

Bolton Abbey Development Options Appraisal Study

Chatsworth Settlement Trustees

7 April 2017

LICHFIELDS

LICHFIELDS

Lichfields is the pre-eminent planning and development consultancy in the UK

We've been helping create great spaces
for over 50 years.

lichfields.uk

© 2017 Nathaniel Lichfield & Partners Ltd, trading as Lichfields. All Rights Reserved. Registered in England, no. 2778116. 14 Regent's Wharf, All Saints Street, London N1 9RL
Formatted for double sided printing.
Plans based upon Ordnance Survey mapping with the permission of Her Majesty's Stationery Office.
© Crown Copyright reserved. Licence number AL50684A
50635/JG/ROd
14189038v2

Executive Summary

Introduction

The Chatsworth Settlement Trustees (“CST”) appointed Lichfields in June 2016 to undertake this Bolton Abbey Development Option Appraisal Study (“BADOAS”) relating to the Core Visitor Area (“CVA”) from Bolton Bridge to Barden Bridge. The BADOAS is undertaken as an objective assessment of options to sustain the important role of Bolton Abbey CVA as a major tourist destination and thereby inform CST’s long term planning for the Bolton Abbey Estate.

Context

Proponent

The Chatsworth Settlement, known internally as the Devonshire Group, owns the land and estates of the Dukedom of Devonshire. Its main estates are in the vicinity of Chatsworth in Derbyshire and Bolton Abbey in North Yorkshire. It also runs visitor and other businesses on these estates, including: hotels, retail and catering outlets, forestry; livestock and; arable farming. It employs over 600 full time employees. It is committed to quality in all its activities and takes a responsible approach to development; as such, it measures performance in financial as well as social and environmental terms.

CST’s Yorkshire Estate provides 160 full time equivalent jobs at Bolton Abbey and contributes c.£8m of enabled Gross Value Added to the local economy each year (Source: New Economics Foundation 2014). Its income funds socio-economic facilities (e.g. village shop/post office) and environmental management activities (e.g. architectural conservation) without grant support. CST thereby provides benefits far beyond *“just the estate”*.

The Bolton Abbey Estate

The Bolton Abbey Estate comprises c.12,000 hectares owned by CST situated mostly in the southern part of the Yorkshire Dales National Park (“YDNP”). This landholding includes the CVA and major tourist attractions such as: The Strid; Bolton Priory; Devonshire Arms Hotel; Cavendish Pavilion; and Barden Tower.

Bolton Abbey is a settlement comprising Bolton Abbey village, Bolton Bridge and Bolton Abbey Station. It is situated on high ground west of the River Wharfe and located less than a mile north of the junction of the A59 and B6160. It contains 58 properties, 39 of which are dwelling units.

Local Economy

CST makes a key economic contribution to the area by way of: employment (The Estate Office, Devonshire Arms Hotel, Cavendish Pavilion and Devonshire Fell Hotel employ 160 full-time equivalent (FTE) staff); commercial premises (farms; hotel; Estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; tea rooms; farm shop; café/restaurant); visitor economy (450,000 visitors to the CVA per year).

Core Visitor Area (CVA)

The CVA is a sensitive area. It is protected by several planning designations and managed in line with the Bolton Abbey Heritage Landscape Management Plan (“BAHLMP”) 1993. CST is exempt from some taxes in return for reasonable access across parts of the estate (e.g. the CVA) as well as an obligation for CST to maintain, repair and preserve the buildings and land that is covered by the agreement. However, related costs are rising, and now stand at c. £1.5m per year, thereby putting a strain on CST’s ability to fund such management.

Estate Objectives

In 2012 CST reviewed its operation at Bolton Abbey in view of the need for business growth and the fact that there was no realistic prospect of planning permission for any large-scale development in the YDNP. Further discussions with the Yorkshire Dales National Park Authority (“YDNPA”) and Craven District Council (“CDC”) led to the Bolton Abbey Tourism Development Strategy 2014 which identified the main business strengths, weaknesses, opportunities and threats in the CVA as follows:

Strengths: heritage assets, natural features and landscape quality; the CVA is the main strategic “southern gateway” for c.3.5 million visitors to the YDNP pa; provision of services for visitors; single land ownership/control by CST

Weaknesses: lack of sense of arrival (and departure); visitor operation dependent on weather and school holidays; brief trips with little or no secondary spend; major planning constraints limit growth; high maintenance costs; loss-making entities (e.g. Post Office); staff cannot afford local house prices (i.e. long journeys to work); limited visitor accommodation; the CVA therefore has a limited and low value offer to visitors

Opportunities: warmer winters; enhancement of Bolton Abbey village (within CDC) to provide new village green, pub, farm shop, play area, play barn, cycle hub, wedding barn and staff/visitor/market accommodation; entry sign (welcome to Bolton Abbey); link to Bolton Abbey Station, more/varied events

Threats: wetter summers; limited staff/other accommodation; increased competition; rising costs; planning constraints; listed buildings at risk.

It concluded that CST should focus development in Bolton Abbey village, and in particular a site of 3.9ha in Craven District for tourism-led mixed use development so as to diversify its visitor offer and get visitors staying longer and spending more, thus generating the level of funding needed for the delivery of the BAHLMF.

Work to date

In view of the foregoing, CST liaised with CDC as the local planning authority (“LPA”) with a view to securing an allocation for mixed use development at Bolton Abbey village, and gathered related evidence (including a Visitor Accommodation Needs Assessment, a Staff Accommodation Needs Assessment, an initial Heritage Assessment, an initial Landscape Appraisal and a Village Masterplan).

Liaison also led to CST: reducing the scale of its development aspirations; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from sensitive views.

Although CDC indicated in late 2015 that it would support an allocation at BA Village, the subsequent draft Craven District Local Plan (CDLP April 2016) did not do so because: CDC’s Strategic Housing Land Availability Assessment (SHLAA) process took place before Bolton Abbey was included in the settlement hierarchy (and was not re-run prior to the publication of the draft CDLP); Historic England (HE) felt the initial Heritage Assessment needed further work in order to ‘underpin’ a proposed local Plan allocation.

HE therefore asked for extra work on the Heritage Assessment, and in particular that it consider further issues (e.g. the importance of the Romantic movement to Bolton Abbey becoming a popular visitor destination in the 1800s) and establish the environmental capacity of the CVA. HE also suggested CST consider: the scope for more housing in Bolton Abbey village to screen views of the car park and provide a better sense of arrival; a second site (c.1.75ha) for development at Bolton Bridge.

As such, CST appointed FAS to undertake a detailed Heritage Capacity Assessment in line with HE’s specification so as to establish the environmental capacity of the area and inform the subsequent BADOAS and related masterplan.

CST also responded to the Draft CDLP in May 2016 stating: support for inclusion of Bolton Abbey in the settlement hierarchy; need to provide policy (preferably by way of allocation) for tourism-led mixed use development (including housing) on 3.9ha of flat land in Bolton Abbey village and 1.75ha of flat land SW of Bolton Bridge.

Need

The CVA is a major tourist destination within Craven District and YDNP, a significant contributor to the local economy and a major source of employment in the area. However it faces challenges by way of the following needs:

visitor needs: no sense of arrival (or departure) for visitors; no wet weather facilities; no play facilities; little or no secondary spend by visitors; lack of “mid-range” visitor accommodation within a 5km radius of Bolton Abbey

business needs: vulnerability of visitor operation to increased wet weather facility/climate change; limited staff accommodation (especially for hotels) leading to staffing issues and long journeys to work; increased competition from other local attractions; visiting costs

conservation needs: the prospect of diminished visitor income threatens the ability of CST to provide its (self-funded/non-grant supported) on-going programme of environmental management and architectural conservation (i.e. CST faces a “conservation deficit” in real terms)

socio-economic needs: Craven District has a need for high quality jobs; the post office in Bolton Abbey village is currently subsidised by the Estate and therefore needs a greater critical mass of development to help support it

sustainability needs: CST faces limited income streams, opportunity costs both now and in the long term, a lack of facilities (especially play facilities) for the community, threats to CST’s custodial environmental management role and an increased carbon footprint caused by long journeys to work by staff.

All of these needs currently prevent the CVA – and the wider Estate – from realising its wider potential as a tourist destination. They are also putting existing heritage assets, as well as other facilities and services within the Estate, at risk.

To address these needs, CST’s business plan requires the provision of “a new village green, pub, farm shop, play area(s), play barn (wet weather facility)...staff/visitor/market accommodation...and cycle hub” in Bolton Abbey to benefit both visitors and the local community now and in the long term.

Approach and Methodology

Study area

The study area comprises the CVA from Bolton Bridge in the south to Barden Bridge in the north. This area includes 2 sites with access onto the B6160 owned by CST which have been identified as suitable and available for development:

- 1 a 3.9ha site (flat land) in the south-west of Bolton Abbey village which is currently used for housing/parking/retail; and
- 2 a 1.75ha site (flat land) in the south-west of Bolton Bridge which is currently used for grazing and has some related flood risk issues.

Approach

This study comprises a robust, objective and systematic appraisal to firstly define and assess “strategic” options (i.e. broad locations) for development, and then secondly consider “detailed” options (for the preferred strategic option). As such, it is similar to an Environmental Impact Assessment (EIA) insofar as

the team sought to identify and evaluate the capacity and sensitivity of receptors, predict broad magnitude of impacts, assess the significance of related effects and prescribe mitigation measures accordingly.

Study Team

The study team has been multi-disciplinary, comprising:

- 1 Lichfields: project management/planning/flood risk/infrastructure/ environmental planning/liaison/report writing
- 2 Rural Solutions Limited (“RSL”): planning/masterplanning/design
- 3 Steel Consulting: planning/liaison
- 4 FAS Heritage (“FAS”): heritage
- 5 Bill Lever Ecology (“BLE”): ecology
- 6 Gillespies: landscape and visual assessment/design
- 7 Arup: traffic management.

Study Process

The study process has comprised a number of steps taken in relation to the preparation process for the Draft CDLP as shown below:

- 1 Technical work
- 2 Definition and assessment of strategic options
- 3 Selection and initial design of preferred option
- 4 Stakeholder engagement and public liaison.

Consultation

The preparation of this BADOAS report has been informed by extensive consultation with key stakeholders and members of the public, including:

- 1 A stakeholder presentation and workshop (including the YDNPA and CDC) on Monday 11th July 2016;
- 2 Distribution of a letter to all residential and commercial properties in the Bolton Abbey Estate, informing residents and other interest parties of the potential development options and inviting them to a public exhibition;
- 3 A public exhibition hosted by Lichfields and attended by over 60 people on Tuesday 26th July 2016; and
- 4 Opportunities for all stakeholders to comment on the potential development options via both feedback forms and a bespoke website.
- 5 The principal issue raised as part of the consultation process related to potential highways impacts from any potential new development. In direct response to this, CST appointed Arup to undertake a transport statement so as to inform detailed designs and ensure traffic solutions in due course.

Planning Policy

National Planning Policy Framework (NPPF)

The NPPF:

- 1 provides a presumption in favour of sustainable development, meaning LPAs should positively seek opportunities to meet development needs and that Local Plans should meet objectively assessed needs in terms of new housing (para 14);
-

- 2 provides support for the conversion of rural buildings in rural locations and states that housing should be located where it will enhance or maintain the vitality of rural communities (para 55);
- 3 provides support for the use of previously developed land and promotes mixed-use development (paras 17 and 69/70);
- 4 accepts that opportunities for sustainable transport options will differ from urban to rural areas (para 34) but also seeks to locate developments involving significant movement so as to minimise the need to travel;
- 5 looks to direct development away from areas of flood risk and ensure that new development does not increase flood risk elsewhere (paras 100 and 103);
- 6 negates the scope for major development in National Parks (para 116);
- 7 presumes against development likely to harm Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) (para 118);
- 8 provides a positive framework for the conservation of heritage assets, including the need to consider related economic benefits and the contribution to sustainable communities (para 131);
- 9 provides support for development within the setting of heritage assets which helps to reveal their significance (para 137); and
- 10 provides for the location of housing to maintain and enhance the vitality of rural communities (para 55).

Yorkshire Dales Local Plan 2015 – 2030 (adopted December 2016)

Key policies include:

- 1 Policy SP1 – defines what is considered to be sustainable and unsustainable development in the context of the National Park;
 - 2 Policy SP2 - states that development must conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park and promote opportunities for the understanding and enjoyment of its special qualities;
 - 3 Policy SP3 – sets out a spatial strategy for the location of new development. It identifies Bolton Abbey as a service village and, in doing so, recognises it as sustainable and appropriate place to accommodate development;
 - 4 Policy SP4 – sets out the requirement for high quality development to be delivered in the National Park, in terms of design, transport, human safety & amenity and environmental safeguarding;
 - 5 Policy SP5 – only allows major development in the National Park in exceptional circumstances;
 - 6 Policy C1 – identifies new housing sites and whilst none are identified at Bolton Abbey, the policy states that housing development will be permitted on acceptable sites within the housing development boundaries of Local Service Centres and Service Villages;
 - 7 Policy C2 - allows for exception sites for affordable housing;
 - 8 Policy C13 - presumes against the development of designated areas of ‘important open space’ (including areas in Bolton Abbey village and at Bolton Bridge);
 - 9 Policy L1 – states that development proposals affecting a designated heritage asset will be permitted provided they conserve or enhance its significance;
 - 10 Policy L2 allows for the conversion of ‘traditional buildings’ (e.g. barns) in certain circumstances;
 - 11 Policy BE1 – allows for the expansion or redevelopment of existing business uses or the development of unallocated land for new small-scale business or employment uses at Bolton Abbey;
 - 12 Policy BE2 - supports in principle rural land based enterprises;
-

- 13 Policy T3 – allows for the development of new sustainable self-catering visitor accommodation, subject to various criteria being met;
- 14 Policies T4 and T5 - provide support for visitor led development including indoor visitor attractions (though this needs to be considered against the constraints provided by Policies SP2 and SP5 above);
- 15 Policy W1 - presumes against development likely to harm the ecological networks identified on the Policies Map (including SSSIs, SPAs and SACs); and
- 16 Policy CC1 provides support for small scale renewable and low carbon technologies where they contribute to meeting the energy needs of communities and businesses in the National Park.
- 17 Policy CC2 - states that all developments should be located in areas of lowest flood risk.

National Park Management Plan (Revised March 2016)

The NPMP sets out the vision, strategic policies and outcomes for the National Park over the long term and guides the delivery of National Park purposes.

The NPMP sets out a number of special qualities that relate to the public enjoyment purpose of the Park, including natural beauty; wildlife; cultural heritage and; enjoying the experience of being here. Bolton Abbey is identified as forming a significant part of the National Park's cultural heritage.

Craven District Local Plan (CDLP) 1999

Given the historic nature of the plan (seventeen years since adoption) and our review of it, there are not considered to be any relevant policy implications for this study.

Emerging Craven District Local Plan (2nd Publication Draft) 2016

The Emerging CDLP identifies Bolton Abbey village within its settlement hierarchy. This provides a supportive policy context for the location of development within the village (and nearby Bolton Bridge, which may be considered either 'within' or functionally related to Bolton Abbey village). Other relevant policies include:

- 1 Policy EC1 – supports proposals for employment/economic development, including proposals that will benefit the rural economy;
 - 2 Policy EC3 – looks to diversify and grow the rural economy and, as part of that, support development proposals that will benefit the local economy, environment and quality of life;
 - 3 Policy EC4 - provides specific support for tourism-led development, including 'at Bolton Abbey/Bolton Abbey Railway Station'. Draft Policy EC4 also supports established destinations being enhanced through the development of new and improved facilities; recognises opportunities to bring tourism into new areas of untapped potential and; acknowledges the range of sport, recreational, cultural and leisurely activities that people may wish to engage in as tourists;
 - 4 Policy ENV1 (criteria D and E) - states that any development outside the settlement which harms the YDNP should be avoided;
 - 5 Policy ENV2 - seeks to conserve and enhance the historic environment;
 - 6 Policy ENV3 - requires new development to provide good design; and
 - 7 Policy ENV6 - seeks to avoid and alleviate flood risk by locating development in areas of low flood risk wherever possible.
-

Capacity

Heritage

The detailed Bolton Abbey Heritage Capacity Assessment by FAS identifies the Bolton Priory Scheduled Monument, the Bolton Abbey village Conservation Area and 35 Listed Buildings (mostly clustered around Bolton Priory, Bolton Abbey village and Barden Tower).

It also identifies and evaluates 18 heritage landscape character zones in terms of other significance and related capacity to accommodate change, and concludes that the areas with greatest capacity to accommodate change are at: Bolton Bridge; Bolton Abbey village; Bolton Abbey – Hind House Close; Cavendish Pavilion and car park; Strid Wood car park; Barden; dispersed farmsteads.

Ecology

Ecological designations apply to the CVA in varying degrees as follows:

- 1 YDNP (which covers most of the CVA): the YDNPA is required to conserve and enhance the natural beauty and wildlife of the National Park
- 2 N Pennines SPA/SAC (located c.05.km west of Strid Wood car park): this protects extensive tracts of semi-natural moorland habitats including upland heath and blanket bog; as such, any development proposals must minimise and mitigate any likely negative impact on the SPA/SAC
- 3 W Nidderdale, Barden and Blubberhouses SSSI (located >1km from Bolton Abbey): this is situated to the north-east of the CVA and contains internationally important tracts of blanket bog, heather moorland and vegetation as well as a breeding bird population.
- 4 Strid Wood SSSI (situated in the northern part of the CVA): contains important populations of fauna and flora, including the largest area of acidic oak woodland and the best remnant of oak wood pasture in the National Park. As such, any proposal would require a substantial amount of mitigation to make them acceptable in planning terms.

Bolton Abbey village and Bolton Bridge are not located within or near to any ecological designations and are relatively unconstrained, notwithstanding the presence of protected species in certain locations.

Landscape

The Bolton Abbey Landscape Capacity Study by Gillespies identifies landscape character areas largely based on the heritage landscape zones by FAS so as to assess the landscape's capacity to accommodate development. It identifies that whilst the CVA has a low capacity to accommodate development in general, there are some specific (and less sensitive) areas that have a medium-high capacity to accommodate some built development. These areas are: Bolton Abbey Station; Bolton Bridge and approach roads; Bolton Abbey village; Cavendish Pavilion and Tourist facilities; Strid Wood car park and camping site.

Flood risk

In effect national policy and related guidance provides for development in Flood Zone 1 (low risk) areas, some development in Flood Zone 2 (medium risk) areas and very limited development (e.g. water-compatible uses) in Flood Zone 3. Housing should only be situated in Flood Zone 1, whilst retail uses and car parking is compatible with Flood Zone 2, subject to the satisfaction of the sequential test.

Most of the CVA lies in Flood Zone 1 on the Environment Agency's Flood Map. However:

- 1 much land in the Cavendish Pavilion area lies in Flood Zone 3
 - 2 much land at Barden Bridge lies in Flood Zone 3
 - 3 much land at Sandholme/The Ungain lies in Flood Zone 3
 - 4 some land at Bolton Bridge lies in Flood Zone 2 and a fraction of it in Flood Zone 3.
-

There is therefore very limited scope for much development at the Cavendish Pavilion, Barden Bridge, Sandholme/Ungain and a small area of Bolton Bridge. Most of Bolton Bridge could accommodate retail and parking uses.

Visitor and community infrastructure

Visitor and community infrastructure within the CVA varies as follows:

- 1 Bolton Bridge: bus stop; hotel; food/refreshments
- 2 Bolton Abbey village: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access; post office; coach park; camp-site; village hall
- 3 Cavendish Pavilion: picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 4 Strid Wood: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 5 Barden Tower: bus stop; food/refreshments
- 6 Barden Bridge: car park; picnic area.
- 7 Bins and interpretation boards are interspersed throughout the CVA.

The capacity of the related car parks is as follows:

- 1 Bolton Abbey village: c.800 spaces (plus over-flow capacity)
- 2 Cavendish Pavilion: c. 1200 spaces (inc. over-flow capacity)
- 3 Strid Wood: c.60 spaces (with no over-flow capacity)
- 4 Bolton Bridge: c.20 spaces (plus over-flow capacity in nearby field).

These car parks tend to be full at peak times (i.e. bank holidays and weekends during school summer holidays).

Traffic

The B6160 is a quiet country road with considerable traffic capacity, but at peak times congestion can and does occur. At its worst, for c. 10 days maximum per year, standing traffic waiting to park at the main car park in Bolton Abbey village can tail back as far as Bolton Bridge. This causes disruption and delays and adversely affects both the visitor experience at Bolton Abbey, as well as other businesses further up the valley.

There is need, therefore, for the design of any new development to ensure that at least any existing traffic congestion is not made worse and, if possible, is alleviated in whole or in part for the benefit of the local area.

Assessment of Development Options

This study defines and assesses:

- 1 “strategic” options (i.e. broad locations) for development
- 2 “detailed” options relating to the preferred strategic option for development.

Definition of Strategic Options

The study considered strategic options for development as being:

- 1 Development dispersed throughout the YDNP between Bolton Abbey and Barden Bridge
 - 2 Development clustered around Bolton Abbey village
 - 3 Development clustered around Bolton Bridge
-

- 4 Development clustered around Bolton Abbey village AND Bolton Bridge, with some limited development (e.g. small play areas) throughout the CVA.

Assessment of Strategic Options

The four strategic options were assessed using a 'SWOT' (Strengths / Weaknesses / Opportunities / Threats) analysis, looking at how each option would respond to: i) CST's commercial objectives to diversify its visitor offer; ii) planning policy; iii) environmental capacity. The findings of the SWOT analysis are presented in the following Table 1.1:

Table 1.1 SWOT Analysis of Strategic Options

Strategic Option	Strengths	Weaknesses	Opportunities	Threats
1. Development in the YDNP only	-proximity to existing visitor attractions and related infrastructure e.g. the Priory, Cavendish Pavilion	-fragmentation of potential new development over a large area, giving rise to unsustainable travel patterns -only small scale development could be accommodated on available land, which would not materially diversify the existing visitor offer (and would therefore be unviable) -location of staff accommodation away from the core worker areas (i.e. Bolton Abbey village and Bolton Bridge) -large parts of the YDNP are sensitive in landscape / visual impact terms, with limited capacity to accommodate change -certain parts of the YDNP have very limited capacity to accommodate change in the historic environment e.g. around the Priory	-potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-potential policy conflicts with YDNP Local Plan due to the scale of development proposed (e.g. Policy SP2 requires development to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park) -potential harm to the amenity / tranquillity that attracts visitors to the Priory -high risk of flooding in certain areas (e.g. Barden Bridge and the Cavendish Pavilion) -potential harm to sensitive ecological receptors including Strid Wood SSSI and North Pennines SAC/ SPA
2. All Development in Bolton Abbey village	-development would enhance existing settlement in terms of its visitor and community offer -location of staff accommodation near to core worker areas -no sensitive ecological and flood risk issues -the local landscape has capacity to accommodate change	-operational difficulty of accommodating vehicular flows (to and from farm shop) in village -potential cumulative impacts on heritage assets / character of settlement	-development can be centred on existing settlement (and avoid unsustainable travel patterns) -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and CDLP policies -concentration of development could adversely affect the setting of key heritage assets, including Bolton Priory and the surrounding conservation area
3. All development in Bolton Bridge village	-good commercial location (with road frontage to A59) - location is remote from sensitive ecological risk areas - relatively unconstrained in heritage terms -the local landscape has capacity to accommodate change	-location remote from visitor hub (i.e. Bolton Abbey/Cavendish Pavilion) -limited land available unable to accommodate all CST needs -not operationally viable (since it would not diversify existing visitor offer)	-need for development centred on existing settlement (and avoid unsustainable travel patterns) -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and Craven Local Plan policies -design / location of development will need to respond to flood risk
4. Most development in Bolton Bridge village and Bolton Abbey village with some small-scale development in the YDNP	-farm shop-related traffic problems in Bolton Abbey village avoided -location of staff accommodation near to core worker areas (including Bolton Bridge and Bolton Abbey village) -harm to character of Bolton Abbey village avoided -scale of development can achieve material economic benefits / visitor enhancements -ability to provide appropriate scales of development across different parts of the CVA, according to their varying heritage and landscape capacities	-distance between visitor attractions / facilities	-need for development centred on existing settlements -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -proximity to existing visitor attractions and infrastructure -ability to provide a 'gateway' to the wider YDNP -potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-design / location of development will need to respond to flood risk in certain locations

As such, it is considered that:

- 1 Strategic Options 1 and 3 are not commercially viable or realistic
- 2 Strategic Option 2 would cause operational issues and could harm the historic landscape character of Bolton Abbey
- 3 Strategic Option 4 is the preferred option as it has the most strengths and opportunities, and no real weaknesses or threats.

Definition of Detailed Options

The preferred Strategic Option 4 would comprise “composite” development as follows:

- 1 Barden Bridge – limited scope for play area, facilities and ancillary parking;
- 2 Barden Tower – scope for play area and/or staff/visitor/other accommodation with ancillary parking;
- 3 Strid Wood – scope for small play area;
- 4 Cavendish Pavilion – scope for small play area;
- 5 Sandholme/The Ungain – scope for special events;
- 6 Bolton Priory – scope for some church-related development;
- 7 Bolton Abbey village – scope for barnyard green, play barn, play area, pub, staff/visitor/other accommodation, biomass boiler and wedding barn;
- 8 Bolton Bridge – scope for farm shop, cycle hub, café, offices, play area, hotel extension, spa extension and staff/visitor/other accommodation.

Interpretation boards (or similar) would also be provided throughout the YDNP area to raise awareness of locations where Turner painted related landscape watercolours/others (c.11 locations in all) as appropriate.

Further assessment work will be required to ensure that each of these uses is compatible with the heritage sensitivities identified in each area. For each location and development option, this will require further consideration of design, layout, setting, massing and access issues.

Assessment of Detailed Options

The assessment of detailed options focused on Bolton Bridge and Bolton Abbey since the smaller scale forms of development outside of these settlements are already consistent with YDLP policy and would be considered as applications in due course.

The assessment of detailed options classifies the effect of the development (both positive and negative impacts) by way of the following terms: Substantial¹ beneficial; Moderate² beneficial; Minor³ beneficial; Neutral/negligible; Minor³ adverse; Moderate² adverse; Substantial¹ adverse.

¹ **Substantial** – considerable effects (by extent, duration or magnitude) or of more than local significance

² **Moderate** – limited effects which may be considered significant

³ **Minor** – slight, very short or highly localised effects

Table 1.2 Bolton Abbey village (BAV)

Factor / Issue	Positive Impacts	Negative Impacts	Commentary	Overall Assessment
Heritage	No direct impacts on any identified heritage assets	Limited to potential, indirect impacts on heritage assets	<p>Any potential impacts on the historic environment would be largely dependent on the detailed design and layout of individual proposals.</p> <p>The layout of the main car park is capable of being reconfigured so that it could provide a less formal and 'softer' setting to surrounding heritage assets.</p> <p>Planning policy would ensure that any development would be of a high standard of design and complementary to the character of the village.</p> <p>In terms of below-ground heritage receptors, any impact on hitherto unrecorded archaeological remains would need to be addressed through an appropriate programme of evaluation and mitigation</p>	Moderate beneficial in terms of impact to the historic environment at BAV.
Landscape and Visual	Selective felling would 'open up' views from the B6160 towards the Tithe Barn and proposed barnyard green. Planting would screen new/existing car park	Potential minor adverse impacts in the short-term during construction work and whilst new planting becomes established	New planting could help screen / enhance potential new development, thus minimising any adverse visual impacts, and in particular shield unsightliness of existing car park	Moderate beneficial in terms of impact to the historic environment at BAV
Ecology	No direct or indirect ecological impacts on designated sites. Possible net gain in biodiversity term.	None identified	This option includes provision for a bat house and a high-quality open greenspace, both of which could provide a possible net gain in terms of biodiversity	Overall, and subject to suitable mitigation, the residual impact of the proposed development will have a minor beneficial effect on the village.
Flood Risk	None identified	Potential minor to moderate adverse drainage impact and potential increased flood risk elsewhere	<p>Planning policy would ensure that any new development provides (as far as practically possible) sustainable urban drainage systems and achieve existing surface water run-off rates on greenfield sites, minimising any potential impacts.</p> <p>It is assumed that planning obligations could be used to provide additional water treatment capacity if it was needed.</p>	Overall, and given the mitigation measures identified, the residual flood risk and drainage impact of BAV would be neutral .
Socio-Economic	<p>The historic significance of the Barnyard Green better revealed</p> <p>Creation of new accommodation for visitors, staff and others, which could provide a better sense of arrival (and departure)</p> <p>Creation of additional facilities (including play areas, open green space), which could encourage visitors to stay longer</p> <p>Increase the amount of 'wet weather' facilities available within the CVA</p> <p>Improved employment opportunities within the village</p> <p>Increased community and other infrastructure</p> <p>Reduction in carbon footprint</p>	None identified	<p>Collectively, a total of 27 FTE high quality / high value jobs would be created, with additional temporary jobs created during the construction phases.</p> <p>New staff accommodation would help reduce CST's carbon footprint by encouraging staff to live closer to their place of work and thereby reducing long journeys to work.</p> <p>Overall, potential new development would help reinforce the role of the village as a local service centre and thereby help meet the social and economic needs of the local and wider community both now and in the future (especially since outlying settlements will increase in size and population anyway).</p>	The development option would greatly diversify the visitor offer of the CVA. Development would therefore be major beneficial in terms of its socio-economic effects.

Factor / Issue	Positive Impacts	Negative Impacts	Commentary	Overall Assessment
Heritage	No direct impacts on any identified heritage assets	Limited to potential, indirect impacts on heritage assets	<p>Most development would be adjacent to the A59, an area of Bolton Bridge with very limited historic interest</p> <p>Planning policy would ensure that any potential new development would respect the setting of surrounding listed buildings and be designed to a high standard so as complement the existing scale/character of the village and preserve key views</p> <p>Any impact on hitherto unrecorded archaeological remains would be addressed through an appropriate programme of evaluation and mitigation</p>	Overall, and subject to appropriate design and mitigation measures, the development option would be neutral / minor beneficial in terms of impact to the historic environment of Bolton Bridge
Landscape and Visual Impacts	None identified	None identified	<p>Landscape currently dominated by man-made features meaning that development in a prominent position off the A59, subject to some limited natural screening, would be appropriate.</p> <p>Further north, development could be screened by existing planting, helping to minimise the scope for adverse visual impacts</p>	Overall, the development option would present a neutral impact in landscape terms.
Ecology	<p>Unlikely to give rise to any direct or indirect ecological impacts on designated sites</p> <p>Additional tree planting has the potential to provide a modest enhancement to the biodiversity of Bolton Bridge.</p>	None identified	Where necessary, individual proposals would need to consider the presence of habitats and features of interest for reptiles, bats and birds to minimise impacts from development, and in particular ensure that Hambleton Beck was not harmed by potential sources of pollution.	Overall, and subject to mitigation, the proposed development will not have a significant impact on ecology and nature conservation, with a residual impact considered to be minor beneficial in terms of ecology.
Flood Risk	Hard development (e.g. farm shop and cycle hub / café) would be located within flood zone 1 (i.e. at low risk of flooding).	<p>Potential minor to moderate adverse drainage impact and potential increased flood risk elsewhere</p> <p>Small parts of the main development site are at potential risk from flooding, including areas closest to Hambleton Beck</p>	<p>Development proposals would need to ensure that less-vulnerable uses (i.e. parking and planting areas) are located within the higher flood risk areas, with more-vulnerable development (i.e. hotel / spa extension and staff / visitor / other accommodation) located within the flood zone 1 areas.</p> <p>Planning policy would ensure that any future development proposals provide (as far as practically possible) sustainable urban drainage systems and achieve existing surface water run-off rates on greenfield sites, minimising any potential impacts.</p> <p>It is assumed that planning obligations could be used to provide additional water treatment capacity if it was needed.</p>	Overall, the residual flood risk and drainage impact associated with the detailed development option at Bolton Bridge would be neutral .
Socio-Economic Effects	<p>Development option would provide two new visitor attractions i.e. a farm shop and a cycle hub/café</p> <p>The provision of commercial space (i.e. offices)</p> <p>Proposed accommodation would make good re-use of the former A59 route</p> <p>Reduction in carbon footprint</p> <p>Improved employment opportunities</p>	None identified	<p>Collectively, a total of 10 FTE high quality / high value jobs would be created, with additional temporary jobs created during the construction phases.</p> <p>New staff accommodation would help reduce CST's carbon footprint by encouraging staff to live closer to their place of work and thereby reducing long journeys to work.</p> <p>Provision of commercial space in an attractive location would appeal to small-medium ("SME") businesses in the local area</p> <p>Development would provide two new 'indoor' visitor attractions, creating opportunities for secondary spend and diversifying the visitor offer</p> <p>The development option has the potential to create a gateway to the CVA</p>	The development option would represent a significant new capital investment in Bolton Bridge and, overall, a major beneficial impact in terms of its socio-economic effects.

Traffic Management

A high level highway assessment of increased visitor trips has been undertaken as part of a supporting Transport Statement and concludes that additional trips can be broadly accommodated on the local network. On the basis that additional car parking is proposed and measures to relieve congestion as a result of queuing at the payment kiosk have been identified, the supporting Transport Statement also concludes that **the preferred development option can be satisfactorily accommodated on the local transport network.**

Delivery

Design

CST has extensive experience of creating and delivering high quality built development and heritage-related spaces at Bolton Abbey, Chatsworth and elsewhere using traditional materials and building methods. Development at Bolton Abbey village and Bolton Bridge would need to be mitigated through the use of appropriate materials and textures and designed to a high standard to complement and enhance the existing scale/character of the places concerned, thereby minimising adverse impacts on the wider landscape and responding to the heritage landscape capacity from which the preferred development options have been derived.

Delivery

The main delivery mechanism for development will stem from the phasing programme for the scheme, so that each phase pays for itself and can generate funding for further elements as appropriate. In the first instance and to fund Phase 1, CST has sufficient internal financial resources and access to funding to ensure that development is deliverable. As such, this is a long term project and envisaged to be completed over a 20-50 year timeframe. Opportunities for enabling development and other funding sources (e.g. Heritage Lottery Fund) will also be explored as appropriate.

Phasing

Further to completing a comprehensive development masterplan in liaison with key external stakeholders, CST will look to develop the scheme as follows:

- Phase 1: Bolton Abbey village (within 10 years of masterplan completion)
- Phase 2: Bolton Bridge (within 20 years of masterplan completion)
- Phase 3: YDNP elements (after 20 years of masterplan completion).

