

Supporting Planning Statement

Llwyn Onn Replacement Reservoirs and
Replacement Pumping Station

Prepared on behalf of Dee Valley Water

November 2016

Quality information

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1. Introduction

This supporting planning statement has been prepared by AECOM on behalf of Dee Valley Water to assist with their planning application for Llwyn Onn replacement reservoirs and replacement pumping station. In summary, the proposal is to replace the existing reservoir and associated infrastructure at Llwyn Onn Water Treatment Works (WTW) with new state of the art facilities consisting of the installation of two new enlarged service reservoirs (total capacity of 24MI) and the construction of a new pumping station to accommodate replacement pumps.

In line with Article 1 of the Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016, the necessary pre-application consultation has been undertaken for this 'major' development. The pre-application consultation (PAC) report accompanies this supporting planning statement as part of the planning application.

1.1 Rationale for replacement reservoirs and pumping station

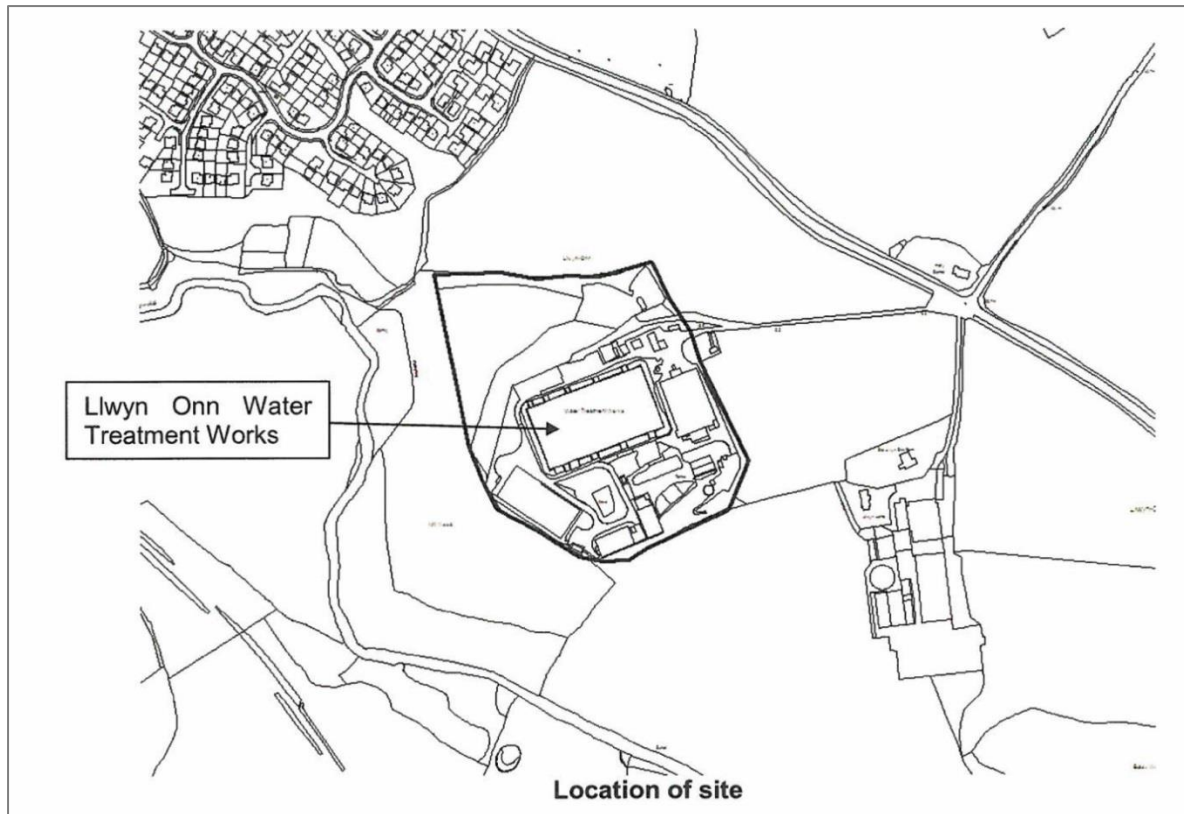
Llwyn Onn Water Treatment Works was commissioned in September 2013, replacing the old treatment works substantially modified since its original construction in the 1940's to supply a munitions factory. With a capacity of 47.5 MI/d, Llwyn Onn is Dee Valley Water's main water treatment works, supplying water to Wrexham and the surrounding area. Llwyn Onn Water Treatment Works is supplied with raw water from two sources: the River Dee at Sesswick and upland impounding reservoirs at Ty-Mawr and Penycae. Water is abstracted from the River Dee and pumped to Marchwiell raw water storage water reservoir from where it gravitates to Llwyn Onn. Water from the River Dee can also be pumped directly from Sesswick to the treatment works. The raw water main which runs around the outside of the existing service reservoir is now redundant. The potable output from the works is currently stored in an 18MI reinforced concrete service reservoir. Water is super-chlorinated and lime dosed before entering the reservoir, and dechlorinated with sulphur dioxide and dosed with orthophosphate prior to entering the water distribution system.

