

Hydrology Consultation Report for CAPC: Objection to Planning Application for CA12 Development

Date: 28/03/25

Executive Summary

This report presents a detailed **hydrological objection** to the proposed development of **236 houses at CA12** (land west of Heath Lane and north of Bowling Green Road, Thatcham). Based on extensive analysis of **local flood history, existing drainage infrastructure, underground aquifers, and national flood management policies**, it is evident that this development is **highly unsuitable** and poses **serious long-term flood risks**.

Key findings:

- The site is a **critical natural floodplain** that prevents downstream flooding in Thatcham.
- It is cited as a **FLOOD ZONE 2 & 3** in the latest update **March 25th 2025** of the **Government Flood risk planning site** - [Map – Flood map for planning – GOV.UK](#)
- **Underground aquifers and natural water movement** have not been assessed properly.
- The **Sustainable Drainage Systems (SuDS)** strategy lacks **long-term maintenance planning** and does not account for **climate change impact**.
- This development would increase the risk of flooding to surrounding properties, contradicting multiple legal and planning policies.

This report urges **West Berkshire Council (WBC)** to reject this application due to **inadequate flood risk assessment (FRA)**, failure to integrate with Thatcham's existing flood defences, and the **long-term hydrological impact** on the region.

1. The Site's Role in Natural Flood Prevention

- **CA12 is a natural flood storage area**, acting as a **buffer between Cold Ash Hill and Thatcham**.
 - **Groundwater and surface water movements** have shaped this floodplain for centuries—construction here will **severely disrupt** these flows.
 - The **July 2007 floods in Thatcham** demonstrated that drainage systems are **already at full capacity**. Building on CA12 will further strain them. (*Reference: WBC Flood Review, 2007*)
 - The **developer incorrectly states in their application that this area is NOT a flood risk area**, yet in the accepted prior application for flood defences WBC in its application stated it **IS A FLOOD RISK AREA?**
 - It is cited as a **FLOOD ZONE 2 & 3** in the latest update **March 25th 2025** of the **Government Flood risk planning site** - [Map – Flood map for planning – GOV.UK](#)
- ◆ **Legal Precedent: National Planning Policy Framework (NPPF) Paragraph 167** states that **new developments must not increase flood risk elsewhere**—this proposal **clearly violates** this requirement.

2. The Site Sits on an Underground Aquifer – No Proper Assessment Conducted

- The **developer's FRA entirely ignores the aquifer that sits beneath CA12.**
 - Previous assessments acknowledged the presence of **millions of litres of underground water**—yet **no calculations have been provided** to assess its movement. (*Flood Warden Statement, 2025*)
 - **Cutting into the aquifer will alter natural underground flows**, which will:
 - Increase water pressure downhill, risking **subsidence and flooding in Thatcham.**
 - Reduce natural infiltration, causing **more surface runoff and flash flooding.**
 - **See attached Hydrology reports for FULL detail Appendix B**
- ◆ **Legal Precedent: Planning Policy Guidance (PPG), Paragraph: 023 Reference ID: 7-023-20220825** requires developments to **avoid medium and high flood risk areas**—this site is not compliant.
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3. No Integration with Thatcham's Flood Defence Systems

- **Development Area is designated Flood Risk 2 & 3 in published mapping environmental report updated March 25th 2025 which is not acknowledged nor properly considered by the developer – see diagram 1 below**
 - **Since the 2007 floods, Thatcham has invested millions in flood defences** (detention ponds, culverts, and drainage upgrades).
 - **The developer's plan does not support or integrate with these defences**—it will only **increase the volume of water discharged into an already fragile system.** There is NO acknowledgement on the application form from them recognising this as a Flooding risk area.
 - **The site's surface water discharges into the River Kennet, which already has Flood Alerts** during heavy rainfall. (*Environment Agency, 2024*)
 - **Questions over the submitted plans using the existing access road which is only 4.8m wide whereas normal rural roads should be a Minium of 5.5m wide plus Arco barrier and path protection for existing detention ponds suggesting current plans are not fit for purpose**
- ◆ **Legal Precedent: The Flood and Water Management Act 2010** requires developments to **demonstrate long-term flood risk mitigation**—this has not been done here.
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4. SuDS System is Incomplete and Lacks Maintenance Planning

- **The SuDS plan does not account for groundwater movement, only surface water.**
- **The detention ponds on the site already overflow during heavy rain**, meaning new drainage systems will **likely fail in extreme weather events.** The detention ponds flow out into the culvert abutting Heath Lane, during very heavy rain this culvert can run at over 80% capacity. Discharging SuDS systems on top, into this Culvert will likely cause the culvert to be over-whelmed. Resulting in substantial water flows into Thatcham

- The **developer provides no plan for long-term maintenance**—who will be responsible for maintaining ditches, culverts, and SuDS basins for the next 100 years?

♦ **Legal Precedent: NPPF (2021, Paragraph 169)** states that SuDS systems must be **maintained in perpetuity**—this proposal **fails to ensure this**.

No acknowledgement nor commentary on the requirement Policy CAP 5 SuDs management within the enacted CAPC NDP 2024

5. Increased Risk of Sewage Backflow and Infrastructure Overload

- **Thames Water’s wastewater system in Thatcham is already over capacity.**
- The **proposal plans to add 148 new homes into an already failing 225mm foul sewer**, which frequently experiences outflow issues during heavy rain. (*Flood Warden Report, 2024*)
- **No funding or upgrade plan is in place** to support this additional load.