Conclusions and Recommendations

CST is committed to and experienced in delivering high quality development within heritage settings in the long term, but currently faces several issues that affect its visitor operation and therefore its ability to carry out its programme of environmental management and architectural conservation at Bolton Abbey. As such:

Delivery of the preferred development option (Strategic Option 4) for the CVA identified in this study would help CST address its identified needs and, subject to suitable design and layouts for individual proposals being progressed, would do so in a way which avoids harm to the sensitive historic landscape character of Bolton Abbey.

Indeed, the preferred option would enhance the local area and provide key benefits in the long term including; public open greenspace; attractive focal point to settlement; improved amenity; increased awareness of the former Barnyard area; high quality accommodation for visitors/staff/others; renewable energy supply; enhanced sense of arrival/departure for visitors; heritage-themed learning-through-play facilities; one of the few wet weather play facility in the Dales area; sale of local/organic/estate produce; better access to/from Bolton Abbey Station; improved road safety; homes for young people (e.g. subsidised

housing, as is the case for existing staff); office or other work-space units; 37 extra full-time equivalent high quality/value jobs.

Having taken all relevant factors into account, it is considered that the preferred development option represents the best way forward in terms of the scale and balance of proposed development, and also that the detailed options provide for the right locations for the types of development concerned.

Such development would be phased over a 20 - 50 year timeframe, though some elements are needed now. Inclusion of an allocation and/or suitable policy in the Craven District Local Plan would be justified and give plan-led certainty to CST to invest in such development accordingly.

Contents

1.0	Introduction	1
	Purpose of Report	1
	Structure of Report	1
2.0	Context	3
	Proponent	3
	Bolton Abbey Estate	3
	Estate Objectives	7
	Summary	11
3.0	Need for Development	14
	Visitor Needs	14
	Business Needs	14
	Conservation Needs	16
	Socio-Economic Needs	16
	Sustainability Needs	17
	Overall Need for Development	18
	Summary	18
4.0	Approach & Methodology	20
	Study Area	20
	Approach	20
	Study Team	20
	Study Process	21
	Consultation	21
	Summary	22
5.0	Planning Policy Context	24
	National Planning Policy Framework (“NPPF”)	24
	Yorkshire Dales Local Plan 2015 - 2030 (Adopted December 2016)	24
	National Park Management Plan (Revised March 2016)	25
	Craven District Local Plan (1999)	26
	Emerging Craven District Local Plan (Second Pre-Publication Draft, 2016)	26
	Summary	27

6.0	Capacity	30
	Heritage	30
	Ecology	37
	Landscape	41
	Flood Risk	49
	Visitor and Community Infrastructure	52
	Traffic	54
	Summary	54
7.0	Assessment of Development Options	57
	Definition of Strategic Options	57
	Assessment of Strategic Options	59
	Definition of Detailed Options	63
	Assessment of Detailed Options	67
	Traffic Management	73
	Summary	74
8.0	Delivery	83
	Design	83
	Delivery Mechanisms	83
	Phasing	83
	Summary	83
9.0	Conclusion & Recommendations	85

Figures

Figure 2.1 Core Visitor Area	4
Figure 2.2 Planning Constraints	6
Figure 2.3 Bolton Abbey village Development Site	10
Figure 2.4 Bolton Bridge Development Site	10
Figure 3.1 Rainfall Effects on Visitor (Car) Numbers	15
Figure 3.2 Workforce Jobs by Sector in Craven (2015)	17
Figure 4.1 Study Process	21
Figure 6.1 Ecological Designations	38
Figure 6.2 Landscape Capacity to Accommodate Development.	42
Figure 6.3 Flood Risk	50
Figure 6.4 Visitor Infrastructure	53
Figure 7.1 Locations of strategic options	58
Figure 7.2 Overview of Preferred Option	64

Tables

Table 6.1 Summary of Historic Landscape Zones	31
Table 6.2 Summary of Heritage Capacity	33
Table 6.3 Description of Habitat and Ecological Network within the CVA	39
Table 6.4 Criteria for Assessing Landscape Capacity for Development	44
Table 6.5 Definition of Capacity of Landscape to Accommodate Development	44
Table 6.6 Definition of Overall Capacity Assessment	45
Table 6.7 Landscape Capacity	46

Appendices

Appendix 1: Bolton Abbey Heritage Landscape Management Plan

Appendix 2: Bolton Abbey Tourism Development Strategy

Appendix 3: Bolton Abbey Visitor Accommodation Needs Assessment Report

Appendix 4: Bolton Abbey Staff Accommodation Needs Assessment Report

Appendix 5: Bolton Abbey village Masterplan

Appendix 6: Bolton Abbey village Masterplan, letter from Historic England

Appendix 7: Bolton Abbey village Masterplan, response letter to Historic England

Appendix 8: Craven District Local Plan 2nd Pre-Publication Draft Response

Appendix 9: part 1 – Chatsworth Settlement Trust-Yorkshire Dales National Park Authority Publication Draft Local Plan Comments Covering Letter & part 2 – Detailed Comments on Yorkshire Dales Local Plan 2015-2030 (Publication Draft Plan) Consultation

Appendix 10: Consultation Feedback

Appendix 11: Bolton Abbey Heritage Capacity Assessment

Appendix 12: Bolton Abbey Landscape Capacity Assessment

Appendix 13: Bolton Abbey Ecology Statement

Appendix 14: Historic England Letter 27th January 2017

Appendix 15: Bolton Abbey Transport Statement

1.0 **Introduction**

Purpose of Report

1.1 The purpose of this Bolton Abbey Development Options Study (“BADOAS”) is to provide a robust, objective and systematic appraisal of possible development options at Bolton Abbey. This will help sustain its role as a major tourist destination and thereby inform both the long term planning for the Bolton Abbey Estate - owned by Chatsworth Settlement Trustees (CST) – and the preparation of the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

1.2 It has been informed by a suite of documents, including:

- 1 The Bolton Abbey Heritage Capacity Assessment (by FAS)
- 2 The Bolton Abbey Landscape Capacity Assessment (by Gillespies)
- 3 The Bolton Abbey Transport Statement (by Arup)
- 4 The Bolton Abbey village Masterplan (by CST)
- 5 The Bolton Abbey Visitor Accommodation Needs Assessment (by Frey Consulting)
- 6 The Bolton Abbey Staff Accommodation Needs Assessment (by Frey Consulting)
- 7 The Bolton Abbey Ecological Statement (by BLE)
- 8 The Preliminary Bolton Abbey Heritage Assessment (by ArcHeritage)
- 9 The Preliminary Bolton Abbey Landscape Appraisal (by Gillespies)
- 10 The Bolton Abbey Estate Tourism Development Strategy (by CST)
- 11 Bolton Abbey Heritage Landscape Management Plan (by English Nature et al).

Structure of Report

1.3 The report addresses the following:

- Context
- Study approach and methodology
- Need for development
- Planning policy
- Assessment of development options
- Delivery

1.4 It concludes that CDC should allocate sites for development and/or at least provide a related policy in the CDLP.

1.5 The report is accompanied by the following appendices:

APPENDIX 1 – Bolton Abbey Heritage Landscape Management Plan

APPENDIX 2 – Bolton Abbey Tourism Development Strategy

APPENDIX 3 – Bolton Abbey Visitor Accommodation Needs Assessment Report

APPENDIX 4 – Bolton Abbey Staff Accommodation Needs Assessment Report

APPENDIX 5 – Bolton Abbey village Masterplan

APPENDIX 6 – Bolton Abbey village Masterplan, letter from Historic England

APPENDIX 7 – Bolton Abbey village Masterplan, response letter to Historic England

APPENDIX 8 – Craven District Local Plan 2nd Pre-Publication Draft Response

**APPENDIX 9, part 1 – Chatsworth Settlement Trust-Yorkshire Dales National Park Authority
Publication Draft Local Plan Comments Covering Letter**

**APPENDIX 9, part 2 – Detailed Comments on Yorkshire Dales Local Plan 2015-2030
(Publication Draft Plan) Consultation**

APPENDIX 10 – Consultation Feedback

APPENDIX 11 – Bolton Abbey Heritage Capacity Assessment

APPENDIX 12 – Bolton Abbey Landscape Capacity Assessment

APPENDIX 13 – Bolton Abbey Ecology Statement

APPENDIX 14 – Historic England Letter 27th January 2017

APPENDIX 15 – Bolton Abbey Transport Statement

2.0 **Context**

Proponent

- 2.1 The Devonshire Group is the collective name for the landed estates, businesses and interests of the Dukedom of Devonshire which are mainly centred around Chatsworth in Derbyshire, with further property in Yorkshire, London and Eastbourne. The Devonshire Group provides over 600 full time equivalent jobs in a range of activities including stewardship of historic buildings and works of art; farming and forestry; visitor enterprises; events and exhibitions; hotels; property lettings and management. The Group also includes the Chatsworth House Trust (registered charity no.1511149) which manages Chatsworth House, Park and Gardens for the long term benefit of the public. The Group is committed to quality in all its activities; it measures its performance in conventional financial terms but, as importantly, in terms of its social and environmental impact, referred to internally as its triple bottom line.
- 2.2 The Chatsworth Settlement Trustees' Yorkshire Estate is based at Bolton Abbey and leases out much of its land for a variety of uses (including agricultural, commercial, residential and sporting purposes). It also runs a forestry enterprise, the renowned Devonshire Arms and Devonshire Fell hotels, and visitor activities (including the main visitor car park at Bolton Abbey, the Cavendish Pavilion shop and restaurant). The Yorkshire Estate provides 160 full time equivalent jobs at Bolton Abbey and contributes c. £8m of enabled Gross Value Added to the local economy each year (Source: New Economics Foundation 2014). It also takes a responsible approach to development and the environment. The Chatsworth Settlement Trust is committed to quality in all its activities; it measures its performance in conventional financial terms but as importantly in terms of its social and environmental impact, referred to internally as its triple bottom line.

Bolton Abbey Estate

Geography

- 2.3 CST owns c.12,000 hectares between Beamsley, Embsay, Cracoe, Appletreewick and West End; this land comprises the Bolton Abbey Estate and has been owned by the Cavendish family since 1753. It is situated mostly in the Yorkshire Dales National Park (YDNP).
- 2.4 This landholding includes the "Core Visitor Area" (CVA) between Bolton Bridge in the south and Barden Bridge in the north (see Figure 2.1 for Plan of CVA). This land includes major tourist attractions such as The Strid and Bolton Priory, as well as the Devonshire Arms Hotel at Bolton Bridge, the Cavendish Pavilion and the ruins of Barden Tower. It also includes Sandholme / The Ungain, an undeveloped part of the Core Visitor Area which is licensed to accommodate temporary events such as outdoor music concerts.

Figure 2.1 Core Visitor Area



Source: Rural Solutions

- 2.5 Bolton Abbey is a settlement comprising two large and closely linked groups of buildings (Bolton Abbey village and Bolton Bridge) with an associated area of development (Bolton Abbey Station). It is situated on high ground west of the River Wharfe in Lower Wharfedale, and located less than a mile north of the junction of the A64 and B6160 (a major access point to the settlements of southern Wharfedale Dales) which runs through the village itself.
- 2.6 Bolton Abbey village and Bolton Bridge are partly located in Craven and partly in the YDNP. Bolton Abbey contains 58 properties, 39 of which are dwelling units; 7 of these units are occupied by existing or former estate workers on reduced rents (i.e. 18% of households include at least one employee or former employee based at Bolton Abbey). Together with dwellings occupied by farmers or others working locally, this constitutes a very high percentage of people who live and work in the village when compared to other rural villages.

Local Economy

- 2.7 The Bolton Abbey Estate plays an important social role in the local area and also makes a key economic contribution to the same by way of the following:
- **Employment:** The Estate Office (based in Bolton Abbey village) has 41 full-time equivalent (FTE) staff; the Devonshire Arms Hotel has 73 FTE staff; the estate also has 20 FTE staff at the Cavendish Pavilion by Strid Wood nearby and 26 FTE staff at the Devonshire Fell Hotel in nearby Burnsall; this comprises 160 FTE staff in total.
 - **Commercial premises owned by CST:** farms; hotel; Estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; two tea rooms; farm shop; and, café/restaurant.
 - **Visitor Economy:** 450,000 visitors to Bolton Abbey per year (but there is only one 4 star hotel and a camp-site to accommodate them).

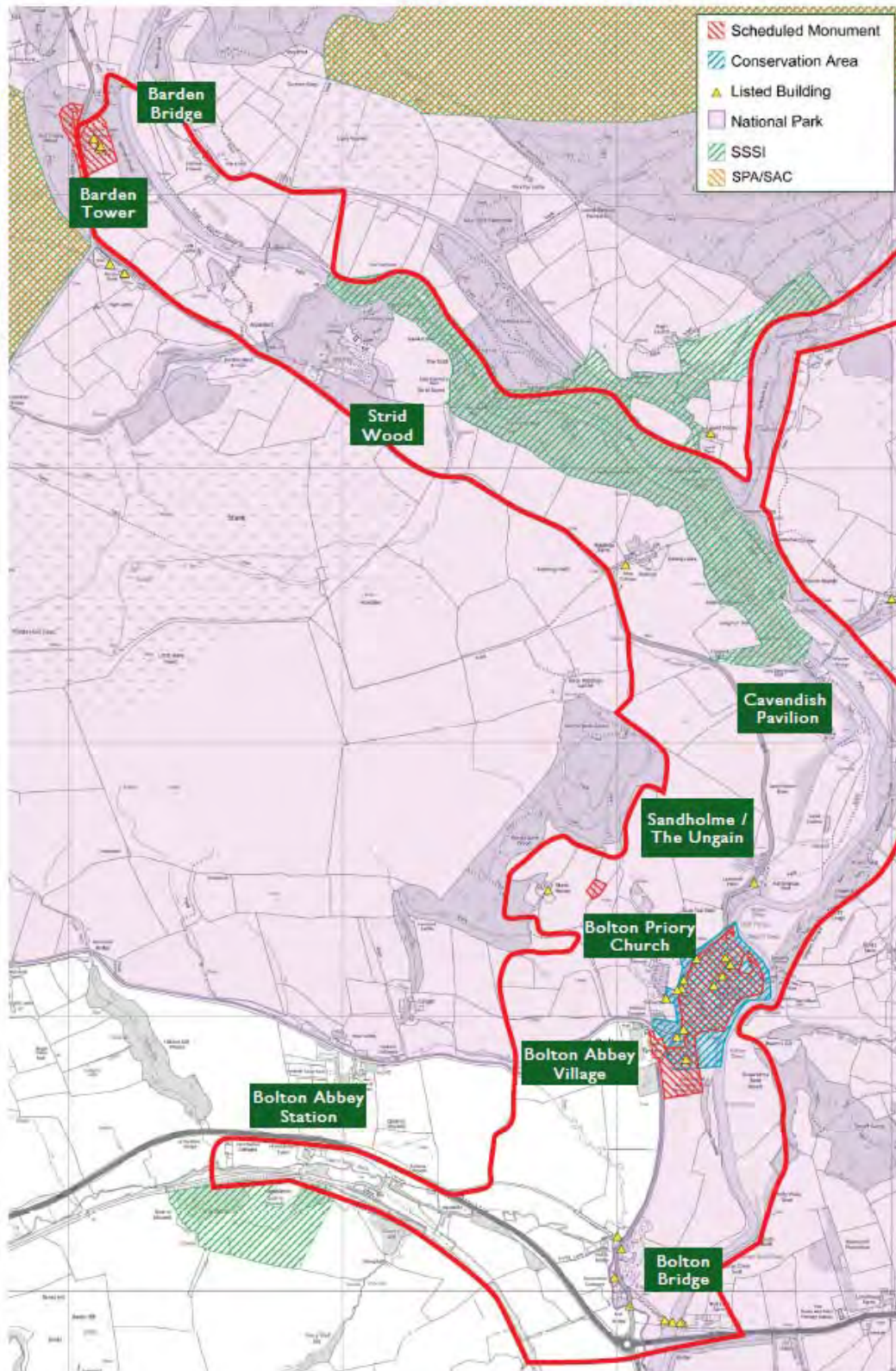
Service Village

- 2.8 Bolton Abbey fulfils an important service village function for the Southern Dales (particularly Wharfedale and nearby settlements) due to the unusually large number of services it offers for a settlement of its size, in part due to its complementary roles as both a visitor attraction and a service centre. These services include: post office; bus stop; village hall; shops; public toilet; church; short stay public car park; tea room; delicatessen; gym/health spa; hotel; pub/bistro; cricket club; farm shop; garage.
- 2.9 Significant employment in tourism and other sectors within the village and the Estate Office's role as a central 'hub' for the Estate and its workers means that the village is an active one, and thus provides for a relatively high proportion of people who live and work locally. This is markedly different to some of Craven's other villages where there is little employment and the main role of the settlement is that of a commuter dormitory.
- 2.10 As such the village has rightly been included in the settlement hierarchy of both the Yorkshire Dales National Park Local Plan (YDNPLP) and the Draft CDLP.

Core Visitor Area

- 2.11 The CVA between Bolton Bridge and Barden Bridge is a sensitive area and therefore heavily protected by a suite of planning designations (see Figure 2.2). It is managed in accordance with the Bolton Abbey Heritage Landscape Management Plan ("BAHLMP") 1993 (see Appendix 1) as agreed with English Nature and others (and now monitored annually by Natural England, Historic England and the YDNPA). This is because the terms of the Chatsworth Settlement provided for exemption from certain taxes in return for reasonable access across certain parts of the estate such as the CVA as well as an obligation for CST to maintain, repair and preserve the buildings and land that is covered by the agreement.

Figure 2.2 Planning Constraints



Source: Rural Solutions

2.12

The BAHLM provides for the sensitive management of the landscape in and around Bolton Abbey (and also acknowledges the need for a farm shop) in view of the fact that the CVA

provides reasonable access for visitors. CST thereby funds a significant range of high quality environmental management activities (e.g. woodland management, architectural conservation) from its own purse. However, related costs are rising, and now stand at c.£1.5m per year, thereby straining CST's ability to fund such management at a time when it faces a number of pressing issues (unforeseen when the BAHLMMP was written).

Estate Objectives

Business planning

- 2.13 In view of rising costs and other issues, CST held a series of meetings in 2012 to review its operation at Bolton Abbey and discuss ideas for moving forward.
- 2.14 This quickly established that despite its need for business growth, CST has only succeeded in securing planning permission for small-scale development proposals in the YDNP (e.g. some barn conversions, food outlets, etc.) and that the prospects of securing planning permission for the type of large-scale development needed by CST to sustain its business need would be extremely limited.
- 2.15 CST discussed related findings with both the YDNPA and CDC before producing the Bolton Abbey Tourism Development Strategy 2014 (see Appendix 2) to inform its business plan). This established the main business strengths, weaknesses, opportunities and threats in the CVA as follows:
- **Strengths:** Bolton Abbey's heritage assets, natural features and landscape quality act as a strong draw for visitors; Bolton Abbey acts the main strategic "southern gateway" for the majority of 3.5 million visitors to the Dales pa; range of services to accommodate the 450,000 visitors to Bolton Abbey pa; single land ownership/control of Bolton Abbey and the surrounding countryside
 - **Weaknesses:** Bolton Abbey suffers from a lack of sense of arrival (and departure); its tourism is dependent on weather and school holidays; trips tend to be brief, with little or no secondary spend; major planning constraints (National Park, Scheduled Ancient Monument, Site of Special Scientific Interest, Conservation Area, Listed Buildings); maintenance costs are high; loss-making entities (e.g. Post Office); staff cannot afford local house prices, meaning long journeys to work; visitor accommodation is limited (to the rather exclusive Devonshire Arms Hotel); Bolton Abbey village therefore has a limited and low value offer to visitors
 - **Opportunities:** warmer winters; expansion/enhancement of Bolton Abbey village (within CDC) to provide new village green, pub, farm shop, play area, play barn (i.e. wet weather facility), wedding barn and staff/visitor/market accommodation; entry sign (welcome to Bolton Abbey); link to Bolton Abbey Station, more/varied events (YDNP land); visitor centre/cycle hub
 - **Threats:** wetter summers; limited staff/other accommodation; increased competition elsewhere; rising costs; planning constraints; listed buildings at risk.
- 2.16 As such, the Development Strategy concluded that CST should focus development in Bolton Abbey village (and in particular that part of it which lies in Craven District).

Vision

- 2.17 CST therefore identified a possible development site of 3.9Ha (see Figure 2.3, below) in Bolton Abbey village for tourism-led mixed use development including: a play attraction/area, play barn, pub, village green, farm shop, visitor/staff/other accommodation. It saw these facilities as

providing a means to address the key issues identified above, and in particular to get visitors to stay longer at Bolton Abbey and spend more so as to generate the level of funding needed to sustain the high level of environmental management and architectural conservation required by the BAHLMF.

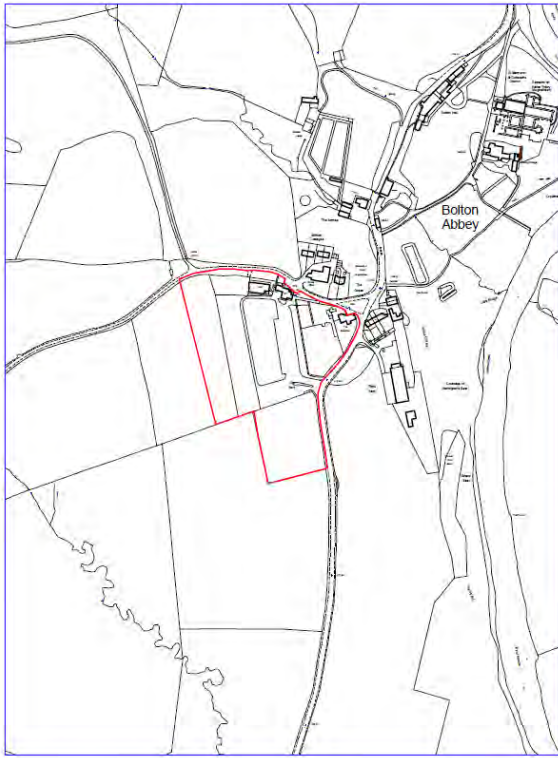
Work to date

- 2.18 In view of the foregoing, CST liaised with CDC with a view to securing an allocation for mixed use development at Bolton Abbey village, and established related evidence in line with CDC's steer to support its case for development by way of the following:
- 1 a Visitor Accommodation Needs Assessment by Frey Consulting (see Appendix 3)
 - 2 a Staff Accommodation Needs Assessment by Frey Consulting (see Appendix 4)
 - 3 an initial Heritage Assessment by ArcHeritage (superseded by later work by FAS)
 - 4 a preliminary Landscape Appraisal by Gillespies (superseded by later work by Gillespies)
 - 5 a Village Masterplan by RSL (see Appendix 5).
- 2.19 Liaison with Craven DC has also led to CST: reducing the scale of its development aspirations; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from views in the YDNP.
- 2.20 Related evidence established that:
- 1 there is little/no visitor accommodation within 5km of Bolton Abbey except a 4 star hotel & budget camp-site (i.e. there is a clear need for mid-range visitor accommodation such as self-catering units)
 - 2 there is a strong (business) need to accommodate staff locally (especially specialist foreign staff working for the Devonshire Hotels and Restaurant Group) and thereby help reduce CST's carbon footprint
 - 3 a tourism-led scheme would not have a significant impact on the heritage/landscape resource of the village and wider area provided that it contained suitable mitigation measures
 - 4 such development would accord with the National Planning Policy Framework (NPPF), which provides for heritage assets to contribute to sustainable communities, including their economic vitality (para 131), and also for all settlements in rural areas to contribute to housing growth (para 55)
 - 5 scheme benefits would include: public open greenspace; attractive focal point to settlement; improved visual amenity; increased awareness of the former Barnyard area (relating to the Tithe Barn); high quality accommodation for visitors/staff/others; renewable energy supply; enhanced sense of arrival/departure for visitors; heritage-themed learning-through-play facilities; one of few wet weather play facilities in the Dales area; sale of local/organic/estate produce; better access to/from Bolton Abbey Station; improved road safety; office or other work-space units; 27 extra full-time equivalent high quality/value jobs.
- 2.21 As such, CDC indicated in late 2015 that it would support an allocation at Bolton Abbey village. Despite this, the subsequent draft CDLP (April 2016) did not allocate the proposed site concerned.
- 2.22 It seems there were two reasons for this. Firstly, CDC's assessment of the proposed allocation site took place as part of the Strategic Housing Land Availability Assessment (SHLAA) process (i.e. before Bolton Abbey was included in the settlement hierarchy as a designated settlement),

and was not re-run prior to the publication of the draft CDLP. Secondly, Historic England (HE) felt the initial Heritage Assessment (HA) needed further work in order to ‘underpin’ the proposed Local Plan allocation.

- 2.23 HE therefore asked for additional work on the Heritage Assessment, and in particular that it consider a range of further heritage issues (e.g. the importance of the Romantic movement to Bolton Abbey becoming a popular visitor destination in the nineteenth century) and establish the environmental capacity of the CVA so as to be sure that development at Bolton Abbey is justified (see Appendix 6 for Historic England’s letter dated 26.11.15 and Appendix 7 for CST’s response dated 4.5.16).
- 2.24 Importantly, HE did not object in principle to development of the proposed village centre site but only raised reservations regarding design and site sensitivity relative to the uses proposed.
- 2.25 HE also suggested CST consider: the scope for more housing in Bolton Abbey village to help screen views of the unsightly car park and provide a better sense of arrival; a second site (c.1.75ha) for development at Bolton Bridge (as submitted to CDC’s SHLAA in 2015 for use as a farm shop etc.).
- 2.26 It seems that HE understood CST’s need to maintain its custodial role but wanted: the environmental capacity of the CVA to be established before any optioneering took place; a comprehensive, integrated long term development masterplan for the whole CVA - not just Bolton Abbey village; some of the latter’s development potential to be “decanted” to the less sensitive Bolton Bridge.
- 2.27 As such, CST appointed FAS to undertake a detailed and comprehensive Heritage Assessment in line with Historic England’s specification so as to establish the heritage capacity of the area in an objective way and inform the subsequent BADOAS and related masterplan.
- 2.28 CST also responded to the Draft CDLP in May 2016 (see Appendix 8 for CST’s response to Draft CDLP dated 31.5.16 and Appendix 9 for CST’s response to Draft YDNPLP dated 9.9.15) stating: support for inclusion of Bolton Abbey in the settlement hierarchy; need to allocate tourism-led mixed use development (including housing) on 3.9ha of flat land SW of Bolton Abbey village and 1.75ha of flat land SW of Bolton Bridge. Location plans for the proposed allocation sites at Bolton Abbey village and Bolton Bridge are shown in Figures 2.3 and 2.4, below:

Figure 2.3 Bolton Abbey village Development Site



Source: CST

Figure 2.4 Bolton Bridge Development Site



Source: CST

Summary

Proponent

- 2.29 The Chatsworth Settlement, known internally as the Devonshire Group, owns the land and estates of the Dukedom of Devonshire. Its main estates are in the vicinity of Chatsworth in Derbyshire and Bolton Abbey in North Yorkshire. It also runs visitor and other businesses on these estates, including: hotels, retail and catering outlets, forestry; livestock and; arable farming. It employs over 600 full time employees. It is committed to quality in all its activities and takes a responsible approach to development; as such, it measures performance in financial as well as social and environmental terms.
- 2.30 CST's Yorkshire Estate provides 160 full time equivalent jobs at Bolton Abbey and contributes c.£8m of enabled Gross Value Added to the local economy each year (Source: New Economics Foundation 2014). Its income funds socio-economic facilities (e.g. village shop/post office) and environmental management activities (e.g. architectural conservation) without grant support. CST thereby provides benefits far beyond "just the estate".

The Bolton Abbey Estate

- 2.31 The Bolton Abbey Estate comprises c.12,000 hectares owned by CST situated mostly in the southern part of the YDNP. This landholding includes the CVA and major tourist attractions such as: The Strid; Bolton Priory; Devonshire Arms Hotel; Cavendish Pavilion; Barden Tower.
- 2.32 Bolton Abbey is a settlement comprising Bolton Abbey village, Bolton Bridge and Bolton Abbey Station. It is situated on high ground west of the River Wharfe and located less than a mile north of the junction of the A59 and B6160. Bolton Abbey contains 58 properties, 39 of which are dwelling units.

Local Economy

- 2.33 CST makes a key economic contribution to the area by way of: employment (The Estate Office, Devonshire Arms Hotel, Cavendish Pavilion and Devonshire Fell Hotel employ 160 full-time equivalent (FTE) staff); commercial premises (farms; hotel; Estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; tea rooms; farm shop; café/restaurant); visitor economy (450,000 visitors to the CVA per year).

Core Visitor Area (CVA)

- 2.34 The CVA is a sensitive area. It is protected by several planning designations and managed in line with the Bolton Abbey Heritage Landscape Management Plan (BAHLMP) 1993. CST is exempt from some taxes in return for reasonable access across parts of the estate (e.g. the CVA) as well as an obligation for CST to maintain, repair and preserve the buildings and land that is covered by the agreement. However, related costs are rising, and now stand at c.£1.5m per year, thereby putting a strain on CST's ability to fund such management.

Estate Objectives

- 2.35 In 2012 CST reviewed its operation at Bolton Abbey in view of the need for business growth and the fact that there was no realistic prospect of planning permission for any large-scale development in the YDNP. Further to discussions with the YDNPA and CDC, this led to the Bolton Abbey Tourism Development Strategy 2014 which identified the main business strengths, weaknesses, opportunities and threats in the CVA as follows:

- **Strengths:** heritage assets, natural features and landscape quality; the CVA is the main strategic “southern gateway” for c.3.5 million visitors to the YDNP pa; provision of services for visitors; single land ownership/control by CST
- **Weaknesses:** lack of sense of arrival (and departure); visitor operation dependent on weather and school holidays; trips are brief, with little or no secondary spend; major planning constraints limit growth; high maintenance costs; loss-making entities (e.g. Post Office); staff cannot afford local house prices (i.e. long journeys to work); limited visitor accommodation; the CVA therefore has a limited and low value offer to visitors
- **Opportunities:** warmer winters; enhancement of Bolton Abbey village (within CDC) to provide new village green, pub, farm shop, play area, play barn, cycle hub, wedding barn and staff/visitor/market accommodation; entry sign (welcome to Bolton Abbey); link to Bolton Abbey Station, more/varied events
- **Threats:** wetter summers; limited staff/other accommodation; increased competition; rising costs; planning constraints; listed buildings at risk.

2.36 It concluded that CST should focus development in Bolton Abbey village, and in particular a site of 3.9ha in Craven District for tourism-led mixed use development so as to diversify its visitor offer and get visitors staying longer and spending more, thus generating the level of funding needed for the delivery of the BAHLMF.

Work to date

2.37 In view of the foregoing, CST liaised with CDC with a view to securing an allocation for mixed use development at Bolton Abbey village, and gathered related evidence (including a Visitor Accommodation Needs Assessment, a Staff Accommodation Needs Assessment, an initial Heritage Assessment, an initial Landscape Appraisal and a Village Masterplan) which established that:

- 1 there is little/no visitor accommodation within 5km of Bolton Abbey village except a 4 star hotel & budget camp-site (i.e. there is a need for “mid-range” visitor accommodation such as self-catering units and B&B accommodation)
- 2 there is a business need to accommodate staff locally (especially specialist foreign staff working for the Devonshire Hotels and Restaurant Group) and thereby help reduce CST’s carbon footprint
- 3 a well-designed scheme would not harm the sensitive character of the village
- 4 such development would accord with national planning policy, which provides for heritage assets to contribute to sustainable communities, including their economic vitality (para 131), and for all settlements in rural areas to contribute to housing growth

2.38 scheme benefits would include: public open greenspace; attractive focal point to settlement; improved amenity; increased awareness of the former Barnyard area; high quality accommodation for visitors/staff/others; renewable energy supply; enhanced sense of arrival/departure for visitors; heritage-themed learning-through-play facilities; one of few wet weather play facilities in the Dales area; sale of local/organic/estate produce; better access to/from Bolton Abbey Station; improved road safety; office or other work-space units; 27 extra full-time equivalent high quality/value jobs.

2.39 Liaison also led to CST: reducing the scale of its development aspirations; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from sensitive views.

- 2.40 Although CDC indicated in late 2015 that it would support an allocation at Bolton Abbey Village, the subsequent draft CDLP (April 2016) did not do so because: CDC's Strategic Housing Land Availability Assessment (SHLAA) process took place before Bolton Abbey was included in the settlement hierarchy (and was not re-run prior to the publication of the draft CDLP); Historic England (HE) felt the initial Heritage Assessment (HA) needed further work and was also uncomfortable with the proposed allocation.
- 2.41 HE therefore asked for extra work on the Heritage Capacity Assessment, and in particular that it consider further issues (e.g. the importance of the Romantic movement to Bolton Abbey becoming a popular visitor destination in the 1800s) and establish the environmental capacity of the CVA. HE also suggested CST consider: the scope for more housing in Bolton Abbey village to screen views of the car park and provide a better sense of arrival; a second site (c.1.75ha) for development at Bolton Bridge.
- 2.42 As such, CST appointed FAS to undertake a detailed Heritage Assessment in line with HE's specification so as to establish the heritage capacity of the area and inform the subsequent BADOAS and related masterplan.
- 2.43 CST also responded to the Draft CDLP in May 2016 stating: support for inclusion of Bolton Abbey in the settlement hierarchy; need to allocate tourism-led mixed use development (including housing) on 3.9ha of flat land in Bolton Abbey village and 1.75ha of flat land SW of Bolton Bridge.

3.0 **Need for Development**

- 3.1 As introduced in Section 2.0, CST currently faces a range of issues (“needs”) which impact on the value of the Core Visitor Area (CVA) as a key tourist destination in the Craven area and Yorkshire Dales National Park (YDNP).
- 3.2 CST seeks to address these needs by identified forms of development. This BADOAS reviews the capacity of the CVA to accommodate change arising from such development and assesses the effects of development to derive a preferred option for delivery. The needs of the CVA are outlined below.