Dee Valley Water are under Notice from Welsh Government [Notice under Regulation 29(4) of the Water Supply (Water Quality) Regulations 2010, Drinking Water Inspectorate Notice Reference DVW 3373] to replace the existing reservoir with a new facility.

Various improvements have been made to the reservoir over the years including the conversion of the raw water compartments to potable water storage, provision of a roof, security measures to access hatches, and the installation of 'baffles' to prevent streaming. The most recent intervention on the reservoir was the repair of the roof following a partial collapse in 2013.

The existing reservoir (see figure 1) presents a risk of both structural and functional failure. The reservoir's structural condition now requires intervention if it is to continue to serve its water storage function. The reservoir also presents the greatest water quality risk of all to Dee Valley Water's stock of service reservoirs due to the potential for resuspension of deposits within the reservoir arising from abnormal operations. The rationale for the replacement is therefore clear.

Llwyn Onn Water Treatment Works is a live operational site and will remain so during construction and commissioning of the new reservoirs and pumping station. A loss of output from Llwyn Onn for whatever reason would pose a significant risk to the provision of water to the approximately 100,000 people supplied from the site as no alternative supplies of potable water exist. The current and proposed reservoirs and pumping station are therefore critical to Dee Valley Water's operations.

Figure 1. Existing site layout

2. Site description

Llwyn Onn Water Treatment Works is located approximately 1.5 miles to the south-east of Wrexham town centre, off the Cefn Road. The existing site is 5.2 hectares in its full extent and has been operating as a reservoir and associated treatment works for over 75 years. The proposed area of development within the site is approximately 2 hectares.

The site has an elevated position of approximately 72m AOD (Above Ordnance Datum) whilst the surrounding landscape is set at a level of between 45m and 55m AOD. The ground generally slopes away from the site boundaries. The centre and main operational area of the site is largely level. There is a steep slope to the north and north-west portion of the site where the woodland and open ground areas are located. The gradient of this slope becomes shallower towards the most north-west corner. The site also slopes downwards to the south and south-east corner.

The site is surrounded in the immediate vicinity by woodlands and open farmland and pasture (see figures 2 and 3). There are no public footpaths within or in the immediate area of the site. There is currently one access point to the north of the site off Cefn Road via a large concrete surfaced apron. The entrance to the site is via a tarmac surfaced single lane access track; entrance to the reservoirs is via the main gate with an access road to other service buildings within the perimeter fencing (see figure 4).

Figure 2. Unused area to north of site



Figure 3. Pasture surrounding site



Figure 4. Perimeter security fencing



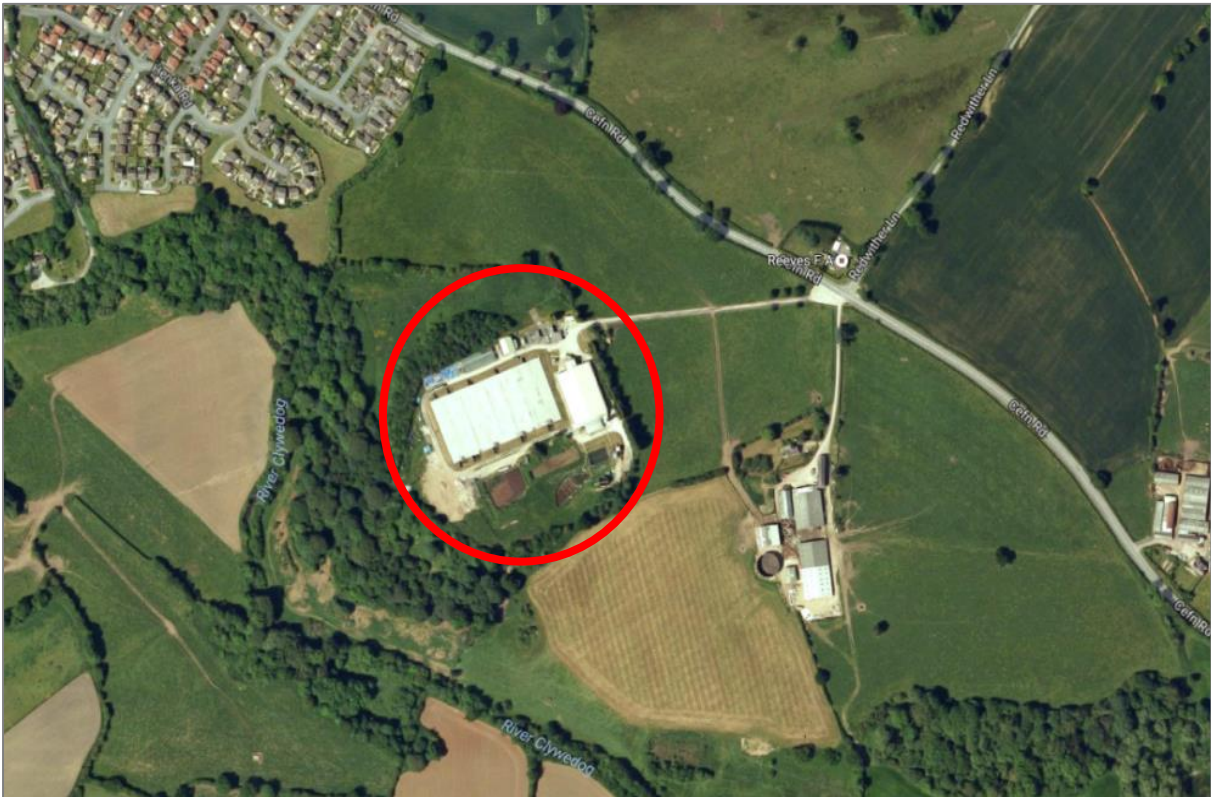
The site is located outside of the local town boundary and within a designated 'Green Barrier' area (see section 4). It is not bounded by existing houses or other development however there is a nearby residential area on the edge of town situated along the Cefn Road to the north-west of the site, as well as an individual rural property and a local farm to the east and south-east of the site (see figure 5). The site is adjacent to a large Special Landscape Area known as Mill Wood.

