

Planning Policy Team
Chiltern District Council
South Bucks District Council
King George V Road
Amersham
Bucks
HP6 5AW

Our ref: NE/2009/109093/PO-02/IS1

Date: 11 March 2016

Dear Sir/Madam,

Chiltern and South Bucks Local Plan – initial consultation (Regulation 18) incorporating issues and options

Thank you for consulting us with your new Local Plan initial consultation. We have provided detailed comments below about issues within our remit that we would expect to see addressed in the Local Plan.

We have also provided comments about your proposed ‘built area extension options’ and ‘employment areas of search’ in an appendix at the end of this response.

Water Cycle Study

Chiltern District Council has been included as a member of the ‘Hertfordshire Water Project’, which will assess impacts of proposed growth in the district on foul drainage infrastructure, sewage treatment works capacity and fresh water resources. We expect the outputs from this study to provide sufficient evidence to Chiltern District Council in relation to ‘water cycle’ issues and opportunities.

For South Bucks, we are not aware that any previous WCS work has been undertaken and you do not fall within the drainage catchments to join the Hertfordshire Water Project. Given this, you will need to ensure that water-related issues have been assessed, understood, and any water-related infrastructure required for the proposed growth can be accommodated and delivered in time.

You will need to liaise with Thames Water directly for more information on the locations of waste water treatment works (WwTW) and any sewerage network maps. You will also need to liaise with Affinity Water, who is the drinking water provider in South Bucks. Any cross-boundary issues, for example where another authority’s sewerage feeds into a WwTW located in South Bucks, will need to be discussed with the relevant Local Authority to ensure their growth figures are also considered.

We have not been made aware of any significant issues with the treatment works or sewerage network capacity in South Bucks.

You may find that you will not need to undertake a full WCS. We would, as a minimum, require confirmation from Thames Water that there aren’t any known issues and that there is sufficient capacity in the treatment works and network to accommodate the proposed growth in the proposed locations within the district



across the plan period. If there are any concerns that the growth strategy could impact on water resources, flood risk, water quality or the treatment works/network capacity – then further assessment work will need to be undertaken to confirm what mitigation measures may need to be developed.

I have focused on foul drainage, which is the principal issue to be addressed in WCS across the region. However, a WCS scoping study (such as that undertaken for the Maple Lodge WwTW in 2010) should also consider the wider impacts on the water environment – including water resources, flood risk issues (e.g. increased sewer flooding or increased risk of flooding because of more flows to treatment works) and water quality issues.

If you can demonstrate that these points are not going to cause issues for South Bucks' proposed growth, then you may not need to undertake a WCS. However, if there are any doubts about these issues, we would expect a WCS Scoping Study to be undertaken as a minimum, which may then recommend that a more detailed study needs to be undertaken depending on the issues identified.

For your information, we have attached with this response our Water Cycle Study Manual, which provides guidance on the purpose, scope and process for undertaking a Water Cycle Study.

Water efficiency

The south-east is a highly water stressed region:

<https://www.gov.uk/government/publications/water-stressed-areas-2013-classification>. The Colne catchment, in which all of Chiltern and most of South Bucks District is located, has no water available for new large-scale water abstractions. This is starkly demonstrated by the Colne Abstraction Licensing Strategy (updated February 2013), which is part of the Colne Catchment Abstraction Management Strategy ('Colne CAMS'), which shows that there is no surface water or groundwater available for licensing. The Licensing Strategy can be downloaded from the GOV.UK website:

<https://www.gov.uk/government/publications/colne-catchment-abstraction-licensing-strategy>. This should form an important part of your evidence base to demonstrate that water resources are highly sensitive in Chiltern and South Bucks Districts.

We expect a policy to be included for new developments to achieve a water efficiency standard of 110 litres per person per day and non-residential development to similarly achieve a BREEAM 'excellent' rating for water. This is in line with the Government's recent changes to Optional Housing Standards for water efficiency:

<http://planningguidance.planningportal.gov.uk/blog/guidance/housing-optional-technical-standards/water-efficiency-standards/>.

Managing water supplies and improving efficiency in how water is used is a key component of the Water Resource Management Plans (WRMPs) adopted by Affinity Water and Thames Water. There is a statutory duty on you as a Local Authority to conserve water under Section 83 of the Water Resources Act 1991. You can contribute towards resilience in water supplies by adopting water efficiency planning policies for refurbishments and/or new developments.

New developments should seek to reduce water usage by incorporating water-efficient devices from the outset. Such measures could include low-flow taps and shower heads, water butts and rainwater harvesting systems. This is particularly important because the local groundwater aquifers are over-abstracted, having impacts on both the availability of drinking water supplies and on groundwater-fed

streams like the River Misbourne. For example, public water supplies in the Misbourne area have already been reduced through our Restoring Sustainable Abstractions (RSA) programme (<https://www.gov.uk/government/publications/changing-water-abstraction-and-impoundment-licences>), but further reductions will still be required to improve flows in the Misbourne. These impacts will be further exacerbated by future population growth and climate change.

We would also strongly support a requirement for the retrofitting of existing properties with water efficiency measures, because this will be a key way to reduce the overall water consumption in the district. Older properties are often the least efficient for water use. You should consider how your Development Management Officers will be able to confirm that water efficiency requirements have been complied with – we would suggest that developers submit a water efficiency calculator report to demonstrate compliance: <https://www.gov.uk/government/publications/the-water-efficiency-calculator-for-new-dwellings>.

Water quality

The Water Framework Directive (WFD) is the key measure for water quality for rivers in England. The rivers Chess, Colne, Misbourne, Alderbourne, Colne Brook and Horton Brook are in the Colne catchment. The River Thames, Roundmoor Ditch, Boveney Ditch, Salthill Stream, Chalvey Ditches and Datchet Common Brook are in the Lower Thames catchment. Details of the WFD status of the rivers can be found in the Thames River Basin Management Plan (RBMP). WFD issues are expanded upon later in this response.

Standard development is unlikely to cause rising trends in chemicals. Any industrial or commercial processes that discharge to ground or a watercourse would be expected to consult us for a licence or permit.

There are three specific areas that should be addressed in your Local Plan relating to rural/agricultural land management, drainage misconceptions and polluted surface water runoff.