Visitor Needs

- 3.3 The Bolton Abbey Tourism Development Strategy (October 2014) (see Appendix 2) describes how within the CVA, Bolton Abbey village acts as the southern gateway to the Yorkshire Dales National Park. Its built form, however, is largely dispersed, giving it an “anonymous” feel, with visitors tending to drive through the place without knowing what it is or where they are.
- 3.4 The Strategy describes how this lack of sense of arrival (and departure) for visitors is exacerbated by a number of factors, including: a lack of any ‘gateway’ buildings at the southern edge of Bolton Abbey village and; the presence of formal tree and hedgerow planting along the B6160, which obscures key views into the village and has a funnelling effect on passing traffic.
- 3.5 Bolton Priory represents the main visitor attraction within the CVA and, consequently, the majority of supporting tourist facilities and infrastructure is currently located towards this southern part of the CVA. This, in turn, provides the focus for the majority of visitors which, at peak periods (e.g. summer holidays and especially bank holiday weekends), causes issues of traffic congestion when the car parks, typically, become full. Whilst the previous Section of this report describes how CST has already tried to diversify and ‘disperse’ its tourist offer into other parts of the CVA (e.g. within the YDNP), major planning constraints have prevented these opportunities for diversification and growth from being realised.
- 3.6 As recognised in the Bolton Abbey Tourism Development Strategy, the CVA notably lacks “wet weather” facilities, as well as any type of play facility for children. This is a major omission and source of concern for a place historically synonymous with “fun” (e.g. the stepping stones by the ruins at Bolton Priory and riverside play) and one which is seeking to improve its offer to visitors (especially families). It also means that visitor trips to the Bolton Abbey Estate are typically brief in nature and even more so at times of poor weather.
- 3.7 The CVA is also severely lacking in visitor accommodation, other than a basic campsite (at Catgill Farm) and a 4 star hotel (at Bolton Bridge). There is little or no “mid-range” accommodation, such as self-catering apartments or Bed-and-Breakfast guesthouses, within a 5 km radius of Bolton Abbey (and not many more further afield – within a 10 km radius). This is despite there being a substantial demand for visitor accommodation in the area, with half of respondents surveyed as part of the Visitor Accommodation Needs Assessment (see Appendix 3) stating that they would use visitor accommodation in Bolton Abbey village if it was built. This lack of visitor accommodation represents a major opportunity cost to CST.

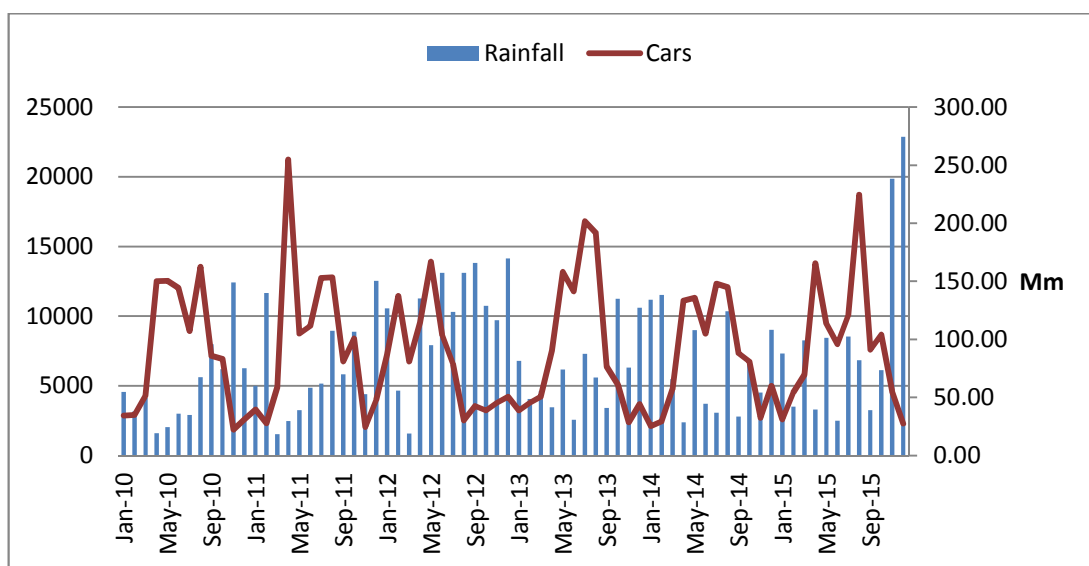
Business Needs

- 3.8 CST has confirmed that the main income streams for the Bolton Abbey Estate are, in descending order:
- 1 Rental incomes from existing residential, agricultural and commercial lets;

- 2 Tourist-related spend including car park charges as well shop and refreshment purchases and;
- 3 Shooting and fishing licences.

3.9 The income from tourist-related spend is currently very limited and this is largely due to the limited number of visitor attractions within the CVA (which would encourage prolonged stays and secondary spend) and the lack of visitor accommodation (which would facilitate longer trips). The lack of secondary spend is exacerbated in periods of poor weather and, indeed one of the major threats to the Bolton Abbey Estate is the vulnerability of its tourism operation to weather. This is demonstrated in Figure 3.1, below, which shows how over the last 5 years, extended periods of rainfall have suppressed visitor numbers.

Figure 3.1 Rainfall Effects on Visitor (Car) Numbers



Source: CST

- 3.10 Climate change is expected to increase periods of wet weather within the UK². Consequently, there is a real business need for the Estate to provide more wet weather facilities for its visitors if it is to become resilient to the effects of climate change. Based on the existing trends shown in Figure 3.1, failure to do so will mean that visitor numbers to the Bolton Abbey Estate will steadily diminish.
- 3.11 The Bolton Abbey Staff Needs Assessment by Frey Consulting (see Appendix 4) describes how the Bolton Abbey Estate lacks a sufficient supply of staff accommodation. In short, many staff cannot afford local house prices, leading to staffing issues and/or long journeys to work. This also represents a major opportunity cost to CST and is a particular issue for the Hotels and Restaurants side of the business (i.e. the Devonshire Arms Hotel, Cavendish Pavilion and Devonshire Fell Hotel), since it needs specialist staff (e.g. chefs and waiters with an international reputation brought in from other countries and therefore with no housing or housing ties within the local area). There is, therefore, a strong business case to accommodate staff locally.
- 3.12 Finally, the Bolton Abbey Estate continues to compete with other tourist destinations within the local area, many of which are able to provide a broader range of facilities and attractions (including ‘rainy day’ facilities) to appeal to a wider range of visitors.

² Source: Met Office 2016: From Global Carbon Budgets to Food Security

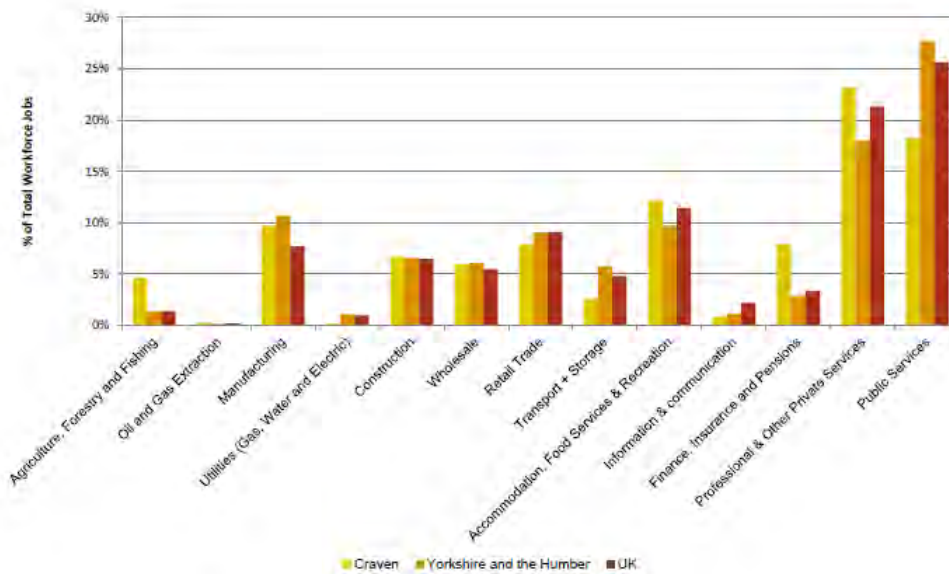
Conservation Needs

- 3.13 CST is responsible for funding the upkeep of a vast number of heritage assets within the CVA and undertaking a range of environmental management activities. It also provides and maintains services (e.g. toilets for public use) which are perceived as being “public” facilities (but which are not).
- 3.14 Whilst the costs associated with CST’s custodian role for the Bolton Abbey Estate is partly offset by the value of the inheritance tax exemption agreement and the agri-environmental agreements entered into by its tenants, it is without grant support and the availability of funding is falling under increased pressure from ever-increasing maintenance and repair costs. This, in turn, has led to a ‘conservation deficit’ at the Bolton Abbey Estate and the fall-out from this is already evident in the degradation of heritage assets such as Barden Tower. It also means that many of the existing, loss-making services within the Estate will be increasingly at risk, if additional income streams cannot be found (and if, as is likely, the funding of agri-environmental agreements faces increased uncertainty owing to austerity and Brexit). This would be to the detriment of visitors as well the community which lives and works within the Estate.
- 3.15 Whilst potential new development would provide much needed funding for the ongoing maintenance costs of the Bolton Abbey Estate, it is important to note that CST would not seek to justify all future development proposals as being ‘enabling’ development. This is on the basis that Bolton Abbey is included within the settlement hierarchy of both CDC and YDNP and that in general terms, the principle of development in this location is already considered to be sustainable and policy compliant.

Socio-Economic Needs

- 3.16 The Bolton Abbey Estate is a major tourist attraction within Craven District as well as the Yorkshire Dales National Park. To this end, it attracts 450,000 visitors each year and provides the basis of commercial success for many suppliers and holiday-based businesses (such as public houses, B&Bs, campsites and local shops and cafes) within the CVA and wider local area.
- 3.17 Craven District accommodated 23,960 FTE jobs in 2015, with the majority of these in the ‘professional and other private services’ sector:

Figure 3.2 Workforce Jobs by Sector in Craven (2015)



Source: Experian/Lichfields Analysis

- 3.18 The Accommodation, Food Services & Recreation sector accounts for a relatively high proportion (12.2%) of workforce jobs within Craven District. The Bolton Abbey Estate currently provides a range of high quality job opportunities which support these sectors and, to this end, currently has 160 FTE staff on its payroll. The Bolton Abbey Estate is, therefore, a major local employer and contributor to the local economy since many suppliers and businesses are dependent on its continued existence.
- 3.19 125 residential properties are located in the Bolton Abbey Estate, as well as 44 farms and 18 farm cottages. Many of the residents within the Estate are dependent on the shops, services and facilities available within the CVA and wider local area. As set out above, the Estate provides an important role by helping to subsidise these amenities in Bolton Abbey village (including the Post Office and village shop), thus supporting its role as a recognised local service centre within Craven District. For the Bolton Abbey Estate to function sustainably, this role not only needs to continue but additional facilities (such as play areas and new focal points) need to be provided within the Estate (particularly, within Bolton Abbey village as designated service centre), in order to consolidate the community who live and work there (in particular the subsidised village shop and Post Office in Bolton Abbey village).
- 3.20 Notwithstanding the foregoing, CST acknowledges that tenants of its properties tend to be older rather than younger, and would welcome the opportunity to provide homes for younger people and families whilst also retaining freehold of the land concerned. It currently provides subsidised housing for staff and would seek to continue to do so; it would be willing to consider the extension of such arrangements to others (and possibly even establishing a dedicated housing association or other).

Sustainability Needs

- 3.21 National planning policy requires that development is sustainable i.e. it takes into account a balance of social, economic and environmental factors. When assessed against these core principles, it is concluded that the sustainability credentials of the Bolton Abbey Estate are currently hindered by the following issues:

- 1 Economic factors – the limited visitor income streams to the Estate as well as the lack of secondary spend within the local area.
- 2 Social factors – a lack of facilities to expand the Estate’s employment base (and, in turn, the potential to provide further high quality local jobs) as well as limited opportunities to house Estate employees and those seeking to live locally. It also has a need to enhance the range of facilities available to local residents and visitors.
- 3 Environmental factors - limited income streams increasingly prevent the Estate from fully realising its custodian role with regard to environmental management activities and the preservation of historic buildings. The lack of staff accommodation within the Estate is contributing to an unduly large Carbon footprint, as result of some staff travelling long distances in order to get to their place of work.

3.22 These sustainability needs will have to be addressed by CST if, in line with the principles of sustainable development, the Bolton Abbey Estate is to function and be enjoyed as a key tourist destination, for generations to come.

Overall Need for Development

3.23 All of the issues set out above currently prevent the CVA – and the wider Bolton Abbey Estate - from realising its full potential as a tourist destination and, more pertinently, is putting existing heritage assets, as well as other facilities and services within the Estate, at risk.

3.24 To ensure the future viability and financial resilience of the Estate, these issues need to be addressed through the provision of new development. Accordingly, CST’s current Business Plan identifies the need for:

“... the enhancement of Bolton Abbey (within CDC) to provide a new village green, pub, farm shop, play area, play barn (i.e. wet weather facility)...staff / visitor / market accommodation, entry side (welcome to Bolton Abbey), link to Bolton Abbey Station...and visitor centre / cycle hub”.

3.25 Sections 7.0 and 8.0 of the BADOAS consider where and how this type of development would be best provided for within the CVA.

Summary

3.26 The CVA is a major tourist destination within Craven District and YDNP; a significant contributor to the local economy and; a major source of employment in the area. However it faces a number of challenges by way of the following needs and issues:

- 1 **visitor needs:** no sense of arrival (or departure) for visitors; no wet weather facilities; no play facilities; little or no secondary spend by visitors; lack of “mid-range visitor accommodation within a 5km radius of Bolton Abbey
- 2 **business needs:** vulnerability of visitor operation to increased wet weather facility/climate change; limited staff accommodation (especially for hotels) leading to staffing issues and long journeys to work; increased competition from other local attractions
- 3 **conservation needs:** the threat of diminished visitor income threatens the ability of CST to provide its (self-funded/non-grant supported) on-going programme of environmental management and architectural conservation (i.e. CST faces a “conservation deficit”)

- 4 **socio-economic needs:** Craven District has a need for high quality jobs; the post office in Bolton Abbey village is currently subsidised by the Estate and therefore needs a greater critical mass to help support it
- 5 **sustainability needs:** CST faces limited income streams and opportunity costs both now and in the long term, a lack of facilities (especially play facilities) for the community, threats to CST's custodial environmental management role and an increased carbon footprint caused by long journeys to work by staff.

3.27 All of these needs currently prevent the CVA – and the wider Estate – from realising its potential as a tourist destination. They are also putting existing heritage assets, as well as other facilities and services within the Estate, at risk.

3.28 To address these needs, CST seeks to provide “a new village green, pub, farm shop, play area(s), play barn (wet weather facility...staff/visitor/market accommodation...and cycle hub” in Bolton Abbey and thereby benefit both visitors and the local community both now and in the long term.

4.0 **Approach & Methodology**

Study Area

- 4.1 The study area comprises the Core Visitor Area (CVA) from Bolton Bridge in the south to Barden Bridge in the north (see Figure 2.1 for Plan of CVA).
- 4.2 The study area includes 2 sites owned by CST which have been identified as suitable and available for development:
- 1 a 3.9ha site (flat land) in the south-west of Bolton Abbey village (as submitted to CDC in 2014 for consideration as part of its allocation process); most of this site (c.3.2ha) is already in use (for housing/parking/retail) and none of it is subject to flooding; it contains 3 ingress/egress points onto the local highway network (including the main car park entrance/exit onto the B6160)
 - 2 a 1.75ha site (flat land) in the south-west of Bolton Bridge (as submitted to CDC in 2015 for consideration as part of its allocation process); this site comprises semi-improved pasture and is currently used for grazing; a small part of the site has some localised flood risk issues.

Approach

- 4.3 As set out in Section 3.0, CST faces several issues at Bolton Abbey and has specific business needs which must be addressed through the provision of new development. Whilst CST has assumed that such development must take place at Bolton Abbey village, an objective appraisal (i.e. this study) must ask firstly whether this is right, broadly speaking, and secondly what form such development should take. As such, it is necessary to:
- 1 Define and assess “strategic” options (i.e. broad locations) for development
 - 2 Define and assess “detailed” (or “sub”) options (i.e. indicative layout and other considerations relating to the preferred strategic option) for development.
- 4.4 As such, and further to liaison with Historic England (HE), CDC and YDNP, it was considered that: this study needs to be robust, comprehensive and objective; the related approach and methodology to assessing options needs to be systematic and objective, i.e. similar to that for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA); the team needs to be multi-disciplinary; liaison with external stakeholders (both statutory consultees and the public) needs to inform the definition and assessment of development options; the project manager needs to be an environmental planner with experience and expertise in managing and co-ordinating SEA, EIA and Appropriate Assessment (AA) projects.
- 4.5 The specific methodologies for respective disciplines (e.g. heritage, landscape) are further outlined in the related sections concerned later in this report.

Study Team

- 4.6 In view of the foregoing, the study team for this multi-disciplinary project comprised:
- Lichfields: project management/planning /flood risk/infrastructure/ environmental planning/liaison/report writing
 - Rural Solutions Limited (RSL): planning/masterplanning/design/liaison
 - Steel Consulting: planning/liaison
 - FAS Heritage (“FAS”): heritage

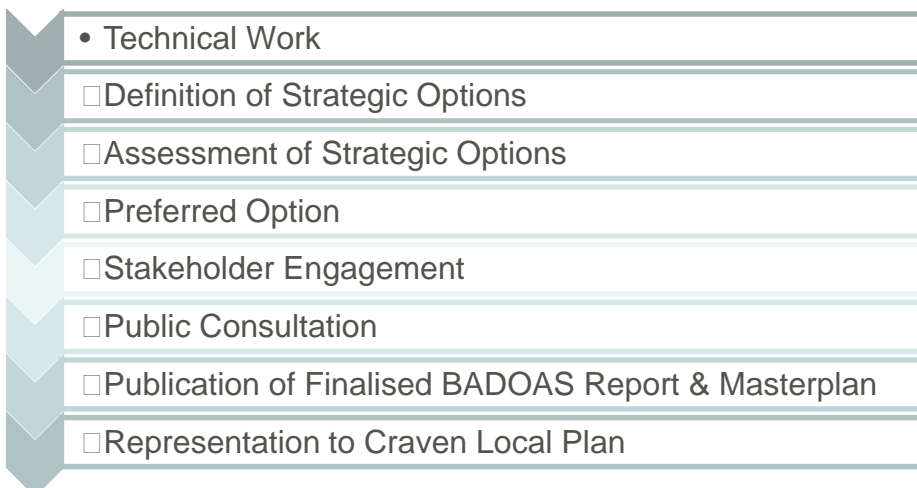
- Bill Lever Ecology (BLE): ecology
- Gillespies: landscape and visual assessment/design
- Arup: traffic management
- Frey Consulting: staff and visitor accommodation needs

4.7 All team members have considerable expertise and experience in environmental planning, GIS, masterplanning and/or working with external stakeholders. In particular, Lichfields (as project manager) is conversant with EIA/SEA methodology and terminology (i.e. significance, magnitude and sensitivity), and therefore well-placed to determine the sensitivity of receptors, predict magnitude of impacts, assess the significance of related effects and prescribe mitigation measures as appropriate.

Study Process

4.8 The study process has comprised a number of steps taken in relation to the preparation process for the Draft CDLP as shown below in Figure 4.1 below.

Figure 4.1 Study Process



Consultation

4.9 The preparation of this BADOAS has been informed by extensive consultation with key stakeholders and members of the public, including:

- 1 A stakeholder presentation and workshop attended by Craven District Council, Historic England and the YDNPA, on Monday 11th July 2016;
- 2 Distribution of a letter to all residential and commercial properties in the Bolton Abbey Estate, informing residents and local business operators of the potential development options and inviting them to a public exhibition. This invitation was extended to local interest groups (e.g. neighbouring Parish Councils).
- 3 A public exhibition hosted by Lichfields and attended by CST and its consultant team. This took place on Tuesday 26th July 2016 between 3:00pm and 7:00pm at the Bolton Abbey Village Hall.
- 4 Opportunities for all stakeholders to comment on the potential development options via feedback forms at the consultation event.

5 Opportunities for all stakeholders to view comment on the potential development options via a bespoke website³

4.10 The principal issue raised as part of the public exhibition related to potential highways impacts from the potential development options. In direct response to this, CST appointed Arup to undertake a Transport Statement so as to inform detailed designs and ensure traffic solutions in due course.

4.11 Other key matters raised at the public exhibition related to; concern for potentially adverse impacts on the Estate's landscape and historic character; the potential for competition between existing and proposed facilities in the local area and; amenity concerns relating to potential development options. A summary of all consultation feedback from the public exhibition is included in Appendix 10.

Summary

Study area

4.12 The study area comprises the CVA from Bolton Bridge in the south to Barden Bridge in the north. This area includes 2 sites owned by CST which have been identified as suitable and available for development:

- 1 a 3.9ha site (flat land) in the south-west of Bolton Abbey village which is already mostly in use for housing/parking/retail with direct access onto the B6160; and
- 2 a 1.75ha site (flat land) in the south-west of Bolton Bridge which is currently used for grazing and has some related flood risk issues.

Approach

4.13 This study comprises a robust, objective and systematic appraisal to firstly define and assess "strategic" options (i.e. broad locations) for development, and then secondly consider "detailed" options (for the preferred strategic option).

4.14 As such, the related approach to assessing options was similar to that for Environmental Impact Assessment (EIA) in so far as the team sought to identify and evaluate the capacity and sensitivity of receptors, predict broad magnitude of impacts, assess the significance of related effects and prescribe mitigation measures.

Study Team

4.15 The study team has been multi-disciplinary, comprising:

- Lichfields: project management/planning/flood risk/infrastructure/ environmental planning/liaison/report writing
- Rural Solutions Limited ("RSL"): planning/masterplanning/design
- Steel Consulting: planning/liaison
- FAS Heritage ("FAS"): heritage
- Bill Lever Ecology ("BLE"): ecology
- Gillespies: landscape and visual assessment/design
- Arup: travel management

³ <http://nlppanning.com/public/Bolton-Abbey/Bolton-Abbey.html>.

- Frey Consulting: staff and visitor accommodation needs

Study Process

- 4.16 The study process has comprised a number of steps taken in relation to the preparation process for the Draft CDLP as shown below:
- 1 Technical work
 - 2 Definition and assessment of strategic options
 - 3 Selection and initial design of preferred option
 - 4 Stakeholder engagement and public liaison.

Consultation

- 4.17 The preparation of this BADOAS report has been informed by extensive consultation with key stakeholders and members of the public, including:
- 1 A stakeholder presentation and workshop attended by Craven District Council, Historic England and the YDNPA, on Monday 11th July 2016;
 - 2 Distribution of a letter to all residential and commercial properties in the Bolton Abbey Estate, informing residents and other interest parties of the potential development options and inviting them to a public exhibition.;
 - 3 A public exhibition hosted by Lichfields and attended by over 60 people, on Tuesday 26th July 2016;
 - 4 Opportunities for all stakeholders to comment on the potential development options via feedback forms; and
 - 5 Opportunities all stakeholders to view comment on the potential development options via a bespoke website.
- 4.18 The principal issue raised as part of the consultation process related to potential highways impacts from the potential new development options. In direct response to this, CST appointed Arup to undertake a Transport Statement so as to inform detailed designs and ensure traffic solutions in due course.

5.0 **Planning Policy Context**

- 5.1 The development options to be considered as part of this study must pay due regard local and national planning policy if a Local Plan allocation policy and/or planning permission is to be achieved.
- 5.2 This planning policy review has led to the identification of a number of key issues of relevance to the BADOAS and the consideration of any potential development options for the CVA. These are summarised below.

National Planning Policy Framework (“NPPF”)

- 5.3 The NPPF provides national policy support for the conversion of buildings in rural locations, and, at paragraph 55, states that housing should be located where it will enhance or maintain the vitality of rural communities. New isolated homes in the countryside are to be avoided unless there are special circumstances, such as the exceptional quality or innovative nature of its design.
- 5.4 The NPPF also provides clear support for the use of previously developed land and looks to promote mixed-use development (paragraph 17 and 69/70).
- 5.5 In transport terms, the NPPF accepts that opportunities for sustainable transport options will differ from urban to rural areas (paragraph 34, final sentence). However, it also seeks to locate developments involving significant movement so as to minimise the need to travel.
- 5.6 Paragraphs 100 and 103 look to direct development away from areas of flood risk and also ensure that new development does not increase flood risk elsewhere.
- 5.7 Paragraph 116 negates the potential for major development in National Parks, with paragraph 118 presuming against development which is likely to adversely affect, inter alia, Sites of Special Scientific Interest, Special Protection Areas as well as Special Areas of Conservation.
- 5.8 The NPPF provides a positive framework for the conservation of heritage assets, which includes the need to consider the benefits of conservation of assets in terms of the economy and contribution to sustainable communities. In particular, paragraph 137 provides support for development within the setting of heritage assets which helps better reveal their significance.

Yorkshire Dales Local Plan 2015 - 2030 (Adopted December 2016)

- 5.9 Policy SP1 defines what is considered to be sustainable and unsustainable development in the context of the National Park.
- 5.10 Policy SP2 states that development must conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park and promote opportunities for the understanding and enjoyment of its special qualities.
- 5.11 Policy SP3 identifies Bolton Abbey village as a Service Village and therefore recognises it as sustainable and appropriate place to accommodate development.
- 5.12 Policy SP4 sets out the requirement for high quality development to be delivered in the National Park, in terms of design, transport, human safety & amenity and environmental safeguarding.
- 5.13 Policy SP5 only allows major development in the National Park in exceptional circumstances.

- 5.14 Policy L1 – states that development proposals affecting a designated heritage asset will be permitted provided they conserve or enhance its significance.
- 5.15 Policy L2 allows for the conversion of ‘traditional buildings’ (e.g. barns) to residential high intensity, visitor accommodation and employment uses within existing settlements and building groups, or other suitable roadside locations. It similarly allows for the conversion of more isolated buildings for low-intensity uses, where they would not result in a material alteration to the exterior of the building or its surrounds. Any such conversions to a dwellinghouse for continuous occupation are to be subject to a local occupancy restriction.
- 5.16 Policy C1 identifies new housing sites and whilst none are identified at Bolton Abbey, the policy states that housing development will be permitted on acceptable sites within the housing development boundaries of Local Service Centres and Service Villages.
- 5.17 Policy C2 allows for exception sites to be delivered for affordable housing. Given, however, that CST wishes to bring forward development in order to provide additional revenue streams, it is noted that affordable housing would not do this.
- 5.18 Policy C13 presumes against the development of designated areas of ‘important open space’. This includes substantial areas of Bolton Abbey village and Bolton Bridge.
- 5.19 Policy BE1 allows for the expansion or redevelopment of existing business uses or the development of unallocated land for new small-scale business or employment uses at Bolton Abbey.
- 5.20 Policy BE2 supports in principle rural land based enterprises.
- 5.21 Policy T3 allows for the development of new sustainable self-catering visitor accommodation, subject to various criteria being met.
- 5.22 Policies T4 and T5 provide support for the delivery of visitor led development including indoor visitor attraction. However, this needs to be considered against the constraints to development provided by Policies SP2 and SP5 (see above).
- 5.23 Policy W1 presumes against development proposals that would be likely to result in an adverse effect upon, inter alia, the ecological networks identified on the Policies Map. This includes SSSIs as well as the defined Special Protection Areas and Special Areas of Conservation.
- 5.24 Policy CC1 provides support for small scale renewable and low carbon technologies where they contribute to meeting the energy needs of communities and businesses in the National Park. Any such proposals must comply with Policy SP4 (see above).
- 5.25 Policy CC2 states that all developments should be located in areas identified as being at the lowest risk of flooding.

National Park Management Plan (Revised March 2016)

- 5.26 The National Park Management Plan (“NPMP”) is a joint strategy for the Yorkshire Dales National Park which is being delivered by a partnership of 14 private and public sector agencies, including Craven District Council, North Yorkshire County Council, Dales Rural Estates Network and Historic England. It sets out the vision, strategic policies and outcomes for the National Park over the long term and guides the delivery of National Park purposes. The NPMP sets out a number of special qualities that relate to the public enjoyment purpose of the Park, including natural beauty; wildlife; cultural heritage and; enjoying the experience of being here.

- 5.27 The NPMP specifically identifies Bolton Abbey as forming part of the cultural heritage of the National Park, helping to serve “*powerful reminders of periods of dominance by large estates and religious houses*”.

Craven District Local Plan (1999)

- 5.28 Given the historic nature of the plan (seventeen years since adoption) and our review of it (as part of another piece of work for CDC), it is considered there are no policy implications of relevance to the BADOAS study.

Emerging Craven District Local Plan (Second Pre-Publication Draft, 2016)

- 5.29 Policy SP4 identifies Bolton Abbey village as a named settlement in the Local Plan hierarchy. This provides a supportive policy context for the location of development within the village (and nearby Bolton Bridge, which is considered either ‘within’ or functionally related to Bolton Abbey village).
- 5.30 Policy H1 allows for new housing development on unallocated sites where it would represent the infilling, rounding off or extension of a settlement.
- 5.31 Policy EC1 provides support or employment/economic development, including proposals that will benefit the rural economy. The draft policy also requires such development to not give rise to unacceptable adverse effects, including in terms of highways and amenity impacts.
- 5.32 Policy EC3 seeks to grow the rural economy. As part of that, the draft policy provides support for development proposals that will benefit the local economy, environment and quality of life.
- 5.33 Policy EC4 provides specific support for tourism-led development, including ‘at Bolton Abbey/Bolton Abbey Railway Station’. It states that tourism growth will be achieved by:
- 1 Enabling established destinations to become even better through the development of new and improved facilities;
 - 2 Helping up-and-coming destinations to establish themselves and become successful;
 - 3 Recognising opportunities to bring tourism into new areas that have untapped potential, including new types of activity and new destinations;
 - 4 Acknowledging the range of sporting, recreational, cultural and leisurely activities that people may wish to engage in as tourists;
 - 5 Ensuring that tourism development provides easy access to the network of public transport services, footpaths and cycle routes (including canal towpaths) in the area and, wherever possible, secures the improvement and expansion of that network;
 - 6 Realising opportunities, where they arise, to secure additional knock-on benefits from placing tourism development and other forms of business and commercial development together in the same location, thereby achieving synergies of co-location; Supporting, in principle, proposals for tourism development and for achieving synergies of co-location, in the following key locations for tourism development identified on the policies map:
Bolton Abbey/Bolton Abbey Railway Station
Broughton Hall Estate
Ingleton – viaduct area
Gargrave – canal area
Skipton – canal and railway station area

Bentham – railway station area

Hellifield – railway station area

Embsay – railway station area

- 7 Supporting sustainable tourism development of the committed tourism development opportunity site on land to the west of Hellifield, in accordance with broad requirements set out on the policies inset map;
- 8 Ensuring that the benefits of tourism growth – to the economy, environment and quality of life – are felt as broadly as possible within local communities;
- 9 Securing appropriate community use of private facilities provided as part of tourism developments, including sports, leisure, recreational and cultural facilities, shops and open spaces;
- 10 Encouraging local communities to promote their own sustainable tourism projects through neighbourhood planning;
- 11 Proposals of the type described above will be supported provided they accord with all relevant local plan policies and any relevant neighbourhood plan policies, and will help to achieve sustainable development.

5.34 Policy ENV1 (criteria D and E) states that any development within the plan-area which is outside of the settlement / adversely affects the Yorkshire Dales National Park should be avoided.

5.35 Policy ENV2 seeks to conserve and enhance the historic environment in Craven and presumes against proposals which would give rise to unjustified harm.

5.36 Policy ENV3 requires new development to provide good design and, as part of this, proposals should respect their surrounding context in terms of density, scale, height and massing. It also require high quality materials (sourced locally) to be used wherever possible.

5.37 Policy ENV6 seeks to avoid and alleviate flood risk by locating development in areas of low flood risk wherever possible and always in areas with the lowest acceptable flood risk.

Summary

5.38 The development options considered must be in line with local and national planning policy to secure a Local Plan allocation or planning permission.

National Planning Policy Framework (NPPF)

5.39 The NPPF provides support for the conversion of rural buildings in rural locations and states that housing should be located where it will enhance or maintain the vitality of rural communities (para 55). The NPPF also provides support for the use of previously developed land and promotes mixed-use development (paras 17 and 69/70).

5.40 The NPPF accepts that opportunities for sustainable transport options will differ from urban to rural areas (para 34) but also seeks to locate developments involving significant movement so as to minimise the need to travel. It looks to direct development away from areas of flood risk and ensure that new development does not increase flood risk elsewhere (paras 100 and 103).

5.41 The NPPF negates the scope for major development in National Parks (para 116), and presumes against development likely to harm Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) (para 118).

5.42 The NPPF provides a positive framework for the conservation of heritage assets, including the need to consider related economic benefits and the contribution to sustainable communities. It also provides support for development within the setting of heritage assets which helps to reveal their significance (para 137).

Yorkshire Dales Local Plan 2015 – 2030 (adopted December 2016)

5.43 Policy SP1 – defines what is considered to be sustainable and unsustainable development in context of the National Park;

5.44 Policy SP2 - states that development must conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park and promote opportunities for the understanding and enjoyment of its special qualities;

5.45 Policy SP3 – sets out a spatial strategy for the location of new development. It identifies Bolton Abbey as a service village and, in doing so, recognises it as sustainable and appropriate place to accommodate development;

5.46 Policy SP4 – sets out the requirement for high quality development to be delivered in the National Park, in terms of design, transport, human safety & amenity and environmental safeguarding;

5.47 Policy SP5 – only allows major development in the National Park in exceptional circumstances;

5.48 Policy C1 – identifies new housing sites and whilst none are identified at Bolton Abbey, the policy states that housing development will be permitted on acceptable sites within the housing development boundaries of Local Service Centres and Service Villages;

5.49 Policy C2 - allows for exception sites for affordable housing;

5.50 Policy C13 - presumes against the development of designated areas of ‘important open space’ (including areas in Bolton Abbey village and at Bolton Bridge);

5.51 Policy L1 – states that development proposals affecting a designated heritage asset will be permitted provided they conserve or enhance its significance;

5.52 Policy L2 allows for the conversion of ‘traditional buildings’ (e.g. barns) in certain circumstances;

5.53 Policy BE1 – allows for the expansion or redevelopment of existing business uses or the development of unallocated land for new small-scale business or employment uses at Bolton Abbey;

5.54 Policy BE2 - supports in principle rural land based enterprises; Policy T3 – allows for the development of new sustainable self-catering visitor accommodation, subject to various criteria being met;

5.55 Policies T4 and T5 - provide support for visitor led development including indoor visitor attractions (though this needs to be considered against the constraints provided by Policies SP2 and SP5 above);

5.56 Policy W1 - presumes against development likely to harm the ecological networks identified on the Policies Map (including SSSIs, SPAs and SACs); and

5.57 Policy CC2 - states that all developments should be located in areas of lowest flood risk.

National Park Management Plan (Revised March 2016)

- 5.58 The NPMP sets out the vision, strategic policies and outcomes for the National Park over the long term and guides the delivery of National Park purposes.
- 5.59 The NPMP sets out a number of special qualities that relate to the public enjoyment purpose of the Park, including natural beauty; wildlife; cultural heritage and; enjoying the experience of being here. Bolton Abbey is identified as forming a significant part of the National Park's cultural heritage.

