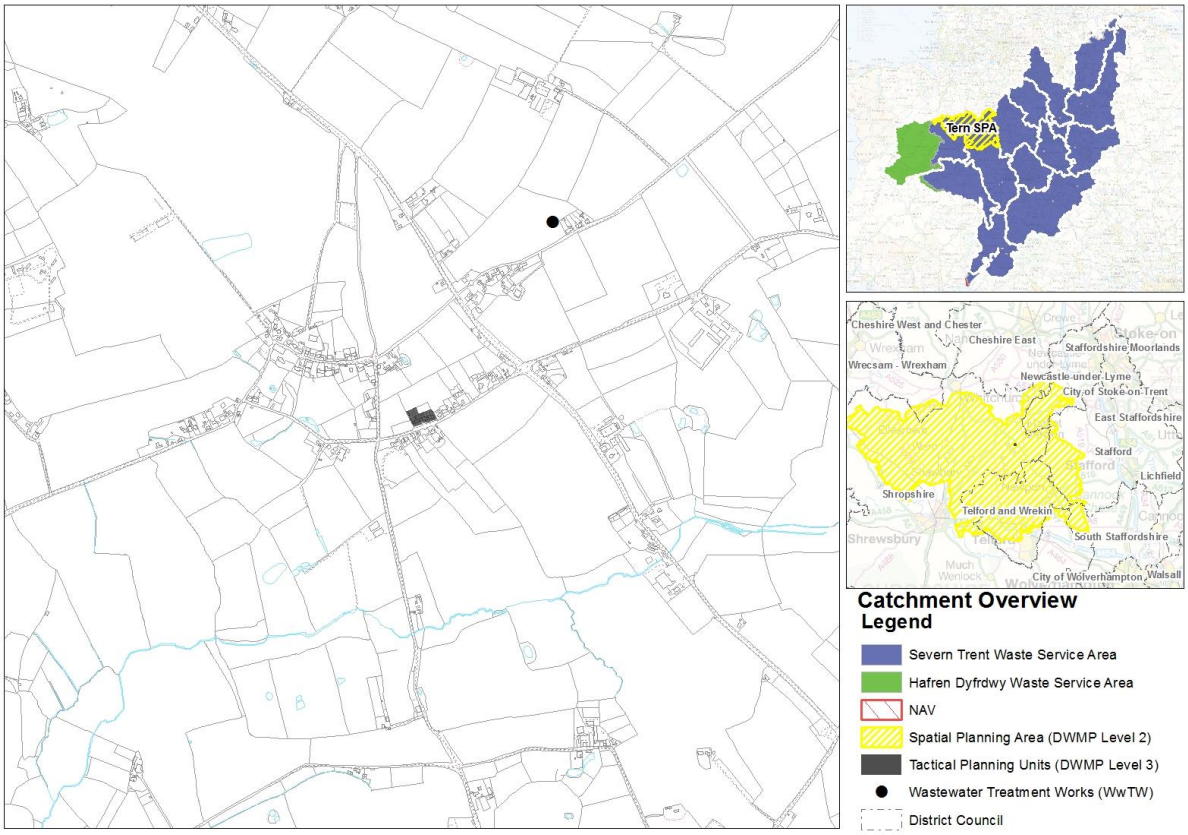
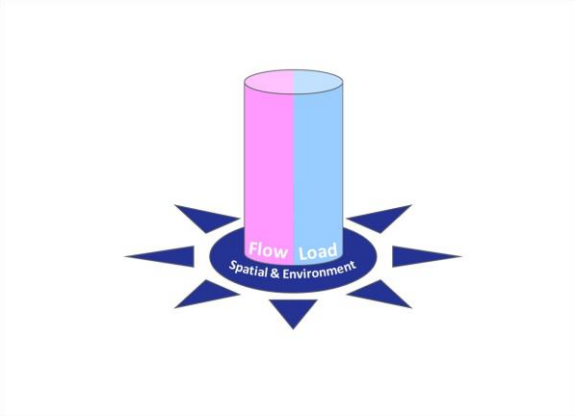


Figure 169 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 170 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 181 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WOLLERTON (BEAN BANK) (10927)

March 2023

WONDERFUL ON TAP

Overview

Wollerton (Bean Bank) WwTW serves a residential population of 37. Treated effluent is discharged to the River Tern.

Key Statistics:

- Residential Population Served: 37
- This is our 751st largest catchment across the whole of Severn Trent, and the 48th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

