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Technical Constraints:
an Overview

SECTION 5 - TECHNICAL CONSTRAINTS: AN OVERVIEW

5.1 Introduction

Existing site conditions are a key consideration in determining the scope of the masterplan proposals. The strategy will not only need to reflect the limitations of the technical constraints assessments but also identify areas where mitigation may be appropriate or provide creative solutions to achieve the objective.

It is important to recognise that these technical assessments are set at a **preliminary investigation level**. Site-specific projects arising from the masterplan will require a much more detailed and focused evaluation. Full details of all the Technical Constraints reports can be found in the Appendices and supporting document.

5.2 Land Quality

A land quality assessment of the canal and corridor has been undertaken to provide preliminary information on whether the property would result in the inheritance of any enforceable statutory contamination liability on or below the ground. It also makes provisional recommendations for a further Phase II Ground Investigation.

The current study has undertaken to:

- Establish as far as is practicable, the historical uses of the site
- Review any existing ground investigation data
- Provisionally characterise the ground conditions and any contamination present

- Identify geo-environmental constraints on the development of the site
- Provisionally highlight contamination issues, which may be cause for concern in light of current environmental legislation

The study has identified potential contaminants, their sources and possible receptors, which may be vulnerable if the strategy proposals are to be realised. The chief concern, which presents a moderate to high risk, is the contamination of groundwater and surface water by the movement of leachate. Leachate gas may also present a moderate risk to adjacent land, buildings and services.

The proposals for a Phase II Geo-environmental Site Assessment include:

- Intrusive ground investigation comprising bore holes, trial pits and window sampling
- Installation of gas stand pipes to measure gas concentrations
- Measuring equipment to establish variations in groundwater levels
- An assessment of the geo-technical properties of the soil and rocks
- Chemical sampling and tests to assess the impact and nature of contamination to soil and ground water

5.3 Drainage

An assessment of natural drainage patterns has been made.

Excluding the canal, there are two water bodies within the area of interest, namely Newland Main Drain and an un-named back drain. In addition there are two current water abstraction licences, both held by GlaxoSmithKline. The first

allows GSK to abstract 795,550 cubic metres of water per year from the canal. The second permits GSK to abstract from Sandside Well at a rate of 713,722 cubic metres per year.

Anecdotal information and site survey details confirm that periodic flooding occurs in and around the study area. The Environment Agency has confirmed that the majority of the site resides within the indicative flood plain and it is recommended that as part of the planning process for any of the proposed developments, that a full Flood Risk Assessment should be carried out together with mitigation proposals. This could include for balancing ponds, sustainable urban drainage systems (SUDS) and construction methods that would considerably reduce the impact of sporadic flooding.

5.4 Services

The principal objectives of this assessment are:

- To identify the location of existing public utilities apparatus within and around the site boundary
- To determine the potential for servicing any future developments from the existing utilities apparatus

All of the major service providers are present within the site; predominantly located to the south of the canal. There is a wide range of capacities, suggesting that most types of development could be catered for, although it is likely that some expensive apparatus will need installing e.g. gas governors, pumping stations and sub-stations, to enable supplies to be delivered to certain locations on the site.

A major constraint will be the absence of a drainage system north of the canal and the fact that the combined sewer within North Lonsdale Road is flowing close to maximum capacity. This will possibly entail the installation of new drainage systems, (foul and surface water). Any new services brought into areas north of the

canal may have to cross the Carlisle to Lancaster Railway line, greatly increasing costs.

5.5 Canal Maintenance and Management

The canal, owned by GSK, ceased to operate in 1916 and the lock gate access to the sea was concreted up in 1949.

A public footpath (number 578016) runs the entire length of the towpath and connects the A 590 with Canal Foot. Although no longer used for vessels, the canal provides an emergency water supply to GSK in case of fire. The body of water also acts as a physical barrier between areas of general public access and storage plant on the site. The canal is classed as a reservoir under the 1975 Act and under Section 12 is required to be subject to regular inspection.

The canal towpath is used by local people as a recreational route, but is also used by regular traffic to Rame Farm and also anglers who stock and manage their fishing areas. In addition, horse riders frequent the towpath, although prefer to use the soft verges as well as drivers who regularly park on the grass, (despite advisory signs.)