The site is identified in Wrexham's LANDMAP Special Guidance as being within the Welsh Maelor Landscape Character Area 13a. This area is particularly valuable for nature conservation and informal recreation. In visual terms, the area is typified by undulating estate farmland and trees, with designed parks and gardens and a general abundance of hedgerows and hedgerow trees. Buildings are generally traditional red brick farmsteads, with many barns now converted to residential uses. The landscape quality of the area is also affected by the A483 and pylons to the west.

As part of the pre-application consultation, a number of adjoining occupiers were notified of the development proposals including the farmhouse and associated buildings located to the south-east of the site approximately 160m away. (see PAC report for copies of the notice given to owners and occupiers of adjoining land and their responses to the proposal). We did not individually notify all

landowners in the residential areas in the outskirts of Wrexham however one of the residents was involved in the pre-application process as he obviously saw the publicity releases.

Figure 5. Aerial image showing site location



3. Proposed development

The proposed development will replace the existing reservoir (see figures 6 and 7) and associated infrastructure with new state of the art facilities. The development will be constructed within the existing Llwyn Onn site boundary and will incorporate the following (see figure 8):

- Demolition of existing reservoir and installation of two new 12MI service reservoirs (total capacity of 24MI) – one on the footprint of a former treatment building and one on the footprint of the existing reservoir.
- Construction of a new pumping station to accommodate replacement pumps serving the Wrexham and Cinders distribution systems, together with new pumps to deliver potable water from Llwyn Onn to Bronwyfala service reservoir.
- Laying of internal access roads, soft landscaping works, planted screening, pipework and connections associated with the operation of the reservoirs and the pumping station.
- Ancillary site works including demolition of the existing reservoir once sufficient replacement storage capacity has been provided to permit construction of the new reservoir on the same footprint.