Craven District Local Plan (CDLP) 1999

- 5.60 Given the historic nature of the plan (seventeen years since adoption) and our review of it, there are not considered to be any policy implications of relevance to BADOAS study.

Emerging Craven District Local Plan (2nd Publication Draft) 2016

- 5.61 The Emerging CDLP identifies Bolton Abbey village within its settlement hierarchy. This provides a supportive policy context for the location of development within the village (or nearby Bolton Bridge, which may be considered either 'within' or functionally related to Bolton Abbey village).
- 5.62 Policy EC1 supports proposals for employment/economic development, including proposals that will benefit the rural economy.
- 5.63 Policy EC3 looks to diversify and grow the rural economy and, as part of that, support development proposals that will benefit the local economy, environment and quality of life;
- 5.64 Policy EC4 provides specific support for tourism-led development, including 'at Bolton Abbey/Bolton Abbey Railway Station'. Draft Policy EC4 also; supports established destinations being enhanced through the development of new and improved facilities; recognises opportunities to bring tourism into new areas of untapped potential and; acknowledges the range of sport, recreational, cultural and leisurely activities that people may wish to engage in as tourists;
- 5.65 Policy ENV1 (criteria D and E) states that any development outside the settlement which harms the Yorkshire Dales National Park should be avoided.
- 5.66 Policy ENV2 seeks to conserve and enhance the historic environment in Craven and presumes against proposals which would give rise to unjustified harm.
- 5.67 Policy ENV3 requires new development to provide good design and, as part of this, proposals should respect their surrounding context in terms of density, scale, height and massing. It also requires high quality materials (sourced locally) to be used wherever possible.
- 5.68 Policy ENV6 seeks to avoid and alleviate flood risk by locating development in areas of low flood risk wherever possible.

6.0 **Capacity**

Heritage

6.1 FAS Heritage was commissioned to prepare an assessment of the heritage significance and historic character of land at Bolton Abbey (Craven District and the Yorkshire Dales National Park), to inform this BADOAS report and the related Masterplan. The assessment was prepared in consultation with Historic England (HE) and in line with HE's related specification for the work, on behalf of CST. See Appendix 11 for the full Heritage Capacity Assessment report concerned.

6.2 It has been recognised that the heritage significance of Bolton Abbey village cannot be understood in isolation, and so the Heritage Capacity Assessment (HCA) considers a stretch of Wharfedale that extends from Bolton Station in the south (NGR: SE 060 533) to Barden Tower in the north (NGR: SE 050 571).

Statutory and Non-statutory Designations

Scheduled Monuments

6.3 The Priory remains and part of the village are designated as Bolton Priory Scheduled Monument. The Scheduling includes a detached area which incorporates the remains of a medieval reservoir that served the priory mill. Also scheduled is the area around Barden Tower, including the tower, and earthwork remains of the associated gardens.

Listed Buildings

6.4 The wider study area contains 35 Listed Buildings. The Listed Buildings cluster at the historic focal points of settlement at activity, at Bolton Priory, Bolton Abbey village, Barden Tower, with more dispersed farmhouses within the wider landscape.

Conservation Area

6.5 Bolton Priory and part of Bolton Abbey village is designated as a Conservation Area.

Historic Landscape Zones

6.6 Building on the understanding of historic and current use of the landscape as set out in the full HCA report, a series of historic landscape character zones have been identified, described and assessed in terms of their significance. These zones have been defined according to landscape character, historic use and contribution to the overall understanding and appreciation of the wider landscape. Detailed descriptions are provided in the HCA, and the contribution of each to the exceptional significance of the landscape as a whole is set out (see Table 6.1 below).

Table 6.1 Summary of Historic Landscape Zones

Zone no.	Zone	Description
1	Bolton Station and modern A59	Contains the 19th-century railway and station that formerly provided links to Skipton and Ilkley and historically a key arrival point for tourists. Bounded by the modern A59 which has severed the historic road link between the station and Bolton Bridge.
2	Bolton Bridge and historic approach roads	The settlement at Bolton Bridge provided the historic gateway to the core visitor area, and the Devonshire Arms would have been a landmark for travellers. Sense of arrival now diminished by the modern A59, but the inn is still a prominent building. Zone 2 includes the former approach roads and land extending south to the A59.
3	Low Bridge Field	Land stretching from Bolton Bridge to Bolton Abbey on either side of the Wharfe, representing the low approaches to the priory and village, via the riverside footpaths (including the long distance Dales Way). Views afforded along the river, and important to the setting of the Devonshire Arms and Bolton Bridge.
4	Pastoral landscape/ medieval ridge and furrow	Pastoral landscape surrounding the settlements of Bolton Bridge, Bolton Abbey, providing rural landscape setting. Earthwork survival of medieval field systems. The gentle meadow and pasture provides a contrast with the wilder uplands. Fields continue on the gentler slopes of the valley characterised by stone walls and dispersed stone barns and farmsteads.
5	Storiths	Large area of ancient field systems east of the core visitor area, characterised as 'piecemeal enclosure'
6a	Bolton Abbey - Priory precinct	Core precinct of the medieval priory, including the church and claustral ranges, earthworks of the barkhouse and tannery, precinct wall. Significant for archaeological value for the aesthetic value that drew the Picturesque and Romantic movements.
6b	Bolton Abbey village	Village of Bolton Abbey, which largely retains its 18th century layout and form. Buildings cluster around the road junction formerly known as the Upper Green. Includes the former barnyard area and the Great Barn.
6c	Bolton Abbey - Hind House Close	Now subsumed into the pastoral landscape and including modern features of the carpark, shop and village hall, this formerly represented part of the outer precinct area of the priory known as 'Hind House Close'. The area would have been occupied by the agricultural works, or 'hinds' and the livestock.
7	The Stank	Above the medieval field systems, an area of rougher grassland historically known as The Stank. Distinct, wilder area that contrasts with

		the gentler valley below. Contains 7a, which are the earthworks of a possible medieval grange.
8	Sand Holme	Steep descent from the elevated road to the valley floor, and including key views towards the priory from the Hartington Seat and representing the main vehicular approach to the Cavendish Pavilion.
9	Cavendish Pavilion and tourist facilities	Hub of tourist facilities at Cavendish Pavilion, including the historic lodge, the wooden bridge, car park and area of informal recreation east of the river. Active and busy area that has been the location of tourist facilities, and a key crossing point, since the 19th century.
10	Bolton Priory to the Cavendish Pavilion	Area extending from the stepping stones at the priory to the Cavendish Pavilion, representing a relatively low-lying woodland walk. Includes a sequence of intended views along the valley through opened areas in the woodland. Pickles Gill had 19th-century paths crossing the gill, now lost.
11a	Cavendish Pavilion to Barden – Strid Wood	Strid Wood, extending north from the Cavendish Pavilion/Lodge to Barden. Central area that was laid out with paths and seats in the early 19th century, and contains the more dramatic, sublime landscape that inspired the Romantic movement. These include the Strid itself. Key views afforded towards Barden Tower from the Pembroke Seat.
11b	Valley of Desolation	Valley of Desolation was so called after a deluge stripped the valley in 1826. Paths have been laid out along the valley, and formed a focus for artists in the 18th and 19th centuries.
12	Strid Wood Car Park and tourist facilities	Strid Wood with café, car park and tourist facilities represents another hub within the core visitor area. Easy point of access to the path network, and to the Pembroke Seat. The woodland is a distinct element in the landscape, within which a school and caravan site are largely screened.
13	Bolton Park	Historic deer park enclosed in the 17th century. Still legible as a historic parcel of land with stone walls surviving, but becoming less so due to tree cover and bracken growth, due to lack of ongoing maintenance as a deer park.
14a	Strid Wood to Barden	Include the open ground that frames views of the tower from the south. Includes the historic Barden Bridge, and areas of parking east of the river.
14b	Barden Tower	Includes the core area of Barden Tower and associated below ground remains.
15	Ascent to Simon's Seat	Continuing on from the Valley of Desolation, rising moorland towards Simon's Seat. These are the 'noble moorlands' described by Ruskin, and the backdrop to many of the 18th and 19th

	century landscape paintings.
--	------------------------------

Source: Heritage Capacity Assessment, FAS

Assessment of Heritage Capacity

6.7 The historic landscape zones vary in their capacity to accommodate development without causing harm to the heritage significance of the landscape, and Table 6.2 summarises the results of the assessment on a zone by zone basis. As the function of the study is to consider the potential for development, the areas beyond the core area – The Stank (Zone 7), Storiths (Zone 5) and the Ascent to Simon’s Seat (Zone 15) are not considered further.

Table 6.2 Summary of Heritage Capacity

	Capacity/opportunities for new development
	Capacity/opportunities for new development, subject to detailed design taking into account heritage assets
	Capacity/opportunity for development, restricted to existing settlement form or structure
	Little capacity for development, beyond enhancement of existing structure and heritage assets

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
	1 – Bolton Station and modern A59	Lack of connection with the remaining area other than footpath/underpass Divided by the modern A59	Has the capacity to absorb development, but the modern A59 will remain a significant obstacle Link with Bolton Bridge could be enhanced Possible link of railway to Skipton – gateway site
	2 – Bolton Bridge and historic approach roads	Inappropriate development has potential to harm views from the river (Zone 3) and setting of historic Devonshire Arms Settlement form is focussed around the former junction – future development should not be allowed to ‘sprawl’ to N	Has the capacity to absorb development, if carefully located and designed. Area of the stump road detracts from current character and represents a key opportunity for improvement Land south of the former main road could accommodate change without harming key areas of heritage significance Opportunities to improve setting of the bridge/Devonshire arms and views through thinning/planting

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
			Opportunities to better mark the start of the Bolton Abbey/Devonshire offer though development and signage
	3 – Low Bridge Field	Open landscape and footpaths characterises the zone, and so vulnerable to inappropriate development	<p>Little or no capacity for new development</p> <p>Better tree planting and management to reflect softer landscape</p> <p>Strengthen footpath links to Bolton Abbey</p>
	4 – Pastoral landscape/ medieval ridge and furrow	Zone characterised by rural character, which would be harmed by inappropriate and intrusive development	<p>Development opportunities offered by, and restricted to, existing farmsteads, barns</p> <p>Opportunity to enhance legibility and understanding of medieval water management NW of the village</p>
	6a – Bolton Abbey - Priory precinct	<p>Views of and from the ruins key to significance, so vulnerable to unsympathetic or inappropriate change</p> <p>Cost of maintaining the monastic ruins</p> <p>Conflict of uses between Church, Hall and public recreation</p> <p>High archaeological potential</p> <p>Need to find suitable uses for existing buildings and to accommodate extra space requirements for the church</p>	<p>Little or no capacity to absorb change without affecting aesthetic value</p> <p>Future development would need very careful consideration and justification</p>
	6b – Bolton Abbey village	<p>Setting and views of historic buildings vulnerable to inappropriate change</p> <p>Archaeological potential of the area</p> <p>Vitality of the Post Office and other villages services</p> <p>Car Parking – too much/too</p>	<p>The village has the capacity to absorb some development without harming the heritage significance of the core visitor area</p> <p>Opportunity to enhance the legibility of medieval layout, improve visitor experience</p> <p>Area W of road/modern car park provides opportunity for new</p>

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
		<p>little – better screening</p> <p>Gateway marker to the Village and rest of the attraction</p>	<p>development, to improve approach and provide a sense of arrival</p> <p>Setting of Tithe Barn could be enhanced</p> <p>Enhanced links to the monastic ruins and river</p> <p>Enhanced crossing of the road from the car park</p>
	6c – Bolton Abbey - Hind House Close	<p>Historic land parcels no longer legible, and not well understood strong contribution to the setting of the village as part of its legibility however this has been seriously eroded by the current car park and formal tree planting/management</p> <p>Archaeological potential</p>	<p>Former service area provide precedent for extent of activity in the area</p> <p>This area can accommodate development, if carefully designed and located</p> <p>Open space can be defined better to reinforce legibility of the historic land parcels/form and function</p> <p>Opportunities to enhance understanding through archaeological investigation</p> <p>Opportunities to create a better gateway to the village</p> <p>Better balance to the village</p> <p>Opportunities to highlight the tithe barn</p>
	8 – Sand Holme	Historic approach, with views over open ground towards priory ruins, vulnerable to intrusive development	Little or no capacity for development which would intrude on these views
	9 – Cavendish Pavilion and tourist facilities	<p>Significance as a continuity of visitor provision, sympathetically built and not visually intrusive</p> <p>Capacity limited by space afforded within this area</p>	<p>Some limited capacity to enhance visitor facilities if undertaken to the same standard as existing</p> <p>Informal recreation – football/games area</p>
	10 – Bolton Priory to the Cavendish Pavilion	Vulnerable to intrusive development within Zone, and in areas visible from it	Little or no capacity to accommodate development, beyond enhancing path networks and interpretation

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
	11a – Cavendish Pavilion to Barden – Strid Wood	Vulnerable to intrusive development within Zone, and in areas visible from it	Little or no capacity to accommodate development, beyond enhancing path networks and interpretation
	11b – Valley of Desolation	Vulnerable to intrusive development within Zone, and in areas visible from it	Little or no capacity to accommodate development, beyond enhancing path networks and interpretation
	12 – Strid Wood Car Park and tourist facilities	Significance is as a continuity of visitor provision, sympathetically built and visually unintrusive.	Woodland affords opportunity for development that is screened from key views Capacity limited in scale by nature conservation designations, topography Maximize use of car park – links to wedding functions at Barden Integrated car parking plan – parking for Barden Tower events Capacity for additional play facilities
	13 – Bolton Park	No longer functioning as a deer park and so vulnerable to decreasing legibility to vegetation growth	Development opportunities offered by and restricted to, existing farmheads, barns Opportunity to maintain and enhance legibility of the deer park
	14a – Strid Wood to Barden	Views of the tower from the S vulnerable to intrusive development Archaeological potential Movement between main car parking area and Tower restricted by narrow road/ bridge E of river (car parking area) is an important green space No parking facilities at the tower	Area E of the river could absorb limited change to parking provision and visitor facilities; car parking W of river is problematic Enhanced links to Strid car park
	14b – Barden Tower	Barden Tower is currently without a sustainable use, and is largely inaccessible	Barden Tower offers a challenging opportunity – a new use would afford greater accessibility to the remains

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
		<p>Views of the tower from the S vulnerable to intrusive development</p> <p>Archaeological potential</p> <p>Movement between main car parking area and Tower restricted by narrow road/bridge</p> <p>No parking facilities at the tower</p>	<p>Capacity to accommodate change but within, and dictated by, the historic buildings</p> <p>Opportunities to enhance understanding and interpretation of the whole Scheduled Area</p> <p>New wedding facilities in Barden Chapel – additional offer and spend</p>

6.8 The assessment considers that several areas have the capacity to absorb change, which if managed and designed appropriately, will not adversely harm the overall significance of the Bolton Abbey landscape. The areas with the greatest capacity to absorb change are at Bolton Bridge (Zone 2) and Bolton Abbey village – Hind House Close (Zone 6c), where development, if carefully designed, could enhance and complement the existing settlements. Strid Wood car park (and tourist facilities) also has capacity to absorb change, due to the screening afforded by the woodland, but development would be constrained in scale in this location.

6.9 Potential development capacity has also been identified at:

- 1 Bolton Abbey village (Zone 6b)
- 2 Cavendish Pavilion and car park (Zone 9)
- 3 Strid Wood Car Park (Zone 13)
- 4 Barden Tower (Zone 14b)
- 5 Dispersed farmsteads within Zones 4, 13 and 14a

6.10 In the remaining areas, opportunities for new development are more restricted and should focus on maintaining existing buildings which contribute to the significance of the area and in particular the farmsteads and isolated field barns which so characterise the area.

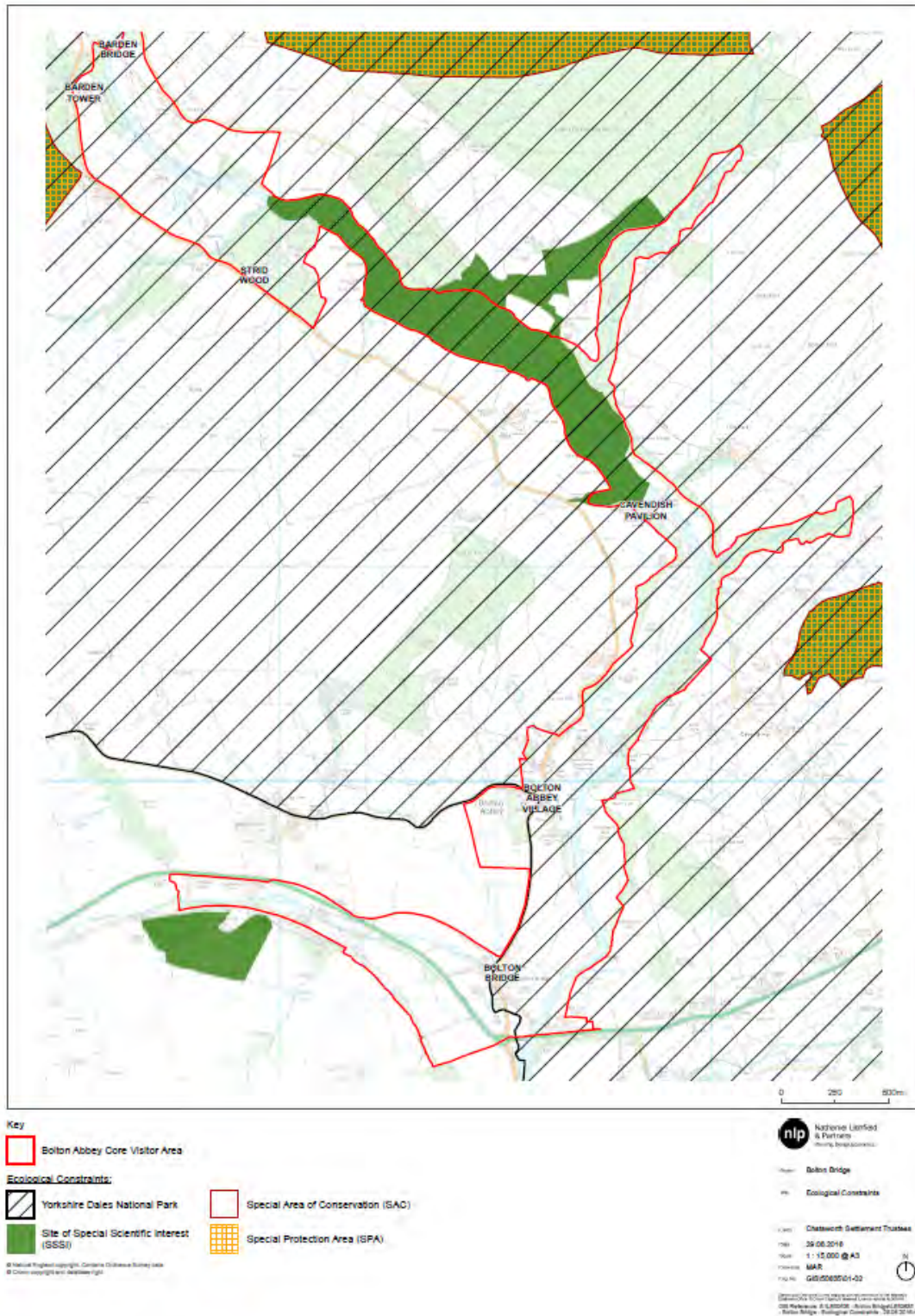
Ecology

6.11 BLE was appointed by CST to prepare a high level ecology statement to inform the BADOAS and this is included in Appendix 13.

Ecological Designations

6.12 The ecology statement identifies that a number of ecological designations exist on and within close proximity to the CVA. These are listed below and are shown in relation to their proximity to the CVA on the following map:

Figure 6.1 Ecological Designations



Source: Lichfields

Yorkshire Dales National Park

- 6.13 The majority of the CVA is located within the Yorkshire Dales National Park. Parts of Bolton Bridge and Bolton Abbey village, to the south of the estate, fall just outside of the National Park boundary, however.
- 6.14 As part of its statutory duty, the Yorkshire Dales National Park Authority seeks to conserve and enhance the natural beauty and wildlife of the National Park.

North Pennines SPA / SAC

- 6.15 The North Pennine Moors SPA / SAC includes parts of the Pennine moorland massif between the Tyne Gap (Hexham) and the Ribble-Aire corridor (Skipton). It encompasses extensive tracts of semi-natural moorland habitats including upland heath and blanket bog. Proposals for development within, or likely to have an effect on a SPA / SAC are required to minimise and mitigate any negative impact on the protected area.
- 6.16 The SPA / SAC area is located to the north east and north west of the Bolton Abbey Estate, with Barden Tower and Barden Bridge in the CVA, located only 200 metres away from its border. Bolton Bridge and Bolton Abbey village are both located over a kilometre away from the closest extent of the North Pennines SPA / SAC.

West Nidderdale, Barden and Blubberhouses SSSI

- 6.17 The SSSI is located to the north east of the Bolton Abbey Estate and is considered to be of international importance for its blanket bog, heather moorland vegetation communities and for its breeding bird populations.
- 6.18 Barden Tower and Barden Bridge exist within 200 metres of the SSSI, to the west. Bolton Bridge and Bolton Abbey village are both located over a kilometre away from the SSSI and have little, if any, relationship with it.

Strid Wood SSSI

- 6.19 Strid Wood is located within the northern part of the CVA and is a designated SSSI for its important populations of many groups of plants and animals. Strid Wood contains the largest area of acidic oak woodland and the best remnant of oak wood pasture in the Yorkshire Dales National Park. It is also considered one of the best lichen woods in Yorkshire. More generally, it is a popular recreational area and there are nature trails on the south-west bank.

General Habitat and Ecological Network Description

- 6.20 As set out in detail in the accompanying ecology statement, the general habitat of the CVA is typified as follows:

Table 6.3 Description of Habitat and Ecological Network within the CVA

Location	Description of Habitat / Ecological Network
Bolton Bridge	The predominant habitat is improved grazed pasture and is generally of low ecological value. Habitats of value are present at Hambleton Beck and the old A59 which support tree lined corridors. Individual trees and other areas of planting also support potential for nesting birds, roosting and foraging bats.
Bolton Abbey village and Bolton Priory	Habitat is largely improved grazed pasture but with mature trees, hedgerows and mature gardens. The built environment supports known bat roosts. Hedgerows are un-laid species which are managed and not

	considered to be of significance.
Sandholme / The Ungain	Local habitats are heavily managed, including mown amenity grassland and grazed pasture. Some mature trees exist, alongside the River Wharfe.
Cavendish Pavilion	Local habitats are heavily managed, with areas of hardstanding and amenity grassland. The Pavilion is directly adjacent to Strid Wood SSSI.
Strid Wood	The area is typified by woodland, but falls outside of the SSSI boundary and comprises an area of car parking and a caravan site. Habitats within Strid are diverse and are subject to statutory protection.
Barden Bridge	Habitats generally comprise improved grazed pasture and well used amenity grassland of low ecological value. Habitats of ecological value do, however, exist and include the River Wharfe, Ancient Woodland and built structures suitable for roosting bats.
Barden Tower	Habitat areas generally comprise well used visitor areas, including hard standing and amenity grassland. Barden Tower falls within close proximity to the SPA / SAC and whilst no development would occur within the protected site, it would fall within its zone of influence.

Protected Species

- 6.21 Bats are a significant consideration throughout the CVA and known roosts exist at Bolton Abbey village, The Priory and Barden Bridge. Other roosts are likely to exist within other built structures and mature trees within the CVA. A bat barn is proposed at Tithe Barn and will be located within foraging and commuting habitat on the bank of the Wharfe.
- 6.22 Habitat linkages are present throughout Bolton Abbey village and Bolton Bridge, including Hambleton Beck, the former A59 route and overall Wharfe river corridor. All of these provide significant value to local bat populations through an abundance of woodland and the river habitat itself.
- 6.23 With regard to aquatic species, white clawed crayfish are known to be present within the Wharfe and Kex Beck; both of which are within the immediate catchment of Hambleton Beck. The River Wharfe is also known to support otters, migratory fish and other invertebrates. It is assumed that all tributaries of the Wharfe and Kex Beck could support aquatic species, including other and white clawed crayfish.

Assessment of Ecological Capacity

- 6.24 National and local planning policies presume against development which would give rise to unacceptable direct or indirect ecological impacts on SPAs, SACs, SSSIs and protected species.
- 6.25 The Yorkshire Dales National Park area of the CVA has the closest proximity to designated ecological sites and, indeed, forms part of a SSSI itself. As such, it represents the most ecologically sensitive and constrained part of the CVA in terms of its potential to accommodate significant new development. To this end, any such proposals would be likely to require a substantial amount of mitigation or be very limited in scale to be acceptable in planning terms.
- 6.26 By comparison, Bolton Bridge and Bolton Abbey village are not located within, nor within close proximity to, any ecological designations and are therefore considered to be relatively unconstrained in this regard. As built settlements, their ecological value has been identified to be generally low, other than for the colony of bats in the Tithe Barn and a copse of yew trees north-east of the Tithe Barn.

6.27 In terms of existing hedgerows in Bolton Abbey village, the ecology statement concludes that based on their quality, the relevant hedgerow regulations would unlikely prevent their removal.

Landscape

6.28 Reference is made to the report Heritage Capacity Assessment Bolton Abbey Masterplan (June 2016) prepared by FAS Heritage as part of the BADOAS with particular reference to Figure 7 Landscape Zones. That assessment breaks the landscape of the CVA into 14 distinct Landscape Zones. Those zones, whilst prepared having regard to historical factors and character, also form the basis of logical Landscape Character Areas (LCAs) for the purposes of this study as the relationship between landscape and historic matters is close in this context.

6.29 The Landscape Capacity Study therefore took these Landscape Zones but made various alterations. In particular, a number of the Landscape Zones were omitted from the landscape capacity assessment because it is considered that those areas are either impractical or unsustainable to develop because of their disconnection with the CVA or because they are environmentally or historically too sensitive to accommodate development. Those areas are:

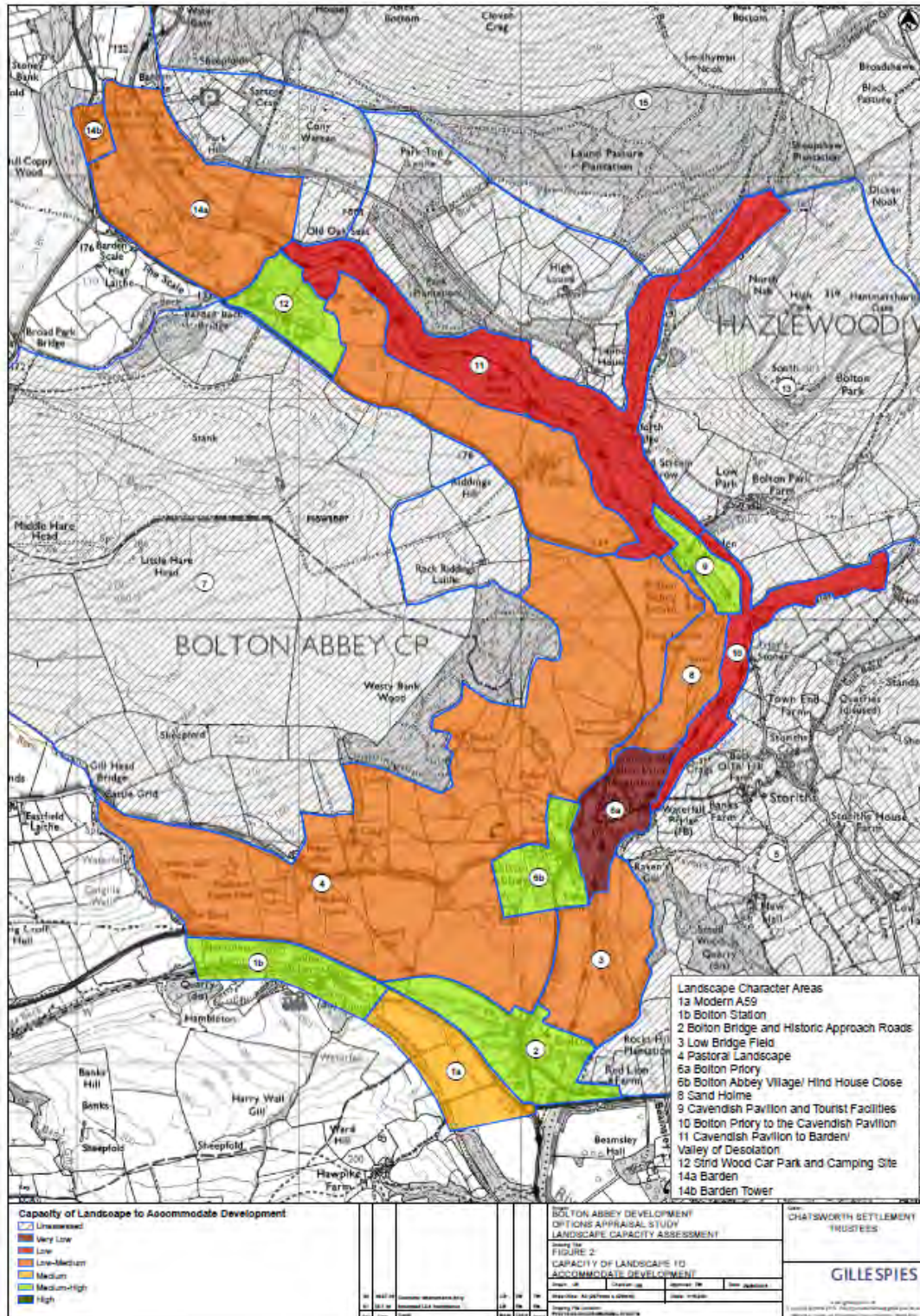
- 5 Storiths
- 7 The Stank
- 7a Earthworks of Monastic Grange
- 15 Ascent to Simons Seat

6.30 Of the remaining Landscape Zones contained within the Heritage Capacity Assessment, some amendments were made to their boundaries to reflect issues which are relative to Landscape. The full justification is contained within the Landscape Capacity Assessment (see Appendix 12). Brief details of the amendments are as follows:

- 1 Area 1 Bolton Station and Modern A59 have been separated into two separate landscape character areas. The area immediately north of the A59 roundabout at Bolton Bridge has been identified as 1a Modern A59 and the area which surrounds Bolton Station has been identified as 1b Bolton Station.
- 2 Areas 6b Bolton Abbey village and 6c Bolton Abbey – Hind House Close have been merged to become 6b Bolton Abbey village/ Hind House Close.
- 3 Area 10 Bolton Priory to the Cavendish Pavilion as shown within the Heritage Capacity Assessment includes an area of relatively flat pasture located within a meander of the River Wharfe. That area has been removed from area 10 and instead has been incorporated within area 6a Bolton Abbey.
- 4 Areas 11a Cavendish Pavilion to Barden and 11b Valley of Desolation as referred to in the Heritage Capacity Assessment have been merged to form one character area; 11 Cavendish Pavilion to Barden Bridge/ Valley of Desolation.
- 5 Area 14 Barden, has been split into two areas; Areas 14a Barden and Area 14b Barden Tower

6.31 The resulting amendments form the LCAs which have been used to assess the landscape's capacity for development for the purposes of this study and these areas are illustrated within Figure 6.2:

Figure 6.2 Landscape Capacity to Accommodate Development.



Source: Landscape Capacity Assessment, Gilispies

Potential Development

6.32 For the purposes of this study the following types of development have been considered when assessing the landscape's capacity to accommodate them:

- 1 Paths
- 2 Interpretation panels
- 3 Village green (specifically at Bolton Abbey village)
- 4 Play barn
- 5 Pub
- 6 Farm shop
- 7 Cycle Hub
- 8 Cafe
- 9 Visitor, staff and market accommodation
- 10 Cycleway
- 11 Car parking
- 12 Outdoor play areas of a range of scales and for different ages
- 13 Offices
- 14 Biomass Boiler
- 15 Hotel Extension

6.33 Clearly some development types are more easily accommodated within the landscape than others. However, for the purposes of this assessment, each LCA has been assessed in terms of its capacity to accommodate development with the **highest relative impact, in this case built development**. It should be noted however that whilst a LCA may have a low capacity to accommodate this type of development in general, it may have specific (and less sensitive) areas within it which can accommodate some built development, and it may also be able to accommodate lower impact development types such as interpretation panels and path improvements. Therefore the overall capacity of the landscape illustrated in Figure 6.2 (above) should be considered in conjunction with the full Landscape Capacity Assessment and, in particular, the Overall Capacity section included at the end of each LCA section which summarises capacity for development in more detail.

Methodology

6.34 A number of capacity criteria have been identified which help assess how much development could potentially be accommodated or not in each LCA. These criteria are defined within Table 6.4 below.

Table 6.4 Criteria for Assessing Landscape Capacity for Development

Theme	Capacity Criteria
Landscape	Landscape pattern, scale and enclosure Landform Landcover Non Designated Built Development and infrastructure
Visual	Skylines and settings Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)
Aesthetic, perceptual and Experiential	Scenic Quality and Character Remoteness / Tranquillity
Value	Landscape Value (Landscape Related Designations)

6.35 The assessment of each LCA took the form of a two stage process:

6.36 Stage 1: The capacity of each LCA to accommodate development was systematically assessed against each of the capacity criteria which are detailed in Table 6.4 and was graded using a transitional three point sensitivity scale, **higher, medium or lower** as described in Table 6.5 below:

Table 6.5 Definition of Capacity of Landscape to Accommodate Development

Landscape Capacity	Definition
Low	Areas where the key landscape characteristics are vulnerable and likely to be adversely affected by particular types of development being considered. The landscape would not be able to accommodate development without significant effects on its character.
Medium	Areas where a particular type of development may cause some adverse effects on key landscape characteristics. Although the landscape may be able to absorb some development if sensitively sited and designed, it may introduce new inappropriate characteristics or result in a change in character.
High	Landscapes which taking into account their character and general visibility are not very vulnerable to change and could accommodate a particular type of development without significant adverse effects.