Proper rural and/or agricultural land management is important to protect water quality throughout Chiltern and South Bucks, both for groundwater and surface water resources. Given the rural nature of much of the districts, this should be addressed within your Local Plan. We have attached with this response guidance notes – ‘Cherishing the Chess’ and ‘Managing the River Misbourne’ – which provide ‘on the farm’ undesirable and good practice. The points raised in these guidance notes could be incorporated into an appropriate Local Plan policy. For example, requiring landowners/farmers to include appropriate buffer zones to watercourses and fencing off watercourses so that animal stock cannot cause damage to the banks and to reduce the chances of fish poaching. Further guidance is available on the GOV.UK website, for example: <https://www.gov.uk/guidance/manage-water-on-land-guidance-for-land-managers#pollution-from-land-management-activities>.

Drainage misconceptions can occur in new developments, redevelopments, extensions or through refurbishment. Developers must ensure that they do not connect any foul drainage (including sinks, showers, washing machine/dishwasher outlets and toilets) to a surface water sewer, as this can send polluted water into watercourses. Similarly, developers should ensure that they do not connect surface water drainage (e.g. roof gutter downpipes) into foul sewers as this can cause overloading of the foul sewer during heavy rainfall events. We continually work with Thames Water to identify polluting outfalls, and trace the outfalls back to the polluting

site. Site owners are expected to rectify any faults causing pollution, and could find themselves liable to prosecution if the work is not undertaken.

Polluted surface water flows from areas like car parks or service yards should always have sufficient pollution prevention measures in place to ensure the protection of groundwater and watercourses from specific pollutants like petrol (hydrocarbons) and suspended solids. Developers should follow the appropriate pollution prevention best practice. We used to recommend that developers referred to Pollution Prevention Guidance (PPG) notes, such as '*PPG3: use and design of oil separators in surface water drainage systems*' (<https://www.gov.uk/government/publications/choosing-and-using-oil-separators-ppg3-prevent-pollution>) when designing formal drainage for large areas of hardstanding; however, these PPGs have now been withdrawn as we no longer provide 'good practice' guidance via GOV.UK. Given this, we would be keen to see good practice guidance and/or requirements included within your Local Plan where feasible. Ideally, applicants should introduce more 'surface' or 'green' drainage solutions to aid improvements in water quality, such as swales along hardstanding boundaries, or a more advanced reed bed system for larger sites. These solutions are easier to access and maintain than engineered solutions like petrol/oil interceptors, which require regular maintenance to ensure they operate correctly.

Foul drainage

From our maps, it appears that the majority of the settlements in Chiltern are connected to the main foul sewer network. We would expect applications for non-mains drainage to be infrequent and in rural locations only. However, South Bucks has many smaller settlements not connected to the main foul sewer network, so there is a higher likelihood of non-mains drainage being required in South Bucks.

Larger settlements are connected to the main foul sewer network, and in these locations we would always expect developments to connect to the main network, because this is the most sustainable solution for sewerage discharges. Applicants will need to discuss their development proposals with the local sewerage provider (Thames Water Utilities Limited) to ensure that there is sufficient capacity in the system and to determine whether there would be any additional infrastructure needs before the development is built.

For those settlements not connected to the main foul sewer network, it is likely that developments will require a form of non-mains drainage. In these instances, applicants may need to seek further advice online or from the Environment Agency about what solution is preferred and they may also need to obtain an Environmental Permit for their foul drainage solution.

There is a hierarchy of foul drainage solutions:

- **Connection to main foul sewer** – developments must connect to the main foul sewer where possible. Non-connection must be fully justified.
- **Package Treatment Plant (PTP)** – A non-mains solution that produces a high quality of effluent. Can discharge to ground or to a watercourse. PTP's require electrical power to operate and need to be properly maintained and emptied of solids. PTP's require a regular flow of sewage to keep the micro-organisms alive and operating effectively; they are therefore not suitable for developments that may generate variable flows, for example holiday accommodation. A PTP 'operator' must meet specific 'general binding rules'; if they do not, they will require a permit from the Environment Agency.

- **Septic tank** – A septic tank is a non-mains solution with a lower quality of effluent produced than a PTP; they usually therefore require additional stages of treatment before discharging to the water environment. Septic tanks do not usually require electrical power, but do need to be regularly maintained and emptied of solids. They are suitable for developments with an infrequent flow of sewage. A septic tank ‘operator’ must meet specific ‘general binding rules’; if they do not, they will require a permit from the Environment Agency.
- **Cesspool/cesspit** – These are the least sustainable form of non-mains drainage and are only generally supported as a short-term solution whilst a more permanent non-mains solution is installed. Cesspools are a covered, watertight tank with no outlet to the environment and no sewage treatment. They have to be emptied by road tanker very frequently and must not be allowed to overflow. Because there is no discharge to the water environment, a cesspool does not require a permit from the Environment Agency.

We would like to see these details reflected in your Local Plan so that applicants are aware of the most sustainable options for their foul drainage when they are not able to connect to the main foul sewer network. In particular, we would like you to state that where a non-mains drainage solution is proposed, the applicant must submit a [Foul Drainage Assessment \(FDA1\) form](#) with their planning application and advise them to contact the Environment Agency for advice.

You could also reference the following advice/guidance in the Local Plan:

- **Planning Practice Guidance: Water supply, wastewater and water quality**
<http://planningguidance.planningportal.gov.uk/blog/guidance/water-supply-wastewater-and-water-quality/>
- **Foul Drainage Assessment (FDA1) form**
<https://www.gov.uk/government/publications/foul-drainage-assessment-form-fda1>
- **Septic tanks and treatment plants: permits and general binding rules**
<https://www.gov.uk/permits-you-need-for-septic-tanks>

Water Framework Directive

The Water Framework Directive (WFD) is a European Directive that seeks improvements to the water environment - including lakes, canals, rivers and groundwater – to ensure that they are achieving a ‘good’ overall ecological status (or potential) and are prevented from deteriorating any further. The WFD sets targets for all waterbodies to achieve ‘good’ status or potential by 2027 at the latest (unless a lower status objective is proposed). The WFD is implemented regionally by way of River Basin Management Plans (RBMPs). Chiltern and South Bucks Districts are covered by the Thames RBMP, which should be included within your Local Plan evidence base. The first RBMPs were published in 2009 and are updated every 6 years. We published the updated 2015 RBMP in February 2016 at:

<https://www.gov.uk/government/collections/river-basin-management-plans-2015#thames-river-basin-district-rbmp-2015>.

