

Proposal: Land at Farleigh Farm and 54 and 56 Farleigh road, Backwell

Application: Outline planning application for demolition of 54 and 56 Farleigh Road; residential development of up to 125 dwellings (Class C3); strategic landscaping and earthworks, surface water drainage and all other ancillary infrastructure and enabling works with means of site access (excluding internal roads) from the new junction off Farleigh Road for approval; all other matters (internal access, layout, appearance, scale and landscaping) reserved for subsequent approval.

Planning Reference:21/P/1766/OUT

Further to the response received from Simon Bunn on the 7th January 2022 we have reviewed the detailed points raised and set out below our response to them. The key points noted are —

- Discharge location
- Volume of flow
- Overland flow routes
- Water quality
- Space of the attenuation basin and suitable maintenance
- Trees
- Amenity and biodiversity

We note there are additional items raised which were not mentioned when we met on the 5th November 2021. Moreover, some items such as the water quality element now raised were understood to have been agreed and therefore were satisfied.

Below is a summary of our response to the items raised.

Discharge Location

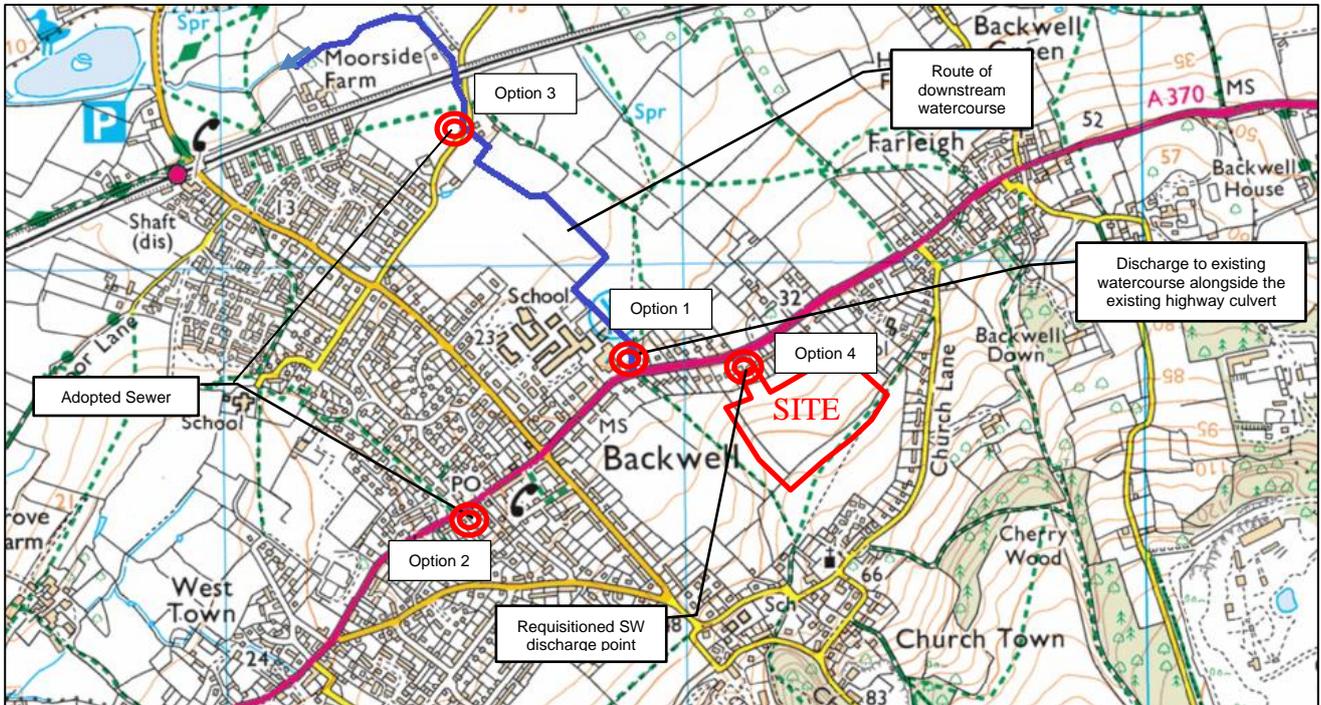
The discharge location requiring a survey of the condition and capacity was something which was previously agreed to be conditioned on the earlier application. Whilst the ditch alongside the leisure centre is the preferred option offered in the outline there are other options which are all viable to Wessex Water. The alternative options although located further away are site viable options for the scheme. We agree an assessment of the condition and capacity of the ditch system will be required but this is considered something which could be conditioned as this will involve the detailed design of systems, headwalls, levels etc... subject to the findings of the preferred option to connect to the ditch the alternative options are still also available.