6.37 Stage 2: These assessments were then considered in order to give an overall assessment of each LCAs capacity to accommodate development. This capacity was evaluated using a more detailed six point capacity scale, **low, low-medium, medium, medium-high, high and very high capacity to accommodate development**. This final assessment is presented within Figure 2: Landscape Capacity to Accommodate Development.

Table 6.6 Definition of Overall Capacity Assessment

Landscape Capacity	Definition
Very Low	The key characteristics and qualities of the landscape are very highly sensitive to change from the type and scale of development being assessed.
Low	The key characteristics and qualities of the landscape are highly sensitive to change from the type and scale of development being assessed.
Low-Medium	The key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
Medium	Some of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
Medium-High	Few of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
High	Key characteristics and qualities of the landscape are robust and less likely to be adversely affected by the type and scale of development being assessed.

6.38 It should be emphasised that capacity does vary locally within the LCAs and that the overall evaluation represents the general capacity across the LCA to reflect the strategic nature of this study. Local variations are however discussed to some extent within the Overall Capacity section for each LCA within the full Landscape Capacity Assessment.

Assessment of Landscape Capacity

6.39 No LCA is found to have a **high capacity** to accommodate development.

6.40 The following landscape character areas are found to have a **medium-high capacity** to accommodate development:

- 1b Bolton Station
- 2 Bolton Bridge and Historic Approach Roads
- 6b Bolton Abbey village
- 9 Cavendish Pavilion and Tourist Facilities
- 12 Strid Wood Car Park and Camping Site

6.41 The following LCA is found to have a **medium capacity** to accommodate development:

- 1a Modern A59

6.42 The following LCAs are found to have a **low-medium capacity** to accommodate development:

- 3 Low Bridge Field
- 4 Pastoral Landscape
- 8 Sand Holme
- 14a Barden
- 14b Barden Tower

6.43 The following LCAs are found to have a **low capacity** to accommodate development

- 10 Bolton Priory to the Cavendish Pavilion
- 11 Cavendish Pavilion to Barden/ Valley of Desolation

6.44 The following LCA is found to have a **very low capacity** to accommodate development:

- 6a Bolton Priory

6.45 It is therefore considered that the five LCAs which have been assessed as having a **medium-high capacity** to accommodate development offer the greatest opportunity for built development. It must be reiterated that this is not to say that there is not localised areas within other LCAs that do not have capacity, nor that the remaining LCAs cannot accommodate development with lower impact such as path improvements and signage.

6.46 The overall capacity of the five areas assessed as having a **medium-high capacity** to accommodate development is summarised below:

Table 6.7 Landscape Capacity

Landscape Character Area	Overall Landscape Capacity to Accommodate Development
1b Bolton Station	Small scale, enclosed landscape characterised by the built development and infrastructure associated with Bolton Station in addition to the proximity of the busy A59. It is considered to have medium-high capacity to accommodate development.
2 Bolton Bridge & Historic Approach Roads	<p>Whilst this LCA includes a number of important landscape related designations, it is considered to have medium-high capacity to accommodate development because:</p> <p>Appropriately sited and well-designed built development would be in keeping with the existing qualities of the LCA which include its existing built development, landcover, scale and pattern of Bolton Bridge.</p> <p>The remnant section of the A59 to the north west of the settlement offers an opportunity to accommodate built development whilst simultaneously resolving this section of unused infrastructure.</p> <p>Views are relatively enclosed within the settlement and, if located on the village edge, development would be visually assimilated with the existing settlement of Bolton Bridge. Existing tree cover offers opportunities for screening.</p> <p>On the basis that built development is appropriate in scale, quality and style, there is potential for development to be sited within or directly adjoining the existing settlement edge in order that it could be visually assimilated, particularly if the development is well screened from the A59. There is less capacity within the pastoral fields which form</p>

	<p>the setting of Bolton Bridge aside for low impact development such as improved cycle/ pedestrian links on the basis that they are in keeping with the pattern of the landscape. The well-manicured grounds to the east of the Devonshire Arms hotel feel more associated to the hotel rather than to the pastoral fields which provide the overall setting. This man made influence has the potential to increase capacity.</p> <p>Attention would need to be given to flooding issues which may restrict capacity generally.</p>
<p>6b Bolton Abbey village</p>	<p>Whilst this ICA includes a number of landscape related designations, this does not preclude it from incorporating sensitively sited, well designed and appropriate development. This ICA is therefore considered to have medium-high capacity to accommodate development because:</p> <p>The existing pattern of a settled, built ICA could accommodate more, particularly to the west which is the location of the existing car park.</p> <p>The existing built landcover and landform is less sensitive.</p> <p>Views are relatively enclosed and, where visible, appropriately sited development is likely to be viewed in the context and character of the existing settlement.</p> <p>Its village character, the car park and the B6160 detracts from its tranquillity and remoteness.</p> <p>Any new development would need to be designed and sited in order that it is in keeping with the existing settlement.</p> <p>This is dealt with in more detail within the Landscape and Visual Assessment (LVA) which was prepared in support of the Bolton Abbey village Masterplan (April 2015). This LVA showed that the current layout of the village lacks a sense of arrival and that Bolton Abbey village has capacity to accommodate sensitive and appropriate development.</p>
<p>9 Cavendish Pavilion & Tourist Facilities</p>	<p>Whilst this ICA has scenic quality and includes landscape related designations in addition to having a high number of sensitive receptors, it</p>

	<p>is considered to have medium-high capacity for development because:</p> <p>It has a small scale, enclosed, character which already includes a developed pattern</p> <p>Its landcover of hard surfacing and managed grassland lends itself to accommodate further appropriate development</p> <p>It already includes non-designated development and infrastructure</p> <p>Its enclosed nature restricts visibility and it is removed from the more sensitive LCA 6a Bolton Priory.</p> <p>It is therefore considered that this LCA has the capacity to accommodate appropriate and sensitive built development along with lower impact development types such as signage, paths and play areas.</p>
<p>12 Strid Wood Car Park and Camping Site</p>	<p>This is a LCA of two opposing characters. Within the areas of Semi Ancient Natural Woodland (ASNW), capacity for development is very low. However, away from this area and towards the B6160, the pattern of parcels of land utilised for development or pasture enclosed by woodland lends itself to accommodate development and is therefore higher. Therefore, the assessment here reflects these area outside of the ASNW and which is considered to have a medium-high capacity to accommodate development. This is because:</p> <p>The existing pattern of parcels of developed land or pasture surrounded by woodland screening has the potential to accommodate more.</p> <p>Built development already forms part of the character</p> <p>Existing woodland provides opportunities for backclothing and screening</p> <p>Existing woodland restricts visibility both within and into the LCA</p> <p>It is considered that these factors provide the potential to accommodate built development in addition to development considered to be</p>

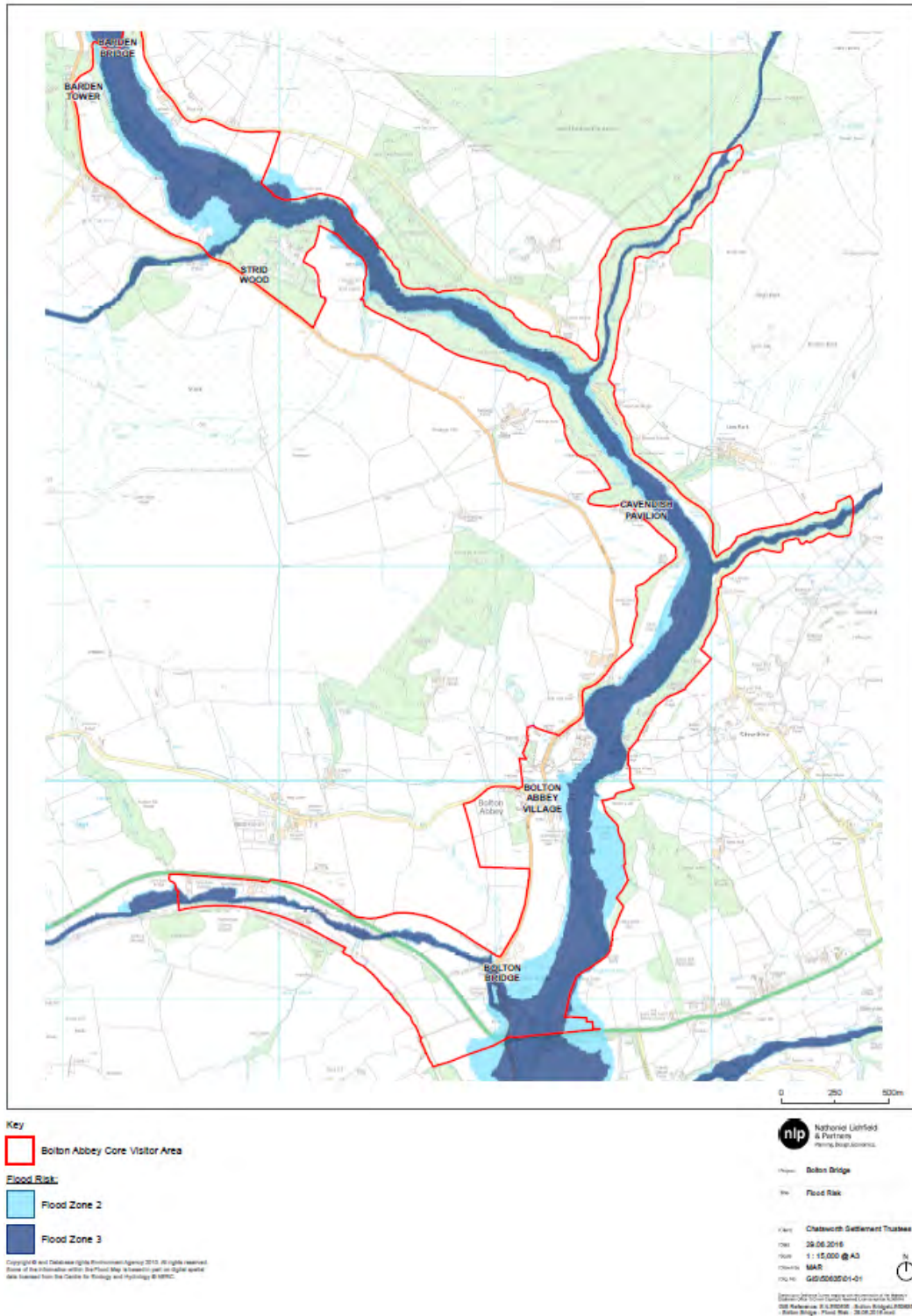
	of a lower impact such as play areas, paths and signage on the basis that they are appropriately designed and sited.
--	--

Source: Landscape Capacity Assessment, Gillespies

Flood Risk

- 6.47 **The Bolton Abbey Estate is centred on the River Wharfe in Upper Wharfedale. The Wharfe rises in the Yorkshire Dales National Park, flowing south-east through Craven District towards Tadcaster and to its confluence with the River Ouse, north of Cawood.**
- 6.48 **The Environment Agency completed a River Wharfe Modelling Study in 2014, covering an area of the River Wharfe from Bolton Bridge to Wharfe Bridge. The findings of the study were used to update the Environment Agency’s Flood Map and simulate the risk of flooding in the local area from rivers and seas. A map showing how this relates to the CVA is shown at Figure 6.3 on the following page.**
- 6.49 **The potential implications of flood risk on new development within the CVA are considered below. This has been informed by discussions within the Environment Agency as part of the preparation of the BADOAS report.**

Figure 6.3 Flood Risk



Source: Lichfields

Yorkshire Dales National Park Areas

The Cavendish Pavilion

6.50 The Cavendish Pavilion building, including its immediate environs to the north-west, is located in Flood Zone 1 and a small, undeveloped area of land between the two car park access roads falls within Flood Zones 1 and 2 in roughly equal proportions. The majority of the site, however, falls within Flood Zone 3, where it is considered to be at high risk from flooding. This includes the carpark/picnic area nearest to the River Wharfe as well as the eastern-most access road to the car park.

6.51 In order to comply with the flood risk policy tests set out by the NPPF, any new development proposals on the Cavendish Pavilion site would need to be limited to the undeveloped parts of the site which fall within Flood Zone 1 or, if in Flood Zones 2 and 3, be supported by a sequential assessment which demonstrates how there are no potential alternative sites available which are at less risk from flooding.

Barden Tower

6.52 Barden Tower is located in Flood Zone 1 and by virtue of its elevated position to the west of the River Wharfe, is considered to be at low risk from flooding.

Barden Bridge

6.53 Barden Bridge is located immediately adjacent to the River Wharfe and consequently falls within Flood Zones 2 and 3, where it is considered to be at high risk from flooding.

Sandholme / The Ungain

6.54 Flood risk varies in this location, with areas nearest to the River Wharfe falling within Flood Zones 2 and 3. Further west of the River Wharfe, the more elevated areas of Sandholme / The Ungain fall within Flood Zone 1.

The Strid

6.55 The vast majority of the site is located in Flood Zone 1 where it is considered to be at low risk from flooding. Only a very small part of the site - immediately adjacent to the River Wharfe and Barden Beck – is at risk from flooding.

Bolton Bridge

6.56 Bolton Bridge is located within close proximity to the River Wharfe and CST's potential development site is bound by Hambleton Beck to the north. By virtue of the site's topography, however, approximately half of its area falls within Flood Zone 1, where it is not considered to be at risk from flooding. Within closer proximity to the River Wharfe, the eastern extent of the site - covering approximately 40% of its total area - is shown to be located within Flood Zone 2 where it is considered to be at 'medium risk' from flooding. Subject to sequential assessment, however, a full range of land uses could, in flood risk terms, be considered acceptable within this part of the site.

6.57 A small portion of the site towards its north eastern corner (equating to some 10% of its total area) is located in Flood Zone 3, where it is considered to be at high risk from flooding. The North West Yorkshire Strategic Flood Risk Assessment (2010) categorises at least half of this Flood Zone 3 area as being Flood Zone 3b which, as functional floodplain, is considered to be at highest risk from flooding and where only 'water compatible' development, such as outdoor recreational space, would be permitted.

6.58 The Environment Agency also state on their online database that the southernmost section of the CST site, adjacent to the A59 / B6190 roundabout, is at high risk from surface water flooding.

Bolton Abbey village

6.59 The entirety of Bolton Abbey village, including CST's potential development site, falls within Flood Zone 1 where it is considered to be at low risk from flooding.

6.60 Notwithstanding the above, the Environment Agency identify that a small area to the south east of the CST site, adjacent to the B6160, is vulnerable to surface water flooding.

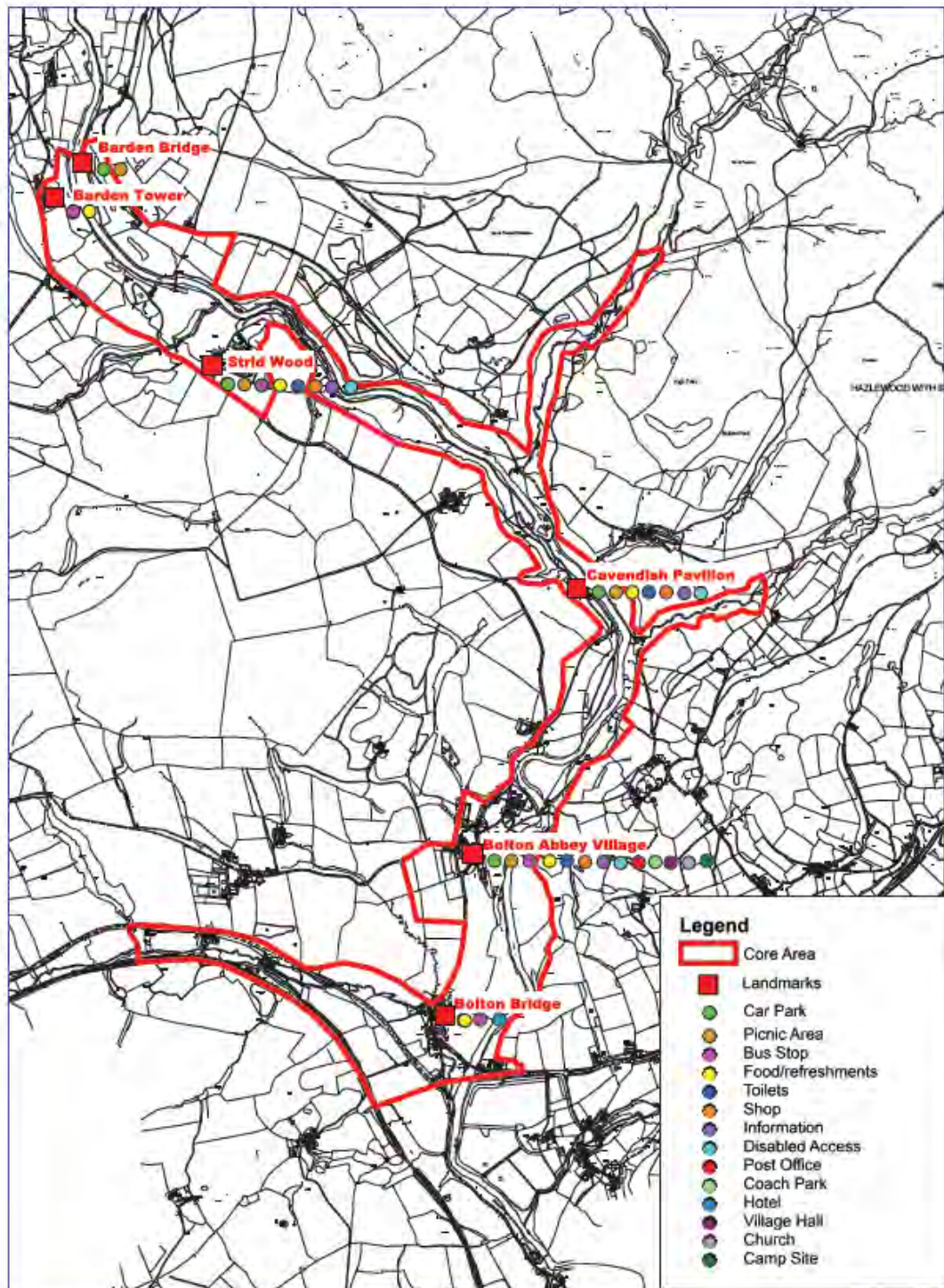
Visitor and Community Infrastructure

6.61 Visitor infrastructure within the CVA varies from location to location as follows:

- 1 Bolton Bridge: bus stop; hotel; food/refreshments
- 2 Bolton Abbey village: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access; post office; coach park; camp-site; village hall
- 3 Cavendish Pavilion: picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 4 Strid Wood: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 5 Barden Tower: bus stop; food/refreshments
- 6 Barden Bridge: car park; picnic area.

6.62 Bins, signage and interpretation boards are interspersed throughout the CVA.

Figure 6.4 Visitor Infrastructure



Source: CST

6.63

The capacity of the car parks is as follows:

- 1 Bolton Abbey village: c.800 spaces (plus over-flow capacity)
- 2 Cavendish Pavilion: c. 1200 spaces (inc. over-flow capacity)
- 3 Strid Wood: c.60 spaces (with no over-flow capacity)

4 Bolton Bridge: c.20 spaces (plus over-flow capacity in nearby field).

6.64 As referred to in Section 3.0 of this report, car parks throughout the CVA typically become full at peak times.

Traffic

6.65 The supporting Transport Statement (see Appendix 15) describes how the B6160 provides access to Bolton Bridge and Bolton Abbey village from the A59, running in an east west direction between Harrogate and Skipton. The B6160 is generally a quiet country road, however at peak tourist times (Easter and summer holiday periods, particularly weekends and bank holidays), it can suffer from congestion in Bolton Abbey village and Bolton Bridge.

6.66 The main visitor car park is located in Bolton Abbey village with very limited public parking in Bolton Bridge. The Bolton Abbey visitor car park is located to the south west of the village with a two way access provided from the B6160. A manned kiosk is located at the car park entrance for payment. The existing payment on entry system causes delays at the car park entrance in peak tourist periods, with queues forming on the northbound approach to the car park. At its worst, at peak times during approx. 10 days per year, standing traffic waiting to park at the main car park in Bolton Abbey village can queue back as far as Bolton Bridge. These issues causes disruption and delays and adversely affects both the visitor experience at Bolton Abbey, as well as other businesses further up the valley.

6.67 Due to the rural nature of Bolton Bridge and Bolton Abbey village, access options by sustainable modes of travel are limited. A local bus service is in operation but services are infrequent. Limited pedestrian and cycle infrastructure is provided within, and connecting, the villages.

Summary

Heritage

6.68 The Heritage Capacity Assessment identifies the Bolton Priory Scheduled Monument, the Bolton Abbey village Conservation Area and 35 Listed buildings (mostly clustered around Bolton Priory, Bolton Abbey village and Barden Tower).

6.69 It also identifies and evaluates 18 heritage landscape character zones in terms of other significance and related capacity to accommodate change (e.g. zone 6a Bolton Abbey Priory Precinct has little or no capacity for change, whereas zone 6b Bolton Abbey village and 6c Bolton Abbey – Hind House Close do have scope for change without harming the overall significance of the Bolton Abbey landscape).

6.70 It concludes that the areas with greatest capacity to accommodate change are at Bolton Bridge and Bolton Abbey – Hind House Close (where carefully designed development could enhance/complement existing settlements), as well as: Cavendish Pavilion and car park; Strid Wood car park; Barden; dispersed farmsteads.

Ecology

6.71 To a lesser or greater extent, ecological designations apply to the CVA as follows:

- 1 YDNP: the YDNPA is required to conserve and enhance the natural beauty and wildlife of the National Park
- 2 N Pennines SPA/SAC: this protects extensive tracts of semi-natural moorland habitats including upland heath and blanket bog; as such, any development proposal must minimise and mitigate any likely negative impact on the SPA/SAC

- 3 W Nidderdale, Barden and Blubberhouses SSSI: this is situated to the north-east of the CVA and contains internationally important tracts of blanket bog, heather moorland and vegetation as well as a breeding bird population. However, Bolton Abbey village and Bolton Abridge are over a kilometre away and unlikely to have related effects.
- 4 Strid Wood SSSI: this is situated in the northern part of the CVA and contains important populations of fauna and flora, including the largest area of acidic oak woodland and the best remnant of oak wood pasture in the National Park. As such, any proposal would require a substantial amount of mitigation to make them acceptable in planning terms. However, Bolton Abbey village and Bolton Bridge are not located within or near to any ecological designations, and are relatively unconstrained.

6.72 Bats are a significant consideration throughout the CVA and known roosts exist at Bolton Abbey village, The Priory and Barden Bridge. Other roosts are likely to exist within other built structures and mature trees within the CVA.

6.73 With regard to aquatic species, white clawed crayfish are known to be present within the Wharfe and Kex Beck; both of which are within the immediate catchment of Hambleton Beck. The River Wharfe is also known to support otters, migratory fish and other invertebrates. It is assumed that all tributaries of the Wharfe and Kex Beck could support aquatic species, including other and white clawed crayfish.

6.74 The Yorkshire Dales National Park area of the CVA has the closest proximity to designated ecological sites and, indeed, forms part of a SSSI itself. As such, it represents the most ecologically sensitive and constrained part of the CVA in terms of its potential to accommodate significant new development. To this end, any such proposals would be likely to require a substantial amount of mitigation or be very limited in scale to be acceptable in planning terms.

6.75 By comparison, Bolton Bridge and Bolton Abbey village are not located within, nor within close proximity to, any ecological designations and are therefore considered to be relatively unconstrained in this regard. Indeed, as residential settlements, their ecological value has been identified to be generally low, other than the colony of bats in the Tithe Barn and a copse of yew trees north-east of the Tithe Barn. Given their quality, the hedgerow regulations are unlikely to apply to the removal of related hedges.

Landscape

6.76 The Landscape capacity study identifies landscape character areas largely based on the heritage landscape zones so as to assess the landscape's capacity to accommodate built development. It identifies that whilst the CVA has a low capacity to accommodate development in general, there are some specific (and less sensitive) areas that have a medium-high capacity to accommodate some built development. These areas are: Bolton Abbey Station; Bolton Bridge and approach roads; Bolton Abbey village; Cavendish Pavilion and Tourist facilities; Strid Wood car park and camping site.

Flood Risk

In effect national policy and related guidance provides for development in Flood Zone 1 (low risk) areas, some development in Flood Zone 2 (medium risk) areas and very limited development (e.g. water-compatible uses) in Flood Zone 3. Housing should only be situated in Flood Zone 1, whilst retail uses and car parking is compatible with Flood Zone 3.

6.77 Most of the CVA lies in Flood Zone 1 on the Environment Agency's Flood Map (currently being updated, August 2016). However:

- 1 much land in the Cavendish Pavilion area lies in Flood Zone 3

- 2 much land at Barden Bridge lies in Flood Zone 3
- 3 much land at Sandholme/The Ungain lies in Flood Zone 3
- 4 some land at Bolton Bridge lies in Flood Zone 2 and a fraction of it lies in Flood Zone 3.

6.78 There is therefore very limited scope for much development at the Cavendish Pavilion, Barden Bridge, Sandholme/Ungain and a small area of Bolton Bridge, but most of Bolton Bridge could accommodate retail and parking uses.

Visitor and Community Infrastructure

6.79 Visitor and community infrastructure within the CVA varies as follows:

- 1 Bolton Bridge: bus stop; hotel; food/refreshments
- 2 Bolton Abbey village: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access; post office; coach park; camp-site; village hall
- 3 Cavendish Pavilion: picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 4 Strid Wood: bus stop; picnic area; car park; food/refreshments; toilets; shop; information; disabled access
- 5 Barden Tower: bus stop; food/refreshments
- 6 Barden Bridge: car park; picnic area.
- 7 Bins, signage and interpretation boards are interspersed throughout the CVA.

6.80 The capacity of the related car parks is as follows:

- 1 Bolton Abbey village: c.800 spaces (plus over-flow capacity)
- 2 Cavendish Pavilion: c. 1200 spaces (inc. over-flow capacity)
- 3 Strid Wood: c.60 spaces (with no over-flow capacity)
- 4 Bolton Bridge: c.20 spaces (plus over-flow capacity in nearby field).

6.81 These car parks tend to be full at peak times (i.e. bank holidays and weekends during school summer holidays).

Traffic

6.82 The B6160 is a quiet country road with considerable traffic capacity, but at peak times congestion can and does occur. At its worst, for c. 10 days maximum per year, standing traffic waiting to park at the main car park in Bolton Abbey village can tail back as far as Bolton Bridge. This causes disruption and delays and adversely affects both the visitor experience at Bolton Abbey, as well as other businesses further up the valley.

7.0 **Assessment of Development Options**

Definition of Strategic Options

7.1 A working assumption of CST has been that any new development within the CVA must take place at Bolton Abbey village. However, this objective appraisal must firstly consider whether this location is right, broadly speaking, and secondly what form and quantum of development could reasonably take in the CVA. As such, this study:

- 1 Defines and assesses “strategic” options (i.e. broad locations) for development
- 2 Defines and assesses “detailed” (or “sub”) options (i.e. indicative layout and other considerations relating to the preferred strategic option) for development.

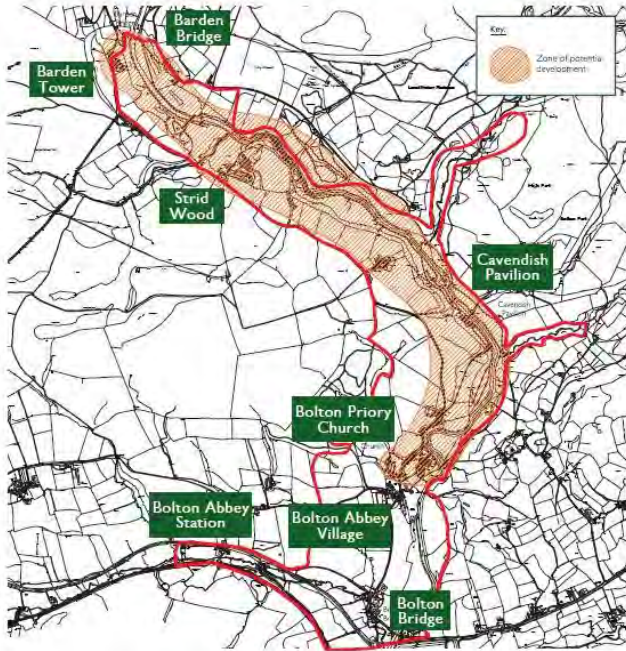
7.2 It is considered that the strategic options for development are:

- 1 Development dispersed throughout the YDNP between Bolton Abbey and Barden Bridge (considered but rejected by the Bolton Abbey Development Strategy 2014)
- 2 Development clustered around Bolton Abbey village (as per the Bolton Abbey village Masterplan 2015)
- 3 Development clustered around Bolton Bridge (as suggested informally by Historic England in 2015)
- 4 “Composite” development clustered around both Bolton Abbey village AND Bolton Bridge with some limited development (e.g. small age-specific play areas) throughout the CVA.

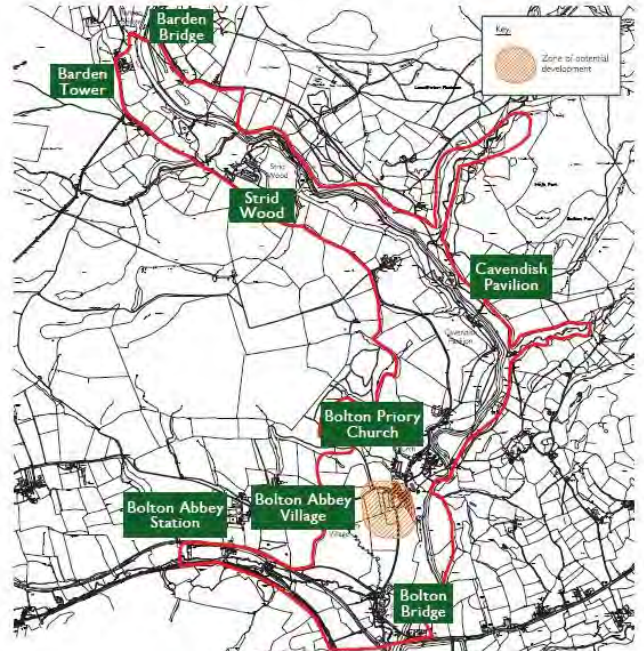
7.3 The broad locations of strategic options are identified by Figure 7.1 below:

Figure 7.1 Locations of strategic options

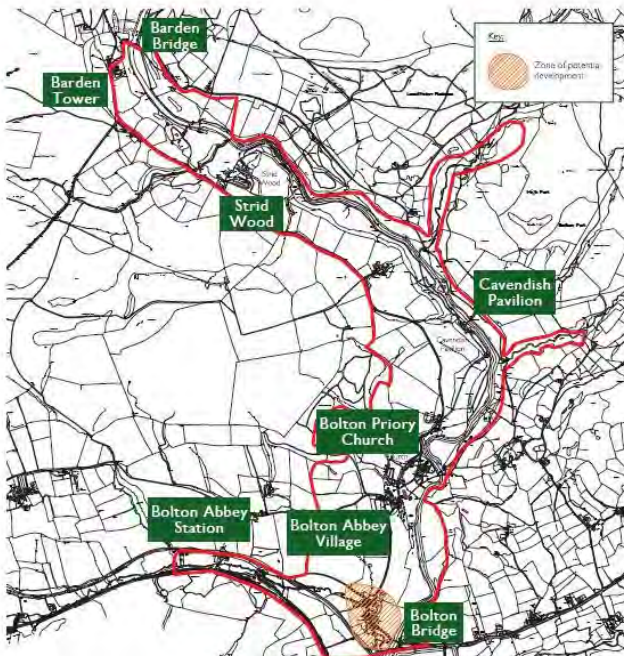
Option 1. All development in the National Park



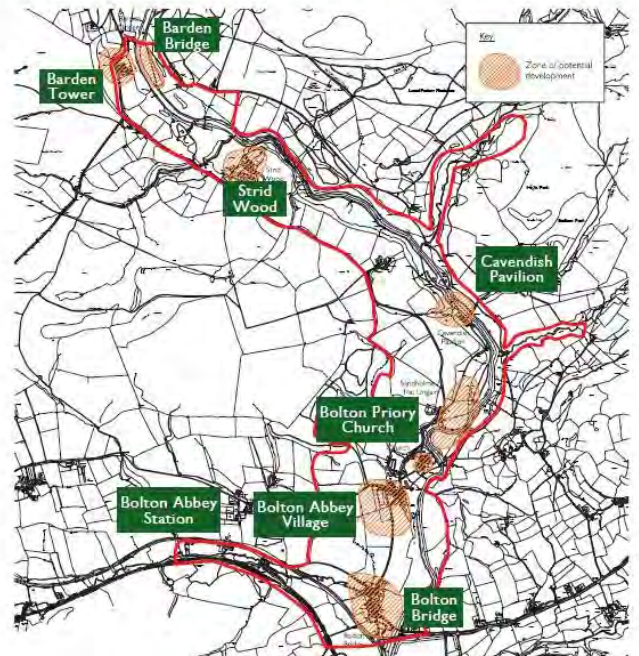
Option 2. All development in Bolton Abbey village



Option 3. All development in Bolton Bridge village



Option 4. Most development in Bolton Bridge and Bolton Abbey village with some small-scale development in the National Park



Assessment of Strategic Options

- 7.4 Each of the four strategic options has been assessed using a ‘SWOT’ (Strengths / Weaknesses / Opportunities / Threats) analysis. In undertaking the SWOT analysis, consideration has been given as to how each option would respond to i) the commercial objectives of CST in providing an enhanced visitor offer at Bolton Abbey and addressing related “need” issues (see Section 3.0); ii) planning policy (see Section 5.0) and; iii) environmental capacity (see Section 6.0).
- 7.5 The findings of the SWOT analysis are presented in Table 7.1 on the next page:

Table 7.1 SWOT Analysis of Strategic Options

Strategic Option	Strengths	Weaknesses	Opportunities	Threats
1. Development in the YDNP only	-proximity to existing visitor attractions and related infrastructure e.g. the Priory, Cavendish Pavilion	-fragmentation of potential new development over a large area, giving rise to unsustainable travel patterns -only small scale development could be accommodated on available land, which would not materially diversify the existing visitor offer (and would therefore be unviable) -location of staff accommodation away from the core worker areas (i.e. Bolton Abbey village and Bolton Bridge) -large parts of the YDNP are sensitive in landscape / visual impact terms, with limited capacity to accommodate change -certain parts of the YDNP have very limited capacity to accommodate change in the historic environment e.g. around the Priory	-potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-potential policy conflicts with YDNP Local Plan due to the scale of development proposed (e.g. Policy SP2 requires development to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park) -potential harm to the amenity / tranquillity that attracts visitors to the Priory -high risk of flooding in certain areas (e.g. Barden Bridge and the Cavendish Pavilion) -potential harm to sensitive ecological receptors including Strid Wood SSSI and North Pennines SAC/SPA
2. All Development in Bolton Abbey village	-development would enhance existing settlement in terms of its visitor and community offer -location of staff accommodation near to core worker areas -no sensitive ecological and flood risk issues -the local landscape has capacity to accommodate change	-operational difficulty of accommodating vehicular flows (to and from farm shop) in village -potential cumulative impacts on heritage assets / character of settlement	-development can be centred on existing settlement (and avoid unsustainable travel patterns) -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and CDLP policies -concentration of development could adversely affect the setting of key heritage assets, including Bolton Priory and the surrounding conservation area
3. All development in Bolton Bridge village	-good commercial location (with road frontage to A59) -location is remote from sensitive ecological risk areas -relatively unconstrained in heritage terms -the local landscape has capacity to accommodate change	-location remote from visitor hub (i.e. Bolton Abbey/Cavendish Pavilion) -limited land available unable to accommodate all CST needs -not operationally viable (since it would not diversify existing visitor offer)	-need for development centred on existing settlement (and avoid unsustainable travel patterns) -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and Craven Local Plan policies -design / location of development will need to respond to flood risk
4. Most development in Bolton Bridge village and Bolton Abbey village with some small-scale development in the YDNP	-farm shop-related traffic problems in Bolton Abbey village avoided -location of staff accommodation near to core worker areas (including Bolton Bridge and Bolton Abbey village) -harm to character of Bolton Abbey village avoided -scale of development can achieve material economic benefits / visitor enhancements -ability to provide appropriate scales of development across different parts of the CVA, according to their varying heritage and landscape capacities	-distance between visitor attractions / facilities	-need for development centred on existing settlements -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -proximity to existing visitor attractions and infrastructure -ability to provide a 'gateway' to the wider YDNP - potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-design / location of development will need to respond to flood risk in certain locations

7.6 In view of the foregoing, it is considered that:

- Strategic Options 1 and 3 are not commercially viable or realistic
- Strategic Option 2 had previously been CST's preferred approach but would cause operational issues
- **Strategic Option 4 is clearly the preferred (optimal) option**, since it has the greatest amount of strengths, no real weaknesses or threats.