You can access the details of the relevant catchments and watercourses on our Catchment Data Explorer pages: <http://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/6>.

Statuses for river waterbodies range from high – good – moderate – poor – bad. Statuses for groundwater bodies are either ‘good’ or ‘poor’.

The following Main Rivers in Chiltern and South Bucks are assessed under the WFD, with their latest (2015 – Cycle 2) ecological status or potential. Please note that there is also WFD status information available for lakes, canals and groundwater through the Catchment Data Explorer (CDE) pages. However, please be aware that the latest data available through CDE is from 2014; data from 2015 will be made available through CDE in due course, but can be provided to you upon request if required.

- **River Chess (Colne catchment)** – moderate ecological status (objective to achieve moderate status).
- **River Colne [Confluence with Chess to River Thames] (Colne catchment)** – moderate ecological potential (objective to achieve moderate potential).
- **River Misbourne (Colne catchment)** – moderate ecological status.
- **Aldbourn (Colne catchment)** - moderate ecological status.
- **Colne Brook (Colne catchment)** - moderate ecological potential (objective to achieve moderate potential).
- **Horton Brook (Colne catchment)** – moderate ecological status.
- **River Thames [Cookham to Egham] (Lower Thames (LT) catchment)** - moderate ecological potential (objective to achieve moderate potential).
- **Roundmoor Ditch and Boveney Ditch (LT catchment)** - poor ecological status (objective to achieve moderate status).
- **Salthill Stream (LT catchment)** – moderate ecological potential.
- **Chalvey Ditches (LT catchment)** – moderate ecological potential.
- **Datchet Common Brook (LT catchment)** - moderate ecological potential.

Please note that ‘potential’ signifies that the watercourse is artificial or heavily modified, whilst ‘status’ signifies that the watercourse is ‘not designated artificial or heavily modified’ (i.e. is in a more ‘natural’ state). All of the watercourses above need to gain one descriptive class to achieve ‘good’ status or potential. The River Chess, River Colne, Colne Brook, River Thames and Roundmoor Ditch/Boveney Ditch have objectives to achieve ‘moderate’ status or potential rather than good status or potential. All of these except for the Roundmoor Ditch/Boveney Ditch are currently already at moderate status or potential.

Chiltern and South Bucks are located on a number of different groundwater bodies, all of which are assessed under the WFD. The waterbodies are: Mid-Chilterns Chalk, South-west Chilterns Chalk, Maidenhead Chalk, Radlett Tertiaries, Twyford Tertiaries and the Lower Thames Gravels. The Mid-Chilterns Chalk, South-west Chilterns Chalk and Radlett Tertiaries are at ‘poor’ status. The Maidenhead Chalk, Twyford Tertiaries and Lower Thames Gravels are at ‘good’ status. Groundwater status is determined by quality and quantity, and both have to be at ‘good’ status for the groundwater body status to achieve ‘good’ overall.

It is vital that the WFD is reflected in the plan. The WFD covers a wide remit and will play a part in water quality issues, water efficiency/consumption and watercourse management. As part of our WFD investigations on the watercourses in Chiltern and South Bucks, we have produced a series of measures that need to take place on the waterbodies for them to achieve ‘good’ status. Such measures could include removal

of weirs, installation of fish passes and improvements to the morphology of the rivers. We would strongly support a requirement for developers to carry out WFD measures when they are developing on sites adjacent to the relevant stretches of river. We would also support a commitment from Chiltern and South Bucks District Councils to carry out such measures on your own land. These WFD measures could be included in your Infrastructure Delivery Plan and/or Community Infrastructure Levy (CIL) list if you decide to proceed with CIL.

Flood risk and sustainable drainage systems (SuDS)

As a result of changes to the Development Management Procedure Order in 2015 the Lead Local Flood Authority, Buckinghamshire County Council (BCC), is now responsible for assessing surface water drainage proposals for major developments and holds responsibility for 'local' sources of flood risk, including ordinary watercourses, surface water and groundwater. Given this, we recommend that you consult BCC when producing your flood risk policy for their comments, particularly on surface water, sustainable drainage (SuDS) and other 'local' sources of flood risk.

We would strongly support a policy requirement for developers to achieve greenfield runoff rates, to maximise 'green' SuDS and to use the SuDS hierarchy. Those SuDS that are towards the top of the hierarchy, for example green roofs, swales and ponds, can provide other benefits on top of their flood risk reduction capabilities, such as amenity and biodiversity value. Applicants should ensure that they leave sufficient space on their sites to incorporate a well designed, appropriate SuDS scheme, which can also form an important part of the Green Infrastructure for their development. The SuDS section of your policy should cover the following:

- SuDS should be incorporated/maximised on all developments. Barriers to use should be fully justified.
- Applicants should follow the SuDS hierarchy (**most sustainable** - green/brown roofs – basins and ponds – filter strips and swales – infiltration devices – permeable surfaces and filter drains – tanked systems – **least sustainable**) and incorporate those techniques identified as most sustainable, which also offer wider benefits (such as biodiversity improvements, water quality improvements etc.). Any barriers to use should be fully justified.
- Applicants should seek to reduce surface water runoff rates to greenfield rates where feasible, with any barriers to achieving this fully justified.
- Infiltration SuDS techniques should only dispose of clean roof water into clean, uncontaminated ground. Infiltration SuDS should not be used for foul discharges or trade effluent, and may not be suitable within Source Protection Zone 1.

