



Langham WRC & Sewerage Network Capacity
Review Meeting 18th Nov 2022

Agenda

- Welcome & Introductions (LPC) 10.00 – 10.10am
- Scene Setting & Key Issues for today (LPC) 10.10 – 10.25am
 - Q&A
- Meeting Part 1 : Wet Weather Considerations (AW) 10.25 – 10.50am
 - i. Presentation on Langham Sewerage Network Map and the results from AW's Network Flow Study (Nov 21 – Nov 22)
 - ii. Explanation of Flood Risks identified in AW's consultation response to Planning Application 221510 (Wick Road Langham)
 - iii. Q & A
- Meeting Part 2 : Dry Weather Considerations (AW) 10.50 – 11.10am
 - i. Update on Specification, EA sign-off , Design & Delivery of Langham WRC Upgrade Project
 - ii. Presentation on actual WRC daily flow data for 2022 so far
 - iii. Q & A
- Wrap Up and Action Points (All) 11.10 – 11.30am

Scene Setting and Key Issues for the day will be covered by eleven slides

Table showing proportional growth for the Colchester satellite villages

| Settlement | Population | Current Houses | Increase | Change since 9/16 | % Increase | Core | % Increase to core |
|------------------|--------------|----------------|-----------|-------------------|------------|------------|--------------------|
| Langham | 1,036 | 419 | 80 | -45 | 19 | 237 | 34 |
| Copford | 1,689 | 635 | 120 | 0 | 19 | 518 | 23 |
| Eight Ash Green | 1,750 | 860 | 150 | 0 | 17.5 | 569 | 26 |
| Tiptree | 9,182 | 3,860 | 600 | 0 | 16 | x | x |
| Chappel | 506 | 210 | 30 | 0 | 14 | 120 | 25 |
| Great Tey | 911 | 374 | 40 | +23 | 11 | 270 | 6 |
| Abberton | x | x | 55 | +25 | ? | 309 | 18 |
| Great Horkesley | 2,476 | 932 | 93 | 0 | 10 | 558 | 16 |
| West Bergholt | 2,855 | 1,365 | 120 | 0 | 9 | 1202 | 10 |
| Wivenhoe | 7,637 | 3,335 | 250 | 0 | 7 | x | x |
| Fordham | 835 | 317 | 20 | 0 | 6 | 220 | 9 |
| Boxted | 1,379 | 555 | 36 | 0 | 6 | 219 | 16 |
| West Mersea | 7,183 | 3200 | 200 | -150 | 6 | x | x |
| Layer de la Haye | 1,767 | 710 | 35 | -15 | 5 | 544 | 6 |
| Birch | 873 | 326 | 15 | ? | 5 | 226 | 6 |
| Rowhedge | x | 900 | 40 | -20 | 4 | x | x |
| Dedham | 1,907 | 796 | 0 | -17 | 0 | 169 | 0 |

Some recognised publications that still need to be observed

- The 2016 Water Cycle Study identified:
 - lack of head room capacity at the Langham Water Recycling Centre (WRC)
 - the need for upgrades at the Langham WRC to enable it to accept all wastewater flows from the proposed Langham & Boxted developments
 - water quality issues in the receiving water bodies feeding into the Stour Estuary. This should not deteriorate further as a result of development in Langham and Boxted
- Planning Policy PP1 - The delivery of waste water and sewage infrastructure upgrades specified in policy PP1 will be essential to ensure compliance with the Habitats Regulation 2010 (as amended)
- The 2017 joint positioning statement between the Local Planning Authority, the Environment Agency and Anglian Water. Which aimed to identify and address water and sewage capacity shortfalls at the Langham WRC
- Planning conditions applied by the Local Planning Authority, after input from AW and the Environment Agency, that state development should not commence until adequate waste water and sewage treatment capacity is available to serve the new housing