The proposed development area falls within the surface water drainage catchment of the watercourse by virtue of discharge onto the road, and subsequent conveyance via the highway drainage system. We don't expect the site drainage to the preferred discharge point to be an issue as we are limiting flow significantly more than the greenfield rate by restricting flows from the development to Qbar for all events and the site is located within the catchment.

Option 2, connection to Wessex Water sewer to the west of the site, whilst noted as 800m from the basin is downstream with a combined sewer running along this route at present, therefore the connection to here should not require the use of a pump.

To help clarify the outfall options the locations of all the options of surface water disposal are shown on the below plan. A final choice of outfall will be determined after approval of the outline application. The options currently identified are:

1. Discharge into the existing ditch on the east side of the Backwell Leisure Centre. The Farleigh Rd highway drain discharges into this ditch through a 300mm diameter pipe, and the ditch currently receives run-off flows from the site which flow onto the road. North Somerset Council previously agreed to the discharge into the ditch to be conditional upon satisfactory capacity and future maintenance arrangements.
2. Discharge to an adopted surface water sewer in West Town Rd at the junction with Rodney Rd. WW have confirmed that they will accept greenfield flows from the site into this sewer. This route is downstream and can drain via gravity so would not require the use of a pump.
3. Discharge into an existing adopted surface water sewer in Backwell Common Rd. WW has confirmed that they will accept flows into this sewer.
4. Requisition a new surface water discharge point on the site from WW in accordance with S98 of the Water Industry Act 1991.



Volume of surface water

We have previously agreed the discharge rate for the site would be limited to Q_{bar} for all events. This provides a significant control of runoff rates and volumes and ensures the mitigation from volumetric events are accounted for in the storage.

The SuDS Manual states the following for extended long term storage for volumetric control '*...it is recommended that the maximum discharge rate for the attenuation storage is reduced to the region of Q_{bar} or 2 l/s/ha which ever is greater.*'

In accordance with the SuDS Manual a control to Q_{bar} for all events up to and including the 1 in 100 year +40% has been adopted.

The proposal for restricting flow to Q_{bar} for all events ensures suitable mitigation with a simple flow control rather than a complex control which may be required for variable rates depending on the volume in the system.

In addition to the above, the use of permeable paving within the site (to potentially meet the requirements for water quality – see below) will provide additional slowing of runoff to spread the volume during extreme rainfall events also.

Exceedance Flow Routes

As the response has mentioned, the flow routes will be manipulated by the proposed levels – at this stage we haven't detailed the finished levels. The exceedance routes plan shows the expected direction of exceedance route in the event of the drainage systems failing or being exceeded. It shows that the proposals will manage the overland routes through the site and ensure the proposals are not at risk and will not cause a barrier to exceedance flows.

The plans showing the exceedance routes are indicative given the outline application. The exceedance routes will need to be further delineated at the reserved matters stage so could form part of an appropriately worded condition to ensure the next stage of design development carries on the outline strategy principles.

The risk of overland flows from offsite is considered low. This is in part due to the documented geology of the ground in the catchment upstream. Nonetheless a shallow 'valley' shape to the topography suggests there could be a flow route through the site – albeit low risk. This will be managed by the proposals to ensure the scheme doesn't provide a barrier and allows water to pass through the site and doesn't provide any additional flood risk to off-site properties.

An assessment of the discharge location is an additional request but is unlikely to be changed by the proposals. Detailed design of the outfall may be required to further delineate this. I believe this would be part of the assessment of condition and capacity and can be conditioned as the agreed strategy of the previous application.

Water Quality

This is a new request which was previously understood to have been satisfactory. Nonetheless, the detailed assessment on the outline proposals is not considered suitable for this stage of the design. Further water quality elements can and will be included to ensure they meet the necessary criteria set out. These are all detailed design elements which should be conditioned. Additional options include permeable paving to driveways, filter strips, additional swale features (outside of the basin) for conveyance prior to discharge as well as further dry weather channel elements and stilling areas in the basin itself.

The length and width of the basin is also set by design requirements from Wessex Water (if they are to adopt the feature). For the updated layout I have shown an extended dry weather flow channel but this would still fall short of the length required (for just the basin alone). Its not possible to set out the extents of any filter strips or permeable paving as the layout has not been fixed yet.

The proposed basin has been set out to be online as per the initial comments back on planning. The proposals are for a basin and for it to remain dry for the majority of the time. There will be no standing water in the basin.

Treatment train for the proposals could adopt a number of options for the management of water quality. As noted above these could include permeable paving or filter strips upstream of the basin as well as a swale conveyance below the basin to the downstream network. A two stage treatment train would be the minimum we would recommend for the detailed design based on the runoff catchment characteristics and the receiving water sensitively.