It has been recognised that the condition of the canal and the associated structures are a cause for concern. In particular, the condition and stability of the canal embankment upon which the canal is directly dependent. Ultimately, collapse of the embankment would cause widespread flooding of adjacent land and result in significant environmental and ecological impacts.

Damage to the embankment is further exacerbated by heavy vehicles, unauthorised parking on the verges and by the invasion of the banking by vigorous tree roots.

GSK are committed to the maintenance of the canal and towpath and absorb the costs of the annual maintenance programme, which includes vegetation management, grouting,

reinforcement works and providing signage and lifebelts. Much time is also taken up in dealing with enquiries and complaints from members of the public regarding litter, access, dog fouling and vandalism. Following an appraisal of similar operations elsewhere, the project team have estimated that the average annual maintenance costs for the canal, may be in the region of thirty-five thousand pounds.

In 2004, the Owen Williams group produced a report that provided recommendations for the "maintenance and long-term strategy" for the management of the canal. The focus of the report is the provision of a civil engineering strategy for the stabilisation of the embankment. A combination of site-specific sheet piling, grouting and vegetation management has been proposed over a ten-year period. A significant financial sum will be required to maintain both the structural integrity of the canal and the soft-end use benefits that the canal provides to the wider public.

The Canal Head and Canal Corridor masterplan has provided an opportunity to explore a range of options for the long-term management and maintenance of the canal and towpath. The project team will recommend to the masterplan that the ownership and management of the canal be transferred to another party.

The masterplan proposes that a Development Trust be created in order to take responsibility for the canal. Any new organisation would need to be confident that the hand-over process would not incur severe financial responsibilities and to that end, GSK have suggested that support could be made available in order to realise some pump-prime funding to make the transfer a realistic proposition.

Potential partners could include the MTI Partnership, SLDC, Ulverston Town Council and the County Council. The Development Trust could be involved not only in the canal but also

in the implementation of the masterplan by purchasing key sites that have been identified in the strategy, thereby having fuller control in the long-term development of the area.

Other interested parties should not, at this stage be excluded from becoming involved in the creation of the Trust. The anglers group have a long history of active involvement in the canal and there may also be opportunities to involve businesses that seek to be stakeholders in the over-all regeneration of Ulverston. Other means of generating funding for future management could be secured via 106 planning obligations, revenue from additional parking facilities and an annual maintenance contribution from new businesses and developments along the canal.

The creation of a Development Trust requires further detailed consultation with a wide range of potential partners, but it is anticipated that the delivery of the masterplan strategy will give confidence to those that recognise the benefits of the proposal.

5.6 Ecology

The canal and the wider environs are already acknowledged as having a great wealth of wildlife value. Aquatic, wetland, woodland and coastal habitats all contribute to the collective biodiversity, even derelict buildings are host to species of bats and birds. The ecological impact assessment of the canal and canal corridor has identified a baseline range of species found within the study area. This information is derived from desk-top research and a site walk-over.

The masterplan proposals have been evaluated against the severity of impacts on the wildlife and habitat resource in order to identify any limitations on development. Many of the proposals address new developments on sites where built structures already exist. The main concern in these locations, is the bat roosts which would need to be surveyed in detail and

mitigation proposals put forward.

An increased use of the canal by pleasure craft may also have a minor to intermediate impact on the waterfowl and other birds that use the canal for nesting and feeding, however it should be noted that birds successfully breed along the banks of navigable canals elsewhere in the UK.

In other areas, the use of agricultural land presents opportunities to increase habitat diversity, as at present, they are classed as having negligible ecological interest. Landscaping proposals could include for hedgerow planting, creation of wetland and marginal planting as well as explicit habitat creation where a particular need has been identified. The study has also concluded that there are no specific management requirements for the maintenance of the current ecological and biodiversity interest of the canal, provided that the current extent of canal-side tree and scrub cover is retained.

(Please refer to Appendix II for full details.)