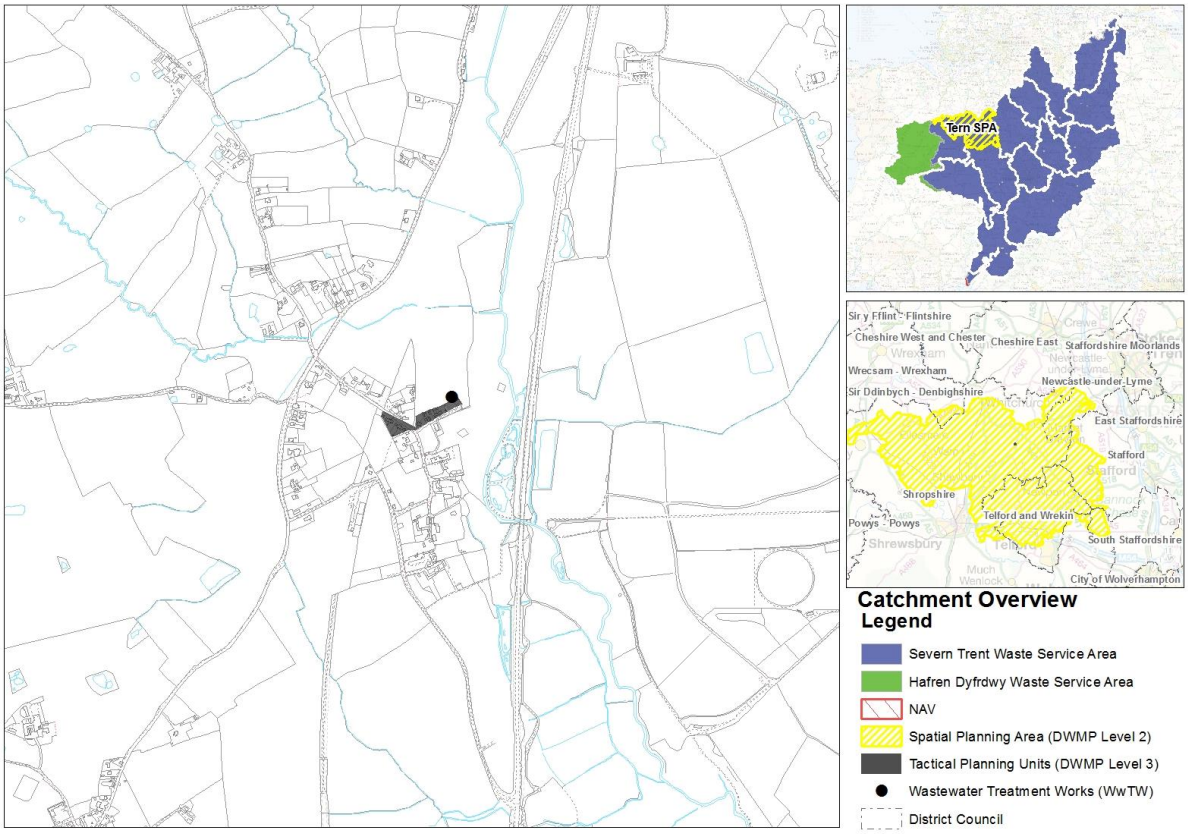
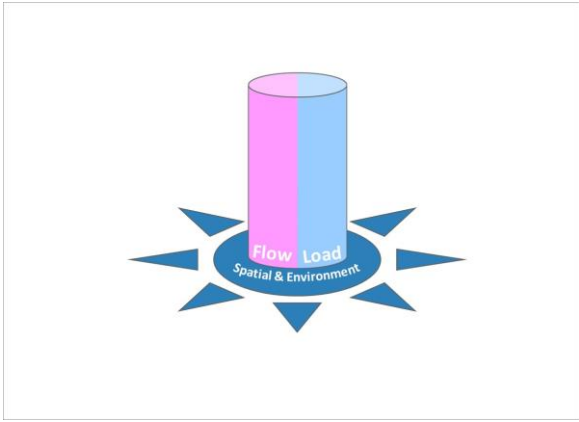


Figure 171 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 172 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 182 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WOODSEAVES (HILLSIDE) (11004)

March 2023

WONDERFUL ON TAP

Overview

Woodseaves (Hillside) WwTW serves a residential population of 37. Treated effluent is discharged to a tributary of the Stoke Brook.

Key Statistics:

- Residential Population Served: 37
- This is our 751st largest catchment across the whole of Severn Trent, and the 48th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