♦ **Legal Precedent: Water Industry Act 1991, Section 94** requires sewerage systems to be **fit for purpose** before allowing additional connections—this proposal **contradicts this regulation**.

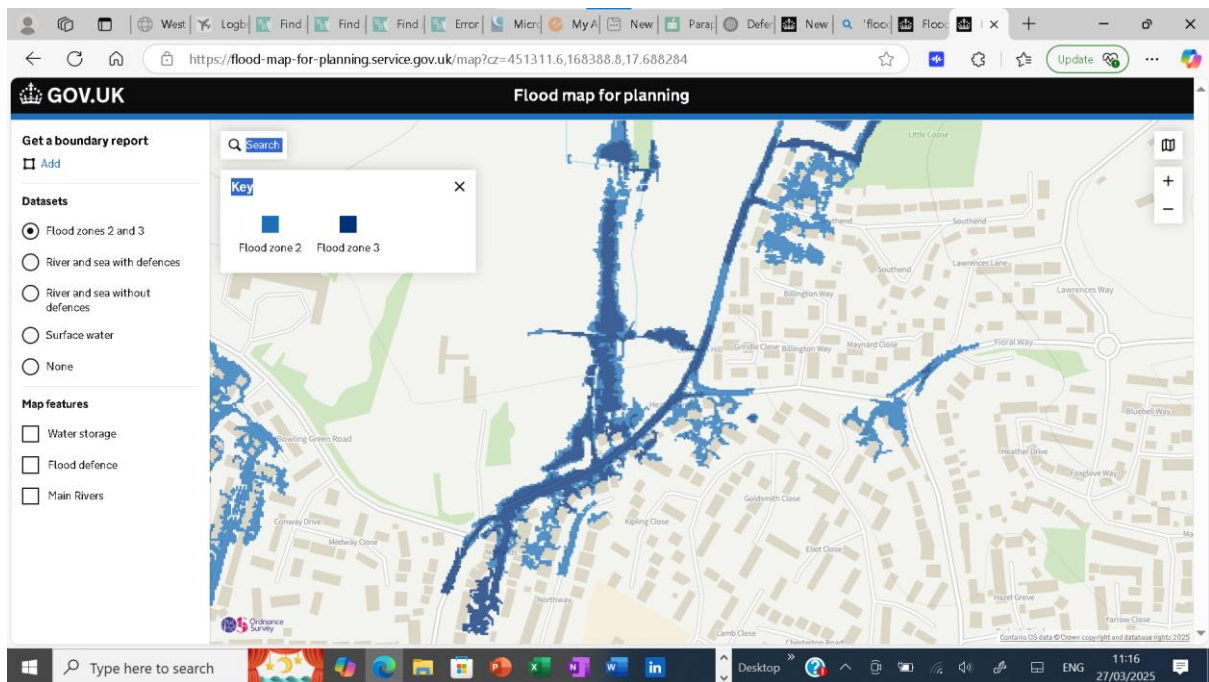


Diagram 1 - Development Area shown as a FLOOD ZONE RISK 2 & 3 status on most recent Environmental Flood Map March 25th 2025. [Map – Flood map for planning – GOV.UK](https://flood-map-for-planning.service.gov.uk/map?cz=451311.6,168388.8,17.688284)

6. Conclusion and Recommendations

This **planning application must be rejected** due to **critical hydrological concerns** that have not been addressed, including:

- ✔ **Disruption of natural flood prevention systems and aquifer flows.**
- ✔ **Failure to integrate with Thatcham's flood defences and no recognition on application forms that this is a flood risk area**
- ✔ **Lack of a sustainable long-term SuDS maintenance plan.**
- ✔ **Increased risk of flooding for Thatcham due to overburdened drainage infrastructure.**
- ✔ **Violation of multiple national and local planning policies.**

Recommendation to West Berkshire Council:

- 🚨 **Reject Planning Application 25/00278/FULMAJ.** 🚨
 - 🚨 **Require the developer to conduct a full hydrological assessment, including groundwater and aquifer impact studies, before any further consideration.**
- ♦ **Final Note:** This proposal has been **submitted four times since 2008**, and **each time, major flood risks have been ignored**. The **Flood Warden and local experts confirm that this site is essential to flood prevention**—West Berkshire Council must act **responsibly** and **refuse** this application. The flood wardens report is included in Appendix A for reference who's detail has been referred in this report, it has also been submitted directly to WBC by the CAPC Warden.

25/00778/FULMAJ

Strong objection on flooding grounds.
Flood risk to Rivers Estate, Thatcham.
Flood risk to Kennet and Thames Valley.
Alteration of Flood Detention Ponds.
Sewer out-flows.
Misleading information
Not using the Correct Flood Risk Zoning rules.

Dated 28 Mar 2025

I have been the Cold Ash Parish Council's Flood and Water Course Warden since the flooding in 2007. As the Flood Warden I physically, work to keep the area's water flowing into the correct catchment/drainage systems. This often involves working throughout the day and night. Most of Cold Ash's water systems are very old and doesn't handle the surface flow well.