5.7 Highways

This assessment includes a review of existing cycleway, highway, footway and bridleway provision for the Canal Corridor study site. Proposals for improvements are discussed within the context of creating a wider network of linked access routes that will serve the canal and the wider environs. Safety and improved access are the key issues that need to be addressed in order to secure the successful realisation of the masterplan strategy.

At present, the study site is tolerably well served by routes but there are significant problems with the poor access onto the A590 from the side of Canal Tavern and also the lack of a pedestrian footway along the north side of North Lonsdale Terrace/North Lonsdale Road. Lack of pedestrian facilities on the approach to Canal Foot are mitigated by the fact that the traffic volumes at present are sufficiently low to allow for relatively safe walking on the road

itself.

A number of other recreational routes pass through or abut the study site including public rights of way, the Cistercian Way, Cumbria Way, Cumbria Coastal Way and proposed Greenways at Rope Walk and beyond. In June 2005, the Walney to Wear Cycle Route will be officially opened and will pass through the centre of Ulverston. This in turn connects to the proposed National Cycle Route 72, which runs directly along the canal towpath and continues along the coast and through Next Ness.

The Furness Greenways Initiative looks at the provision of off-road access for pedestrians, cyclists, disabled users and horse riders where appropriate. The canal towpath has been identified as a potential Greenway with further Greenways links at Rope Walk, Next Ness Lane and possibly along the disused railway line between GSK and Next Ness.

Canal Head is the start/finish point in a complementary masterplan, which addresses initiatives in Ulverston town centre. A signed, pedestrian link, using artworks, orientation points and bespoke street furniture has been proposed between Canal Head and County Square.

(Please refer to Appendix I for full details.)

5.8 Transportation Links

The masterplan strategy has been tested against the existing road network in order to identify whether the existing arrangements can accommodate an increase in capacity.

One of the fundamental aims of the proposals is to attract a greater number of visitors to the canal area and ultimately to Ulverston. This needs to be done without compromising safety and the levels of access that local people currently enjoy.

The A590 is a trunk road and therefore falls under the management and jurisdiction of the

Highways Agency (HA), who, along with Cumbria County Council have been consulted in relation to access and the potential traffic impact of the proposed Canal Head development. In their response, the HA have stated the need to assess the highway impact of the proposed development at fifteen years after occupation of the final phase of development and state that

“ phasing will be a crucial element and have a direct bearing on the assessment year requirements.”

The HA has specifically voiced concerns over intensification of use at the A590 Canal Street/North Lonsdale Terrace priority junction. The HA state

“This junction could prove to be a major constraint to any development aspirations along the canal corridor unless an appropriate solution can be achieved that will adequately mitigate the impact of development traffic.”

With regards to access into the site itself, the HA have requested that consideration be given to routing access into the site via the A590 roundabout adjacent to Booth's supermarket.

The HA will require an assessment of traffic impact where traffic volumes on any part of the road network would increase by 5% or more as a result of development. At this stage of the masterplan development, it has not been possible to obtain comprehensive traffic flow information for the existing local road network. Instead, data from a 2002 traffic turning count survey has been used, including trip generation estimates from the Lund Farm Transport Assessment. Flow diagrams have been produced to compare 2002 survey traffic and 2006 base traffic flows.

Estimated traffic flow levels for the two main phases of the strategy have been calculated using the TRICS computer database. The general magnitude of generated trips has been

based on the best-guess estimates of final site use and estimated employment.

On the A590 road network immediately adjacent to the Canal Head development area, the expected traffic impact is estimated to be between 4% and 5.2%. On North Lonsdale Terrace the impact is estimated to be 6.9%. The indicative 42% increase in traffic levels on the access road serving the Booth's supermarket is based on an estimate of existing retail park traffic levels elsewhere and would need to be validated with a detailed traffic count at that junction.

The 5% threshold of increase in traffic volumes is used by the HA to trigger a detailed safety and capacity assessment. This would certainly be required for the Booth's roundabout and the North Lonsdale Terrace junction.

In order to mitigate against increased capacity and traffic flows at the latter junction, a practical proposition would be to set some development land aside at Canal Head adjacent to the A590 and the Auction Mart. This would enable the HA to implement a larger junction improvement scheme to alleviate congestion problems.

(Please refer to Appendix II for full details.)