You should ensure that any flood risk policy reflects the conclusions or recommendations of:

- your Level 1 and Level 2 Strategic Flood Risk Assessments (SFRA) and/or any joint SFRA work undertaken
- Chesham's Aquaprint report
(<http://www.buckscc.gov.uk/environment/flooding/community-action/floodsmart-in-chesham/>)
- BCC's Flood Management Strategy
(<http://www.buckscc.gov.uk/environment/flooding/strategic-flood-management/flood-management-strategy/>)
- BCC's Section 19 flood investigations
(<http://www.buckscc.gov.uk/environment/flooding/strategic-flood-management/flood-investigations/>)

- BCC's Preliminary Flood Risk Assessment and Chesham & High Wycombe Surface Water Management Plan
(<http://www.buckscc.gov.uk/environment/flooding/strategic-flood-management/documents/>)
- Thames Catchment Flood Management Plan (CFMP)
(<https://www.gov.uk/government/publications/thames-catchment-flood-management-plan>)
- Thames Flood Risk Management Plan (FRMP) (due for publication in 2016*)
(<https://www.gov.uk/government/collections/flood-risk-management-plans-frmps>)
(<https://www.gov.uk/government/publications/thames-river-basin-district-flood-risk-management-plan-frmp-scoping-report>)

*FRMP publication was delayed following the recent December 2015 – January 2016 flooding. FRMPs are developed using the best information currently available including information from past flooding, catchment Flood Management Plans, local Flood Risk Management Strategies and Surface Water Management Plans. It is important that FRMPs provide an accurate reflection of the risk in a catchment. The Environment Agency therefore felt it was appropriate to delay publication of FRMPs to make sure that they take account of the recent flooding events. The plans are currently being updated with additional text to reflect the impacts of the flooding and linking to national recovery work, with a view to publish the FRMPs as soon as possible after this exercise is complete.

The above documents should also form part of the evidence base for your Local Plan.

The key issues that we will look to be addressed by any flood risk policy (and/or accompanying text) are:

- A strong policy steer directing inappropriate development away from areas of flood risk.
- Requirement to undertake the flood risk Sequential and Exception Tests where necessary.
- Sequential approach to development layout to ensure highest vulnerability development is located in areas of sites at the lowest risk of flooding. There should be appropriate site layout and design in areas of flood risk.
- New development must not impact on existing or proposed flood defences.
- The accompanying text should define what is meant by 'resilient and resistant' design. The policy should include a requirement to include flood resilience and/or resistance measures in areas of flood risk.
- Demonstration of safe access and egress, and when this would be needed.
- Addressing the potential impacts of climate change on flood risk.

Other issues to consider in the Local Plan could include the safeguarding of land for future flood alleviation schemes – especially relating to the 'Aquaprint' study, identifying areas of the district where growth should not go for flood risk reasons (this could then identify areas of the district where new Green Infrastructure, habitat creation or SuDS schemes could go instead) and consideration of whether there are areas of the district where development should be relocated in the long-term to reduce flood risk to occupiers. The last point is mentioned in paragraph 100 of the National Planning Policy Framework (NPPF) – "*where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.*"

Strategic Flood Risk Assessment (SFRA) update

South Bucks' Level 1 SFRA was published in February 2008, Chiltern's was updated more recently in 2013. Since the publication of South Bucks' SFRA, there has been some updated modelling of watercourses and surface water flood risk and two significant flooding events in 2012 and 2013/14. Following our recent discussions on this matter, we understand that you are going to update your SFRA to include this new or updated information. A Level 2 SFRA will need to be produced for any sites that you propose to allocate in areas of flood risk.

Since the 2008 SFRA was published, the following information has been updated:

- **Lower Colne:** the 2008 SFRA is based on the 2007 *Lower Colne Study*. A new *Lower Colne Model* was produced in 2012, which has substantially altered the flood zones on the Lower Colne.
- **Datchet Common Brook (and other tributaries around Dorney):** there was no detailed modelling of these watercourses in 2008. A new *Cholvey Ditches Model* was produced in 2010, which provides Flood Zones for these watercourses.
- **River Misbourne:** updated modelling is due to be published this year. Please see section below for further details.
- **Lower Thames:** updated modeling is due to be published in summer 2016. Please see section below for further details.
- **Surface water flood risk:** there was no detailed surface water modelling available when South Bucks' SFRA was published in 2008. Since then, we have produced the *Updated Flood Map for Surface Water (UFMfSW)*. You now have the opportunity to produce a map with an overview of surface water flood risk based on this modelling.
- **'Local' flood risk:** Bucks County Council as the Lead Local Flood Authority may also be able to provide more detailed information on 'local' sources of flood risk in South Bucks, e.g. groundwater flooding, surface water flooding or flooding from ordinary watercourses.

The model data for the Lower Colne, Cholvey Ditches and surface water flood risk is available upon request from our Customers & Engagement team. However, because the Colne & Cholvey Ditch models are in two separate Environment Agency areas, please send any requests to enquiries@environment-agency.gov.uk, and they will send the requests to the relevant area teams.

Flood risk and water projects

Currently, the River Misbourne does not benefit from detailed hydraulic modelling. This means that the Flood Zones for the Misbourne identified on our Flood Map for Planning (Rivers and Sea) and your SFRA may not be an accurate representation of the true flood risk. Applicants may be able to challenge the Flood Zones by undertaking their own modelling or assessment on a site-by-site basis. However, as part of our [6-year flood risk project programme \(2015-2021\)](#), we are currently undertaking a detailed hydraulic model of the River Misbourne. This will significantly improve the robustness of the Flood Zones on the Misbourne. We expect the results of the model to be ready in May and published in September 2016, assuming there are no issues encountered with the model results. We have similarly updated our

hydraulic model of the Lower Thames as part of the modelling for the River Thames Scheme. We expect the results of this modelling to be available in summer 2016, although it is unlikely to lead to substantial changes in the Flood Zones associated with the Thames.

You should bear in mind that you will need to update your SFRA (maps as a minimum) to reflect the revised Flood Zones when the model data becomes available.

Following on from the modelling of the Misbourne, the model will be used to develop flood alleviation schemes on the Misbourne to be implemented before 2021. Until the modelling is complete, we cannot provide any further details about where such scheme/s may be located.

The Vale Brook culvert in Chesham is a particularly important matter to be addressed in your Local Plan. The Vale Brook culvert drains a significant area of urban Chesham and discharges into the River Chess adjacent to the Water Meadow Surgery on Red Lion Street. The culvert is in very poor condition in places, with a 40 metre (m) stretch of culvert through the High Street replaced in 2014 because it was at high risk of collapse. There are other stretches of the culvert that could be at risk of collapse within the Local Plan period. Given this, we hope that you will support the opening up of the culvert through development proposals where this is feasible, which would remove the risk of collapse on those sites. Additionally, there should be a strong steer against building over or within 8m of the culvert, because this could increase load when it is already in poor condition. A collapse would cause significant problems, with damage to any structures above the collapse and a significant increase in flood risk resulting from blockage of the culvert.