I have had to learn which drainage systems and water flows cause the most issues depending on the weather pattern and the time of year. The two main Culverts (drainage collection outlets) on this proposed development site, I need to keep them constantly flowing, to reduce the flood risk to Thatcham. Both culverts handle very large amounts of water. One culvert with a 450mm pipe outlet is up to 1000cu m/hr or 1million litres/hr, the other culvert with a 300mm and 450mm pipes is up to 1.6million litres/hr. They are both zoned Flood Risk 3, the highest flood risk zoning
All this work I do for free, because I having seen and dealt with people being flooded and don't want to ever see that again. My acquired local water knowledge and understanding, means even WestBerks Drainage Engineers ask for my advice and knowledge from time to time.

The fields of this proposed development are a very important natural flood prevention measure. They are as, if not more important than a floodplain.

This development area sits at the bottom of a hill and is the last stop gap before the houses of Thatcham.

What most people are totally unaware of, are the subterranean water flows and aquifer ponding under these fields. The water from the top of Cold Ash Hill, some 60m above, flows down the hill, in subterranean flows. As the hill's slop levels out, a lot of the water is driven further below the surface. The natural underground flows are halted by the large impermeable structure of the roads and houses.

Over many decades people have sought to channel this water away. Most of the field hedgerows/tree lines have deep ditches in them. The ditches flow to culverts, in an unsuccessful attempt to try to drain the ground's top surface. The two natural ponds and the starting of an open water course are a clear sign of the underground water flowing into the area.

The proposed houses Nr 83 and Nr 96 sited by a natural pond. This pond area is marked on the 1883 OS map.

This natural wet area is inside a field boundary ditch. Despite the historical deep ditch this pond area (in the middle of the field) remained full and had to be fenced off, to keep the livestock falling into the deep pond.



Pond in Henwick Creek eastern boundary fence line

These wet areas are a clear sign of the under-ground water movement in these fields.

I first pointed this area out to the developers in 2008

4 applications later this developer has still ignored this and appears not to want to deal with the area's water movements!

I have already had to point out the developer's legal Planning Application Form was incorrect. It stated that there was **no** water course with 20m of this development. How

could they fail to acknowledge the open water course, two ponds and two detention ponds. This inaccurate recording I feel this reflects their attitude to not wanting to deal with water issues. Their current application form is also invalid. It states the site is low risk of flooding. The site has large areas of Flood Risk Zone 2 & 3, the highest flood zoning risk.

To the right of the first picture (above) in the background are the detention ponds. Neither the ditches on the boundaries to these fields, or the detention ponds drain this area!

This is a clear indication of the underground aquifer/waterflows.

In the planning appeal (Ref. No: 16/00008/INQ), the applicant's water expert when challenged said, "yes there is an aquifer under those fields, and I have not calculated it. It is millions of litres of water."

I fully understand, it is possible to drain almost any water area (river, lake etc), for a short period of time. You must first know how much water you are dealing with. You need to know the volume of the waterflows flowing into the area now, and how the flow will change overtime.

Draining this aquifer raises a few serious points.

- 1) Where will the water be displaced to?
- 2) Speed of the water being moved to the displacement point
- 3) How quickly will the site's waterflows and the aquifer to be drained.

- 1) Where will the water be displaced to?

This site's surface water flows under Thatcham out into river Kennet, which feeds into the River Thames above Sonning Lock. Flood Risk Zone 3

This area of the Kennet and Thames already has a serious flooding issue during heavy rain periods.

This is part of my Flood Warden email form WestBerks Emergency Planners, (on 29 Nov 24)

*The following **Flood Alerts and Warnings**, from the Environment Agency, currently in place in West Berkshire are:*

1 Flood Warning:

Flooding is expected

- [River Thames at Purley Village Updated 9:36am on 29 November 2024](#)
- [River Thames from Days Lock down to South Stoke Updated 9:49am on 29 November 2024](#)

11 Flood Alerts:

Flooding is possible

- [Ginge Brook Updated 11:03am on 29 November 2024](#)
- [Groundwater flooding in the Salisbury Plain area Updated 8:59am on 28 November 2024](#)
- [Lower River Loddon Updated 9:42am on 29 November 2024](#)
- [River Blackwater and The Cove Brook Updated 9:41am on 29 November 2024](#)
- [River Kennet and its tributaries from Berwick Bassett down to Newbury Updated 11:03am on 29 November 2024](#)

- [River Kennet from Thatcham down to Reading](#)Updated 11:03am on 29 November 2024
- [River Ock from Watchfield to Abingdon, and also the Letcombe Brook at Wantage, Grove and East Hanney](#)Updated 10:57am on 29 November 2024
- [River Pang from East Ilsley to Pangbourne and Sulham Brook](#)Updated 12:04pm on 29 November 2024
- [River Thames and its tributaries from Days Lock to above Pangbourne](#)Updated 11:04am on 29 November 2024
- [River Thames from Mapledurham to Sonning](#)Updated 10:22am on 29 November 2024
- [River Thames from Pangbourne to Purley](#)Updated 10:22am on 29 November 2024

These flood warnings clearly show, we need to slow down and reduce water volumes entering the rivers. This site is in high flood risk area, it also highly impacts into the surrounding areas of high risk of flooding.