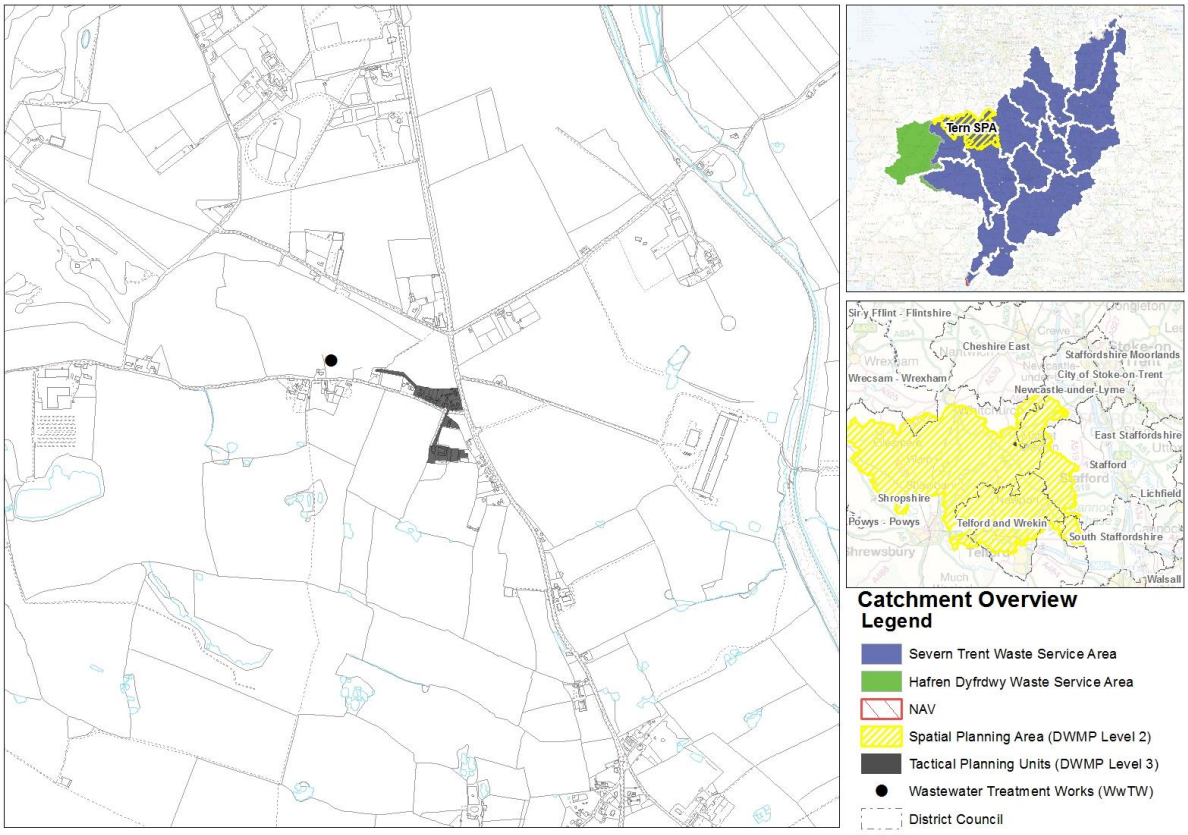
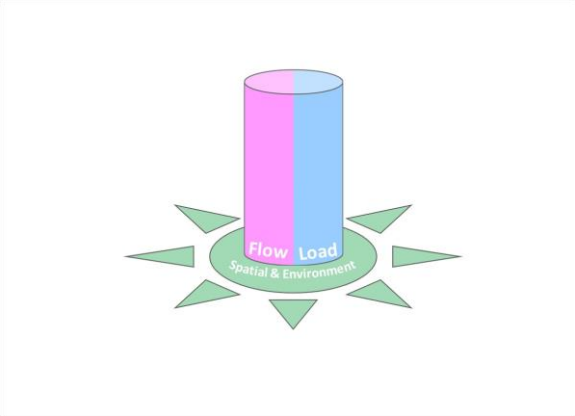


Figure 173 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 174 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 183 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	Yes
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	No
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	No
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	No
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	No
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	No
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	No
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	No
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	No

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
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15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
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This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview:
WOODSEAVES (THE NOOK) (10738)

March 2023

WONDERFUL ON TAP

Overview

Woodseaves (The Nook) WwTW serves a residential population of 10. Treated effluent is discharged locally.

Key Statistics:

- Residential Population Served: 10
- This is our 887th largest catchment across the whole of Severn Trent, and the 82nd largest in the Tern Stategic Planning Area making up <1% of its population.
- It has <1km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

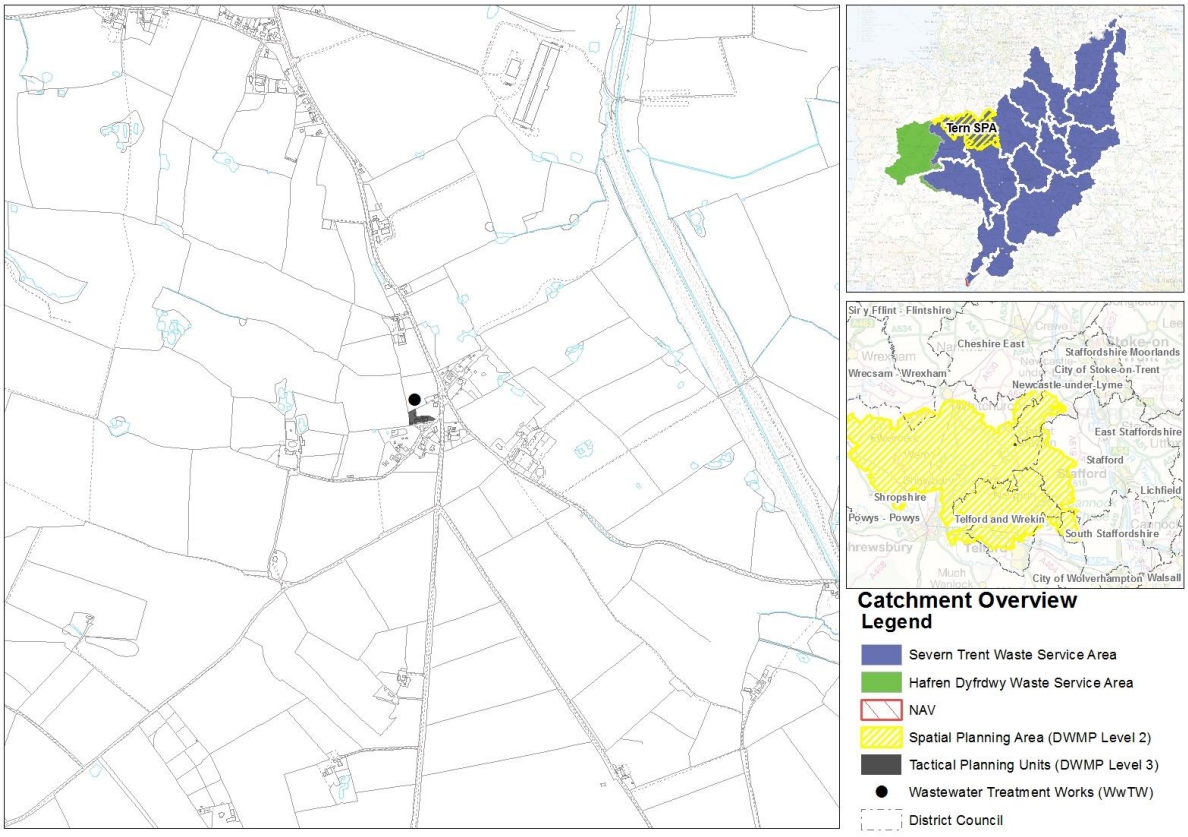
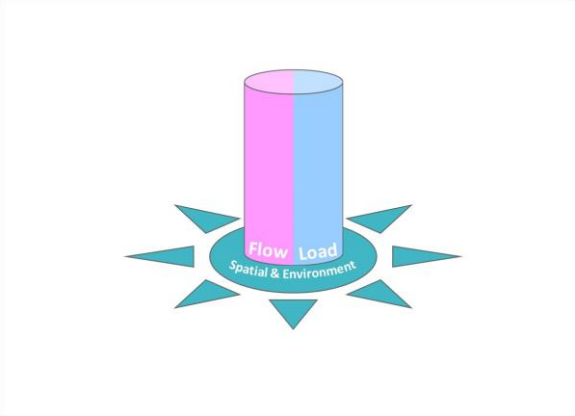