7.7 As with all of the strategic options, any individual development proposals pursued by CST would, in line with paras 6 and 7 of the NPPF, be considered by CDC and YDNPA in the context of their ability to achieve sustainable development. In this context, one of the wider environmental and social benefits of Strategic Option 4 is its ability to avoid over-development at more sensitive parts of the CVA (e.g. at Bolton Abbey village). With this in mind, Historic England has welcomed Strategic Option 4 as the preferred approach and this is reflected in their written response to the BADOAS report dated 27th January 2017 (see Appendix 14).

Definition of Detailed Options

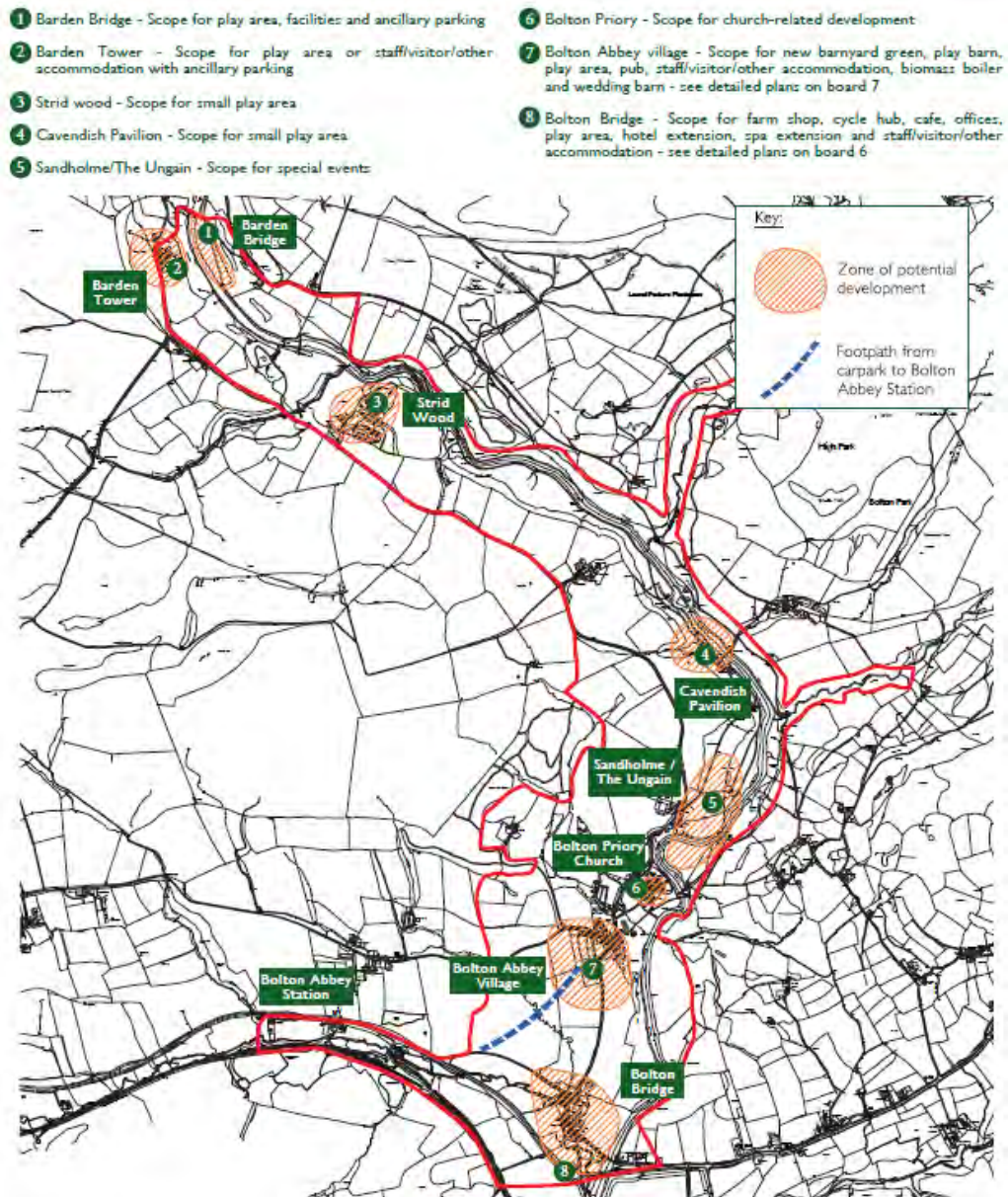
7.8 The preferred Strategic Option 4 (composite development) would include development as follows:

- 1 Barden Bridge – scope for play area, facilities and ancillary parking;
- 2 Barden Tower – scope for play area and / or staff/visitor/other accommodation with ancillary parking;
- 3 Strid Wood – scope for small play area;
- 4 Cavendish Pavilion – scope for small play area;
- 5 Sandholme / The Ungain – scope for special events;
- 6 Bolton Priory – scope for church-related development;
- 7 Bolton Abbey village – scope for new barnyard green, play barn, play area, pub, staff/visitor/other accommodation, biomass boiler and wedding plan (Tithe Barn); and
- 8 Bolton Bridge – scope for farm shop, cycle hub, café, offices, play area, hotel extension, spa extension and staff/visitor/other accommodation;

7.9 In addition to the above, interpretation boards (or similar) would be provided throughout the YDNP area, as appropriate, to raise awareness of locations where Turner painted related landscape watercolours/others (c.11 locations in all).

7.10 Further assessment work will be required to ensure each of these uses is compatible with the sensitivities set identified in the Heritage Capacity Assessment and Landscape Capacity Assessment which accompany this BADOAS. For each location and development option, this will require further consideration of design, layout, setting, massing and access issues.

Figure 7.2 Overview of Preferred Option



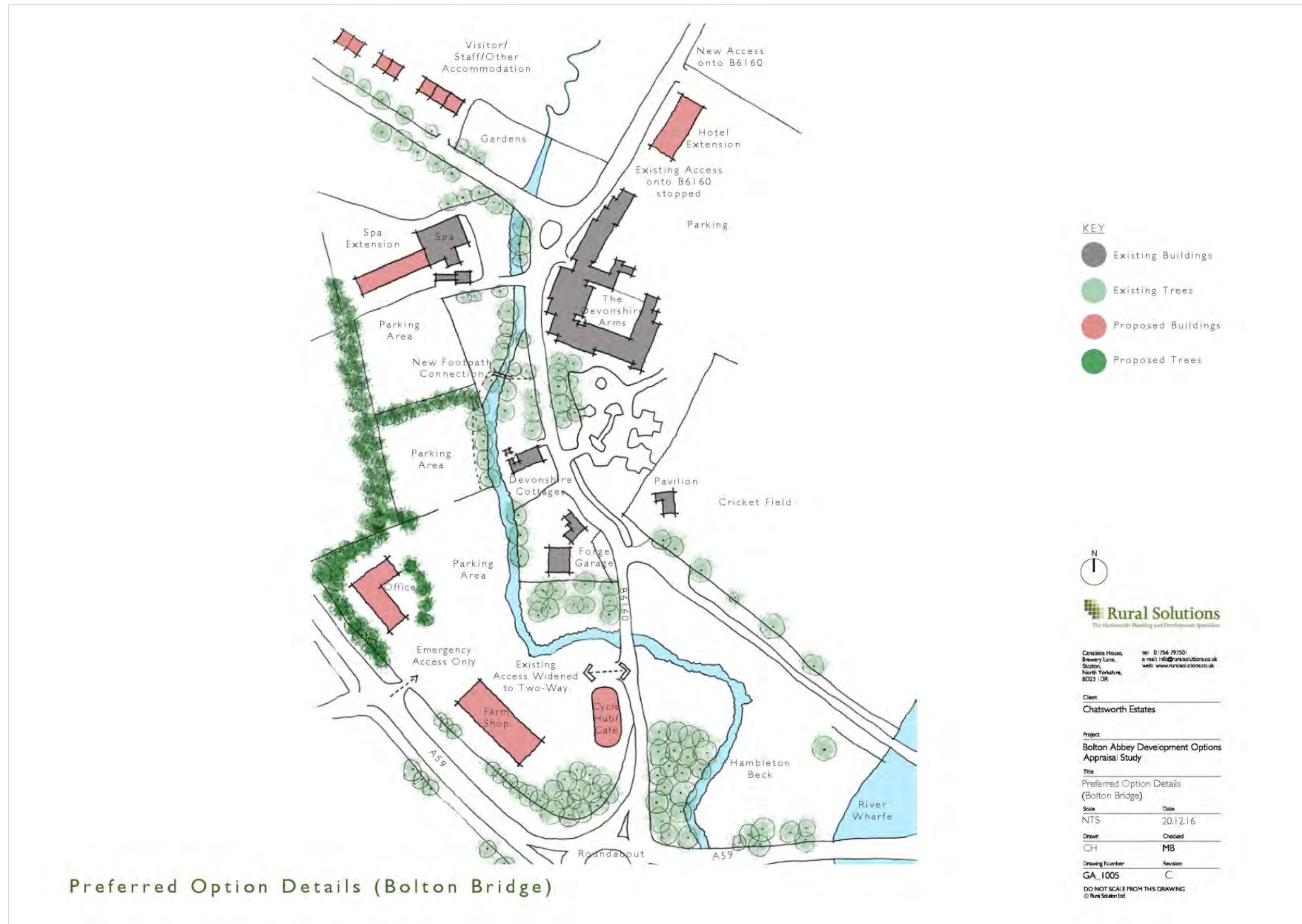
Source: Rural Solutions

- 7.11 Consultation feedback from the 2015 Bolton Abbey village Masterplan has been used to inform the layout for detailed options appraised by the BADOAS. For example, it reflects the removal of the proposed farm shop from Bolton Abbey village to a more commercially appropriate location off the A59 at Bolton Bridge.
- 7.12 Included within the detailed options is the accommodation of smaller scale forms of development within the CVA which are outside Bolton Abbey village / Bolton Bridge. This includes locations within the YDNP. Any proposals in these locations would be brought forward at an appropriate time and are not assessed in detailed as part of the BADOAS.
- 7.13 For Plans showing detailed options, see Figures 7.3 and 7.4 below.

Figure 7.3 Preferred Option Details Bolton Abbey village



Figure 7.4 Preferred Option Details Bolton Bridge



Preferred Option Details (Bolton Bridge)

Assessment of Detailed Options

- 7.14 This section of the report provides an assessment of the potential effects of the detailed options at Bolton Abbey village and Bolton Bridge, respectively. It does not provide an assessment of those detailed options prescribed for areas outside of these settlements as it is considered these are both consistent with YDNP policy and too small-scale to warrant consideration here. As part of this, the assessment identifies the likely significant effects of the detailed development options and the scope for any mitigation measures which would likely be required to reduce or remove the effect of those impacts.
- 7.15 The assessment classifies the effect of the development (both positive and negative impacts) using the following measures:
- Substantial⁴ beneficial
 - Moderate² beneficial
 - Minor³ beneficial
 - Neutral/negligible
 - Minor³ adverse
 - Moderate² adverse
 - Substantial⁴ adverse

Bolton Abbey village

Heritage

- 7.16 The Heritage Capacity Assessment identified areas 6b and 6c in Bolton Abbey village as being less sensitive areas in terms of their ability to accommodate growth. Within these two areas, the Assessment identified the following as being important, above-ground features which contribute to the heritage character of Bolton Abbey village:
- 1 The 'hole in the wall';
 - 2 A number of listed buildings within the village, including the Grade II* listed Tithe Barn;
 - 3 The village's 18th century form and layout;
 - 4 Building clusters around the road junction formerly known as the Upper Green; and
 - 5 The former barnyard area.
- 7.17 The detailed option for Bolton Abbey village proposes no direct impacts (eg. through alteration or demolition) on any of the heritage assets identified above and any effects would therefore be indirect (i.e. effect on settings).
- 7.18 To a large extent, any potential impacts on the historic environment would be dependent on the detailed design and layout of individual proposals. Notwithstanding this, the detailed option shows how Bolton Abbey village is capable of accommodating a range of new development in a way which respects its 18th century form and layout and, importantly, enhances the role and legibility of the historic barnyard area through the provision of new open space. Furthermore, it shows how the layout of the main car parking area is capable of being reconfigured so that it

⁴ **Substantial** – considerable effects (by extent, duration or magnitude) or of more than local significance

² **Moderate** – limited effects which may be considered significant

³ **Minor** – slight, very short or highly localised effects

provides a less formalised and 'softer' setting to surrounding heritage assets and one which reflects the layout of medieval field patterns.

- 7.19 In line with policies SP2, SP4 and L1 of the Yorkshire Dales Local Plan, as well as draft policies ENV2 and ENV3 of the emerging Craven Local Plan, proposals would need to be designed to a high standard in order to complement the existing scale/character of the village and make use of traditional/rural/vernacular styles in terms of the materials and textures used (i.e. wood, stone and ivy-cladding). This would ensure that any new development would respect the setting of surrounding heritage assets and blend in to the fabric of the existing village.
- 7.20 In terms of below-ground heritage receptors, any impact on hitherto unrecorded archaeological remains would need to be addressed through an appropriate programme of evaluation and mitigation
- 7.21 Overall, and subject to appropriate design and mitigation measures being implemented, it is considered that the development option would be **moderate beneficial** to the historic environment of Bolton Abbey village.

Landscape and Visual Impacts

- 7.22 The Landscape Character Assessment (LCA) identifies Bolton Abbey village as having medium-high capacity in terms of being able to accommodate growth. To that end, it recognises how a number of landscape related designations exist within the village but how these do not preclude it from incorporating sensitively sited, well designed and appropriate development. As set out above in relation to the historic environment, the scope and nature of any potential landscape and visual impacts is, therefore, largely dependent on the detailed design, layout and landscaping schemes of individual proposals.
- 7.23 The detailed option demonstrates, however, how a range of new planting can be accommodated within Bolton Abbey village to enhance and, where appropriate, screen potential new development, thus minimising any adverse visual impacts. As part of this, the development option includes extensive planting throughout the reconfigured and extended car park area, as well as around the proposed new staff / visitor accommodation off the Barnyard Green. The detailed option also shows how reconfigured planting would help 'open up' key views from the B6160 towards the Tithe Barn, as well as to the proposed new village green to the south-west of The Beeches tearoom.
- 7.24 Overall and having regard to the LCA, it is considered that the detailed options have the potential to give rise to minor adverse impacts in the short-term, whilst individual proposals are built-out and new planting becomes established. However, with the opening up of key views within Bolton Abbey village and following the establishment of mitigation over a longer-term period, it is considered that the development option would present a **neutral** impact in landscape terms.

Ecology

- 7.25 Bolton Abbey village does not contain any statutory or non-statutory site of nature conservation importance. The nearest statutory site is Hambleton Quarry SSSI, approximately 1.2 km to the south-west. On this basis, it is unlikely that the development option would give rise to any direct or indirect ecological impacts on designated sites.
- 7.26 Bolton Abbey village exists as a built-up area, with surrounding grazing land, mature trees and hedgerows. Overall, the accompanying ecology statement identifies the ecological value of the settlement to be low but it also recognises its role as forming part of a 'habitat linkage' across the wider CVA and overall Wharfe Corridor.

- 7.27 The ecology statement notes the existence of known bat roosts at Tithe Barn and how, in recognition of this, a bat house is to be provided as part of the development proposal to convert the Tithe Barn into a wedding venue. Such measures provide a good example of how the detailed layouts and designs of any other future development proposals in this location would have to respect the presence of existing habitats and, where appropriate, adequately mitigate potential effects on protected and otherwise notable species.
- 7.28 The detailed option includes scope for additional tree planting within Bolton Abbey village as part of proposed landscaping schemes around the play barn / play area, as well as the extended car park. The development option also includes provision for an attractive, high quality open greenspace (village green). Both of these features have the potential to provide a net gain in terms of the biodiversity of the village.
- 7.29 After mitigation, it is not considered that the development option would have a significant impact on ecology and nature conservation, with the overall residual impact considered to be **minor beneficial**.

Hydrology and Drainage

- 7.30 Bolton Abbey village lies approximately 180 metres to the west of the River Wharfe and all of the development proposed as part of the option falls within flood zone 1, where it is not considered to be at risk from flooding.
- 7.31 The development option would lead to the creation of new areas of hard-standing within Bolton Abbey village which, in turn, could give rise to minor / moderate adverse impacts by preventing natural surface water drainage and, potentially, increasing flood risk elsewhere. It is noted, however, that draft Policy ENV6 of the Craven District Local Plan would require any future development proposals to provide – as far as practically possible – the use of sustainable drainage systems and, in line with the Environment Agency's standards, achieve existing surface water run-off rates on greenfield sites.
- 7.32 Additional foul water flows from the occupation of new dwellings and commercial businesses would also be generated as part of this option. It is assumed, however, that existing water treatment facilities would, be able to accommodate the relatively modest scale of new development within its existing capacity or, failing that, planning obligations could be used to provide additional capacity within the network.
- 7.33 On the basis of the mitigation measures identified, the residual flood and drainage impact associated with the detailed development option at Bolton Abbey village would be expected to be **neutral**.

Visitor and Socio-Economic Effects

- 7.34 The development option seeks to better reveal the historic significance of the Barnyard Green – a substantial open space at the southern entrance of the village - which would act as a new focal point within Bolton Abbey village. These features, together with the addition of 'lodge-style' visitor / staff accommodation towards the south of the village, would provide visitors with a greater sense of arrival and departure to / from Bolton Abbey village.
- 7.35 The proposed pub and play barn / play area would enhance the sense of arrival / departure to the village even further, whilst also encouraging visitors to spend longer within the CVA and provide more opportunities for secondary spend. Importantly, they would also provide much-needed 'rainy day' facilities within the CVA, helping the Estate become more resilient to seasonal weather.

- 7.36 The development option would create a range of local employment opportunities within the village, particularly in terms of the proposed pub and play barn. Collectively, a total of 27 FTE high quality / high value jobs would be expected to be created from the development option, with additional temporary jobs created during the construction phases.
- 7.37 A range of new staff and visitor accommodation is proposed at various locations throughout the village. In addition to providing additional rental incomes to CST, new staff accommodation would help reduce the carbon footprint of the Bolton Abbey Estate by encouraging staff to live closer to their place of work.
- 7.38 Overall, the development option would represent a significant new capital investment in Bolton Abbey village, helping reinforce its role as a local service centre and ensuring that it is able to meet the social and economic needs of the local and wider community both now and in the future (especially since outlying settlements will increase in size and population).
- 7.39 The range of development that comprises the option would help diversify the visitor offer of the CVA, provide staff and visitor accommodation, provide local employment opportunities and increase expenditure in the local area which would help support community infrastructure. It would also provide open space and play space. On this basis, the development option would be **major beneficial** in terms of its visitor and socio-economic effects.

Bolton Bridge

Heritage

- 7.40 The Heritage Capacity Assessment identifies a small number of listed buildings within Bolton Bridge as contributing to its heritage character. These include the Grade II listed Devonshire Arms and Bolton Bridge (the structure itself).
- 7.41 The detailed option for Bolton Bridge proposes no direct effects (e.g. through alteration or demolition) on any designated heritage assets. Any impacts of development would therefore be indirect (i.e. effect on settings).
- 7.42 The majority of new development comprising this option would be located adjacent to the A59, an area of Bolton Bridge which has very limited historic interest and, accordingly, where it is unlikely to impact on the setting of any heritage assets or key views.
- 7.43 Further north, new development including the hotel and spa extension, as well as the proposed staff / visitor accommodation, would need to be respectful of the setting of surrounding listed buildings and, in line with policies SP2, SP4 and L1 of the Yorkshire Dales Local Plan and draft policies ENV2 and ENV3 of the emerging Craven Local Plan, be designed to a high standard in order to preserve key views and complement the existing scale/character of the village.
- 7.44 In terms of below-ground heritage receptors, any impact on hitherto unrecorded archaeological remains would need to be addressed through an appropriate programme of evaluation and mitigation.
- 7.45 Overall, and subject to appropriate design and mitigation measures being implemented, it is considered that the development option would be **neutral / minor beneficial** to the historic environment of Bolton Bridge.

Landscape and Visual Impacts

- 7.46 The LCA describes how, in landscape terms, there is capacity for new development within Bolton Bridge, provided that it is in keeping with local scale, quality, pattern and style. It also notes that areas closest to the A59 – including the main development site – have the greatest

capacity for development as a result of the man-made feature of the A59. The exact scope and nature of any potential landscape and visual impacts would, however, be dependent on the detailed design, layout and landscaping schemes of individual proposals.

- 7.47 Having regard for the LCA, the detailed option provides for the majority of new development to be located away from the historic core of Bolton Bridge and located in a prominent position off the A59 with some limited screening / enhancement through new planting. This is considered to be appropriate to the landscape character of this particular area which is dominated by the man-made feature of the A59. Further north, the detailed option demonstrates how the more modest forms of proposed development (namely the staff / visitor accommodation, hotel and spa extensions) are capable of being screened by existing planting, helping to minimise the scope for adverse visual impacts.
- 7.48 Given that the majority of any potentially new development would front on to the existing, man-made feature of the A59 and the scope that there is to screen the other forms of development with existing planting, it is considered that the development option would present a **neutral** impact in landscape terms.

Ecology

- 7.49 Bolton Bridge does not contain any statutory or non-statutory site of nature conservation importance. The nearest statutory site is Hambleton Quarry SSSI, approximately 1.1 km to the north-west. On this basis, it is unlikely that the development option would give rise to any direct or indirect ecological impacts on designated sites.
- 7.50 The main development site, to the south of Bolton Bridge, comprises undeveloped grazing land, adjacent to the A59 / B6160 roundabout. A small area of woodland exists to the south east of the site, as well as Hambleton Beck to the north. Further north, the proposed staff / visitor accommodation is proposed to be located on undeveloped grazing land off the old route of the A59; the spa extension is proposed to be located within the undeveloped curtilage of the existing building and; the hotel extension is proposed to be located within the existing hotel car park.
- 7.51 As a built settlement, the accompanying ecology statement identifies the overall ecological value of Bolton Bridge to be low, notwithstanding its role as part of wider 'habitat linkage' within the CVA, in particular given its close proximity to the River Wharfe and Hambleton Beck.
- 7.52 Where necessary, the detailed layouts and designs of individual proposals would need to take into account the presence of habitats and features of interest for reptiles, bats and birds to minimise impacts from development. Importantly, any proposals to the south of Bolton Bridge would have to ensure that Hambleton Beck is not adversely affected from potential sources of pollution, particularly given the presence of protected aquatic species (otters and crayfish).
- 7.53 The detailed option includes scope for additional tree planting within the site, as part of a landscaping scheme for the proposed office building. This has the potential to provide a modest enhancement to the biodiversity of Bolton Bridge.
- 7.54 After mitigation, it is not considered that the development option would have a significant impact on ecology and nature conservation, with the overall residual impact considered to be **minor beneficial**.

Hydrology and Drainage

- 7.55 Small parts of the main development site are at potential risk from flooding, including areas closest to Hambleton Beck which fall within flood zones 2 and 3. However, the detailed option provides for the more vulnerable forms of proposed development (i.e. the office, farm shop and

cycle hub / café) to be located within flood zone 1, where they would be at low risk from flooding. Conversely, the development option provides for the less vulnerable uses (i.e. the proposed car park areas) to be located within the higher flood risk areas. All of the other potential new development comprising this option, including the hotel extension, spa extension and staff / visitor accommodation would be located within flood zone 1, where it is not considered to be at risk from flooding.

- 7.56 The development option would lead to the creation of areas of hard-standing which, in turn, could give rise to minor / moderate adverse impacts by preventing natural surface water drainage and, potentially, increasing flood risk elsewhere. It is noted, however, that draft Policy ENV6 of the Craven District Local Plan would require any new development to provide – if practically possible – the use of sustainable drainage systems and, in line with the Environment Agency’s standards, achieve existing surface water run-off rates on greenfield sites. This, in turn, could help address any existing issues of surface water flooding which currently occur on-site.
- 7.57 Additional foul water flows would be generated from the proposed staff / visitor accommodation as well as the commercial development (ie. the office, farm shop, cycle hub / café, spa and hotel extensions) proposed as part of this option. It is assumed, however, that existing water treatment facilities would be able to accommodate the relatively modest scale of new development within its existing capacity or, failing that, planning obligations could be used to provide additional capacity within the network.
- 7.58 On the basis of the assumed site layout and the implementation of mitigation measures identified, the residual flood and drainage impact associated with the detailed development option at Bolton Bridge would be expected to be **neutral**.

Visitor and Socio-Economic Effects

- 7.59 The development option includes two main visitor attractions off the A59 roundabout, namely a proposed farm shop and cycle hub / café. Both of these would provide a new ‘gateway’ to the CVA, whilst creating opportunities for secondary spend (i.e. potential additional income streams for the Estate) as well as help diversify wider visitor offer, including further scope for ‘rainy day’ activities. The same is true for the proposed extensions to the hotel and spa.
- 7.60 New office space off the A59 would add further diversification to the offer and rental income streams of the Bolton Abbey Estate, and help support the local economy by providing small-scale, commercial floorspace in an attractive location. This would be likely to appeal to a range of small-medium enterprise (“SME”) businesses within the local area.
- 7.61 New visitor / staff accommodation would make good re-use of the former A59 route and would allow the opportunity for staff to live within close walking distance of key places of work such as the Devonshire Arms Hotel. Again, this would help reduce the carbon footprint of the Bolton Abbey Estate.
- 7.62 The development option could create a range of local employment opportunities within Bolton Bridge, particularly the farm shop and cycle hub / café. Collectively, a total of 10 FTE high quality / high value jobs could be expected to be created here, with additional temporary jobs created during the construction phases.
- 7.63 Overall, the development option would represent a significant new capital investment in Bolton Bridge and help diversify the visitor offer of the wider CVA, provide staff and visitor accommodation, provide local employment opportunities and increase expenditure in the local area to help support community infrastructure. On this basis, the development option would be **major beneficial** in terms of its visitor and socio-economic effects.

Traffic Management

- 7.64 The supporting Transport Statement (see Appendix 15), prepared by Arup, considers the highways and access implications associated with the preferred development options at both Bolton Bridge and Bolton Abbey village. It is noted, however, that the assessments undertaken as part of the Transport Statement are high level and that more detailed assessment would need to be undertaken as individual development proposals are taken forward as planning applications.
- 7.65 As part of its 'high level' assessment work, Arup has met NYCC Highways on site, to consider various access options and recommended measures, including:
- 7.66 In Bolton Bridge:
- 1 A number of car park access options for the farm shop, café/cycle hub and office have been considered and preferred access proposals recommended – this comprises upgrade to the existing B6160 junction;
 - 2 Car park reconfiguration issues and access options for the hotel and spa have been identified – it is recommended that the hotel car park access is relocated to improve visibility and additional parking at the spa is provided for overflow / staff parking;
 - 3 Proposals for access by sustainable modes of travel have been identified – in particular routes for pedestrian connections to the village.
- 7.67 In Bolton Abbey village:
- 1 A number of options to improve the efficiency of the car park access and reduce congestion have been considered, and assessment undertaken to demonstrate the impacts of the preferred option – in short, it is recommended that ticket machines are used at peak times instead of the manned kiosk;
 - 2 The location of local access junctions and measures to improve visibility are identified at a number of locations;
 - 3 Improved pedestrian access routes, including connections to the local bus stops, have been identified to enhance pedestrian connections to the village;
 - 4 An option to amend the B6160 highway alignment outside The Beeches to facilitate improved pedestrian routes has been considered;
 - 5 Further highway measures around The Beeches have been suggested to provide a new public square.
- 7.68 The junction assessment Sensitivity Test included within the Transport Statement demonstrates that the A59 / B6160 junction can accommodate potential additional traffic associated with the proposed development option at Bolton Abbey. Whilst existing queuing on the B6160 approaching the Bolton Abbey visitor car park access at peak times would be exacerbated by development, the use of ticket machines (instead of the manned payment kiosk at peak periods) could eliminate related issues of congestion and queuing.
- 7.69 The car park occupancy Sensitivity Test (also included within the Transport Statement) demonstrates that additional car park capacity at Bolton Abbey village may be required in order to accommodate visitor during peak periods. It is noted that it would be important to ensure that any new car park layout is designed such that drivers move through the car park efficiently to find spaces and do not cause delays to other cars at the car park entrance.
- 7.70 The transport proposals for Bolton Abbey consider access by all modes of transport. It is acknowledged that the majority of visitor trips to the Bolton Abbey CVA would be by car. A high

level highway assessment of increased visitor trips has been undertaken and concludes additional trips can be broadly accommodated on the local network. On the basis that additional car parking is proposed and measures to relieve congestion as a result of queuing at the payment kiosk have been identified, the supporting Transport Statement concludes that **the preferred development option can be satisfactorily accommodated on the local transport network.**

Summary

7.71 This study defines and assesses:

- 1 “strategic” options (i.e. broad locations) for development
- 2 “detailed” options relating to the preferred strategic option for development.

Definition of Strategic Options

7.72 The study considered strategic options for development as being:

- 1 Development dispersed throughout the YDNP between Bolton Abbey and Barden Bridge
- 2 Development clustered around Bolton Abbey village
- 3 Development clustered around Bolton Bridge
- 4 Development clustered around Bolton Abbey village AND Bolton Bridge, with some development (e.g. small play areas) throughout the CVA.

Assessment of Strategic Options

7.73 The four strategic options were assessed using a ‘SWOT’ (Strengths / Weaknesses / Opportunities / Threats) analysis, looking at how each option would respond to: i) CST’s commercial objectives to diversify its visitor offer; planning policy; iii) environmental capacity.

7.74 The findings of the SWOT analysis are presented below:

Table 7.2 Assessment of Strategic Options SWOT Analysis

Strategic Option	Strengths	Weaknesses	Opportunities	Threats
1. Development in the YDNP only	-proximity to existing visitor attractions and related infrastructure e.g. the Priory, Cavendish Pavilion	-fragmentation of potential new development over a large area, giving rise to unsustainable travel patterns -only small scale development could be accommodated on available land, which would not materially diversify the existing visitor offer (and would therefore be unviable) -location of staff accommodation away from the core worker areas (i.e. Bolton Abbey village and Bolton Bridge) -large parts of the YDNP are sensitive in landscape / visual impact terms, with limited capacity to accommodate change -certain parts of the YDNP have very limited capacity to accommodate change in the historic environment e.g. around the Priory	-potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-potential policy conflicts with YDNP Local Plan due to the scale of development proposed (e.g. Policy SP2 requires development to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park) -potential harm to the amenity / tranquillity that attracts visitors to the Priory -high risk of flooding in certain areas (e.g. Barden Bridge and the Cavendish Pavilion) -potential harm to sensitive ecological receptors including Strid Wood SSSI and North Pennines SAC/SPA
2. All Development in Bolton Abbey village	-development would enhance existing settlement in terms of its visitor and community offer -location of staff accommodation near to core worker areas -no sensitive ecological and flood risk issues -the local landscape has capacity to accommodate change	-operational difficulty of accommodating vehicular flows (to and from farm shop) in village -potential cumulative impacts on heritage assets / character of settlement	-development can be centred on existing settlement (and avoid unsustainable travel patterns) -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and CDLP policies -concentration of development could adversely affect the setting of key heritage assets, including Bolton Priory and the surrounding conservation area
3. All development in Bolton Bridge village	-good commercial location (with road frontage to A59) -location is remote from sensitive ecological risk areas -relatively unconstrained in heritage terms -the local landscape has capacity to accommodate change	-location remote from visitor hub (i.e. Bolton Abbey/Cavendish Pavilion) -limited land available unable to accommodate all CST needs -not operationally viable (since it would not diversify existing visitor offer)	-need for development centred on existing settlement (and avoid unsustainable travel patterns) -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -ability to enhance the village's role as the 'gateway' to the Bolton Abbey Estate and wider YDNP	-scale of development could potentially conflict with YDNP and Craven Local Plan policies -design / location of development would need to respond to flood risk
4. Most development in Bolton Bridge village and Bolton Abbey village with some small-scale development in the YDNP	-farm shop-related traffic problems in Bolton Abbey village avoided -location of staff accommodation near to core worker areas (including Bolton Bridge and Bolton Abbey village) -harm to character of Bolton Abbey village avoided -scale of development can achieve material economic benefits / visitor enhancements -ability to provide appropriate scales of development across different parts of the CVA, according to their varying heritage and landscape capacities	-distance between visitor attractions / facilities	-need for development centred on existing settlements -possibility of historic route of visitors to Bolton Priory walking up the valley by the river -proximity to existing visitor attractions and infrastructure -ability to provide a 'gateway' to the wider YDNP -potential to enhance existing facilities (e.g. Cavendish Pavilion) with complementary development -potential (re)use of Barden Tower -potential to raise awareness / legibility of key views painted by Turner	-design / location of development would need to respond to flood risk in certain locations

7.75 As such, it is considered that:

- Strategic Options 1 and 3 are not commercially viable or realistic
- Strategic Option 2 would cause operational issues and could harm the historic landscape character of Bolton Abbey
- Strategic Option 4 is the preferred option as it has the most strengths and opportunities, no real weaknesses or threats.