2) Speed of the water being moved to the displacement point.

Moving large volumes of water from one area to another must be done over time to minimise the effects adding large water volumes, to prevent overloading the receiving area.

The Kennet / Thames are very susceptible to flooding, therefore any additional loading needs to be correctly calculated, assessed and managed.

3) How quickly will the site's waterflows and the aquifer to be drained.

The underground water flows have laid undisturbed for possibly centuries. Assessments need to be made on the effects of altering these water flows will have on

- A) Uphill site area
- B) The side boundary areas
- C) The downhill area

In 17 years, I have still yet to see this developer's assessments of what the proposed development would have on these, uphill/downstream areas.

A) Uphill site area

This area is mainly agricultural fields owned by same owners of this site. If you are cutting off the underground routes of water by digging into the ground and installing hard impermeable structures, what happens to the subterranean water flow, if their routes are blocked or altered?

The road of Cold Ash Hill sits to the east. Will the road surface, which is lower than the fields, be affected by water run off? See photo below.

B) The side boundary areas

The eastern boundary area is Cold Ash Hill (road). There are a few field drains, draining into the road gully drains on the Western edge of Cold Ash Hill. These field drains rarely drain water into the gullies. These gully drains, feed into the Surface Water Sewer Main (SWSM) on the eastern edge of the road. Thames Water Mapping information of this SWSM is not accurate. Their mapping shows this SWSM pipe to 1.2m feeding into a

0.9m pipe feeding into a 1.2m pipe. This is clearly not accurate. I have pointed this out before to this developer on numerous occasions.

We can't expect the road gully drains to handle any more water, than they do at present. The western site boundary has an ancient woodland, and a water course which runs into the new Detention Pond system (RG18 9EP) Bowling Green Way and onto the culvert on Bowling Green Road. The culvert at time flows at 90%, which is counted as over-capacity, in heavy rain periods.

This new detention pond system was calculated and built to Defra's specifications with the existing water flows. Any alteration to the water flows into this network needs to be assessed and properly calculated.

Flood Risk 3 zoning calculations can't be done without knowing the underground water volumes and flows.

The Regency Hotel on the southern end of the western boundary. The SWSM from the hotel area flow under Bowling Green Road into Thames Road and under the Rivers Estate. This SWSM network is already over its design capacity. The water from this area flowing into the Rivers Estate led to the flooding of the estate in July 2007. The Rivers Estate can't handle any more water volume. It is zoned Flood Risk 2. The developer intends to add their eastern SuDS into this Culvert. This extra load will overload the culvert, therefore must not be permitted.



21/11/2016 the builders working the Folly Court site RG18 9AE cut into the bank at the rear of their site. That bank is the part of eastern boundary of this proposed new development. An underground waterway opened up and the outflow overwhelmed the road drains in Cold Ash Hill. Seen in this picture

The road is Cold Ash Hill looking south to the roundabout

C) The downhill area.

The Southern boundary has the new twin Detention Pond system. Six properties over two sites. Heath Lane, Thatcham Town.

The SWSM pipe on the southern footpath of Heath Lane, flow down under Northfield Road out to the River Kennet. This route is zoned Flood Risk 3.

There are number of ditches which have been unmaintained for decades, which helpfully aided more water to be retained on the proposed development site. While the new twin detention ponds were being constructed, they had to use very large, constantly running pumps, to stop the ground water flows, flooding the dig area during construction despite the work being carried out during a long dry summer period. The water outflow from the twin detention pond system flows along a ditch to a culvert on Heath Lane. This culvert has a 450mm and a 300mm pipes which feed into the SWSM in the footpath on the other side of Heath Lane. In heavy periods, this culvert runs at 80% max flow, which is considered max capacity.



This is the Culvert on Heath Lane, flowing at over capacity causing the road drains to outflow on the road surface 24/3/18. The drain cover has been blown out onto the road.

The field between the two housing areas is waterlogged for large periods of the year. The abundant *Juncus Effuses* (common rush grass) shows the boggy nature of the field. The field is 1.3 above Bowling Green Road surface. After very heavy rain periods, the bank edge weeps small water flows down onto the road's cambered edge. These flows last for a couple weeks. Because these flows start after the rain has long past, the gully's and SWSMs are, more than able to deal with the water. This weeping is another sign of the field acting as a natural flood defence system.

Most flooding in England is caused by moving water from point A to point B too quickly. Modern straight pipes are excellent to move large water volumes at speed. To reduce flooding, we generally need to slow down water and or take out its ferocity. A ditch's uneven sides take out some of the ferocity and bends impair the speed of the water. Ditches allow water to push into the surrounding ground through their banks, during heavy loading and then allow the water from the soaked ground to drain back again into ditch as the water flows decrease. Meaning the ditches need to be viewed as

wet lungs catchment system. The ditch therefore plays a very needed role in water management.

It is excellent to see that this developer is keeping most of the old ditches.

This proposal site area is a natural wet lung system (a sponge). For centuries the water has flowed down from the high ground Cold Ash Hill (60m above), towards the Kennet valley. The construction of Thatcham has meant not all the water flows out into the Kennet. Lots of water is retained in the fields/ground of the proposed development site. The groundwater flows slowdown in the flatter fields. The construction of Heath Lane and Bowling Green Road halt the flow. Cold Ash Hill 60m high exerts a large 6 bar pressure on the water flows. To put 6bar into context, a domestic house tap is only rated to max of 5 bar pressure.