Figure 175 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 176 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 184 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	No

This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.

Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: WOODSEAVES (13328)

March 2023

WONDERFUL ON TAP

Overview

Woodseaves WwTW is located to the south west of Woodseaves and serves a residential population of 597. Treated effluent is discharged to a tributary of the Lonco Brook.

Key Statistics:

- Residential Population Served: 597
- This is our 398th largest catchment across the whole of Severn Trent, and the 21st largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 5.3km of public foul water sewers and <1km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

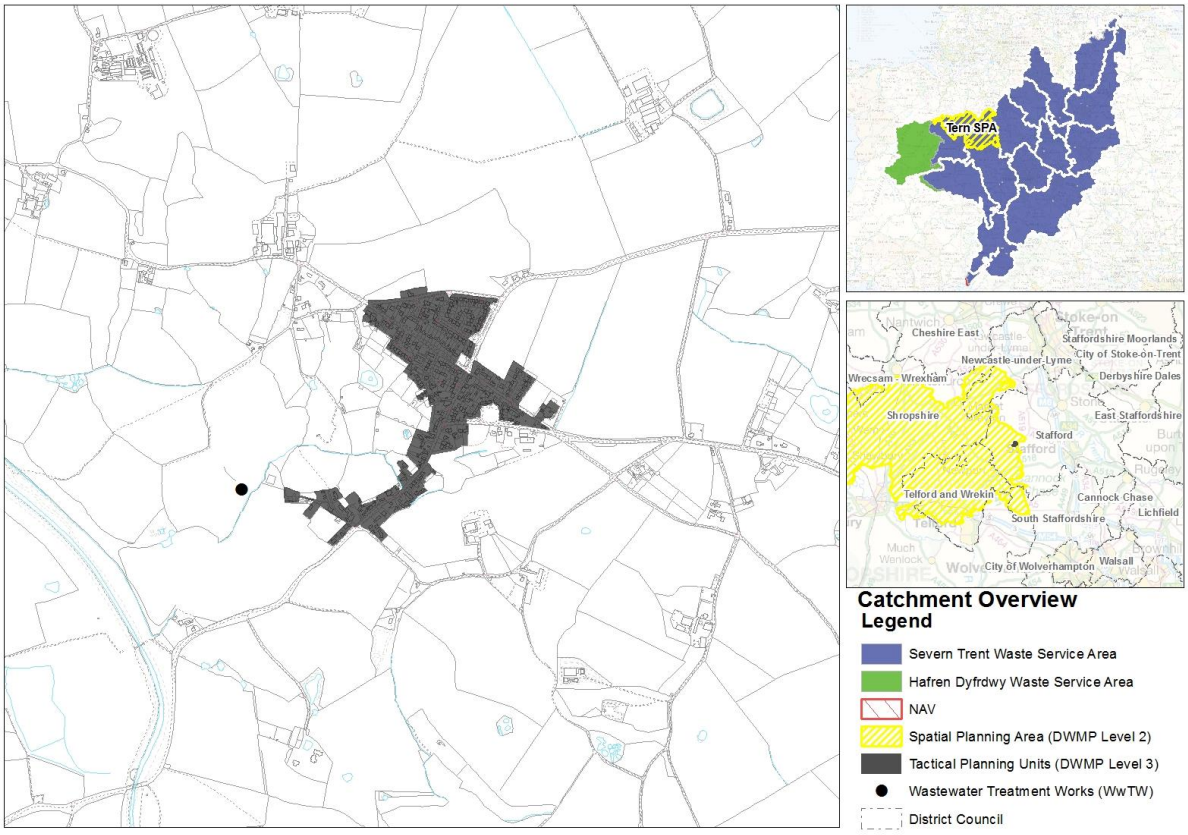
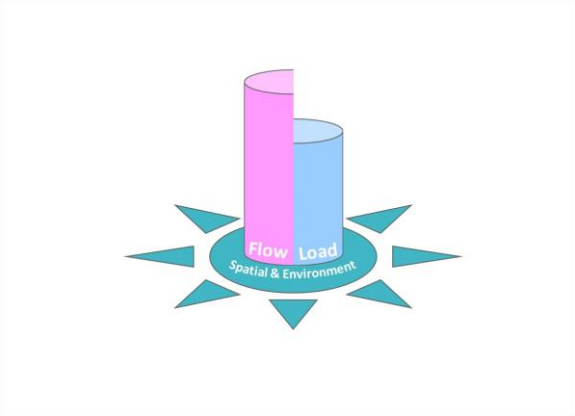