The other issue with the Vale Brook culvert and other urban-draining watercourses/culverts (e.g. around Slough) is related to water quality. The Vale Brook culvert takes urban runoff from Chesham, which is often polluted with chemicals, silt and other pollutants. These polluted discharges are not usually noticed until they discharge into the River Chess, because the culvert is closed along its entire length. The polluting of the River Chess is very detrimental to the sensitive chalk stream ecology, and has an impact on the WFD objective for the river to achieve 'good' status. We would welcome a policy steer for new developments or redevelopments close to the Vale Brook to take opportunities to reduce the levels of pollution going into the culvert. This could be achieved by the use of appropriate SuDS that offer water quality benefits, preventing direct pollutant discharges into the culvert and opening up the culvert where feasible. We would also support projects that could be introduced in Chesham that provide these benefits on council land and highways.

The Chesham Flood Alleviation Scheme is in our 6-year programme. We are working with partners including Bucks County Council, Chiltern District Council and Chesham Town Council to manage the wider issue of flood risk in Chesham. The complex combination of flood sources in the town requires partnership working and innovative approaches to improve resilience. Options are being considered to address the risk of culvert collapse, including creating a new open channel and culvert diversion. Additional reduction in flood risk and improved water quality can be achieved through a town-wide approach to reducing runoff into the watercourses, by diverting highway drainage, reducing runoff from impermeable driveways, and promoting the disconnection of roof drainage and creation of householder rain gardens. The preferred option and outline design should be ready by July 2017, with construction complete by 2020.

The recently formed Chesham Water Group has been established to provide a strategic overview of all ongoing and planned work in Chesham relating to overlapping issues of low flows, water quality and flooding. The aims of the group is “sharing and solving” in the following ways:

- Encouraging the consideration of multiple water-related problems in projects and initiatives around Chesham. There is a degree of overlap when it comes to flooding, water quality and low flows, all of which are problems in Chesham.
- Opportunities for multiple benefits should be taken advantage of.
- Activities focusing mainly on one aspect should not be to the detriment of another.
- Ensure all relevant organisations are kept informed of each other’s relevant projects and initiatives.
- Provide a strategic overview of activities and projects, with technical work being delegated to more specific project steering / working groups.
- Through this sharing of information and knowledge, help steer future water-related activities in the wider Chesham area.

The Jubilee River is a significant flood defence channel between Taplow and Eton, constructed as part of the Maidenhead, Windsor and Eton Flood Alleviation Scheme (MWEFAS). You should refer to the *Jubilee River 25 Year Landscape Management Plan (2008 -2033)* for any recommendations or requirements that should be included within your Local Plan. We have recently provided you with a copy of this plan.

In line with the the National Flood and Coastal Erosion Risk Management Strategy for England, your Local Plan should take a catchment-based approach and consider the impacts on other parts of the catchment. Activities must seek to avoid passing risk on to others within the catchment. In particular, in the Lower Colne catchment there are communities at risk of flooding in Slough and Spelthorne. Two projects - one in Colnbrook Village and one in Staines – are also in our 6-year programme.

One possible proposal for a Slough Flood Alleviation Scheme (FAS) is within South Bucks District, on the northern reaches of the Salthill Stream. The Slough FAS is in the very early stages of planning at the current time.

Finally, there are a number of known areas of significant flood risk in Chiltern and South Bucks Districts, often from ‘local’ sources of flooding including surface water, groundwater and sewers – including in Chesham, Old Amersham, The Chalfonts, Little/Great Missenden, Denham, Iver and Colnbrook/Poyle. Your Local Plan is the perfect opportunity to help to address some of these issues, for example by incorporating measures to reduce flood risk overall, rather than just controlling the flood risks posed by new developments. There are two main ways we see this happening:

- Actively promoting flood risk reduction schemes, such as those listed in the Chesham SWMP or Bucks’ Local Flood Risk Management Strategy. Such projects should be included in your Infrastructure Delivery Plan, or CIL list if you proceed with CIL.
- You could consider including a policy requirement for developers to introduce measures to reduce flood risk overall as part of new development or redevelopment proposals in certain areas. For example, we know of significant surface water flood risk in Chesham as demonstrated by the SWMP. You could for example include a requirement for new developments in areas of surface water flood risk to provide additional flood storage to manage not only the runoff generated by the new development, but also additional runoff, which would then reduce flood risk to the wider community overall.

Biodiversity & river restoration

Chalk streams like the Chess, Misbourne and Alderbourne, are internationally rare and important habitats. Chalk streams are identified as habitats of Principal Importance for England in the Natural Environment and Rural Communities Act (NERC) 2006 (Section 41), which must be protected and enhanced through the policies in your Local Plan. The Misbourne and Chess also support populations of water voles, which are a protected species due to their scarcity. Under the WFD, all three rivers are currently at 'moderate' status and the Misbourne and Alderbourne must achieve 'good' status by 2027 at the latest. Particular issues with the Chess and Misbourne include: high phosphate levels (from WwTWs), poor rural land management, pollution from urban runoff, barriers to fish passage, inappropriate management or development in close proximity. The Alderbourne is failing on Macrophytes and Phytobenthos.

The World Wildlife Fund produced a report in January 2015 – “The State of England’s Chalk Streams”

(http://www.wwf.org.uk/where_we_work/europe/rivers_in_the_uk/englands_chalk_streams/) that reveals the “*shocking state of health*” of many of England’s chalk streams and the pressures that they face, particularly from mismanagement, inappropriate development, water abstraction, population growth and the impacts of climate change. One of the main issues that the report highlights is that so many chalk streams, including the Misbourne, do not have ‘protected’ status. We would strongly support any method by which these habitats could be better protected than they are at present. Could there be a case for designating stretches of the Misbourne / other watercourses in Chiltern and South Bucks and their buffer zones/floodplains as Local Wildlife Sites (LWS) for example? If a suitably worded policy that included protection of LWS was included in the Local Plan, you could help to ensure the ongoing protection and enhancement of these habitats.

Working with colleagues in our West Thames area, we are seeking to introduce a consistent watercourse management policy across all four Bucks districts, modelled on or preferably mirroring Wycombe’s policy DM15. We would strongly encourage you to consider adopting a similar policy and my colleagues are currently liaising with Aylesbury Vale District Council to adopt a similar policy too.