If you drain the aquifer, you remove some of the natural restriction acting on and reducing the water's force, holding back and slowing down the underground flows. The large mature trees (on the site) take up a lot of this water greatly reducing the volume of water leaving the area and entering Thatcham and flowing in to the Kennet. If you drain the aquifer, you then leave nowhere for the water to pond or flow deeper into the ground and surrounding fields. This means more water, and at a greater pressure will need to be piped away into the SWSM systems under Thatcham and out to the Kennet. During the flooding of July 2007, we saw the underground piped systems below Thatcham couldn't cope with our new wetter weather periods. The new Defra approved detention pond systems were installed to help manage water flows. This proposal will mean the removal of the aquifer, leading to more water being sent to the Kennet and decreasing the time from the water falling on Cold Ash Hill entering the Kennet. This will lead to a far greater flooding risk to Thatcham and in the Kennet and Thames valleys. These are Flood Risk 3 Zones

This developer for 17 years fought WestBerks, to stop them building the Defra approved Twin Detention Ponds here. The developer has always wanted to move all the streams, ditches and water courses to facilitate a greater number of houses being built. This without any regard to flooding and the site is Flood Risk 2 & 3 zone.

In this latest proposal, the developer now wishes to use the detention pond's maintenance access track, as the 236 house estate's main entry road. The maintenance access track is constructed as permeable surface to aid the maximum surface water to freely flow into the Detention Ponds. The developer wants to widen the single 4.8m permeable track into an impermeable 6m two-way road with a foot path. This widening will negatively impact on the banks battered edges of both ponds. It will also mean the surface water from the entrance road would flow into the gulley drain systems of Heath Lane roundabout. As this is Flood Risk Zone 3 here, no water should be directed into Cold Ash Hill. The developer plans to connected into the SWSM across the roundabout. This must not be permitted.

The development would mean the detention ponds having to fence off, as well as Arco protection fitted. Who will maintain these fences and clear the rubbish which will blow into the detention ponds from the new estate?

Bowling Green Road estate entrance

They propose installing new estate road entrance on to Bowling Green Road. The field level here, is 1.3m higher than Bowling Green Road. To construct this entranceway would require cutting into the field a long way over a very wide area to obtain the visual X & Y splay distances required for a modern road junction. This wet boggy field would need to be drained losing more of valuable wet lung. This is the field banks which weeps water for weeks after very heavy wet periods. The water this area flows into the drainage system under the Rivers estate. The Rivers estate is in the Flood Zone 2 & 3, therefore alter the water flow into this network will raise the potential flooding risk even higher. The area was very badly impacted by the 2007 flooding. Westfield Road had water over a 1.5m deep.

Unchecked drainage

The ditch (starting above the pond, house Nr 83) that runs southwards on the western edge of the proposed new houses, turns 90 degrees east and runs along to the northern boundary of Henwick Creek, turns 90 degrees south and runs down the western side of the twin detention ponds, then flows south out to the Culvert on Heath Lane. PLEASE note, this water course does NOT flow into the detention ponds, but flows unchecked into the culvert and out into the SWSM network under Thatcham. This is a Flood Risk Zone 3 area which includes the road the house abutting the road. This historical water course (marked on the 1883 OS map) basically runs around and downhill of most of the proposed new houses. This ditch (clearly zoned Flood Risk 3) will most likely pick up a large increase waterflows when buildings are constructed. Overtime property owners will likely send more water into the ditch. This ditch has for at least the last few centuries only acted as a soak-away, therefore this unquantified water increase is a real danger and must not be permitted. It clearly alters the flow of water away from the detention ponds and will crease the water flowing unchecked out of the development, therefor undermining the reason for the detention. Any increased water flow impacts directly into the existing houses zoned Flood Risk 3 area.

The life of an estate is 100 years plus. Who is going to maintain and repair these SuDS systems for the next 100 years? I personally clean the two main culverts' trash screens during the day and night in heavy rain period. I know first hand how import this maintenance is.

Twin Flood Detention Ponds

To use the twin detention ponds as the estate's access would require installation of some form of Armco safety barriers to prevent vehicles entering them as a safety measure, therefore the structural integrity of the batter of the pond's edges will be badly affected. This is contrary to Flood Risk 3

The access maintenance track would need to be upgraded and widened. The proposed access route would be from a Flood Risk 3 zone and though Flood Risk 2 & 3 zoned areas. These areas hold critical water management infrastructure. To plough a main route over and through these areas must not be allowed. It is contrary to Flood Risk 3. The developer has only used Flood Risk 1 zoning rules, to calculate the risk here, but it is clearly Zoned Flood Risk 3. This means it should not be developed.