Figure 177 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 178 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 185 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
8	External Sewer Flooding	1	This is in line with the external sewer flooding PR19 asset health performance commitment. It is an historical measure that records the number of external flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
9	Pollution incidents (Category 1, 2 and 3)	1	As per the 2017 definition of the Environmental Performance Assessment (EPA), this is a measure that identifies incidents of unexpected release of contaminants that have resulted in environmental damage.	**No**
10	WwTW quality compliance	1	An historical assessment of WwTW discharge permit compliance	**No**

No.	Indicator	Tier	Description	Trigger
11	WwTW dry weather flow compliance	1	An historical assessment of compliance of dry weather flow permits based on measured flow, and for catchments that do not have measured flow available calculated flow.	No
12	Storm overflows	1	Using available data to examine permit risks not already covered by other indicators. It looks at whether there is evidence to indicate a storm overflow is not operating within permit. Where monitoring is not in place consideration was given to reported concerns.	No
13	Risks from interdependencies between RMA systems	1	A mechanism to understand risk posed by other Risk Management Authorities (RMA) assets in the catchment.	No
14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	Yes
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
17	Sewer blockages	1	An historic measure using data from the PR19 asset health performance commitment for sewer blockages. It records obstructions in a sewer that require clearing and which cause a reportable problem such as flooding or discharge to a watercourse, unusable sanitation, surcharging sewers or odour.	Yes

Due to this catchment triggering on 1 indicator(s) (excluding sewer blockages and collapses); this catchment progressed through to the Baseline Risk and Vulnerability (BRAVA) stage.

How is this catchment performing?

During the implementation of the DWMP process, it was requested that all companies report against six Common Planning Objectives. These are intended to provide stakeholders with an informed overview of the 2020 baseline performance, and the long-term risk considering future challenges of climate change, urban creep and growth for three of the planning objectives, under a 'do nothing' scenario.

We have identified four additional Opportunity Indicators which help us to consider the wider interacting needs and challenges that are predominantly under the responsibility of our stakeholders, but which have the opportunity to positively contribute to the wider benefits that the DWMP can bring.

Table 186 Description of the priority risk bands for Common Planning Objectives.

Band	Priority Level	Description
2	Short Term Priority	The needs of the catchment indicate that performance warrants more immediate investigation and is a short term priority to improve performance. The solution to remedy the need could be simple or complex which can be understood through Option Development and Appraisal stage of DWMP.
1	Medium Term Priority	The needs of the catchment indicate that performance appears to be borderline and therefore needs further investigation in the Options Development and Appraisal stage of DWMP.
0	Long Term Priority	The needs of the catchment indicate that performance is not triggering specific risk thresholds and current baseline performance (or projected 2050 performance) is not a significant issue or concern. This is a long-term priority to address sider strategic needs. Where there may localised needs there is the mechanism to address through 'business as usual' investment decisions.
N/A	Not Assessed	Where a planning objective has not been assessed due to not being able to project to 2050 .

Table 187 Description of the priority risk bands for Opportunity Indicators.

Band	Opportunity Level	Description
2	Good	This indicates the catchment is likely to offer good opportunities for DWMP interventions to benefit a particular indicator.
1	Reasonable	This suggests there are reasonable opportunities across a catchment to support an indicator.
0	Limited	Based on the characteristics of the catchment our assessment suggests there are limited opportunities to support an indicator, however there may still be some benefits which could still be gained.
N/A	Not Assessed	Where an opportunity indicator has not been assessed due to not being able to project to 2050.

Table 188 Summary table of results for both Planning Objectives and Opportunity Indicators.