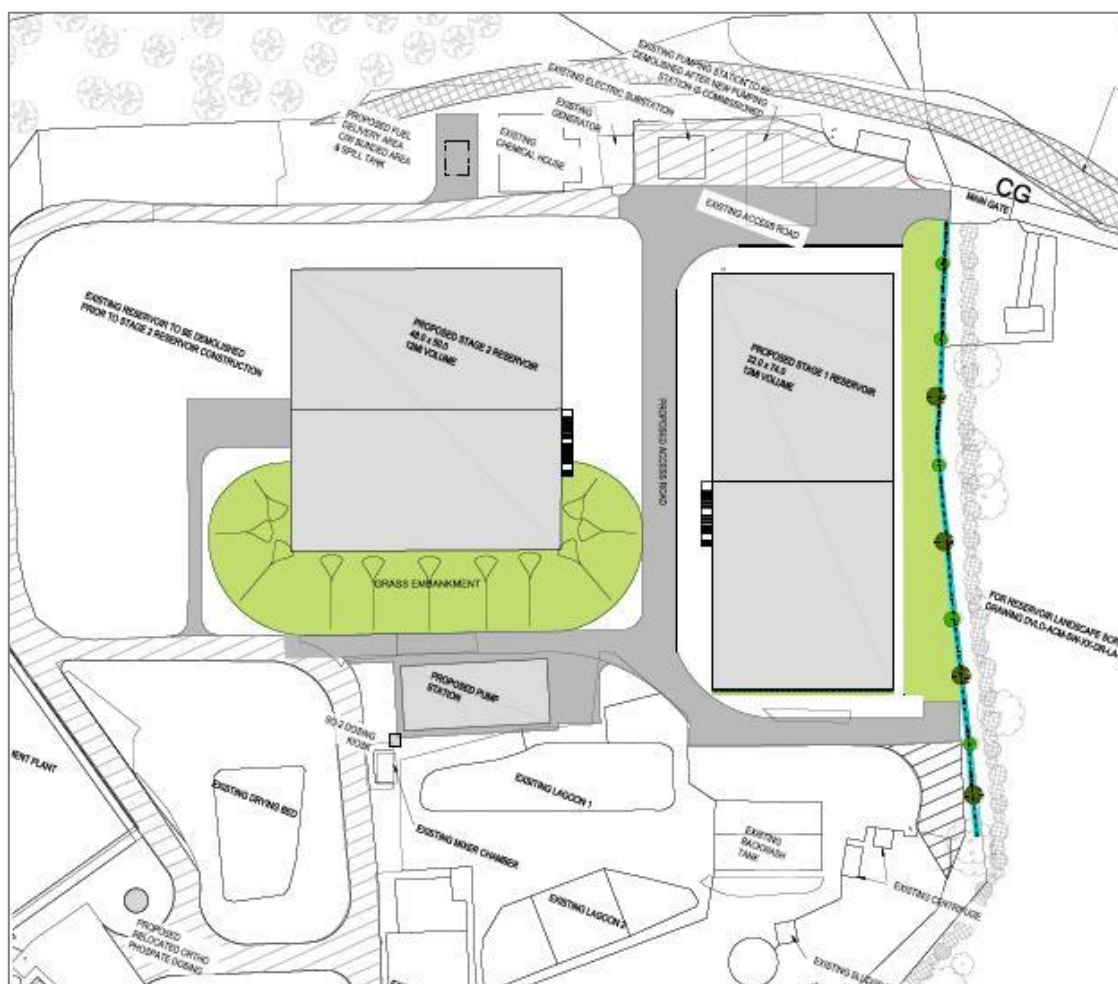
Figure 6. Existing reservoir



Figure 7. Contact tank



Figure 8. Site location map of proposed development



3.1 Design principles

The design of the development has considered the objectives of good design, identified in TAN 12: Design, and has been planned in accordance with the guidelines necessary for reservoir development. Factors which have influenced the design of the proposed reservoirs and pumping station include replacement functions, no external impacts, reservoirs standards, site constraints (e.g. limited space available) and water levels to ensure there is adequate water supply to customers within the local area.

The design has been considered under the following categories: character and context, access and movement, community safety and environmental sustainability.

Character and context

The design of the development has taken into consideration the previous visual impact of the reservoir. We've also considered the previous visual impact of the now demolished water treatment plant, and the new 2013 plant and the changes are not considered significant. The new reservoir copings are approximately 3m higher than the current reservoir coping, however, this is 4m lower than the ridge line of the now demolished water treatment building (which forms the proposed stage 1 reservoir site) and 3m lower than the recently constructed water treatment building which replaced it. The overall appearance, scale and amount of development of the proposed works are comparatively similar to what is currently operational on site.

The proposed development utilises 'soft landscaping' around the perimeters of the reservoir to lessen the industrial appearance of the site. 'Green screens' are used to minimise the overall impact of the development, in particular the walls of the reservoirs (see figure 9). As well as the 'green screening', the perimeter of the site will be landscaped to integrate with the surrounding countryside, with native hedgerows being proposed on the eastern border of the facility. Furthermore, a low maintenance grass mix will be installed on the stage 2 reservoir southern facing embankment to further soften the visual impact. These measures will ensure minimal visual impact for nearby human receptors looking into the site.

Figure 9. Example of green screening



Access and movement

Given the nature of the proposed development, there will be no access to the facility other than authorised staff members and engineers visiting the site. A perimeter fence will continue to border the entire site to ensure that the facility is permanently enclosed. The site will also be monitored by surveillance.

The proposed development is situated on the main Cefn Road out of Wrexham town and is on local bus routes (Routes 1E and 42), allowing this more sustainable form of transport to be used to access

the site. A local bus stop, Llwyn Onn Estate, is situated just north of the site. There are no proposals to alter the external access arrangements. There is one access track serving the site (see figures 10 and 11), running westwards up from Cefn Road to the north-east corner of the operational Llwyn Onn site.