7.76 As with all of the strategic options, any individual development proposals pursued by CST would, in line with paras 6 and 7 of the NPPF, be considered by CDC and YDNPA in the context of their ability to achieve sustainable development. In this context, one of the wider environmental and social benefits of Strategic Option 4 is its ability to avoid over-development at more sensitive parts of the CVA (e.g. at Bolton Abbey village).

Definition of Detailed Options

7.77 The preferred Strategic Option 4 would comprise “composite” development as follows:

- 1 Barden Bridge – scope for play area, facilities and ancillary parking;
- 2 Barden Tower – scope for play area and / or staff/visitor/other accommodation with ancillary parking;
- 3 Strid Wood – scope for small play area;
- 4 Cavendish Pavilion – scope for small play area;
- 5 Sandholme / The Ungain – scope for special events;
- 6 Bolton Priory – scope for some church-related development;
- 7 Bolton Abbey village – scope for barnyard green, play barn, play area, pub, staff/visitor/other accommodation, biomass boiler and wedding barn;
- 8 Bolton Bridge – scope for farm shop, cycle hub, café, offices, play area, hotel extension, spa extension and staff/visitor/other accommodation.

7.78 Interpretation boards (or similar) would also be provided throughout the YDNP area as appropriate, to raise awareness of locations where Turner painted related landscape watercolours/others (c.11 locations in all).

7.79 Further assessment work would be required to ensure each of these uses is compatible with the heritage sensitivities identified in each area. For each location and development option this would require further consideration of design, layout, setting, massing and access issues.

Assessment of Detailed Options

7.80 The assessment of detailed options focused on Bolton Bridge and Bolton Abbey since the smaller scale forms of development outside of these settlements are already consistent with YDLP policy and would be considered as applications in due course.

7.81 The assessment of detailed options classifies the effect of the development (both positive and negative impacts) by way of the following terms:

- Substantial⁵ beneficial
- Moderate² beneficial

⁵ **Substantial** – considerable effects (by extent, duration or magnitude) or of more than local significance

² **Moderate** – limited effects which may be considered significant

- Minor³ beneficial
- Neutral/negligible
- Minor³ adverse
- Moderate² adverse
- Substantial⁵ adverse.

Bolton Abbey village

Heritage

- 7.82 The Heritage Capacity Assessment identified areas 6b and 6c in Bolton Abbey village as being less sensitive areas in terms of their ability to accommodate growth.
- 7.83 To a large extent, any potential impacts on the historic environment would be dependent on the detailed design and layout of individual proposals. Nevertheless, Bolton Abbey village can accommodate new development which respects its 18th century form and layout, and enhances the role and legibility of the historic barnyard area by providing new open space. Moreover, the HCA shows how the layout of the main car park is capable of being reconfigured so that it provides a less formalised and 'softer' setting to surrounding heritage assets (and even responds to the form of medieval field patterns).
- 7.84 In line with policies SP2, SP4 and L1 of the YDLP and draft policies ENV2 and ENV3 of the emerging CDLP, any proposal would need to be designed to a high standard so as to complement the existing scale/character of the village and make use of traditional/rural/vernacular styles in terms of the materials and textures used (i.e. wood, stone and ivy-cladding).
- 7.85 Overall, and subject to appropriate design and mitigation measures, the detailed development option would be **moderate beneficial** in terms of impact to the historic environment at Bolton Abbey village.

Landscape and Visual Impacts

- 7.86 The Landscape Character Assessment (LCA) identifies Bolton Abbey village as having medium-high capacity in terms of being able to accommodate growth. It concludes that new planting can help screen potential new development, thus minimising any adverse visual impacts, and also 'open up' key views from the B6160 towards the Tithe Barn as well as to the new barnyard green south-west of The Beeches tearoom.
- 7.87 Overall, it is considered that the detailed option has the potential to give rise to minor adverse impacts in the short-term, whilst individual development proposals are" being built-out and new planting becomes established. However, the opening up of key views and the establishment of mitigation over a longer-term period would lead to a **neutral** impact in landscape terms.

Ecology

- 7.88 The study concludes that the detailed development option would be unlikely to cause any direct or indirect ecological impacts on designated sites, and that any future development proposal would need to respect the presence of existing habitats and, as appropriate, mitigate against potentially adverse effects on protected and other notable species.

³ **Minor** – slight, very short or highly localised effects

7.89 Indeed, the detailed option makes provision for a bat house in direct response to the need for mitigation as part of the proposal for a wedding barn at the Tithe Barn, and includes scope for substantial additional tree planting and the provision of attractive, high quality open greenspace (barnyard green), thereby giving rise to a possible net gain in terms of the biodiversity.

7.90 Overall, and subject to suitable mitigation, the residual impact of the proposed development would have a **minor beneficial** effect on the village.

Flood Risk

7.91 The Study concludes that the creation of new areas of hard-standing could give rise to minor / moderate adverse impacts by preventing natural surface water drainage and, potentially, increasing flood risk elsewhere. However, emerging CDLP Policy ENV6 would require any future development proposal to provide – as far as practically possible – the use of sustainable drainage systems and achieve existing surface water run-off rates on greenfield sites.

7.92 It is assumed that existing water treatment facilities would accommodate the relatively modest scale of new development within its existing capacity (or, if not, that planning obligations could provide additional capacity as appropriate).

7.93 Overall, and given the mitigation measures identified, the residual flood risk and drainage impact of detailed development option at Bolton Abbey village would be **neutral**.

Socio-Economic Effects

7.94 The study concludes that the detailed development option would better reveal the historic significance of the Barnyard Green which would act as a new focal point within Bolton Abbey village, and that various features (visitor / staff / other accommodation) would help provide a better sense of arrival (and departure).

7.95 More facilities would encourage visitors to spend longer and more within the CVA, and help provide much-needed 'wet weather' facilities within the CVA, helping the Estate to become more resilient to seasonal weather and adapt to climate change.

7.96 Development would create a range of local employment opportunities within the village, particularly the proposed pub and play barn. Collectively, a total of 27 FTE high quality / high value jobs would be created, with additional temporary jobs created during the construction phases.

7.97 New staff accommodation would help reduce CST's carbon footprint by encouraging staff to live closer to their place of work and thereby reducing long journeys to work.

7.98 Overall, development would help reinforce the role of the village as a local service centre and thereby help meet the social and economic needs of the local and wider community both now and in the future (especially since outlying settlements will increase in size and population).

7.99 It would also greatly diversify the visitor offer of the CVA, providing staff and visitor accommodation, local employment opportunities, secondary spend, community infrastructure, open greenspace and play areas. Development would therefore be **major beneficial** in terms of its socio-economic effects.

Bolton Bridge

Heritage

- 7.100 The Heritage Capacity Assessment concludes that the detailed option for Bolton Bridge would have no direct impacts on any identified heritage assets and so any effects would be indirect (i.e. may affect settings only).
- 7.101 Most development would be adjacent to the A59, an area of Bolton Bridge with very limited historic interest and therefore unlikely to impact on the setting of any heritage assets or key views.
- 7.102 Development such as the hotel and spa extension, as well as the proposed staff / visitor / other accommodation by the old A59 would need to respect the setting of surrounding listed buildings and, in line with policies SP2, SP4 and L1 of the YDLP and draft policies ENV2 and ENV3 of the emerging CDLP, be designed to a high standard so as complement the existing scale/character of the village and preserve key views.
- 7.103 Overall, and subject to appropriate design and mitigation measures, the development option would be **neutral / minor beneficial** in terms of impact to the historic environment of Bolton Bridge.

Landscape and Visual Impacts

- 7.104 The LCA concludes that development away from the core of Bolton Bridge and located in a prominent position off the A59 with limited screening / enhancement through new planting would be appropriate to the landscape character of this particular area (which is dominated by the man-made feature of the A59).
- 7.105 It also concludes that, further north, the modest forms of development (i.e. the staff / visitor / other accommodation, hotel and spa extensions) could be screened by existing planting, helping to minimise the scope for adverse visual impacts.
- 7.106 As such, the development option would present a **neutral** impact in landscape terms.

Ecology

- 7.107 The study concludes that development would be unlikely to give rise to any direct or indirect ecological impacts on designated sites since it would be situated on undeveloped grazing land or the existing hotel car park (with a low to moderate ecological value).
- 7.108 Where necessary, individual proposals would need to consider the presence of habitats and features of interest for reptiles, bats and birds to minimise impacts from development, and in particular ensure that Hambleton Beck was not harmed by potential sources of pollution.
- 7.109 Additional tree planting has the potential to provide a modest enhancement to the biodiversity of Bolton Bridge.
- 7.110 Overall, and subject to mitigation, the proposed development would not have a significant impact on ecology and nature conservation, with a residual impact considered to be **minor beneficial** in terms of ecology.

Flood Risk

- 7.111 Small parts of the main development area are at potential risk from flooding, including areas closest to Hambleton Beck, some of which lies within flood zones 2 and 3. However, hard development (e.g. farm shop and cycle hub / café) would be located within flood zone 1 (i.e. at

low risk of flooding). Conversely, development such as intended parking areas and some planting would be located within the higher flood risk areas. The other development (i.e. hotel / spa extension and staff / visitor / other accommodation) would be located within flood zone 1 (i.e. not at risk from flooding).

- 7.112 The creation of new areas of hard-standing could give rise to minor / moderate adverse impacts by preventing natural surface water drainage and increasing flood risk elsewhere. However, emerging CDLP Policy ENV6 requires any future development proposals to provide – if practically possible – the use of sustainable drainage systems and achieve existing surface water run-off rates on greenfield sites.
- 7.113 Existing water treatment facilities would accommodate the relatively modest scale of new development within existing capacity or, if not, planning obligations could be used to provide additional capacity within the network.
- 7.114 Overall, the residual flood risk and drainage impact associated with the detailed development option at Bolton Bridge would be **neutral**.

Socio-Economic Effects

- 7.115 The development option includes two main visitor attractions off the A59 roundabout (i.e. a proposed farm shop and cycle hub / café), thus helping to provide a new ‘gateway’ to the CVA whilst also creating opportunities for secondary spend and diversifying the visitor offer. The same is also true for the hotel / spa extensions.
- 7.116 The provision of commercial space (i.e. offices) in an attractive location would appeal to small-medium enterprise (“SME”) businesses in the local area.
- 7.117 The proposed visitor / staff / other accommodation makes good re-use of the former A59 route and would allow the opportunity for staff to live within close walking distance of key places of work such as the Devonshire Arms Hotel, thereby reducing journeys to work and thereby CST’s carbon footprint.
- 7.118 Development would create a range of local employment opportunities within Bolton Bridge, particularly in terms of the proposed farm shop and cycle hub / café. Collectively, a total of 10 FTE high quality / high value jobs would be created, with additional temporary jobs created during the construction phases.
- 7.119 Overall, development would represent a significant new capital investment in Bolton Bridge, help to diversify the visitor offer of the wider CVA, provide staff and visitor accommodation, provide local employment opportunities and increase expenditure in the local area. As such, the development option would be **major beneficial** in terms of its socio-economic effects.

Traffic Management

- 7.120 The supporting Transport Statement, prepared by Arup, considers the highways and access implications associated with the preferred development options at both Bolton Bridge and Bolton Abbey village, including:
- 7.121 In Bolton Bridge:
- 1 A number of car park access options for the farm shop, café/cycle hub and office have been considered and preferred access proposals recommended – this comprises upgrade to the existing B6160 junction;

- 2 Car park reconfiguration issues and access options for the hotel and spa have been identified – it is recommended that the hotel car park access is relocated to improve visibility and additional parking at the spa is provided for overflow / staff parking;
- 3 Proposals for access by sustainable modes of travel have been identified – in particular routes for pedestrian connections to the village.

7.122 In Bolton Abbey village:

- 1 A number of options to improve the efficiency of the car park access and reduce congestion have been considered and assessment undertaken to demonstrate the impacts of the preferred option – it is recommended that ticket machines are used at peak times instead of the manned kiosk;
- 2 The location of local access junctions and measures to improve visibility are identified at a number of locations;
- 3 Proposals for improved pedestrian access routes, including connections to the local bus stops have been identified to enhance pedestrian connections to the village;
- 4 An option to amend the B6160 highway alignment outside The Beeches to facilitate improved pedestrian routes has been considered;
- 5 Further highway measures around The Beeches have been suggested to provide a new public square.

7.123 The junction assessment Sensitivity Test included within the Transport Statement demonstrates that the A59 / B6160 junction can accommodate potential additional traffic associated with the proposed development option at Bolton Abbey. Whilst existing queuing on the B6160 approaching the Bolton Abbey visitor car park access would be exacerbated by development, the use of ticket machines instead of the manned payment kiosk at peak periods, could eliminate issues of congestion and queuing.

7.124 The car park occupancy Sensitivity Test (also included within the Transport Statement) demonstrates that additional car park capacity at Bolton Abbey village may be required in order to accommodate visitor during peak periods. It is noted that it would be important to ensure that any new car park layout is designed so that drivers move through the car park efficiently to find spaces and do not cause delays to other cars at the car park entrance.

7.125 The transport proposals for Bolton Abbey consider access by all modes of transport. It is acknowledged that the majority of visitor trips to the Bolton Abbey CVA would be via car. A high level highway assessment of increased visitor trips has been undertaken and concludes additional trips can be broadly accommodated on the local network. On the basis that additional car parking is proposed and measures to relieve congestion as a result of queuing at the payment kiosk have been identified, it is concluded that **the preferred development option can be satisfactorily accommodated on the local transport network.**

8.0 **Delivery**

Design

- 8.1 CST has extensive experience of implementing built development and creating excellent heritage-related spaces throughout its land holdings. This includes developments at the Bolton Abbey Estate and at Chatsworth, Derbyshire, where design excellence and the use of traditional material and building methods have been used.
- 8.2 As set out in Section 8.0 of the BADOAS, the potential effects of the detailed development options at Bolton Abbey village and Bolton Bridge would need to be mitigated through the use of appropriate materials and textures and designed to a high standard to complement the existing scale/character of the places concerned. They would also need to incorporate “soft” elements (e.g. planting, footpaths, greenspace) so as to complement the existing built form and have less impact on the surrounding landscape.
- 8.3 Built development would need to be sited in a way which complements and enhances the heritage interest of the location as identified by the BADOAS and accompanying HCA.

Delivery Mechanisms

- 8.4 The main delivery mechanism for the detailed development options will stem from the phasing programme for the scheme, so that each element effectively pays for itself and is able to generate funding for further elements as appropriate. In the first instance and to fund Phase 1, it is understood that CST has sufficient internal financial resource and access to funding to ensure that development is deliverable. As such, this is considered to be a long term project and envisaged to be completed over a 20-50 year timeframe.
- 8.5 In addition, opportunities for enabling development should be explored by CST, as will the possibility of creating a Community Interest Company to attract funding from the Heritage Lottery Fund or other, to further assist with development funding and/or to secure more community-related activities within the Estate, including at locations within the Bolton Abbey Estate, but located outside of the detailed option areas.

Phasing

- 8.6 Further to completing a comprehensive development masterplan in liaison with key external stakeholders, it is understood that CST will look to develop the scheme in three broad phases:
- Phase 1: Bolton Abbey village (within 10 years of masterplan adoption)
 - Phase 2: Bolton Bridge (within 20 years of masterplan adoption)
 - Phase 3: YDNP elements (after 20 years of masterplan adoption)

Summary

Design

- 8.7 CST has extensive experience of creating and delivering high quality built development and heritage-related spaces at Bolton Abbey, Chatsworth and elsewhere using traditional materials and building methods. Development at Bolton Abbey village and Bolton Bridge would need to incorporate both “hard” elements and “soft” ones (e.g. planting, footpaths, greenspace) designed to a high standard to complement and enhance the existing scale/character of the places

concerned, thereby minimising adverse impacts on the wider landscape and responding to the heritage landscape capacity from which the preferred development options have been derived.

Delivery

- 8.8 The main delivery mechanism for development will stem from the phasing programme for the scheme, so that each phase pays for itself and can generate funding for further elements as appropriate. In the first instance and to fund Phase 1, it is understood that CST has sufficient internal financial resource and access to funding to ensure that development is deliverable. As such, it is considered to be a long term project and envisaged to be completed over a 20-50 year timeframe at least. Opportunities for enabling development and other funding sources (e.g. Heritage Lottery Fund) should also be explored as appropriate.

Phasing

- 8.9 Further to completing a comprehensive development masterplan in liaison with key external stakeholders, it is understood that CST will look to develop the scheme as follows:
- Phase 1: Bolton Abbey village (within 10 years of masterplan completion)
 - Phase 2: Bolton Bridge (within 20 years of masterplan completion)
 - Phase 3: YDNP elements (after 20 years of masterplan completion).

9.0 **Conclusion & Recommendations**

- 9.1 CST is committed to and experienced in delivering high quality development within heritage settings for the long term, but currently faces several issues that affect its visitor operation and therefore its ability to carry out programmes of environmental management and architectural conservation at Bolton Abbey.
- 9.2 Delivery of the preferred development option (Strategic Option 4) for the CVA identified in this study would help CST address its identified needs and, subject to suitable design and layouts for individual proposals being progressed, would do so in a way which avoids harm to the sensitive historic landscape character of Bolton Abbey.
- 9.3 Indeed the preferred option would enhance the local area and provide key benefits in the long term including public open greenspace; attractive focal point to settlement; improved amenity; increased awareness of the former Barnyard area; high quality accommodation for visitors/staff/others; renewable energy supply; enhanced sense of arrival/departure for visitors; heritage-themed learning-through-play facilities; one of few wet weather play facilities in the Dales area; sale of local/organic/estate produce; better access to/from Bolton Abbey Station; improved road safety; office or other work-space units; 37 extra full-time equivalent high quality/value jobs.
- 9.4 Having taken all relevant factors into account, it is considered that the preferred development option represents the best way forward in terms of the scale and balance of proposed development, and also that the detailed options provide for the right locations for the types of development concerned.
- 9.5 Such development would be phased over a timeframe of at least 20 years, though some elements are needed now. Inclusion of an allocation and/or suitable policy in the Craven District Local Plan would be justified and give plan-led certainty to CST to invest in such development accordingly.

Bristol
0117 403 1980
bristol@lichfields.uk

Cardiff
029 2043 5880
cardiff@lichfields.uk

Edinburgh
0131 285 0670
edinburgh@lichfields.uk

Leeds
0113 397 1397
leeds@lichfields.uk

London
020 7837 4477
london@lichfields.uk

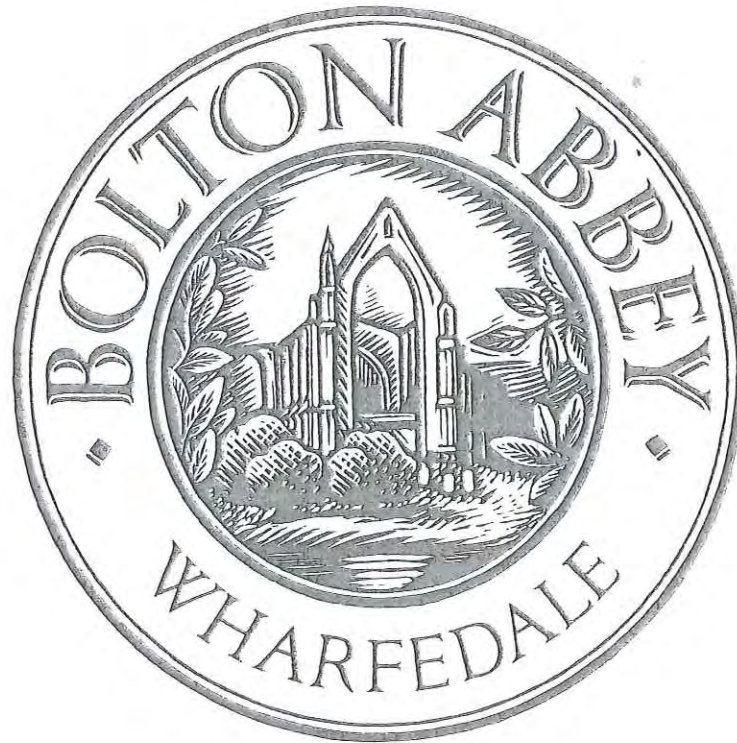
Manchester
0161 837 6130
manchester@lichfields.uk

Newcastle
0191 261 5685
newcastle@lichfields.uk

Thames Valley
0118 334 1920
thamesvalley@lichfields.uk

Appendix 1: Bolton Abbey Heritage Landscape Management Plan

JOB	DATE IN	ACT.
	10 NOV 2015	
TO CMD	TO	TO



HERITAGE LANDSCAPE MANAGEMENT PLAN

**THE TRUSTEES OF THE CHATSWORTH SETTLEMENT
YORKSHIRE ESTATE**

THE BOLTON ABBEY ESTATE

HERITAGE LANDSCAPE MANAGEMENT PLAN

JULY 1993

THE TRUSTEES OF THE CHATSWORTH SETTLEMENT

YORKSHIRE ESTATE

APPENDICES

Appendix 1:

Claim for C.T.T. exemption, management conditions and undertakings

Appendix 2:

Nature conservation

Appendix 3:

Schedule of Historic buildings and monuments, list of non-exempt buildings

Appendix 4:

Estate Forestry

Appendix 5:

Access Agreement and related byelaws

MAPS

- Map 1: Exempt land
- Map 2: Primary land use
- Map 3: Items of Historical and Archaeological Interest
- Map 4: Items of Conservation Interest
- Map 5: Public access

INTRODUCTION

The greater part of the Trustees of the Chatsworth Settlement's Bolton Abbey Estate has been designated as heritage property under sections 76 and 77 Finance Act 1976 and as such exempted from Capital Transfer Tax. As a condition of this exemption the Trustees undertook to prepare a Landscape Conservation and Recreation plan for the Estate in consultation with the Yorkshire Dales National Park Authority.

The exempt land includes extensive tracts of moorland, 61 farms, amenity and productive woodlands, 30 listed monuments and buildings and receives up to approximately 400,000 recreational visitors annually.

The Estate has a long tradition of land management for multiple users and of careful attention to landscape quality and conservation, hence its present landscape qualities.

Chapter One is a general description of the Estate.

Chapter Two describes the resources of the Estate, together with land uses and certain constraints upon management; it also identifies the main landscape types and their main characteristics.

Chapter Three gives the overall objectives of management.

Chapter Four sets out the management of the heritage Estate.

Chapter Five summarises public access and recreation available.

Chapter Six summarises the relationship with tenants.

Chapter Seven deals with consultation and the monitoring of this Plan.

CHAPTER ONE

DESCRIPTION

1.1 Location and Boundaries

1.1.1 The Heritage Landscape area of the Bolton Abbey Estate lies in the south east corner of the Yorkshire Dales National Park and covers a large part of their "Eastern Moors Landscape Zone".

1.1.2 However, some parts of the Estate are outside the National Park, specifically:

- an area of Moorland to the east of the National Park boundary, including parts of Pock Stones Moor, The Great Stray (High Moor and Low Moor) and Rocking Moor down to the boundary with Key Gill Moor.
- an area of farmland to the south of the National Park boundary and west of the River Wharfe, from Farfield House, following the Co.Const. boundary to the A65 at Chelker Reservoir; it includes the eastern half of this reservoir from where it turns north along field boundaries and west along the A59 to meet the National Park boundary again at Eastby. This land covers mainly hillsides and fells, but excludes the Lower Valley meadows. See Map 1.

1.1.3 The following areas are inside the outer boundary of the Heritage Landscape Area but are not part of the Estate.

- Howgill Farm, Beamsley
Howgillside, Beamsley
Ling Chapel Farm, Beamsley
Bowers Hill, Beamsley
New Hall Farm, Pembroke Lodge, Hillside,
Oakhill, Merrileas, Meadowcroft and Oakfield
House, near Storiths, Beamsley
Beamsley Hospital, Deerstones House and
Deerstones Cottage, Beamsley
Crakelands Farm, Halton East
Embsay Reservoir)
Lower Barden Reservoir) see Chapter 2 para
Upper Barden Reservoir) 2.1.9
Chelker Reservoir plus other residential
property in the village of Halton East.
See Map 1.

1.2 Extent

1.2.1 The Heritage Landscape area comprises approximately 26,065 acres (10,556 ha), of which 24,810 acres (10,048 ha) are in the Yorkshire Dales National Park. This can be broken down into the following components:

- Approximately 9,853 acres (3,990 ha) of enclosed farmland, mainly on the lower slopes and the Wharfe valley.
- Woodlands, including fine, deciduous mature woodlands and coniferous plantations of varying ages, total about 1,113 acres (450 ha) in the Wharfe valley and on lower slopes.
- Open moorland areas total about 15,100 acres (6,115 ha).

1.2.2 The Estate includes three S.S.S.I.'s, namely:

- The Strid Wood SSSI for which a management prescription was agreed in 1985, between the Estate and English Nature.
- Butter Hall Hill, within the Cracoe Reef Knolls SSSI, for which a management prescription is presently being prepared.
- Hambleton Quarry SSSI notified in 1991 having been identified as of national importance in the Geological Conservation Review.

1.3 Access

1.3.1 The moorlands of the Estate are open to the public under an Access Agreement (1968), covering a total of 13,821 acres (4,497 ha) of Barden Fell, the Great Stray, Rocking Moor, Hazlewood Moor, Barden Moor, Burnsall and Thorpe Fell, Cracoe Fell, Hall Fell, Rylstone Fell, Embsay Moor and Halton Heights. Effectively, the public are free to roam over these extensive areas of moorland for all but thirty days in the year when shooting may be taking place.

1.3.2 The Estate includes public Rights of Way and permissive paths, representing a footpath and bridleway network of approximately 75 miles (120 km)

The main entry point to the Estate is at the junction of the A59 and the B6160 at the Devonshire Arms Country House Hotel next to Bolton Bridge at the southern boundary of the National Park. From this point day visitors from the Leeds/Bradford conurbation and from Harrogate/York join to follow the B6160 for the last half mile to the village of Bolton Abbey.

1.3.3 There is a large coach and car park in the village of Bolton Abbey, (see Chapter 5 para 4) and an extensive car park and picnic area is provided on the river bank below the Cavendish Pavilion. A riverside field at Barden Bridge is also used occasionally for car parking. These car parks are situated strategically to complement a series of riverside footpaths - and a charge is levied for all car parks.

1.3.4 Public access is provided to Strid Wood from the Cavendish Pavilion car park and from a small car park at its northern entrance. The admission charge for the Nature Trails in Strid Wood was withdrawn in 1990. (see Chapter 5 para 6).

1.4 Land Use and Landscape

1.4.1 The Estate is managed for the following purposes:

- agriculture, forestry, sporting, recreation and conservation

For generations the Owners, the Dukes of Devonshire, have placed great emphasis upon the preservation and enhancement of the landscape of the Estate, which includes many features of natural and historic interest. It is the combination of natural beauty, open countryside, river access and history that forms the main attraction for the many visitors. The primary land uses of the Estate are shown on Map 2.

1.4.2 The Estate contains a number of listed buildings including the ancient ruins of the 12c Bolton Priory and the ruins of the 15c hunting lodge Barden Tower as shown on Map 3.

CHAPTER TWO

THE RESOURCE

.1 Physical Features

- 2.1.1 The upland part of the Estate is underlaid by Millstone Grit which in places rises as cliffs and outcrops to a height of 485m.
- 2.1.2 The Gritstone upland west of the Wharfe forms a basin dipping inwards from three sides, which contains the catchment area for Upper and Lower Barden Reservoirs. The outer edges of this basin drop sharply to the north and west, from a jagged escarpment of cliffs and crags, towards the more gently undulating meadows of Rylstone valley. Along the south edge, the descent is somewhat less steep, although some steep crags and escarpments crop out, most notably at Embsay Crag.
- 2.1.3 The escarpments of Cracoe and Rylstone Fells are marked by monuments (Obelisk and Cross) and crags. This skyline is a very important feature in the landscape as seen from the Skipton to Grassington road B6265.
- 2.1.4 On the Gritstone Moors on the east side of the Wharfe a number of fast-flowing streams have cut deep gills into the bedrock, thus dividing the edge of the plateau into separate hills, rising steeply from the valley. The skyline is marked by several sharp cliffs and crags, including South and North Nab, Carncliff Crag, Simon's Seat, Lord's Seat and Great Pock Stones. Further eastwards the moor plateau is shaped like a dome, rising to 412 m. towards the divide, which roughly marks the boundary of the National Park. Over the divide the moors slope gently towards the river Washburn and the Heritage Landscape boundary lies where the enclosed land starts.
- 2.1.5 The Gills form some of the most attractive scenery on the Estate. Probably the best known is Posforth Gill, in the "Valley of Desolation", with several waterfalls to delight the walker. Other well-known gills include Pickles Gill and Ravens Gill.
- 2.1.6 The deeply cut topography of the Millstone Gritstones provides scenery of great variety, viewed from the valley and long views across the hills and dales from the higher land. In the south east corner of the Estate, Beamsley Moor rises sharply from the valley of Kex Beck and the Estate boundary follows the summit from Beamsley Beacon to Little Gate at

Round Hill (409 m). (The lowest point of the Estate is at 100m. about half a mile below Bolton Bridge).

2.1.7 The soils on top of the Milstone Grit are largely acid and vary in depth from thin mineralised subsoils to deep peat deposits. The Provisional Agricultural Land Classification of 1967 shows the Moorland and hillsides as Grade 5 agricultural land. The soils over a limestone belt area are of a more fertile nature and provide Grade 3 or 4 grazing land in enclosed fields.

2.1.8 Glacial deposits of tenacious clay with stones and sand prevail in the Wharfe valley and are classed as Grade 3 agricultural land. These soils are deep, fertile, well-drained and fairly level in natural terraces separated by short steep slopes. There is evidence that in former times some of the fields in the Wharfe valley were ploughed for cereal crops. These soils provide for good grazing land and fine deciduous parkland trees.

Soils in the gills and on the steep hill sides vary greatly in composition and depth, ranging from scree to deep peat and clay pockets.

2.1.9 There are 3 reservoirs on the Estate, leased by the Yorkshire Water Services Limited and over which the Estate has no control other than for sporting rights over Upper and Lower Barden Reservoirs. These comprise:

Lower Barden Reservoir

At 220 m. on Barden Moor, largely spring-fed ph 6-7, with a Victorian earthbank and gritstone walls construction. It is stocked with rainbow trout and leased to a fishing club.

Upper Barden Reservoir

Also on Barden Moor, mainly stream and flushfed, acid in quality. The dark Victorian walls contribute to its desolate setting on high altitude (360 m.). Water is too acid to support fish.

These reservoirs are not included in the Access Agreement of 1968, although a footpath crosses the dam of Upper Barden reservoir.

Chelker Reservoir

At 220 m. is a balancing reservoir of more recent construction, which experiences much less fluctuations in level. As such, it appears to

support a wider belt of marginal vegetation and a variety of breeding waterfowl.

No public access is allowed by the Yorkshire Water Services Ltd on any of the reservoirs - except for fishermen who are members of the relevant fishing Clubs.

2.2 Vegetation and Habitat

2.2.1 A detailed 1/10,000 scale survey of vegetation was undertaken by English Nature in 1986 covering the unenclosed uplands and some of the larger hillside plantations. The main features of conservation interest are shown on Map 4.

2.2.2 The survey of the uplands can be summarised as follows:

2.2.3 Upland Moor Areas

Dry dwarf shrub heath

Dominated by ericoids with bryophytes and lichens. This vegetation type prevails on all the Access lands, with large areas of bracken along the stream courses, the upper gills and the upper steep slopes.

Wet bog

A large expanse of blanket bog occurs on the expanse of moors around the eastern boundary of the National Park, on the Great Stray and Rocking Moor. This is characterised by the watertable being at or just below the surface with deep peat (min 0.5 m.), depending on atmospheric moisture for peat formation.

Acidic Flushes

These occur in wet areas along seepage lines on sloping ground in the moors and support a species poor vegetation. Flushes usually cover long narrow areas and are prominent on Embsay Moor, Hazlewood Moor and along the sloping east side of the Estate.

Continuous Bracken

This is land dominated by *Pteridium aquilinum*. It occurs in large areas around Barden Beck, Barden Broad Park, Simm Bottom, the slopes above Embsay Reservoir, the steep slopes of Dale Head, Coney Warren, the higher gill slopes and the steep slopes of High Park and Bolton Park on North and South Nab, and other areas mainly on the edge of the moors

especially at Simm Bottom, Asick Bottom, and Agill.

Dry heath/acidic grassland mosaic

This represents a mixture of dry heath and unimproved acidic grassland. It occurs over large areas of Embsay Moor and the highest slopes of Cracoe and Thorpe Fell.

Acidic Cliffs and Rocks

These stand out, along the crag lines above the vegetation but support none.