Ref	Planning Objective	2020	2025	2030	2035	2050	Comments
Common Planning Objectives (Aligned to methodologies published in July 2020)							
CPO1	Internal Sewer Flooding Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of internal sewer flooding incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO2	Pollution Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of pollution incidents reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO3	Sewer Collapse Risk *	0	N/A	N/A	N/A	N/A	Based on the average number of sewer collapses reported over the 3 year period from 1st April 2018 to 31st March 2020.
CPO4	Risk of internal sewer flooding in a 1 in 50-year storm	2	2	2	2	2	This approach uses the basis of the RoSFiaS methodology but incorporates enhancements to align with assessment of surface water and fluvial flood risks assessments used by Environment Agency/LLFAs.
CPO5	Storm Overflow Performance	2	2	2	2	2	This uses the approach set out in the 2017 Capacity Assessment Framework to assess storm overflow performance.
CPO6	Risk of wastewater treatment works quality compliance failure	0	0	0	0	0	This considers pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'.
Opportunity Indicators							
OI1	Risk of surface, fluvial and groundwater flooding	0	N/A	N/A	N/A	N/A	This indicator uses surface water flood risk maps to identify properties at risk of surface water flooding which could potentially benefit from cocreated drainage and wastewater solutions.
OI2	Sustainable accommodation of future growth	0	N/A	N/A	N/A	N/A	This indicator looks at how likely it is that new development would connect to a foul/combined sewer as not suitable surface water sewers are available or the ground conditions limit use of SuDS.
OI3	Effective wastewater asset resilience	0	N/A	N/A	N/A	N/A	High level assessment of WwTW and major pumping station resilience against fluvial (river) flooding, electricity supply failures and communication outages.
OI4	Supporting Water Resource Management Plan strategies	2	N/A	N/A	N/A	N/A	This indicator assesses potential opportunities to integrate DWMP surface water management strategies to offset groundwater and river abstraction constraint within WRMP.

What viable interventions may work in this catchment?

Table 5 (below) indicates which options are expected to be viable within the catchment. This considered the physical characteristic of the catchment and its long-term needs. Through the option development and appraisal process, this indicates interventions with more 'ticks' are considered to have higher viability.

Table 189 Summary table of the Option Development Appraisal findings, indicating what types of options are more suitable for the catchment.

Type		Intervention Theme	Aim of Intervention	Level of Benefit
Reduce		Domestic Water Consumption Management	Working with customers to reduce inflow from domestic properties to reduce base flows.	✓
		Trade Flow Demand Management	Working with non-household traders to identify opportunities to pre-treat flows on site to offset load issues at the WwTW.	✓
		Customer Education	Working with customers to raise awareness of the impact of sewer misuse, water consumption and increase of impermeable area creep. This is a company level activity.	•
		Surface Water Inflow Management	Managing surface water entering the sewer network through surface water separation and SuDS strategies.	✓✓✓✓
		Infiltration Management	Managing groundwater ingress into the sewer network during wet weather in areas with high water tables through activities such as sewer lining and replacement.	✓
Optimise	Sewerage Network	Managing Exceedance Flow Paths	Mitigating sewer exceedance flood risk by managing flow paths. This is a business-as-usual activity.	•
		Sewer Flow Management to Optimise Headroom	Identify opportunities within the sewer network where alterations can be made to make better use of existing spare capacity.	✓
		Storm Overflow Rationalisation	Identify opportunities to combine multiple Storm Overflows into a single asset designed to improved modern design standards.	•
		Active System Control	Using smart technology such as Active System Control or Real Time Control to dynamically hold flows back in areas where there is more capacity such as existing tanks.	✓✓
		Operational Performance Management	Maintenance of the network such as routine cleanse to reduce blockage risk. This is a business-as-usual activity.	•
	WwTW	River Catchment Flexible Permitting	Utilise River reach analysis of permits to ensure that impacts from WwTW are cumulatively considered and balanced to meet both the permit needs of the WwTW and the environmental capacity objectives for the watercourse.	✓
		WwTW Treatment Optimisation/ Decentralisation	Optimising existing treatment capacity by transferring flows to an alternative WwTW with spare capacity or providing a new WwTW to release capacity at the existing WwTW.	✓
		Storm Overflow Effluent Treatment	Treatment of storm overflow effluent to improve the water quality before release into sensitive environments for example through use of reed beds and UV filters.	✓
		Product Recovery	Using technology to extract products from the flows into the WwTW. This is a bespoke option rather than within strategic DMWP scope.	•
Build	Sewerage Network	Sewer Capacity Upgrades	Traditional capacity upgrades including building new sewers and attenuation tanks.	✓✓✓✓✓
		Sewer Rehabilitation	Repair of structural condition of sewers through replacement, sewer lining or patch repairs to reduce risk of collapse, burst or blockage. This is a business-as-usual activity covered through capital maintenance plans.	•
	WwTW	WwTW Capacity Upgrades	Traditional capacity upgrades including building new treatment capacity considering land availability and environmental capacity of the receiving watercourse.	✓✓✓✓
		WwTW Capital Maintenance	Repair and maintenance of existing assets at WwTW. This is a business-as-usual activity covered through capital maintenance plans.	•
Environmental		SuDS for Groundwater Recharge	SuDS Strategies to support groundwater recharge to support water availability objectives.	✓
		Natural Flood Management	Use of Natural Flood Management to manage flood levels where they interact with and inundate the wastewater system.	✓✓
Indirect Measures		Influencing Policy	Influencing policy on growth, planning, surface water connections to reduce inflow. This is a company level activity.	•
		Investigate and Monitor	Understand root cause and risk. This is a company level activity.	•
		Future Technology	To await or develop new technology to support with meeting objectives. This is a company level activity.	•

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term

investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

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Drainage and Wastewater Management Plans (DWMP)

Level 3 Tactical Planning Unit - Catchment Overview: WOORE (10928)

March 2023

WONDERFUL ON TAP

SEVERN TRENT

Overview

Woore WwTW serves a residential population of 1,088. Treated effluent is discharged to the River Tern.