We would expect a specific river policy to be included in the Local Plan, which should apply to all watercourses, not just Main Rivers or chalk streams. In particular, we would expect the policy to address the following matters:

- Minimum of 10 metre (m) buffer zones for all watercourses measured from bank top to provide an effective and valuable river corridor and improve habitat connectivity. The 10m figure is considered to provide the minimum width of habitat needed to provide for the functioning of wildlife habitats, while being able to facilitate informal access for the enjoyment of the river.
- A 5m buffer zone for ponds would help to protect their wildlife value and ensure that the value of the adjacent terrestrial habitat is protected.
- Development proposals to help achieve and deliver WFD objectives. Examples of the types of improvements that we may expect developers to make are: removal of obstructions (e.g. weirs), de-culverting, regrading banks to a more natural profile, improving in-channel habitat, reduce levels of shade (e.g. tree thinning) to allow aquatic vegetation to establish etc. Proposals which fail to take opportunities to restore and improve rivers should be refused. If this is not possible, then financial or land contributions towards the restoration of rivers would be required.

- River corridors are very sensitive to lighting, so rivers and their buffer zones (as a minimum) should remain/be designed to be intrinsically dark i.e. Lux levels of 0-2.
- Chalk streams require higher levels of light than other types of river due to the importance of their aquatic vegetation and the species which rely on it, for example water voles. The ideal ratio is approximately 70% light to 30% shade where shade is caused by trees. Development adjacent to rivers should take note of this when designing schemes and may need to incorporate tree works and set back buildings to increase light levels.
- Tall buildings which would shade the river corridor/buffer zone will need to be set back further to avoid the impact of shading. As in Wycombe District Council's [River Wye Advice note](#), you could state that 'in terms of setting, large buildings should not be closer to the river than their height, irrespective of the 10m buffer.'

It may be useful to include details for landowners, applicants or developers who have a watercourse running through or adjacent to their site. Many people believe that the Environment Agency own 'Main Rivers' (such as the Misbourne), which is not the case. We hold permissive powers to carry out maintenance on Main Rivers, such as weed clearance, and clearing obstructions, culverts, and trash screens. However the owner of the site is the 'riparian owner' of the stretch of watercourse running through their site (whole channel) or adjacent to their site (up to the centre line of the channel) – and this includes culverted watercourses. Our '*Living on the Edge*' document (<https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities>) provides important guidance for riverside owners, and they should be aware of their responsibilities and obligations under the Thames Region Land Drainage Byelaws (1981) (<https://www.gov.uk/government/publications/thames-water-authority-land-drainage-byelaws>).

Opportunities for de-culverting of rivers should be actively pursued to return them to a natural state. This will help to reduce flood risk from blocked or collapsed culverts, and open channels are significantly easier for the landowner to maintain. Culverts that cause blockages of the watercourse are the responsibility of the owner to repair. Open, natural channels are significantly more valuable for wildlife and allow connectivity along the watercourse. Additionally, we will usually object to planning applications that propose new culverts.

One of the reasons for WFD failure on a number of Chiltern and South Bucks' watercourses is fish passage. There are a number of impounding structures, such as weirs, that block the passage of fish upstream and degrade the watercourses. Many of these structures are redundant, having been used for historic mills or existing aquaculture activities like watercress beds. We would therefore encourage applicants to remove existing redundant structures in channels on their land, and would strongly resist new structures being put in place. Where existing structures cannot be removed for any reason, we will seek modifications to ease fish passage. Applicants would need to apply for various consents and/or licenses if they wished to introduce new impounding structures and permission is unlikely to be granted.

Your Local Plan policy/text should also provide details of 'buffer zones' that are left adjacent to watercourses. Currently, we will always ask developers to maintain an undeveloped, naturalised, 8m buffer zone adjacent to Main Rivers, measured from the top of the bank. However as described above, we would strongly support a policy requirement – in line with Wycombe's Policy DM15 – to provide a 10m buffer zone for **all** watercourses to provide sufficient space for biodiversity whilst retaining public access. We ask that applicants do not include any structures such as fencing or

footpaths within the buffer zone as it can lead a detrimental impact on the integrity of the buffer zone and could increase flood risk - through the inclusion of close-board fencing for example. Any works or structures that applicants intend within a channel or within eight metres of a Main River will require a Flood Defence Consent (<https://www.gov.uk/government/publications/flood-defence-consent-england-and-wales>) from us, which is separate from and in addition to any planning permission granted.

Many existing areas adjacent to Chiltern and South Bucks' watercourses have good quality, natural buffer zones that could be sensitively managed to retain their value. Some sites with lower quality stretches of marginal habitat may require some basic riverside management, such as the control of non-native invasive plants, tree works to allow more light to reach the channel, setback of existing structures and planting with locally appropriate, native species. Other sites, where the river has been modified with hard banks, concrete channels or artificial straightening, can benefit from re-naturalising the river to a more natural course and channel, with soft banks and re-connecting the river to the floodplain, providing additional areas for the safe storage of floodwater. This can bring huge benefits in terms of helping the watercourse to achieve its WFD objectives, for local biodiversity and as improved green spaces for people to enjoy.

We would like to point you towards the policies and advice that Wycombe District Council has prepared for the River Wye (also a chalk stream) as part of their Local Plan process. In particular, policy DM15 and the accompanying text (<http://www.wycombe.gov.uk/council-services/planning-and-buildings/planning-policy/preparing-our-plans/delivery-and-site-allocations.aspx>) are very positive and should be used as a framework for your policy and text. Also, the River Wye Advice Note (linked on page 13 of this response) provides useful guidance about why rivers and their corridors are so important. It would be good to include something like the text below in your Local Plan:

"In future, full advantage must be taken of a riverside setting to produce more attractive designs, which visually enhance the area, improve public access and offer refuge for wildlife. The construction or reconstruction of bridges must, wherever possible, take into account the importance of maintaining an obstruction-free bank for wildlife. Bridges should be designed so that there is ample room for the movement of wildlife along the edge of the watercourse. Every effort should be made to deculvert the river where possible. In essence, development must focus around the river corridor rather than the river fitting around the development."

We would advocate that a similar advice note relating to the watercourses in Chiltern and South Bucks is produced, and we would be happy to work with you to produce such an advice note. Colleagues are currently working with Aylesbury Vale District Council (AVDC), Bucks County Council's Strategic Flood Management Team and others to produce a similar advice note relating to AVDC's watercourses.