The final layout of the access routes around the development for vehicles and pedestrians will tie into the existing site roads. All internal roads, footpaths and landscaping shall be in accordance with the operations and maintenance needs and will meet the requirements of the environmental studies and all stipulations of Wrexham County Borough Council's planning approval.

Figure 10. Access road to site



Figure 11. Site entrance north of the site



Community safety

Essential security measures will be put in place to ensure there will be no unauthorised access to potentially dangerous areas of the site, ensuring community safety. The proposed works will be in conformance with the 'Standard for Security Arrangements for Operational Assets (SSAOA) Version 2 2015' and 'Water UK: Specification for the Security of Service Reservoirs'. Furthermore, a range of measures will be implemented to ensure the safety of employees and visitors on the site (e.g. alarm systems, additional CCTV and internal cameras).

Environmental sustainability

In accordance with Planning Policy Wales (PPW) (Edition 8, January 2016) and TAN 22: Planning for Sustainable Buildings, a fully developed Construction and Environmental Management Plan can be prepared prior to commencement of construction works if required. This which will take into consideration the related environmental impacts and proposed sustainable mitigation measures during construction.

4. Policy context

Planning policy aims to provide guidance to help good planning which can contribute to economic development, nature conservation and improve quality of life. This section considers the planning policy context of the proposed development.

4.1 Local area plan policy

The Wrexham Unitary Development Plan (UDP) 1996-2011 is the main point of reference for relevant local area policy for the proposed development, which falls within its jurisdiction. It seeks to provide a framework for local decision making and the reconciliation of development and conservation interests in order that land use changes proceed coherently and with maximum community benefit. As figure 12 illustrates, the site is located within the Green Barrier, which relates to Policy EC1. The site is also

located close to but out with a Development and Flood Risk Area; however, the site is also on elevated ground and will not be at risk of flooding.

The relevant policies relating to the proposed development within this Plan are as follows:

Policy PS2 - development must not materially detrimentally affect countryside landscape/townscape character, open space, or the quality of the natural environment. As outlined in section 5, no Environmental Impact Assessment (EIA) is required for the proposed development as it will not give rise to environmental impacts of more than local significance. Furthermore, there are no national or local designations relating to landscape which the proposed development could adversely impact upon.

Policy GDP1 - all new development should:

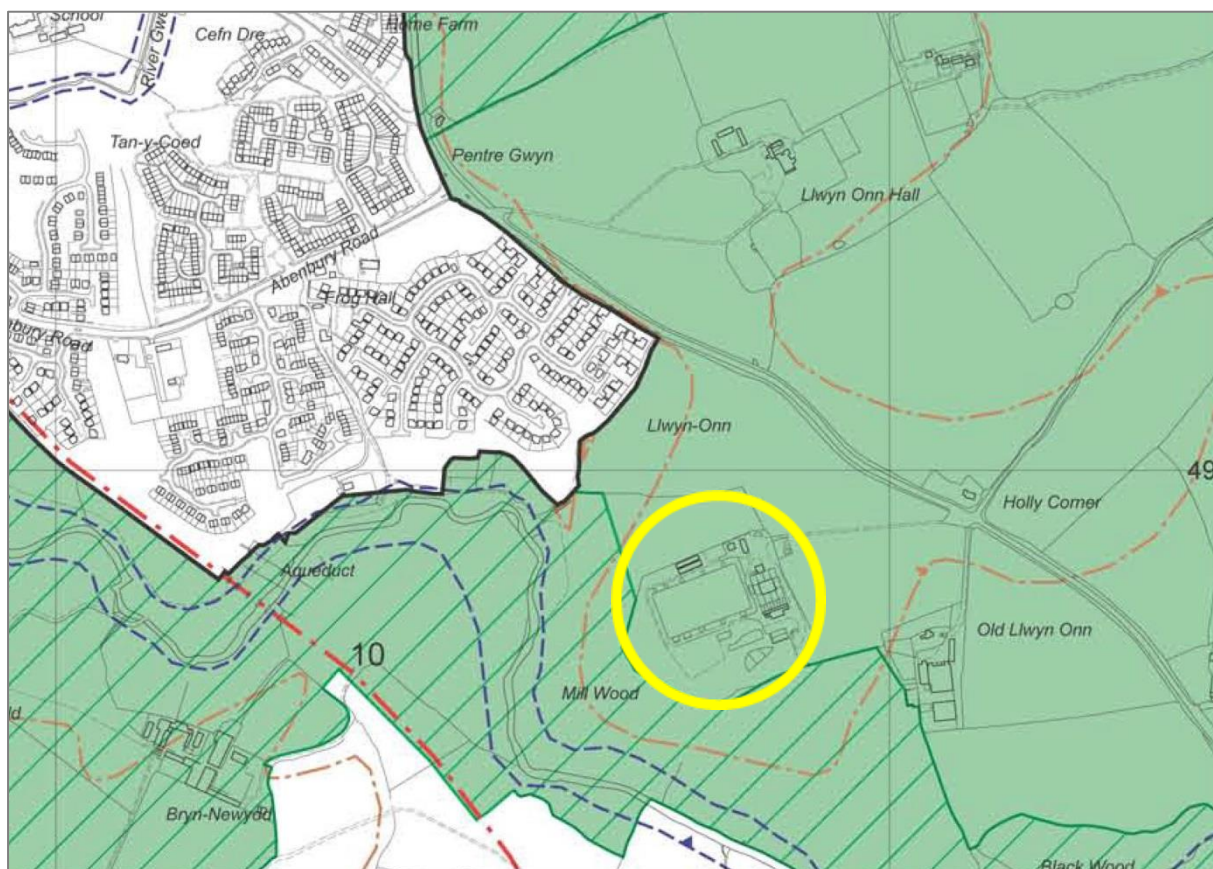
- a) Ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality. The proposal will not adversely impact the character of the site as it is a replacement and an upgrade of existing facilities.
- b) Take account of personal and community safety and security in the design and layout of development and public/private spaces, with safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality. The proposed development conforms to this as there is no public access to the facility and only authorised personnel will access the site.
- c) Make the best use of design techniques, siting and orientation in order to conserve energy and water resources. The proposed development adopts this approach by making best use of the existing site constraints and opportunities.
- d) Ensure that built development is located where it has convenient access to public transport facilities, and is well related to pedestrian and cycle routes wherever possible. The proposed development conforms to this as there is no public access to the facility and a local bus stop is situated just north of the site for authorised personnel.
- e) Ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development. As identified in section 5, no EIA is required for this proposal. As a replacement proposal there is the betterment to the general population in the form of improved water quality that will arise from the upgrading of the existing facilities.
- f) Secure public services (e.g. gas, water, electricity) to development at minimum public cost. The proposed development aligns with this as existing services are already available at the site.
- g) Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest. As identified in section 5, no ecological impact is anticipated from this proposal that would cause harm.
- h) Ensure that development does not result in, or is subject to, flooding, soil erosion, landslides or contamination, either on or off the site. It is not anticipated that the proposed development will cause any of these issues in particular flooding as it is located on elevated ground.
- i) Have regard to the need to safeguard those areas that possess a strong Welsh cultural and/or linguistic identity from development that could harm this identity. This is not a relevant criterion in this instance as it's an upgrade of an existing facility.
- j) Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area. The very upgrade itself of the existing facilities will achieve this.

Policy EC1 - within Green Barriers development will only be granted planning permission if it is for agriculture, forestry, essential facilities for outdoor sport and recreation, cemeteries and other uses of land which maintain the openness of the Green Barrier and do not conflict with the purpose of including land within it. The proposal is not in conflict with this policy as it consists of a replacement and upgrade of water treatment facilities which maintains the openness of the Green Barrier.

Policy EC4 - development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted. The proposal for this development conforms to this policy by including a landscape plan. This shows the necessary retention and supplementary planting which has been included to enhance the character of this landscape.

Policy EC6 - development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. The design principles in section 3.1 highlight how the proposed development includes measures to enhance the landscape quality of the site.

Figure 12. Land zoning map from UDP (yellow circle identifies site, green area identifies Green Barrier, blue dashed lines identify Development and Flood Risk)



4.2 National planning policy

Planning Policy Wales (PPW) (Edition 8, January 2016) sets out the land use planning policies for the Welsh Government on a wide range of issues and is supported by a number of Technical Advice Notes (TANs).

Chapter 12 of PPW makes reference to Infrastructure and Services, including water supply, and has particular regard to sustainable development and climate change. With regard to water infrastructure developments, key paragraphs from PPW are as follows:

Paragraph 12.2.1

'In development plans and when considering development proposals local planning authorities should promote increased efficiency and demand management of water resources, particularly in those areas where additional water resources may not be available, taking into account the effects that a changing climate may have over the lifetime of development'.

Paragraph 12.4.1

'The adequacy of water supply and the sewage infrastructure are material in considering planning applications and appeals. The need to balance the growing demand for water with the needs of the environment is crucial. Even where there is theoretical capacity, timely investment in infrastructure is required to ensure that new development does not adversely affect water supplies, water quality or sewerage. These issues require early identification when locating future development. Local planning authorities should therefore encourage the use of sites where existing water supply and/or drainage provision problems can be solved and seek to avoid the use of sites where adequate water supply and/or drainage provision is unlikely to be achieved'.