Key Statistics:

- Residential Population Served: 1,088
- This is our 317th largest catchment across the whole of Severn Trent, and the 13th largest in the Tern Stategic Planning Area making up <1% of its population.
- It has 20.0km of public foul water sewers and 2.5km of public surface water sewers (these exclude Section 24 and sewers transferred in 2011).

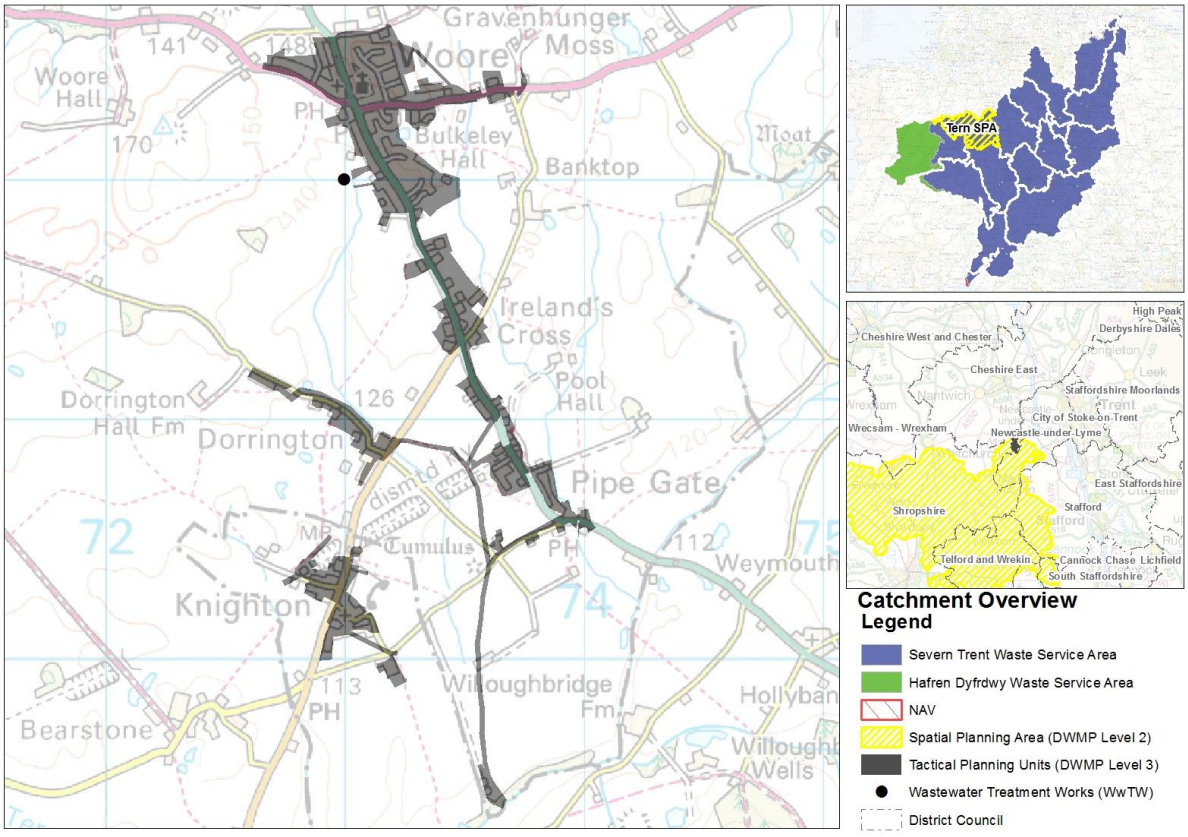
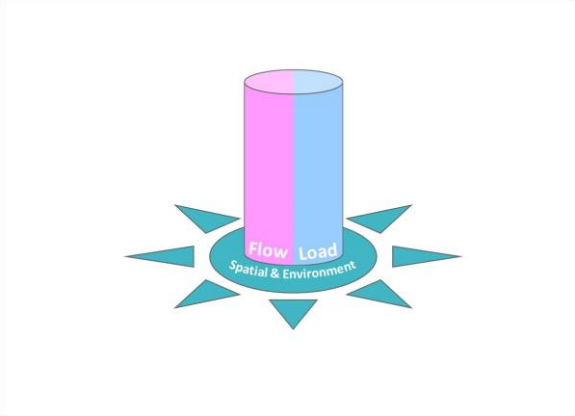


Figure 179 An overview map showing the extent of the catchment and its context within the Level 2 Strategic Planning Area and Level 1 Company.

Wastewater Treatment Works (WwTW)

In line with Common Planning Objective 6 (CPO6); "Risk of Wastewater Treatment Works quality compliance failure" we have considered pressures on flow and quality permit compliance, plus any technological limitations or physical site conditions which could be a 'showstopper'. The output of this assessment is summarised in *Figure 2* (below). For more information on this assessment please see the DWMP Technical Summary; "Assessing WwTW Capacity".