Langham Flooding Map – Informal Resident Survey 2022



Wet Weather Issues

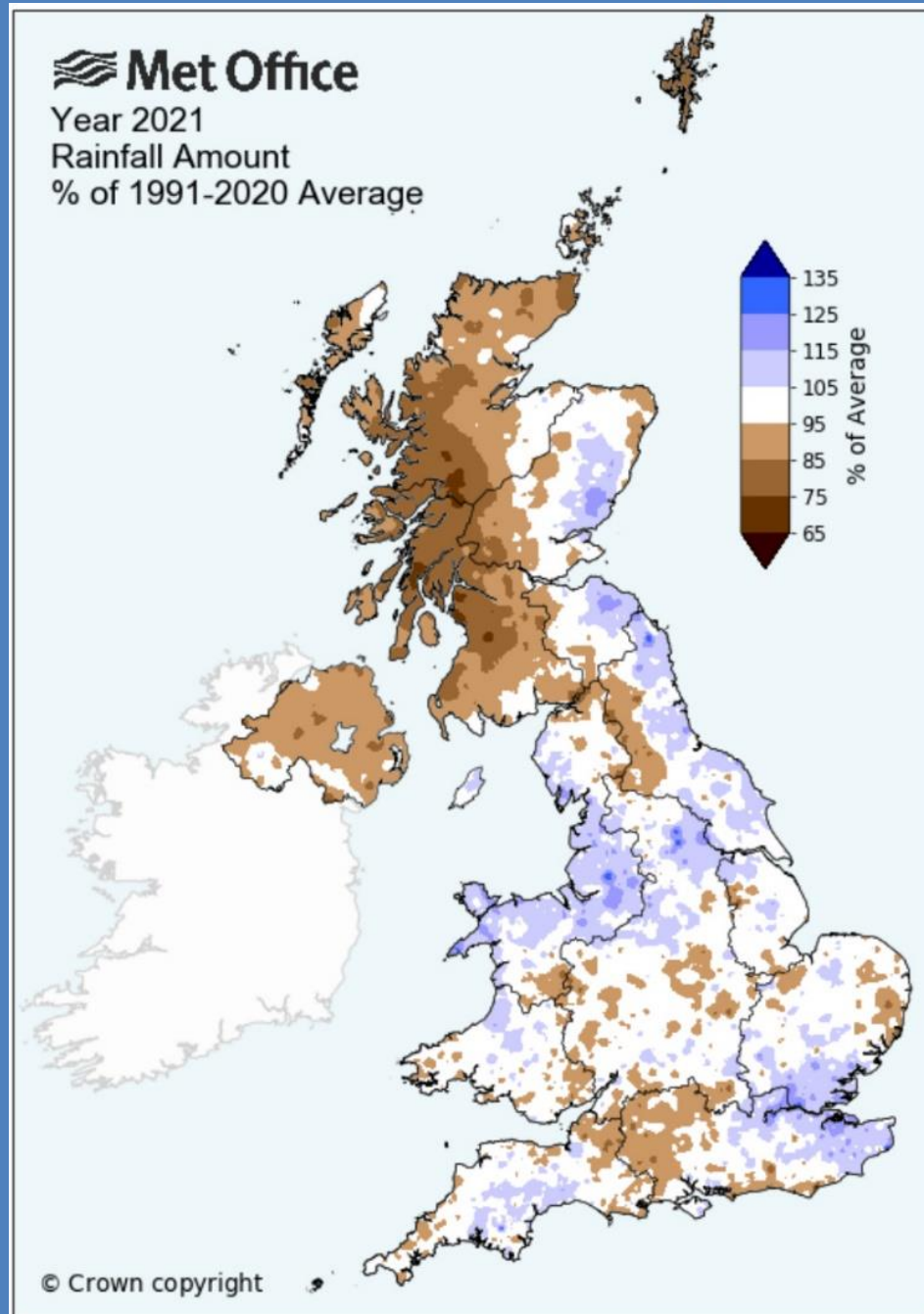
- No routine monitoring of sewerage network flows/overflows
 - but AW have installed some monitoring points since Nov 2021
 - AW will be reporting their study findings today
- No overflow monitoring at Langham WRC
 - as it doesn't have a dedicated storm overflow capability
 - so let's look immediately downstream at Dedham WRC...