Waste/Foul Sewer Main (FSM)

25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_3-

[TWUL map Page 6](#). This map does not show an SWSM in Ashmore Green Road! The water course that flows from Ashmore Green Road (RG18 9EP) to the near the Hotel on Bowling Green Road (RG18 9EP/ RG18 3RP). Clearly not correctly mapped and the culvert at RG18 9EP/ RG18 3RP on Bowling Green Road isn't shown on map page 8. This culvert has 5 inlets and 1 outlet. This route is clearly Zoned Flood Risk 3. This highlights inaccuracies in Thames Water (TWUL) mapping. It is well known that WestBerks and Thames Water's mapping is inaccurate and missing details. The Culvert information and pipework routes from the Heath Lane Culvert, is Zone Flood Risk 3. The Thames Water information cannot be relied on! Development is not permitted here in Flood Zone 3 rules.

Thames Water, are company in desperate need for money. Allowing this estate would give them a cash injection they so desperately need. They know they had foul sewage out flows into properties in Northfield Road in 2007 and 2008. The FSM in Northfield Road needs increasing in size. Thames Water said they couldn't increase the pipe size due to the 1.2m SWSM in the Northfield Road. Thames Water split the 225 sewer pipe, into two 160mm pipes for a short distance and then rejoined them back to a 225mm pipe. This work did not increase the flow volumes but added a little back pressure to the flow, which has temporarily stopped the sewage out flows. Adding more load (housing) increase the likely hood of more sewage outflows into properties again. Over the 15 years since this alteration work was completed, how many houses have been added into the upstream flow of this FSM. The FSM (**sewer**) still discharges onto the road



Northfeild Road looking towards the Heath Lane roundabout

25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_2-2083975.pdf

[Appendix B, Page 17](#)

[The Borehole Record WS3. Struct water at 3m. water rose to 1.8m](#)

Please note this bore hole drilling was done during the very long hot dry 2020 summer. Thames Water had a **hose pipe ban** in place for months. This bore site is about 1.8m higher the drainage culvert on Heath Lane. You would therefore expect the top 1.8m of soil, to have been drained by the culvert. The borehole is about 60m due north of the culvert. The fact that this bore hole recorded water this close to the surface is a clear indicator of an aquifer. The ground structure here would allow the water to easily soak deep into the ground, therefore there must be subterranean flows / aquifer.

25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_1

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1.12 A major change in the latest update to the PPG is Paragraph: 023 Reference ID: 7-023-20220825, 'The Sequential approach to the location of development' which requires development to be located in areas at little or no risk of flooding from any source by avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding.

This proposed development area is Flood Risk Zone 2 & 3. Defra has spent so much money on flood defences here to protect the bordering settlement of Thatcham. Part of these areas abutting the development are also Flood Risk 2 & 3

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4.4. The volume of rainfall during the July 2007 flood event exceeded the capacity of the drainage systems, and this capacity was also reduced due to debris and blockages in the drainage systems, mainly due to lack of maintenance. The WBC reviews of the July 2007 floods made recommendations that involved improving drainage infrastructure and maintenance. An outcome of this is that one drainage engineer at WBC is now responsible to overseeing the implementation of these recommendations made for Thatcham and taking forward other actions identified. 4.5. The 2007 floods were not an outlier, as there were significant events in Thatcham also recorded in the years 1957, 1971, 1978, 1986, 2006, and 2008.

The "*one drainage engineer at WBC*" was the late Stuart Clerk. Mr Clerk fought this developer over many years and succeeded in have these DEFRA approved Detention Ponds built, in their intended location.

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Hydrogeology 2.12. UK Government DEFRA mapping indicates that the Site is: • Located within a Nitrate Vulnerable Zone; • Not located in a Drinking Water Safeguard Zone (Surface Water); • Underlain by a Secondary A Bedrock Aquifer and partially underlain by a Secondary (undifferentiated) Superficial Drift Aquifer; • Located within a Groundwater Source Protection Zone.

I have stated since 2008, the development area sits on an aquifer/ subterranean flows. The Governments flooding risk zoning map for planning, fully supports my assertions by zoning it Flood Risk 3. All the proposal's documents avoid dealing with the fact that there is an aquifer/ subterranean water flow. All the developer's calculations deal with only rainfall and surface water flows for Flood Risk 1 zoning and do not address the aquifer or subterranean water flows. The site is Flood Risk 2 & 3 zoning and the developer needs to start applying Flood Risk 3 rules.

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outlier, as there were significant events in Thatcham also recorded in the years 1957, 1971, 1978, 1986, 2006, and 2008.

The developer is here minimising flood risk to Thatcham, but 2007 was a major flood and in 1957, 1971, 1978, 1986, 2008 lesser or minor flooding

From December 2013 to March 2014 West Berkshire experienced an unprecedented period of wet weather which resulted in significant flooding in many parts of the district. 2013/14 Thatcham just escaped flooding again. This again highlights the wet periods of weather we are now experiencing

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4.24. There is an existing ditch system on the Site, which intercepts flows from the north of the Site. As the ditch system intercepts flows from the north of the Site, no flows will discharge into the proposed development drainage system. The catchment of the ditches was worked out using LiDAR data downloaded from the EA website. Watershed delineation, the process of identifying the boundary of a watershed (catchment), was undertaken to determine the catchment area that the onsite ditches are located within. Once this was worked out, contours were used to determine the individual catchments of the onsite ditches. A drawing showing the watersheds for the Site and nearby areas is included in Appendix G. This drawing indicates proposed development in the north of the Site will not be intercepted by the existing ditch network. It is therefore proposed to provide ditches north of the development to intercept runoff from the north of the proposed development. The ditches have been sized to ensure they are able to accommodate runoff from the north of the development.