Key	Constraint	Description
	Spatial	Indicated by the size of the base, the larger the base, the more space that is available to expand the WwTW if needed.
	Environment	The ability of the watercourse to accept increased treated effluent loadings against the achievable treatment limits where there is limited room for improvements then the icon is dark blue, where there is capacity to adjust processes then the icon is pale yellow.
	Load	Indicated by the blue bar, the larger the bar the greater the spare capacity within the treatment processes to treat additional growth.
	Flow	Indicated by the pink bar, the larger the bar the greater the spare capacity within the current permit to accommodate additional growth.

Figure 180 Displays the Wastewater Treatment Works long term constraints.

Risk Based Catchment Screening (RBCS)

The RBCS process was undertaken at an early stage of the DWMP process with the aim of giving a high-level understanding of potential catchment risks and vulnerabilities. It assessed Wastewater Treatment Works (WwTW) catchments current and past performance against a range of indicators that align with the drivers in the Strategic Context document.

Table 190 Summary table of the Risk Based Catchment Screening (RBCS) results.

No.	Indicator	Tier	Description	Trigger
1	Catchment Characterisation	2	The characterisation score from the Stage 2 of the Wastewater Resilience PR19 common performance commitment was used to understand the vulnerability of the catchment to sewer flooding resulting from an extreme wet weather event. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
2	Intermittent discharge impacts upon bathing or shellfish waters	1	This uses mechanisms to understand the significance of any impact of water company operations on environmental receptors. The intermittent discharge impacts upon bathing or shellfish waters measure were not appliable at the time of the assessment for Cycle 1 of the DWMP as there are no shellfish waters within Severn Trent and Hafren Dyfrdwy regions.	**No**
3	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part A)	1	The 'Remedies' data from Natural England and 'Actions' data from Natural Resource Wales (NRW) were used to understand the significance of any impact of water company operations on environmental receptors.	**No**
4	Continuous or intermittent discharge impacts upon other sensitive receiving waters (part B) (Tier 2)	2	The 'Threats' data from Natural England and 'Issues' data from Natural Resource Wales (NRW) are used to understand the significance of any impact of water company operations on environmental receptors. This indicator is tier 2 and therefore will not contribute to trigger a breach alone.	**No**
5	Storm Overflow Assessment Framework (SOAF)	1	The SOAF indicator triggers where a catchment contains sewer overflows that are under investigation or proposed for investigation under the SOAF guidance. The Water Industry National Environment Programme (WINEP) delivery metric is used to identify overflow locations.	**No**
6	Capacity Assessment Framework (CAF)	1	It provides an indication of capacity constraints in the network as a leading indicator of service failure.	**No**
7	Internal Sewer Flooding	1	This is in line with the PR19 performance commitment. It is an historical measure that records the number of internal flooding incidents per year including flooding caused by extreme events to be consistent with the Ofwat definition.	**No**
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14	Planned residential new development	1	Uses predicted residential population growth forecasts checked against Office for National Statistics (ONS) publications of UK growth to target catchments requiring investigations for potential future capacity constraints. Thresholds for this indicator can be found in Appendix B (Section B2.1.3) of the DWMP Framework.	No
15	The Water Industry National Environment Programme (WINEP)	1	WINEP sets out the actions that companies will need to complete to meet their environmental obligations and details the specific drivers for mitigating measures. Only catchments that contain wastewater investigations, option appraisals or scheme within the WINEP programme trigger.	No
16	Sewer collapses	1	An historic measure using data from the PR19 Common / asset health performance commitment for sewer collapses. It identifies risks to the integrity of the sewer system.	No
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This catchment does not trigger enough tier 1 indicators to progress through to the Baseline Risk and Vulnerability (BRAVA) stage. Tier 2 indicators such as sewer collapses or blockages are not sufficient on their own to warrant progressing a catchment through to BRAVA.

What's next?

From our analysis undertaken so far, this has helped us better understand the performance of those catchments which have proceeded through DWMP. This allows us to understand the expected long term investment needs across our catchments and this is already being used to support and inform the development of our PR24 Business Plan. The PR24 investment period covers 2025 to 2030 and so will help deliver the first five years of our first 25 year DWMP.

As the scope of DWMP is intended to inform the most appropriate high level direction for a catchment, we are not able to give more details as to what specific schemes are likely to be built. This level of detail will follow as part of our PR24 delivery, as we need to complete detailed scheme specific feasibility investigations to decide what actual schemes will look like. However, the schemes we build will be aligned to our long term DWMP strategies, with delivery optimised to ensure schemes are commissioned when required, and where necessary phased to manage any uncertainties.

Contacting us

Our DWMP covers the planning period from 2025 to 2050, and is mainly focussed at a catchment level. If you have any comments relating to our DWMP then please feedback using our online feedback form or email us at dwmp@severntrent.co.uk.

Should you need to contact us about more immediate concerns regarding current performance of our wastewater assets, please visit our 'Contact Us' website: https://www.stwater.co.uk/help-and-contact/contact-us/. For any issues requiring an urgent response please call our 24/7 telephone number: 0800 783 4444.