Dedham WRC - Storm Overflows

Anglian Water Event Duration Measurements

| | 2020 | 2021 |
|------------------------|---------------------------------------|--|
| Spillages | 61 | 66 |
| Time | 1034 hours (43 days) | 1247 hours (52 days) |
| Ranking Order | 39 th worst of 735 AW EDMs | 34 th worst of 1553 AW EDMs |
| Ranking % | Worst 5% | Worst 2% |
| Remedial Investigation | None triggered | None triggered |

Met Office Rainfall Stats for 2021



Dry Weather Issues

- Langham WRC operating above its permitted sewage processing limit
 - downstream river pollution risk
- First identified in 2016 (CBC Water Cycle Study)
- Putting Langham WRC in the worst performing 0.5% of Anglian Water's ~750 WRCs
- ...but still no commitment to upgrade it until 2025

Environment Agency Permit Limit: Dry Weather Flow, cubic metres per day

Statistically assessed as the daily flow which is exceeded by 90% of the daily measurements through the year (hence “Q90”)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|------|------|------|------|------|
| Q90 DWF Permit Limit | 420 | 420 | 420 | 420 | 420 | 420 | 420 | 420 |
| Q90 DWF Actuals (reported by EA) (2021 provisional figure from AW) | 395 | 382 | 357 | 416 | 378 | 428 | 481 | ? |
| Q80 DWF Actual (reported by CBC Water Cycle Study) | | 616 | | | | | | |
| Inferred Q90 DWF Actual (based on CBC Water Cycle Study) | | 570 | | | | | | |

DWF trend attribution

| | 2019 | 2020 | 2021 |
|----------------------|------|------|------|
| Q90 DWF Permit Limit | 420 | 420 | 420 |
| Q90 DWF Actuals | 378 | 428 | 481 |

- 27% increase in two years
- New housebuilding probably explains 9%
 - 36 new homes at Boxted Cross + ~20 “windfall” homes
 - ~600 pre-existing homes in WRC catchment area
- COVID restrictions and work from home trends probably explains ~12%
- Residual ~6% down to other factors/statistical variability

Local Plan - Langham Indicative Design Option



Key Principles:

1. New and improved rural footpaths, which enhance pedestrian access and amenity;
2. Pedestrianised settlement edge;
3. Greens and community squares at the heart of communities;
4. Extension of the green at the convergence of Wick Lane, Park Lane and a new footpath;
5. Extension of the Recreation Ground and provision of a new multi-use games area;
6. Sustainable drainage including prominently located ponds for increased amenity, and improved sewage system;
7. The school to benefit from a new childcare facility, car park and green;
8. Good design in response to the setting and complementing the village vernacular including shared lanes, bespoke house types, use of locally derived materials and high quality architecture;
9. Landscape buffering to the employment area; and
10. Existing adjoining streets to benefit from verges, retention of protected 'important' hedgerow, tree planting and footpaths.

Key:

- Development areas
- Residential building
- Public open space
- Private space
- Shared access village square
- Shared access lane
- Pedestrianised village square
- Footpath
- Informal footpath (grass/gravel)
- School car park

DWF forecast?

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|------|------|------|------|------|------|
| Q90 DWF Permit Limit | 420 | 420 | 420 | 420 | 420 | 420 |
| Q90 DWF | 378 | 428 | 481 | 481 | 510 | 577 |
| Q80 DWF (planning benchmark for any new permit application) | 404 | 458 | 515 | 515 | 546 | 617 |

- Further 20% increase in number of homes by end of 2024
- Corresponding 20% increase in sewage/waste production
- Corresponding 20% increase in measured DWF
- Is AW's permit application for 500 cubic metres/day sufficient?