For biodiversity issues more generally, we would also like to offer the following comments:

- All new appropriate developments should provide built-in bat & bird bricks/boxes to provide long term roosting and nesting provision. This is something that all developments should be able to include very easily and cheaply, but will provide nesting/roosting sites that are more permanent and not subject to deterioration or vandalism in the same way that those installed on trees are.

- Protection is needed for Local Wildlife Sites (LWS) through local policy. LWS are only offered protection through the planning system and the NPPF does not offer sufficient protection on its own. Specific policy mention for the protection of sites of local ecological importance including LWS should be included to ensure that these sites are not lost through inappropriate development.
- You should seek the creation of new habitats through the Local Plan, and could indicate areas of the district where new habitat creation would be particularly beneficial. New habitat creation could also be linked to Green Infrastructure, river buffer zones, flood alleviation schemes, SuDS schemes and the creation of resilient biodiversity networks.
- Existing biodiversity features should be protected and enhanced. The Plan should stress the importance of creating resilient biodiversity networks across the two districts. In particular, this will help wildlife to move around the linked network to adapt to the impacts of climate change.
- The importance of habitat connectivity and wildlife corridors should be mentioned.
- The ecosystem services and ecosystem approach should be followed (see <https://www.gov.uk/ecosystems-services> for further details).

Heritage Strategy

Your Local Plan consultation document (paragraphs 7.2 – 7.4) identifies that a draft Heritage Strategy has been produced for Chiltern and South Bucks. We note that the draft strategy has included Ancient Woodland, but does not include Chalk Rivers. We feel that this is a significant omission because they are locally important, internationally rare habitats which help to shape the character of the two districts in a similar vein to Ancient Woodland.

Land contamination

Any land contamination policy should address the following matters:

- Requirement for developers to submit a Preliminary Risk Assessment (PRA) for contamination on sites where contamination is known or suspected. PRAs and remediation strategies should be in line with relevant guidance – in particular: '[Groundwater protection: principles and practice \(GP3\)](#)', '[Model procedures for the management of land contamination \(CLR11\)](#)' and '[Guiding principles for land contamination \(GPLC\)](#)'.
- Developers should ensure that sites are suitable or made suitable for the intended use.
- There should be no liquid discharges to ground through contaminated land.
- Developers should be encouraged to implement measures as required to prevent the spread of contamination.
- High-risk developments, such as petrol stations, should be steered away from the highest risk groundwater areas, such as Source Protection Zone (SPZ) 1. It would be useful to include details of the groundwater vulnerability in South Bucks, including details of what SPZs are and what activities may or may not be acceptable in certain zones.
- The WFD should be linked to and promoted in the contaminated land policy. The WFD also seeks to protect and improve groundwater resources.

We have attached with this response a non-exhaustive list of potentially contaminative land uses, which gives an indication of the breadth of sites and land uses that could lead to land contamination. This is generally from industrial processes/uses, chemicals used during those processes/uses or agricultural uses where chemicals may have been used.

There are a number of sensitive 'receptors' of land contamination, such as groundwater, surface waters or human health, all of which are affected by different pollutants and to differing degrees. This is why it is important for applicants to carry out a desktop study/Preliminary Risk Assessment (PRA) to assess any sources of contamination, any pathways that could mobilise contaminants (e.g. foundations, piling, drainage) and the sensitive receptors that could be affected. If contamination is suspected or known, the applicant may have to undertake further intrusive site works to characterise and remediate the contamination, so that it no longer poses an unacceptable risk to the receptors.

You may wish to expand the policy (or the accompanying text) to include details of Source Protection Zones (SPZ), which are spatial areas around public drinking water abstraction points. We will object to certain developments, processes or land uses in SPZ1 (the area of highest risk). This could be clarified within the policy by adding a line, for example: *"Certain contaminative developments, processes or land uses proposed within or in close proximity to sensitive locations, including Source Protection Zones, may not be acceptable. Applicants are advised to speak to CDC/SBDC's Environmental Health Team and the Environment Agency where required."* Details and locations of SPZs and other environmental constraints can be found on the 'What's in your backyard?' section of our website:

<http://apps.environment-agency.gov.uk/wiyby/default.aspx>

The National Planning Policy Framework (NPPF) also includes a requirement for assessments to be provided where land instability may be an issue (see NPPF paragraphs 109 and 120-121). Certain areas of the districts may have land instability issues as a result of swallow holes, and proposals in such locations would need to be accompanied by a suitable Land Stability Assessment. This should also be mentioned within the policy.

We hope this response helps you as you develop your Local Plan and policies. We would be happy to review any draft policies and provide any further advice or guidance as the Local Plan emerges.

If you have any specific queries about any of the issues raised in this letter, please do not hesitate to contact us.

Yours faithfully,

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cc Helen Harding – Chiltern District Council
Jessica Dippie – Bucks County Council (Lead Local Flood Authority)
Ian Thornhill – Bucks County Council (Ecology)

APPENDIX 1 – Detailed ‘area of search’ comments

1.1 Below are our comments on your proposed areas of search. We have listed the planning constraints that are within our remit, which we would comment on if a planning application were received for specific parts of the areas. We have also included Water Framework Directive measures for specific stretches of the watercourse within the proposed areas. These measures should be adhered to and completed where possible.

1.2 Some sites are within close proximity to activity regulated by an Environment Agency permit i.e. waste management facilities. New development within 250m of these facilities could result in the community at the proposed development being exposed to noise, dust and odour. If the operator can demonstrate that they have taken all reasonable precautions to mitigate these impacts, the facility and community will co-exist, with some residual impacts. In some cases, these residual impacts may cause local residents concern, and there are limits to the mitigation the operator can apply. Only in very exceptional circumstances would we revoke the operators permit.

1.3 We have previously provided you with all the information we hold on historic landfill (2007). Therefore where historic landfills fall within the proposed site boundary, we have no comments to make at this stage and advise that you consult your Environmental Health Department for further guidance.

1.4 Local wildlife sites are afforded no specific protections in the National Planning Policy Framework, so it is important that your Local Plan and site allocation policies protect these locally important sites, particularly where they are found within some of your areas of search. One of your employment areas of search includes a Local Nature Reserve, which is owned and managed by Bucks County Council. You must ensure sufficient protection and preferably enhancement of these wildlife sites as part of your site allocation process.