The proposed development complies with this policy in two main ways. Firstly, in relation to efficiency, the upgraded development is critical as it will ensure that potable water is supplied to the approximately 100,000 people supplied from the site. The timing of this upgrade may prove significant as the rate of population growth continues to accelerate, placing more demands on potable water supplies.

Secondly, in relation to infrastructure and location, the proposed development will not adversely affect water supplies as it consists of an upgrade of facilities on an existing site; therefore, it can be certain that adequate water supplies can be achieved on site.

Technical Advice Notes (TANs)

PPW is supported by 23 Technical Advice Notes (TANs). The TANs relevant to the proposed development are:

TAN 5: Nature Conservation and Planning

TAN 5 demonstrates how local planning authorities, developments and key stakeholders in conservation can work together to deliver more sustainable development with regard to the natural environment. To ensure nature conservation when deciding upon planning applications, TAN 5 outlines a number of points which local planning authorities should pay attention to. These include addressing the principles of sustainable development, protecting wildlife and natural features in the wider environment, adopting a step-wise approach to avoid harm to nature conservation through mitigation and compensation measures and looking for new opportunities to enhance nature conservation. The proposed development at the Llwyn Onn site has regard to the environmental impact on the natural environs, with mitigation measures in place as discussed in section 3.1 (e.g. the integration of green screening and grass mix to reduce visual impact).

TAN 12: Design

TAN 12 places an emphasis upon encouraging and giving guidance for both inclusive and sustainable design for those involved in development. It encourages a holistic approach to good design, centred on five key tenets: movement, access, character, community safety and environmental sustainability. Paragraph 5.12 of TAN 12 gives specific reference to the design of buildings for employment.

Paragraph 5.12 states:

'the need to embrace high environmental standards, low carbon aspirations and minimise the need for artificially cooled buildings'.

Paragraph 5.12.2 also states:

'... robust design, high quality materials, flexibility of exterior and interior layout and appropriate landscape treatment such as earth form or planting, can help to integrate new business premises into their surroundings, minimise the need to artificially cool buildings and allow for easier conversion by successive occupiers. Service and utility features, exposed and imaginatively detailed, may in many cases provide elements of interest in otherwise plain facades'.

The nature of the proposed development means it will not be in public use however a holistic approach has been applied throughout the design process to ensure the development is inclusive and sustainable. The key elements which were of particular focus to varying degrees in the design stages of the project include movement, access, character, community safety and environmental sustainability (these are fully discussed in section 3.1).

TAN 15: Development and Flood Risk

Paragraph 11.25 of TAN 15 gives specific reference to flooding in relation to dams and reservoirs.

This guidance states that:

'The implications for development in the vicinity of canals and other artificial water bodies are twofold. Firstly, since the concept of a flood plain is not applicable, waterside development or redevelopment of previously developed land may not face the same flood-risk constraints as development alongside a river ... Dams and reservoirs pose a similar potential for possibly large-scale flooding. A precautionary approach should be adopted at vulnerable locations and the precautionary methodology applied in consultation with the canal operator or dam/reservoir owner'.

The water treatment works at Llwyn Onn does not involve a dam; the two replacement reservoirs are service reservoirs which are located above ground level due to the topography of the site. As a result, there is no risk of flooding for the proposed development.

TAN 21: Waste

In relation to construction and demolition waste, the Welsh Government has introduced a requirement to produce Site Waste Management Plans. Amongst other things, Site Waste Management Plans should set out how waste will be prevented, managed and disposed as part of taking forward construction projects. The proposed development accords with the planning policy context at all levels of the hierarchy.

5. Key planning issues

This section considers the natural environment, local landscape and built heritage of the Llwyn Onn site and surrounding area. This identifies relevant planning issues which have been considered in the preparation of the planning application for the replacement reservoirs and pumping station.

5.1 Natural environment

Environmental Impact Assessment (EIA)

An EIA screening opinion was sought from Wrexham County Borough Council. It concluded that the proposal would not give rise to environmental impacts of more than local significance and therefore there was no justification for an EIA to be undertaken. This was signed by Lawrence Isted, Head of Community Wellbeing and Development (22nd March 2016).

Ecology constraints

Atmos Consulting Ltd. was commissioned by Dee Valley Water to undertake an extended Phase 1 habitat survey and reptile survey of Llwyn Onn Water Treatment Works. It concluded (28th September 2016) that habitats within the water treatment works have limited ecological value and do not pose a significant constraint to the development of the site. Protected species are present and appropriate mitigation should be implemented to prevent significant impacts from the development – this is detailed in table 1 below.