Sounds good, but there are underground water flows! If you cut into them, you interrupt the underground water movements. The ditches will then need to take, an increased water flow. The development area will have to deal with more water than just surface flows and rainfall or both. I can't find any information in this application that covers these water flows and volumes, or the facts to cover Flood Risk 2 & 3 zoning.

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Groundwater Flooding 4.38. Groundwater flooding occurs where groundwater levels rise sufficiently to intersect the ground surface and flow onto low-lying areas. Generally, groundwater flooding may be a problem where developments are situated over permeable soils or rocks. 4.39.

The development sits on an aquifer and underground water flows so water will happily travel up to the surface.

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4.54. In accordance with PPG, residential development should be considered to have a minimum of 100 years lifespan. Therefore, drainage design for the proposed development will consider rainfall adjustments for the most distant epoch (2070s) and will conservatively assume an upper end projection scenario (+40%).

The SuDS will need to be maintained for the life of the estate. Who will fund and ensure SuDS are fully maintained for 100years? This is a vital point. In the 2007 floods, the SuDS totally failed in the newly built Florence Gardens (RG183HA of Bowling Green

Road). The SUDs failed, because they were not checked or maintained. Fences were erected in drainage systems and nobody was aware of the SuDS or who owned them. The developer's SuDS are based on Flood Risk Zone 1 and not fit for the Flood Risk 2 & 3 zoning.

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5.49. As required by Policy CS16 of the WBC Core Strategy and Policy SP6 of the LPR, the proposed development will not have a detrimental impact on the flow of fluvial flood water or surface water, appropriate measures have been implemented to manage any flood risk at the Site and, as required in Policy CS16 of the WBC Core Strategy, surface water will be managed through the implementation of SuDS

The developer plans to discharge the SuDS system next to Cold Ash Hill into the existing ditch. This ditch bypasses the Twin Detention Ponds and discharges into the outlet from the Detention Ponds, which then flows unchecked into the Heath Lane Culvert. This critical culvert, in very heavy wet period runs at over 80% flowrate which means it is over capacity, therefore it cannot handle any more volume. I clean the trash screen throughout the high rainfall periods. This open ditch area is Flood Risk Zone 3, therefore should not be altered by adding more flow.

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6.3. It is proposed to discharge foul water via gravity to three TWUL manholes. It is proposed that 88 residential units will discharge to manhole ref 9202 to the southwest of the Site, within Bowling Green Road. It is proposed that 58 residential units will discharge to manhole ref 3408 to the east of the Site, within Cold Ash Hill. It is proposed that 90 residential units will discharge to a new manhole downstream of manhole ref 1201, located to the south of the Site within Heath Lane.

Thames Water can't legally object to a FSM (sewer) connection, unless they have had reported sewage outflows into properties in the last 7 years.

The Developers plan to add 58 and 90, a total of 148 houses into this 225mm FSM which starts in Cold Ash, which is over 60m higher than Northfield Road. The FSM is already over its design capacity (the sewage outflows clearly show this), so adding 148 more houses is a really bad idea.

[25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_4-2083976.pdf](#)

Page 1

This is a map of the ditches and culverts the developer/ landowner have not maintained. I cleared the culverts on Cold Ash Hill a few times, until the Detention Ponds were constructed. I decided around 2010 to not clear the ditches. With the ditches and culverts being left uncleared, this causes more water to be retained for longer in the site area. This better protects Thatcham.

Please note, none of the 15 photos show the too many culverts, which I constantly clean.

Page 3 Appendix E

The map does not show the pond on the Boundary of property 17. This pond is marked on the 1900 OS map

There is a barely legible word “pond” at property 83/95. This pond is marked on the 1883 OS map. These hundreds of year-old ponds are a sign of water rising up out of the ground from the subterranean flows.

[25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_5-2083962.pdf](#)

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This chart shows more properties in Thatcham were flooded than all the other 23 towns and villages added together. This flooding is reflected by the Flood Risk 3 zoning for this areas

[25_00278_FULMAJ-FLOOD_RISK_ASSESSMENT_AND_DRAINAGE_STRATEGY_6-2083981.pdf](#)