The simple Index approach assessment of the pollution hazard is below –

Step 1 – Hazard Indices for the proposed end use –

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (e.g. cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change e.g.g schools, offices ie <300 traffic movements/day	Low	0.5	0.4	0.4
Total hazard for the site		0.7	0.6	0.45

Step 2 – Total pollution mitigation index

Type of SuDS component	TSS	Metals	Hydrocarbons
Detention basin	0.5	0.6	0.6
Swale	0.5	0.5	0.6
Permeable paving	0.7	0.6	0.7
Filter Drain	0.4	0.4	0.4

As suggested in your latest response the above components in isolation wouldn't meet the requirements of the hazard indices in Step 1. The suggest approach for the detailed design is to have at least two components in series to provide the total mitigation index. Combining the above options at the detailed design stage will ensure adequate mitigation is utilised by the complete SuDS scheme. The combination sets a 0.5 factor against the secondary component but should still provide adequate mitigation when in series with the systems proposed. This approach is in accordance with the SuDS Manual Simple Index Approach guidance.

The SuDS systems including the basin, permeable paving, filter strips and swale features will require further detailed design to ensure it meets all the requirements water quality for the site. Further assessment of water quality as well as volumes and rates will be detailed at the reserved matters stage.

Space for the pond

The proposals submitted for the basin are indicative and will be subject to more detailed assessment at the next stage of design. We have made conservative assumptions on the sizing of the pond and its required capacity is larger that would be expected at the detailed design. For example, the impermeable area allowance of 60% is likely to come down when the detailed design is completed which will reduce the size of the basin. The information provided whist indicative has provided a lot of detail which will need to be detailed and updated when more info on the proposals is known.

The maintenance requirements will form part of the detailed design of the scheme also. We have updated the preliminary information on the SuDS feature to have a 2.0m wide area around the top of the basin (as per the requirement of Wessex Water in their design guidance - Wessex Water SuDS Adoption Requirements – February 2021). This is less than the requested 3.0m but would be subject

to review but given the constraints of the site (steep gradients) a two metre margin has been shown for preliminary design (in accordance with Wessex Water requirements).

Provision of a tanker stand has been added to the drawing. Two options are available, a layby and a turning head both are viable. As per the whole preliminary design. This is outline and would be subject to changes at the detailed design stage.

Although the intention is for the basin to be transferred to Wessex Water for their management and maintenance it could be that a private management company is set up to complete this maintenance rather than having it adopted. For the purposes of the outline planning application we have kept the design assumptions conservative to ensure there is adequate space for the proposals.

Trees

This is a new request which hasn't been raised as an issue previously.

We have revised the indicative layout to ensure the RPZ's are clearly avoided. The design will require more detailed design, but it does confirm there is sufficient space for the basin in the space allocated as well as respecting the tree root protection zones. The detailed design will also require working with the same constraints. Based on the preliminary / indicative basin information it is clear the proposals can be detailed to have limited impact on any existing trees and could preserve the existing trees along with planting of new trees in the landscape for the new basin. There will be no excavations within the root protection zones to construct the basin.

Amenity and Biodiversity

This is a new request which hasn't been raised as an issue previously.

The proposals have set out the preliminary designs with 1 in 3 banks to ensure adequate access for maintenance. The amenity aspects could also be enhanced further with the 2.0m corridor around the top of the basin uses as a possible informal footpath. If adopted by Wessex Water we'd need to be clear this met with their obligations. There are other areas of the site which will offer adequate amenity and biodiversity outside of the basin area.

Planting along the northern corridor including the banks to the SuDS basin is encouraged. The slopes whilst fairly shallow will provide a suitable growing area for this landscape.

The shallow banks of the attenuation can be part of the ecological mitigation and will provide an important ecological feature in itself. It will provide habitat for a range of invertebrates and subsequently a good bat foraging habitat and will not be subject to increased artificial lighting. There is still adequate space (when fully detailed) for planting to provide screening from artificial light to the boundary habitat. Access to the banks within the 10m corridor buffer will be discouraged for access to the basin itself which will be outside of this zone.

The HEP calculation will be reviewed with the updated layout. The HEP calculations (used for calculating change in horseshoe bat habitat suitability) calculated 0.34ha of pond habitat with a formation code of 'pond of high ecological quality'. This can also be reviewed with the detailed design at the reserved matters stage as the basin information is indicative and subject to detailed design when the site layout is fixed and the exact basin details are confirmed.

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For and on Behalf of Norse Consulting Ltd (parent company to Hamson Barron Smith)