Table 1. Mitigation measures identified in ecology report

Mitigation measure	Detail
Annual hay cuts	Post-development, consideration should be given to the future management of this area to prevent scrub encroachment and maintain or increase its ecological value. This could be in the form of annual hay cuts with all arising removed from site to prevent a build-up of nutrients and to enable germination of an increasing range of grassland species.
Great crested newt licence	The current Bronwylfa to Llwyn Onn pipeline is covered by a site-wide great crested newt licence issued by Natural Resources Wales (NRW), and the area of grassland to the north has been put forward as mitigation/enhancement for newts as part of this licence. Management of the site must therefore be sympathetic to the enhancement measures specified within the Bronwylfa to Llwyn pipeline great crested newt licence.
Birding season	As the vegetation within the site has the potential to support nesting birds it is recommended that works are undertaken outside of the breeding bird season (typically considered to be March to August inclusive). If this is not possible then an ecologist should check for nesting birds within 24 hours of vegetation removal being due to commence.
Directional strim	As reptiles are potentially present within the area of grassland to the north of the water treatment works it is recommended that prior to works commencing the grassland is subject to a directional strim whereby the grassland is cut to a height of approximately 150mm in a northward direction to encourage reptiles to disperse from the area. At least 24 hours later the grassland should be mown to ground level again in a northwards direction. During works all areas of grassland impacted by the proposals should be maintained at ground level to dissuade reptiles from entering. Works should be undertaken when reptiles are active, typically April to October on relatively warm (above 10C), sunny days. It is not recommended that vegetation removal is undertaken during the winter months owing to the potential for hibernating reptiles to be present.
Badgers	It is important that any excavations are covered over or infilled at the end of each day to prevent badgers falling in and becoming trapped in any such excavations.
Prevention of plant dispersal	As Himalayan balsam is present on site it is recommended that methods to prevent the dispersal of the plant are instigated. As this plant is dispersed by seed it is recommended that vehicle access to and soil disturbance in the western boundary and north western corner of the area of grassland to the north of the water treatment works is prevented. If vehicles so

	enter this area then a wheel wash or similar should be installed at the exit to the site.
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Designated nature conservation areas

Black & Veatch were previously commissioned by Dee Valley Water to undertake a screening study report (June 2010). The conclusions from this study equally apply to the replacement reservoirs and pumping station now proposed. This study reported no statutory nature conservation sites within 1km of the Llwyn Onn site. The following areas were identified:

- There is a single Local Wildlife Site (Marchwiell Marsh) approximately 995m south of the site. This is a local nature reserve.
- Mill Wood ancient woodland runs along the western and south-western boundaries of the site.
- Afon Clywedog flows into the River Dee which is part of the River Dee and Bala Lake Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) approximately 5.2km east of the site.

5.2 Local landscape

Landscape context

The screening study report published by Black and Veatch (2010) identified no national or local designations relating to landscape affecting the site. A Special Landscape Area includes the river corridor and woodland to the west of the site. In summary, the surrounding landscape to Llwyn Onn is a transitional area between the residential suburbs of Wrexham and the rolling agricultural plain of the Maelor to the south.

Views out from and into the site

The views out from the majority of the site are limited by the boundary hedges, mature tree cover and hard landscaping such as fences/gates. In terms of views into the site, a number of local residential receptors are present. However, in relation to the proposed development, it is intended that the screening measures identified in section 3.1 will act as effective visual barriers for nearby residential receptors. In essence, the views will not significantly change from the views that existing prior to May 2016 when demolition of the redundant water treatment works commenced. A detailed analysis of the landscape impact is contained within the Landscape and Visual Assessment which accompanies the planning application.

5.3 Built heritage

Infrastructure network

AECOM prepared a Design and Access Statement on behalf of Dee Valley Water in September 2016. This concisely explains the design rationale, site constraints and how access to and from the proposed development will be achieved. Following a process of public consultation a number of changes have been made to the original design and access statement which consider the issues raised by various consultation responses (see PAC report for a copy of this revised statement).

Archaeological assessment

An archaeological desktop study was undertaken in April/May 2010 prior to the construction of the new treatment plant (2011-2013). This included consultation with Cadw and the Clwyd-Powys Archaeological Trust. The study determined that there would be no archaeological implications arising from the proposed works. This conclusion equally applies to the replacement reservoirs and pumping station now proposed.

6. Conclusions

The planning application for upgrade works to Llwyn Onn Water Treatment Works is a timely and necessary upgrade for the facility that aims to secure the function and operational quality of the site for the foreseeable future. This is a critical piece of infrastructure which services almost 100,000 people with drinking water. Following an assessment of the Local Development Plan, regional planning policies and other material planning considerations in this report, no conflicts have been identified. The scheme complies with applicable planning policies. Also considering the existing operational context of the site, we recommend that the scheme is approved as expediently as possible by the Local Planning Authority.