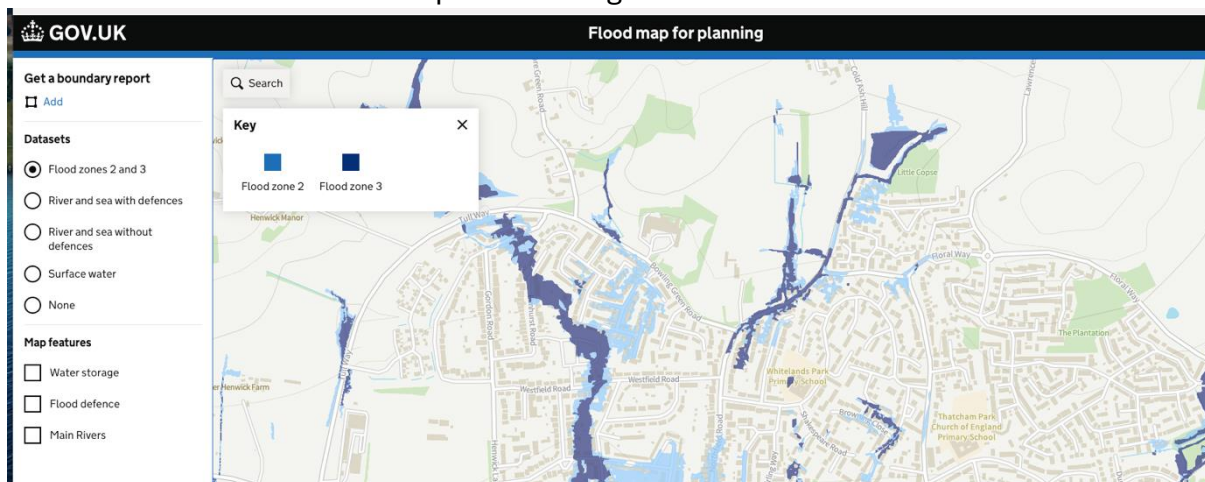
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Shows the existing ditches surrounding the estate outflowing from the site in the Thatcham unchecked.

Into this ditch network they are proposing to add in their SuDS pond next to Cold Ash Hill (road) This culvert (into Thatcham) already runs at 90% flow during heavy rain periods. This level of flow is counted as over-capacity. I constantly keep clearing the culvert’s trash screen during heavy rain or the culvert fails and discharges onto Heath Lane. This extra water will bypass the Detention Ponds. This is not permitted in Flood Risk 3 zoning

The Developer water calculation and assumption are based on the development site being in Flood Risk Zone 1, the lowest risk of flooding. The Government Flood map for planning, zones large key construction areas in Flood Risk 2 and 3. Flood Risk 3 is the highest level of Flood Risk and therefore needs far greater detailed analysis.

Gov.UK Flood map for Planning



<https://flood-map-for-planning.service.gov.uk/map?cz=451165.5,168322,16.332335>

The developer’s prediction, assumption and calculations are all based base on the minimum amount of rain and surface water flows. Developer MUST USE Flood Risk 3 forecasting modelling data and not the low Risk they are using. The developer also needs to add-in to the calculations of the underground water levels and movement.

Here is a summary of some the developer's key water management infrastructure that needs to be totally re-assessed and re-addressed.

SuDS Pond abutting Cold Ash Hill

Is partly in Flood Zone 2

It discharges in a ditch which is in Flood Zone 2 and Flood Zone 3

The ditch discharges into a culvert in Flood Zone 3

The culvert discharges into the SWSM in Flood Zone 3

SuDS Pond abutting Heath Lane

Is in Flood Zone 3

It discharges into a culvert which is in Flood Zone 3

The culvert discharges into the SWSM in Flood Zone 3

SuDS Pond north of Northfield Road

Is partly in Flood Zone 3

It discharges in a new pipeline which flows into SuDS Pond abutting Heath Lane

Which is in Flood Zone 3

SuDS Pond east of the Regency Hotel

Is in Flood Zone 1

It discharges into a new connection in SWSM in Bowling Green Road

The SWSM flows under Thames Road in Flood Zone 2 and flows into Flood Zone 3

Main Site Entrance of Cold Ash Hill is in Flood Zone 3

Proposed Housing

Sections of the development are in Flood Zone 2 and Flood Zone 3

The proposed road drainage SWSM network crosses in and out of Flood Zone 2 and 3.

The pipe-network flows into the proposed SuDS flow in and trough Flood Zones 2 & 3.

The developers stated plans would totally undermine the Defra Flood Defences, in Cold Ash, as well as add more flooding risk to the Rivers Estate and the housing abutting to the east and south of Heath Lane and Northfield Road. This would also add greater danger to Flood Risk 2 & 3 areas across central Thatcham.

I need to point out the minimum parts of proposed development that are in high Flood Risk areas, before any earthworks are undertaken. How the developer wants to set the finished topography of the site, will impact the hydrology not only the site but the wider area.

Proposed houses already mapped out in Flood Risk Zone 2 & 3

House number 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12,13, 14, 21, 23, 24, 98, 120, 121, 122, 123
192,192,193,194,195,196, 211, 212, 213, 209, 219, 220

Block D, Block E

Alteration of the topography (finished ground levels) will bring more houses in the lower Flood Risk area into a far higher risk of flooding.

The physical act, of mechanically manipulating the soil, with large construction machines will change the way and speed water moves across the area.

Digging into the ground to construct building bases, will again majorly increase the area at high Flood Risk.

The proposed road drain network.

This free flowing, unchecked and inter-connected open water system would allow surface water to move and cover vast area of the site. A house in a lower Flood Risk Zone 1 could easily be inundated by flood water pouring out of the drains

Roads

The road's flat smooth surface will again aid flood waters covering far wider area quickly.

The Great unknown

Subterranean water flows are totally unpredictable. Cutting the ground near to them, can cause them to change their route. They can move upwards, downwards or in any direction.

Subterranean flows can change very quickly, from a slow sweep to a major pressurised flow. The subterranean flows here are subject to the force from the hill above. The hill will pressurise the ground flows with upwards of 6bar

How can this developer after nearly 20 years of trying to get planning permission, still not know and understand the water issues of this site?