1.5 Please note in accordance with the National Planning Policy Framework and Planning Practice Guidance, development should not be permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. It is for you to determine whether or not there are other sites available at lower flood risk as required by the Sequential Test in the National Planning Policy Framework. Subsequently there should be evidence that the Sequential Test has been passed and in some cases the Exception Test for sites in Flood Zones 2 or 3. As your site allocations are further refined, any proposed sites in Flood Zones 2 or 3 will need to be assessed using a Level 2 Strategic Flood Risk Assessment, which must include the revised climate change allowances published in February 2016.

For any sites that are not listed below, it is likely that we would have no comments to make on those sites at the planning application stage.

Key:

PRA = Preliminary Risk Assessment

SPZ = Source Protection Zone

FZ = Flood Zone

WFD = Water Framework Directive

The format of the titles below are:

Site location - site grid reference – adjacent roads

Built Area Extension Option

Chesham - SP9718202988 – land north of Botley Road

2 x historic landfill sites (Lye Green Landfill, Botley Lane Landfill). Part of site and historic landfill (potential contamination) is in SPZ3, a PRA would be required.

Amersham - SU9639097010 – land south of A355 London Road West

Central part of the site is in FZ3. WFD objectives: establish and manage riparian buffer zones to enhance river corridor habitat. Remove embankment.

Amersham - SU9521897705 – land west of Mill Lane

Large area of site is in FZ3b, we would object to any inappropriate development here. Part of site is in FZ3.

Beaconsfield - SU9614890387 – land north of A40 London Road

Historic landfill site (Potkilm Lane Landfill) in south east of site. Part of site and historic landfill (potential contamination) is in SPZ3, a PRA would be required.

Chalfont St Peter and Gerrards Cross - TQ0071092967- land north of Rickmansworth Lane

Waste management licensed facility (Uxbridge Scrap Metal) in east of site (please see Paragraph 1.2 of Appendix 1).

Chalfont St Peter and Gerrards Cross - TQ0106590861- land south of Joiners Lane

Waste management licensed facility (Warren farm) in east of site (please see Paragraph 1.2 of Appendix 1).

Chalfont St Peter and Gerrards Cross - SU9996391155 - land east of Gravel Hill A413

Historic landfill site (Mill Meadow) in central part of site. Part of site and historic landfill (potential contamination) is in SPZ2, a PRA would be required. Large part of site is FZb, we would object to any inappropriate development here. FZs 2 and 3 on other parts of the site.

Middle Green - SU9990080671 – land east of Uxbridge Road

2 x historic landfill (tip at Langley, Southend Farm) in north of site. Site and historic landfill (potential contamination) are in SPZ3, a PRA would be required. FZ3 covers significant part of site.

Middle Green - SU9951482072– land south of Wexham Park lane

2 x waste management facilities (All Souls Farm Quarry Landfill, Slough Recycling) in north of site (please see Paragraph 1.2 of Appendix 1). Site is in SPZ3 and historic landfill (All Souls Farm) covers large part of site, therefore PRA required. FZ2 and FZ3 surround site.

Taplow - SU9037782455 – land adjacent to Ray Mead Road

Large part of site in FZ2 and 3. FZ3b cover part of site, we would object to any inappropriate development here. Local wildlife site (Cliveden Estate) covers large part of site (see Paragraph 1.4 of Appendix 1).

Chalfont St Giles - SU9898293892 – land south of Mill Lane

FZ3b cover part of site, we would object to any inappropriate development here. Part of site in FZ3.

Iver Heath - TQ0242882186 - land north of Langley Park Road

Historic landfill site (Hardings Row) in centre of site (see Paragraph 1.3 of Appendix 1).

Iver Heath - TQ0185085269 – south of M25

Historic landfill (Field End Farm) in north west of site (see Paragraph 1.3 of Appendix 1). Waste management facility (Field End Farm) in west of site (see Paragraph 1.2 of Appendix 1).

Iver Heath & Richings Park - TQ0409879160 – south of Richings Way

2 x historic landfill covers large part of site (Larbourne Farm, St. Albans Sand and Gravel Company Limited) (see Paragraph 1.3 of Appendix 1). Small area of FZ2 in east of site.

Iver Heath & Richings Park – TQ0362880779 - south of the B470

Historic landfill site (Thorney Lane North) in east of site (see Paragraph 1.3 of Appendix 1).

Farnham & Stoke Pages - SU9779183362 – south of West End Lane

FZ2 and FZ3 cross site. Historic landfill (The Pond) in North West of site, also in SPZ3 so PRA required. Local wildlife site (Fields south of Rogers Lane) is in the central part of site (see Paragraph 1.4 of Appendix 1).

Employment Area of Search

Chesham - SP9665705257 – East of Vale Road

Historic landfill site (Hog lane landfill) in north of site, also in SPZ2 and SPZ3 so PRA required. 2 x Local wildlife sites (Short Heath Farm, Francis wood) within site boundary (see Paragraph 1.4 of Appendix 1). FZ3 covers large area of site. FZ3b covers part of site, we would object to any inappropriate development here. WFD objectives: remove redundant farm crossing. Divert flow from the mill leat down main channel. Remove masonry weirs near Gerrards Cross. Establish buffer zones from Castlemans Farm to M25 in Gerrards Cross.

Beaconsfield - SU9540189493 – site adjacent to A355

Site overlaps authorised landfill site (Gerrards Cross Landfill) (see Paragraph 1.2 of Appendix 1). Historic landfill site (Pyebush Lane Landfill) runs along the centre of the site, also in SPZ 3 so PRA required. Local wildlife site (Bower and Burtley Woods) at the bottom of proposed site (see Paragraph 1.4 of Appendix 1).

Denham – TQ0434985839 - A40 and M40 Junction

Local nature reserve (Denham Quarry Park) in north east of site (see Paragraph 1.4 of Appendix 1). Historic landfill (The Gravel Pit) in centre of site (see Paragraph 1.3 of Appendix 1). FZ2 at lower tip of site.

Burnham – SU9240980756 - adjacent to A40 Bath Road

Historic landfill site (Lake End road) to east of site (see Paragraph 1.3 of Appendix 1). Large area of site covered by FZ2 and FZ3. Waste management facility (South Yard, Orchard Herb Farm) in south of site (see Paragraph 1.2 of Appendix 1).