2.2.4 Lower Hills

The lower hills, enclosed parts of the moor and the hillsides support the following communities in addition to Continuous Bracken:

Acidic unimproved grassland

This is defined as usually unenclosed hill grazing land on a range of acidic soils. It is normally species poor and is found in large areas of Cracoe Fell, Hall Fell, south of Upper Barden Reservoir and dam, Little Hare Head, Middle Hare Head and Stank, the Black pastures of Broadshaw House, High Park, the east corner of Coney Warren and Shepherds Close on Low Moor.

Semi-improved acidic pasture

Usually enclosed pasture and more species rich than acidic unimproved grassland. It occurs at Mucky Park on Barden Moor; an area around Norton Towers; the south corner of Coney Warren and the far north corner of the Estate at Eller Edge.

Pasture and Haymeadows

Enclosed managed grassland on valley slopes which is usually improved to some extent by farm manure or artificial fertilizers. This comprises the field east of Butter Haw Hill; the lower slope meadows south of Rylstone; below Lower Barden Reservoir; the land east of Bolton Park and the south part of Eller Edge.

2.2.5 Woodlands

Some important semi-natural, broad-leaved woodlands have been identified, namely the Strid Wood SSSI; Garrelgum Wood; part of Gill Beck Wood; part of Upper Fell Plantation and smaller areas at How Beck

and Posforth Gill.

Pockets of mixed woodland have been identified at: the woodland north of Coney Warren and part of Nelly Park Wood.

Coniferous Woodland Plantations include Heber Plantation; Intake Plantation; half of Nelly Park Wood; Gill Beck Wood; Stoney Bank Wood; Bull Coppy Wood; Laund Pasture Plantation and Lower Fell Plantation.

3 Wildlife

2.3.1 No records have been kept of the abundant wildlife but Appendix 2 gives a list of the known species.

2.3.2 A survey of wading birds by English Nature over Rylstone Fell and Embsay Moor in 1983, recorded the highest density of breeding waders and raptors in all of North Yorkshire and Durham. Specific species included Golden Plover, Lapwing, Dunlin, Snipe, Curlew and Redshank. A dot map showing the distribution of these is included in Appendix 2.

The report stressed the importance of flushes and damp areas for the waders. It is also noted the preference of grouse for flushes with a mosaic of burned heather, and in common with the waders, their avoidance of old less productive heather and heavily grazed grassy areas.

2.3.3 Two colonies of gulls are known to be breeding above Upper Barden Reservoir and a colony of Green Hairstreak butterflies is reported in the vicinity of Barden Beck near Brass Castle.

2.3.4 In addition to waders, grouse and gulls, birds of prey are found on the moors; including occasionally Hen Harriers, Short-eared Owls and Merlins. No specific data is available for the eastern moor areas or Beamsley Moor, although similar habitats prevail in these areas.

2.3.5 The Wharfedale Naturalists Trust have recorded more than fifty species of birds breeding in Strid Wood.

2.3.6 In addition to the birdlife mentioned above, other wildlife species appear on the Estate and are listed in Appendix 2.

4 Historic Features

2.4.1 It is believed the land has been continuously occupied for at least 1,000 years but, there are

also traces of human occupation from the Stone and Bronze Ages and Roman times.

The Domesday Book makes reference to settlements in: Bolton Abbey, Beamsley, Drebley, East Halton, Embsay and Rylstone.

Listed Buildings and Churches
comprise the following:

Grade I

- Bolton Priory ruins, 12C building and grounds
- Barden Tower ruins, a 15C hunting lodge

Churches

Grade A

- Church of St. Cuthbert and St. Mary 13C-16C, parish church of Bolton Abbey being the reconstructed nave and North aisle of the original priory (the property of the Bradford Diocese - but attached to the Priory ruins).

Grade B

- Barden Church, 16C church, formerly Chapel of Ease from Bolton Priory and a former private chapel, to the residents of Barden Tower, now deconsecrated.

Grade II

The Estate includes 52 grade II listed buildings and structures - prominent amongst these are:

- The Old Rectory, previously the Grammar School and Rectory
- Mill and Aqueduct
- Precinct Wall of the Priory
- The Great Tithe Barn
- Barden Tower Farmhouse

2.4.2 A complete list of listed buildings is supplied in Appendix 3 (and shown on Map 3). Most old farm buildings are part of the Heritage landscape, but most recent additions are excluded.

2.5 Conservation Areas and TPO's

- Bolton Abbey village is a designated Conservation Area.
- Embsay Conservation Area includes a small part of

- the Heritage Landscape at Monks Well.
- TPO's apply to trees along the Emsay-Eastby road and trees to the north of this road are part of the Estate (TPC no' 2 1971 W Riding).
- Halton East: TPO 2304 of the Craven District applies.

2.6 Archaeological Interests

2.6.1 The Estate has not been systematically surveyed for archaeological remains. Some sites and features are however well known. These include:

- Cup marked boulders at Ellers Edge
- Pillow Mounds at Norton Tower, with the ruins of buildings and deer enclosures
- The ruins of Cliffords Tower
- Field enclosures - Haha walls at Bolton Priory, early walled enclosures with cruck barns at Drebley
- Fish ponds at Bolton Abbey, Halton East and Rylstone
- The Deer Park at South Nab
- Peat pits, coal workings and stone quarries on the moors
- Old water powered mills with aqueducts, fords, weirs and ponds; three old water mills are still present on the Estate, only one of which retains its water-wheel.

2.7 Public Footpaths' and Bridleways

2.7.1 The Heritage Landscape area contains a network of footpaths and bridleways, both statutory and permissive. Some of these were planned, and some have developed through visitor useage. Some are in poor condition and some are subject to extremely intensive use throughout the year. Most important amongst the Permissive footpaths is a section of the Dales Way. This footpath enters the Estate at Bolton Bridge and follows an alignment through the Wharfe Valley up to the northern boundary of the Estate at Howgill on the route to Burnsall.

2.7.2 There are one major and two smaller bridleways:

- a bridleway linking Bolton Hall across the moor to Rylstone (8 miles/13 km)
- a bridleway from Emsay circling Emsay reservoir up to Emsay Crag to Eastby
- a bridleway linking the Devonshire Arms Country House Hotel over Haw Pike with the village of Draughton outside the Estate.

2.8 Land Use

2.8.1 Land use on the Estate consists of farming, forestry, field sports, recreation and conservation (as shown on Map 2).

2.8.2 Farming

The total area of enclosed farmland in the Heritage Landscape area amounts to approximately 9,853 acres (3,990 ha), most of which is leased out to tenants. The land can be classified as meadow, pasture, rough grazing and moorland grazing - there being no arable land. All farms keep livestock and require buildings for in-wintering stock and machinery. The farms can be divided as follows: livestock rearing, dairy or mixed dairy and livestock rearing.

In general the farms are small family enterprises that do not employ outside labour. The average size of all farms is 126 acres (51 ha), much of which is hillside pasture. All farmland is classed as grade 3 or 4 agricultural land. Only 11 farms are over 200 acres (80 ha) and 22 are less than 60 acres (24 ha). This latter size has now become borderline and the Estate has to consider whether it should be amalgamating farms to produce units of a minimum, say, 120 acres (50 ha). In practice, each farm is treated on its merits and since only seven farms have become vacant in the last 10 years there is little chance of making any widespread changes.

Approximately three quarters of the moorland is subject to common grazing rights, but mainly for the Estate's own tenants. Moor grazing is exclusively for hill sheep and most of the common grazing has been registered under the Commons Registration Act of 1965.

Most field enclosures are constructed in drystone, the traditional form of walling in the Dales but some of the lower farms have hedges and wooden fences, particularly along the roadsides.

Only a small amount of land is kept "in hand" by the Estate Owners, mainly the Priory grounds, the car parks and areas for recreation.

2.8.3 Forestry

The total area of land under forestry is approximately 1,113 acres (450 ha). This area has remained unchanged for the last 20 years. Most of this is below the 330 m contour and consists partly of highly fertile valley land but mostly the poorer

hillsides. It can be divided into two main components:

- a coniferous management unit of around 867 acres (350 ha) in various plantations on steep hillslopes on land of poor agricultural value.
- a broadleaved management unit of 245 acres (100 ha) largely on the valley bottom and sides as well as in the lower gills. Most of this is mature.

This woodland, as shown on Map 2, is dedicated to forestry and is managed in accordance with a Plan of Operations approved by the Forestry Commission though the owners may be obliged to turn to the Commission's Woodland Grant Scheme in 1993. The present management is outlined in Appendix 4.

2.8.4 Sporting Rights

The western and eastern moorland areas are managed for heather conservation and grouse. The Estate continues to employ gamekeepers for the proper management of the moor and the sporting. Their duties include the periodic burning of heather, cleaning of grips, ditches and drains and a programme of bracken control to control the spread of bracken into the heather moorland. Sporting rights on Beamsley Moor are leased to a neighbouring land-owner.

Pheasant shooting is also in hand but rights on approximately 2,000 acres (800 ha) are currently let to a syndicate.

2.8.5 Fishing

The river Wharfe, a game-fish river, is fished for brown trout and grayling and the stretch from the south boundary to Barden Bridge is managed by a water bailiff employed by the Estate. North of Barden Bridge the Estate water is let to The Appletreewick, Barden and Burnsall Angling Club. Fishing on Lower Barden Reservoir is reserved for the Estate and is let to Appletreewick, Barden and Burnsall Angling Club.

2.8.6 Other informal recreation

2.8.6.(i)

The riverside near the Priory has been attracting visitors from the West Yorkshire and Lancashire conurbation for over one hundred years. Over two million people now live within a one hours drive and almost eight million within two hours driving time.

The number of visitors has increased over the last 10 to 15 years, requiring more management by the Estate.

2.8.6.(ii)

In the course of a year with an average summer approximately 100,000 cars are admitted to the car parks at the Cavendish Pavilion and Bolton Abbey village. In addition cars arrive outside the fee collecting times, or park at Strid Wood or Barden Tower car parks, or on the road east of the river. Allowing further for coach parties, cyclists, motor cyclists and walkers, the total numbers of visitors to the Estate in one year may be as high as 400,000. Many come for walks by the river and in the woods, but on hot summer days it is access to the riverside that is being sought for picnics and paddling. Many people just spend the whole day on the Estate, much of the time content to rest and play close to their cars, enjoying the scenery, the countryside and each others company. An average of 60,000 visitors a year visit the Nature trails through Strid Wood.

2.8.6.(iii)

Climbers visit Eastby Crag, Eastby with permission from the Estate and access to Crookrise Crag is via Embsay moor - part of the Access Agreement.

2.8.6(iv)

The Estate offers overnight accommodation at several levels of comfort - the Devonshire Arms Country House Hotel, farmhouse bed and breakfast, bunk barn and two caravan sites. The main catering facilities are provided at the Cavendish Pavilion, the Tea Cottage in the village and at Barden Tower but in addition, Howgill Lodge and Forge Cafe at Bolton Bridge provide a full range of refreshments at opposite ends of the Estate, as well as a few selected farms, e.g. Low House Farm, Barden, Back O' Th' Hill Farm, Storiths.

2.8.7 Conservation

Conservation of the landscape features has been an important part of multiple purpose management on the Estate by generations of Owners. This continues to be the case. Equally habitat conservation has played a major role in management of the moorlands and fells to improve red grouse habitats, which simultaneously improves the habitats for wading birds and raptors. Conservation of Strid Wood is secured through its SSSI status and Management Plan (see Appendix 4) and is identified on Map 4. The Estate continues its dialogue with English Nature regarding the identification of other habitats of

special conservation interest which require special management practices for rare or threatened species in need of protection. Further information is detailed under vegetation and habitat. (see para 2.2.1).

2.9 Landscape Identity Areas

2.9.1 The scenery of the Estate can be grouped into landscape identity areas, which closely coincide with different areas of resource management. This identity of landscapes is largely based on the following parameters:

- the physiography, topography and drainage of the land, with its special features
- the main vegetation types
- the land use and its associated features

2.9.2 On this basis 4 main Identity Areas can be recognised:

- the Wharfe Valley, subdivided into the Meadows and the Woodlands
- the Gills
- the Valley sides and hillsides
- the Moorlands, subdivided into the Western and Eastern moors

2.9.3 Conservation management of the landscape character and quality is set out in Chapter 4.

CHAPTER THREE

MANAGEMENT OBJECTIVES

The overall aims are:

- 3.1.1 To continue to manage the Estate as an integral unit incorporating agriculture, forestry, sporting, recreation and conservation interests
 - to endeavour to sustain its economic well-being and support its associated community
 - to maintain the character and quality of the landscape
 - to conserve the Estate's scientific and historic interests and to provide reasonable access for the public
 - to conserve and enhance the nature conservation interests of the Estate

CHAPTER FOUR

MANAGEMENT OF THE HERITAGE ESTATE

4.1 Farmland

4.1.1 The Estate will foster the efficient use of its agricultural resources and will continue

- to farm and require its tenants to farm the land according to the accepted rules of good husbandry appropriate for the area, recognising the political and economic constraints of the time and the development of agricultural practices and other land uses where appropriate.
- to maintain the farmhouses, buildings and cottages necessary for the continuing integrity of economic agricultural enterprises in a good state of repair with suitable materials to preserve their condition and appearance. Appropriate new uses for most redundant farm buildings will be sought. In a few cases it may be impossible to find alternative uses or justify expensive maintenance. In such cases any deterioration in the building will be stabilised pending a decision, following consultation, on whether it should be retained in some form or removed.
- to ensure that any new farm buildings, houses, cottages are erected in a manner that is in harmony with the landscape and conforming with planning requirements.
- as landlords, to ensure that tenants follow those terms of their tenancy agreements which maintain the landscape character and quality of the Estate, for example through the repair, maintenance, and when necessary, replacement of fences, live and dead hedges, gates, field gates, yard walls, field walls, yard posts, stiles, bridges, culverts, ponds, water courses, ditches, etc.
- to consult with the Countryside Commission or their agents on the ploughing of grassland or moorland, reduction or new planting of woodlands or additional drainage or other proposal that might be expected to affect the scenic or wildlife interest of the land.

4.1.2 Hill Pasture and In-Bye Meadow Land

No significant change of vegetation will be made to those areas of hill pasture identified on Map 4 without the prior agreement of the Commission or its

agents. Such agreement will not be required for the control of bracken, control of the spread of common rush or any noxious weeds (the control of which would be commensurate with good husbandry) and normal maintenance of grips, drains, ditches or water courses would be permitted.

The Estate, with the advice of the Yorkshire Dales National Park, will inform tenants of the importance of any in-bye and hill pastures for birds and agree the appropriate management required. The important in-bye land is marked on Map 4.

4.2 Woodlands

4.2.1 The woodlands are of sufficient significance for the landscape quality of the Wharfe Valley to warrant heritage exemption, but have an economic function to fulfil as well, as most of the Estate's woods have been planted for timber production. In general, management objectives to realise the commercial value of timber have a greater weight in the coniferous plantations than in the broadleaved woodlands, where amenity and conservation objectives have a greater, but not exclusive, importance. To secure Forestry Commission grants and obtain authorisation for felling/thinning, the Estate will apply for entry to approved schemes or for Felling Licences as may be appropriate. In March 1993, the Estate applied for entry to the Woodland Grant Scheme.

The Estate's existing practices of designing individual felling coupes and their restocking to enhance the landscape will continue and opportunities will be taken to minimise the adverse impact of some existing woodlands. New areas of planting will continue this sympathetic relationship with landscape conservation.

Not all plantations have adequate road access for modern extraction methods and particularly in the narrow gills and on the steep slopes of the main valley extraction routes may have to be improved. Any road works will be subject to consultation with the Yorkshire Dales National Park and will be designed to minimise visual and other environmental impact.

Stockproof and rabbitproof fencing are a constant necessity of young plantations as well as for the regeneration of older broadleaved woodland. So is the control of pests. Replanting of failed young trees, weeding, brashing, thinning and felling must be regarded as essential to good forestry

management. Natural regeneration may be aided by planting of desired species in the broadleaved management unit, to ensure a permanent forest with a sustainable extracted crop.

4.2.2 Coniferous Plantations

The Estate will continue to manage these in accordance with a Plan of Operations approved by the Forestry Commission but modified, where necessary, to conform with the undertakings which include the maintenance/improvement of the species diversity and appearance of the existing plantations.

- to carry out felling, replanting and maintenance according to the age of the plantation but varied to take account of disease, wind-blow, fire or other incidents outside the control of the Estate. (Such flexibility is in accordance with the approved Plan of Operations).
- to consider planting additional areas where economically feasible and acceptable in landscape and wildlife terms.
- to continue to operate a saw-yard and maintenance yard if economically feasible.
- to develop ancillary forestry activities to include production and sale of Christmas trees and other added value lines, e.g. production of preservative treated fencing materials.

4.2.3 Broadleaved Woodlands

Strid Wood is an SSSI for which a management prescription has been agreed with English Nature. The Estate will adhere to this prescription which aims to maintain an existing mixture of broadleaved and other species and to conserve a number of habitats important for specific flora and fauna. The prescription includes the strengthening of the oak content of the woods East of the Wharfe and allows for the removal of some timber for Estate use or sale, thereby contributing both to the upkeep of the Wood and its rejuvenation. Pest control will continue to be necessary to limit the damage done by mice, rabbits, grey squirrels and deer. The prescription also provides for the Estate to continue to manage its fishing rights in the river Wharfe through the woodland and to allow public access, which will be monitored and, if necessary, controlled to avoid adverse impacts on the flora and fauna.

4.2.4 Outside the SSSI, the Estate will continue

- to manage broadleaved woodland for both its value as a hardwood timber crop and its landscape and wildlife contribution.
- to replace and plant hedgerow and parkland trees where this is desirable in the interest of landscape conservation and Estate management objectives.
- to maintain existing, and consider the creation of new farm shelter belts where the provision of these would comply with the overall objectives of the Heritage Landscape Management Plan.
- to maintain tree cover on steep slopes where it is considered appropriate and necessary for slope stability, excluding grazing on such slopes to encourage natural regeneration and replanting.
- sensitive management will continue to apply to those trees covered by T.P.O.s.

4.3 Moorland

4.3.1 The Estate will continue to maintain the moorlands for sheep grazing and heather management, public access being permitted under the terms of the Access Agreement and this Management Plan. Measures to preserve and improve the habitat of the Red Grouse are important as this species has suffered a dramatic national decline. Coincidentally, these measures have great benefits for moorland birds and other wildlife.

4.3.2 In order to achieve the above objective, the Estate will continue:

- to manage the moor for grouse.
- to burn, maintain and improve the heather and other moorland plants, having due regard to the value of the flushes, bogs and streams, both in terms of their botanical and wildlife interests and as protection against fire.
- trials where appropriate to reverse the spread of bracken at the expense of heather and other plant communities.
- to provide roads, huts and butts for shooting parties and pens for sheep gathering subject to conditions outlined in Chapter Five para 1.2.
- to facilitate further survey work by English Nature to extend knowledge about the special scientific interest of the Estate.

4.4. Sporting Interests

4.4.1 Certain landscape qualities of the Estate are in part the result of a long and established tradition of management for sporting purposes. The owners will continue to practice such management, particularly in respect of heather moorland. Pheasant rearing, particularly in and around woodlands, fox-hunting and beagling will all continue on a scale compatible with public safety and wildlife interests. The Estate will continue to manage the river, ponds, reservoirs and becks for fishing.

4.4.2 In order to achieve the above objective, the Estate will continue:

- to employ keepers for game management consistent with the protection of species listed in Schedule 1 of the Wildlife and Countryside Act 1981.
- to manage the moorland as outlined in para 4.3.2 above.
- to manage the river as a fishery for trout and grayling and, if appropriate, salmon fishing.

4.5 Nature Conservation

4.5.1 The Estate has established a good working relationship with English Nature and will continue, under the terms of existing undertakings, to consult with them in respect of any works which might affect the scientific and wildlife interest of the Estate, especially SSSI's.

4.5.2 Areas of particular conservation value are identified on Map 4 and shown in more detail in Appendix 2.

4.5.3 The physical features within the Cracoe Reef Knolls SSSI will not be interfered with in any way without consultation with English Nature.

4.5.4 The Estate will continue to have regard to the wildlife interest in its broadleaved woodlands and, as at present, maintain predominantly hardwood cover in the valley bottom woodlands, including such species as alder, rowan, birch and other naturally occurring trees. Farm stock would continue to be excluded from woods presently enclosed and consideration to be given to stockproofing other appropriate woods, to encourage natural regeneration.

4.5.5 The Estate will continue to recognise the importance of the avifauna of the area and, in complying with the Wildlife and Countryside Act 1981, have due

regard for the requirements of any endangered or scarce species, including birds of prey, the populations of which English Nature shall be permitted to monitor.

4.5.6 The Estate will continue to manage moorland areas as at present and will endeavour to prevent the spread of bracken and to control it where economically feasible having regard to other Wildlife interests.

4.5.7 The wet area supporting round-leaved sundew and butterwort in the vicinity of the ford upstream of Emsay Reservoir will not be drained. The moorland in the vicinity of Gill Beck, upstream of Nelly Park Wood notated on account of a Green Hairstreak colony will continue to be managed as hitherto maintaining thereby the principle food plants of the species namely bilberry and heather. The chickweed wintergreen site in the Brass Castle Quarry area will be safeguarded.

4.6 Historic Buildings and Features

4.6.1 The Estate will:

- maintain, repair and preserve those listed buildings shown A1-6 and 8 under Management Conditions A in the exemption claim having regard to their historic and architectural interest. See Map 3. Other buildings on exempted land which contribute to its scenic value will be maintained in a satisfactory state of repair with suitable materials to preserve their condition, traditional appearance and affinity of siting in relation to other buildings and the landscape. Such buildings will be confirmed within one year of the commencement date of this Management Plan and added to Appendix 3.
- non-exempted buildings on exempted land - the Estate will use its best endeavours to prevent from falling into such a state as to detract from the outstanding scenic value of the land.
- endeavour to protect the remains of Barden Tower from damage and further deterioration.
- maintain the present means of public access to buildings listed A1-8:
 1. Priory Ruins:
As seen from Priory grounds and adjoining fields - open all year.

2. The Boyle Room:
As seen from adjoining field, public footpaths or Priory grounds - or inside by appointment from The Rector, Church Office, Bolton Abbey.
3. The Old Rectory:
As seen from the adjoining field or Priory grounds. (No access inside).
4. The Perimeter Wall:
As seen from the public road, B6160 or adjoining field.
5. The Mill and Aqueduct:
As seen from the public road B6160. (No access inside).
6. The Great Barn:
As seen from the public road B6160 and public footpaths or inside by appointment from the Estate Office.
7. Barden Tower ruins:
As seen from B6160 or Tower grounds - open all year.
8. The Former Chapel and Priest's House:
As seen from the B6160, from the Tower grounds, or inside by appointment from Mr R Hodgson, Priest's House, Barden.

- facilitate further survey work by English Heritage and the Yorkshire Dales National Park to extend knowledge about the special archaeological and historic interest of the Estate. This survey work will be undertaken within two years of the coming into operation of this Management Plan.

4.7 Minerals

- 4.7.1 There is an abundance of evidence on the Estate of old mineral workings and its mineral resources may have value in the future. The owners reserve the right to exploit its mineral and stone resources subject to prior consultation with the Commission or its agents and planning permission, and additionally to work local stone quarries where deemed necessary for the provision of suitable materials for the repair of vernacular buildings or roads.
- 4.7.2 No minerals will be worked, whether existing or new quarries, in geological SSSIs or in other areas identified by English Nature as being of particular geological interest, without consultation with English Nature.

CHAPTER FIVE

5.1 Access Arrangements (Map 5)

- 5.1.1 The Estate's policy and the aim of the Management Plan will be to continue a tradition of allowing public access wherever possible provided this does not conflict with conservation objectives of the Plan, and reasonable agricultural, forestry and game management requirements.
- 5.1.2 Inheritance Tax Exemption has taken into account provisions for public access which exist under the present Access Agreement between the Estate and North Yorkshire County Council. Negotiations regarding the renewal of the Agreement, should this expire during the period of exemption, will have regard to the basis upon which tax exemption has been granted. Should the Access Agreement not be renewed then public access will be maintained through satisfactory linear routes as an alternative to general access and these routes will be agreed and provided on a permissive basis as defined in the Management Plan. In the meantime, the Access Agreement runs concurrently with the exemption and its terms will not be modified by provisions in the Management Plan.
- 5.1.3 All permissive access routes, including those crossing the Access Agreement Area, will be specifically signposted as such, way-marked at key points and publicised as appropriate. The Estate will take steps under Section 31 of the Highways Act 1980 to advise the public and the Highway Authority where it does not intend to dedicate permissive routes as public rights of way.
- 5.1.4 Except where otherwise formally agreed, the Estate will be responsible for the maintenance of permissive routes and signs to a standard deemed satisfactory by the Commission.
- 5.1.5 Permissive footpaths will not be closed to the public during the period of tax exemption except for the following reasons:
- i. maintenance and repair;
 - ii. public safety;
 - iii. extraction of timber or an overriding agricultural need;
 - iv. danger to the public due to sporting activities;
 - v. trespass, public nuisance or damage to adjoining

land or property.

vi. serious disturbance to bird life at nesting time or farm stock at lambing time.

Where the Estate wishes to close or divert a permissive path for any one of the reasons (i) - (vi) above, it will seek prior agreement by the Commission or its agents to this and provide, where possible, a suitable temporary or permanent alternative route. This does not apply to those paths which are subject to terms, conditions and by-laws under the Access Agreement.

5.1.6 Throughout the tax exemption period there will always be a route for the Dales Way between Barden Bridge and Bolton Abbey, at no charge to the public. Subject to advance consultations with the Countryside Commission or its agents, permissive elements of this route may vary on either bank of the river Wharfe, according to such management considerations as wildlife conservation, etc.

Agreed permissive routes for public access are listed below. See also Map 5.

5.1.7 Routes marked * feature in the original management conditions whilst AA denotes routes also wholly or partially covered by the Access Agreement.

1. Cavendish Pavilion - Barden Bridge (west bank)*
2. Posforth Bridge- Barden Bridge (east bank)
3. Embsay - Upper Barden Reservoir - Burnsall * AA
4. Waterfall Cottage - Valley of Desolation - Simon's Seat - Dales Head Farm * AA
5. Simon's Seat - Howgill * AA
6. Embsay via Moor boundary wall - (Crookrise) - to Waterfall Gill via Green Lane at Rylstone - High Bank * AA
7. Rylstone Cross via Moor wall to Cracoe War Memorial - via Moor wall to Bartle Crag - Thorpe Fell - Burnsall Moor - Drebley AA
8. Bolton Park Farm via Rocking Hall - West End * AA
9. Storiths - Hazlewood Moor via Gill Bank - Noska Head AA
10. Hazlewood - Witchey (now known as Wetshaw) - via Boggy Gill - to Hazlewood Moor.

11. From Barden Aqueduct via Coney Warren to Asick Brow
AA
12. Hammerthorne Gate - Broadshaw - Great Agill Bottom
AA
13. Barden Scale - Upper Barden Reservoir AA
14. Park Top - Brass Castle AA
15. Brayshaw - Upper Barden Reservoir AA
16. Cracoe Fell Lane - Cracoe War Memorial AA
17. Thorpe - Thorpe Fell AA
18. Spittle Ings House - Hard Pits AA
19. Simon's Seat - Spring Brow - Kex Gill AA
20. Bolton Abbey Footbridge - via east bank - Cavendish
Pavilion
21. Beamsley Beacon - Little Gate

5.1.8 The Estate will co-operate with the Commission's agents and use its best endeavours to identify and secure the following permissive routes, which have been agreed in principle:

- i. Access across Upper Barden Reservoir embankment
- ii. To provide route for footpath from Kex Gill to Pace Gate, either within Estate ownership or by agreement with adjacent landowners.
- iii. Access via Waterfall Gill to Norton Tower.
- iv. Access to Crookrise Crag, particularly for climbers.

5.1.9 The Estate agrees to the creation and dedication of new public rights of way (a PROW):

- i. From Dalehead Farm to Dalehead Laithe to join existing PROW at Guides Beck.
- ii. Off-road route for the Dales Way between Farfield Cottages and roadside pavement towards Bolton Bridge.
- iii. Modification to the existing PROW from Halton Edge - Hare Head Side to Barden Road (opposite Strid Car Park).

The Estate will co-operate with North Yorkshire County Council in implementing these PROW measures as soon as practicable.

5.2 Wooden Bridge

The Estate will continue to maintain the ancient wooden bridge at the Cavendish Pavilion, a private Estate bridge carrying vehicular traffic and an important footpath link from East to West sides of the river.

5.3 Picnic Sites

The public are allowed to picnic at:

- i. The stepping stones Bolton Abbey - both sides of the river. (The site comprises grass fields grazed throughout the year by cattle and sheep).
- ii. The Cavendish Pavilion - West side of the river. (The site is a grass field grazed by cattle and sheep occasionally).
- iii. Barden Bridge - East bank of the river. The site is opened occasionally and is a grass field grazed in the winter only when closed as a picnic site.

Lavatories, litter bins and picnic tables are only provided at (ii) above. In view of public use, lavatories should be considered at the other sites.

5.4 Car Parks

The Estate wishes to keep car parks grass covered as long as possible and only provide hard surfacing where it is essential and appropriate.

Local limestone "quarry bottoms" have been used for all-year round parking areas and roadways, but this material is not considered ideal because (a) dust is generated in a dry time and (b) clay-like slurry is formed in wet conditions, both are unpleasant for visitors. Heavily used traffic areas may have to be surfaced with tarmac. Further investigations will be carried out to improve on the surfacing.

Charging for car parking is to continue as this provides essential revenue and contributes towards maintenance of amenity areas, as does the Estate's policy of ice cream sales and other retail and commercial outlets on the Estate - there being no other admission charge.

5.5 Catering to Visitors

- 5.5.1 The Estate considers that some form of catering for visitors is desirable and although it is basically a commercial undertaking, considers it an important service to visitors and one which should be carried out to a high standard.
- 5.5.2 Currently, premises known as the Tea Cottage in Bolton Abbey village caters for visitors to the village. The tenants offer home food, morning coffee, light meals, afternoon teas in a setting with outstanding views of the Priory and river and within the premises the unique structure of a timber barn has been exposed to view.
- 5.5.3 The Cavendish Pavilion was built in 1890 or thereabouts as a refreshment pavilion and caters for visitors at Sandholme Car Park and Strid Wood and has been maintained over many years. However, the premises are now totally inadequate for present levels of use and a new building is urgently required. The Estate sees the Cavendish Pavilion and surrounding land as the main "Country Park" style of recreation for visitors. This area is an ideal base from which to explore the Nature Trails in Strid Wood and the footpath network of the area. In addition, it would provide facilities to educate the public of all age groups in countryside matters with the option to put on exhibitions, demonstrations, or attractions in the winter. This would provide a wet weather facility in the Bolton Abbey area, which is lacking at the moment. The Estate sees the Cavendish Pavilion as the major centre for visitors to Bolton Abbey, and wants the catering facility to be updated, extended and improved.
- 5.5.4 The Devonshire Arms Country House Hotel was refurbished in 1980 and now offers a high standard of cuisine, bar meals, restaurant and comfortable accommodation.
- 5.5.5 Other catering facilities occur on the Estate, including Low House Farm, Barden; The Forge, Bolton Bridge; Howgill Cottage, Barden; Barden Tower Farm House, Barden and Back O' Th' Hill Farm, Storiths.
- 5.5.6 The Estate recognises the needs of disabled and elderly visitors and has provided suitable paths and toilet facilities in the village and Cavendish Pavilion areas.

5.6 Nature Trails

The Nature Trails in Strid Wood were started in 1974 as an extension of interest for visitors to the Cavendish Pavilion, but also to create an income which would be available to maintain the amenity and its special fauna and flora.

Admission charges were increased over the years from 6d to 50p per adult with appropriate reductions for children and pre-booked parties. In 1989 approximately 60,000 people visited the Nature Trails. Information leaflets are available. However, charging ceased in 1990 after requests by the Yorkshire Dales National Park and English Nature.

5.7 Accommodation

5.7.1 Tourist accommodation on the Estate amounts to approximately 420 beds.

This is made up of:

	Beds
Hotel	80
Farmhouse Bed & Breakfast	33
Holiday Cottage	6
Other	
Strid Caravan Site (touring) 57 x 3 persons	171
Howgill Caravan Site (touring) 20 x 3 persons	76
Howgill Camping 12 x 2 persons	24
Bunk Barns 20 + 10 persons	<u>30</u>
Total	<u>420</u>

5.7.2 The popularity of the Dales has brought a shortage of accommodation and further consideration is to be given to producing additional overnight accommodation on suitable sites and of a type appropriate to this area of outstanding scenic value. Particular consideration will be given to the use of redundant traditional buildings.

5.8 Fishing

The River Wharfe offers excellent fly fishing for trout and grayling and the Estate employs a full-time bailiff to manage five and a half miles of river.

Game fishing is offered by day or season ticket. The Estate will continue to provide and protect this facility as long as it can be reconciled with the needs of the non-fishing visitors.

5.9 Future developments for consideration

In consultation with the Yorkshire Dales National Park, the Estate wishes to promote recreation and interpretative facilities and services for visitors. In particular, it will consider the following:

- 5.9.1 Visitor Centre and Information Point at Bolton Abbey, or the Cavendish Pavilion.
- 5.9.2 Production of information and interpretative material.
- 5.9.3 Restoration of "Seats" (ling thatched or moss covered shelters) in Strid Wood and re-opening of further views in Strid Wood.
- 5.9.4 Renovation of the Memorial Fountain.
- 5.9.5 Provision of more overnight accommodation.
- 5.9.6 Conversion of redundant field barns for recreational use.
- 5.9.7 Provision of more bench seats on walks and trails.
- 5.9.8 Provision of improved wheelchair access to riverside.
- 5.9.9 Provision of retail premises selling locally produced goods and quality souvenirs.
- 5.9.10 Improved catering facilities at Cavendish Pavilion and Barden Tower farmhouse.
- 5.9.11 Farm Shop
- 5.9.12 Barden Tower Chapel (deconsecrated) - to repair and bring into an appropriate use.

CHAPTER SIX

TENANTS

- 6.6.1 All existing tenants will be made aware of the heritage status of the property and these management objectives. Consultation will be established between the Estate and its tenants in order that it will use its best endeavours to ensure that existing tenants comply with these objectives and procedures. Prior to the granting of any new tenancy or licence, the Estate will ensure that the prospective tenant or licensee agrees to be bound by a restrictive covenant in accordance with all parts of this management plan as relevant to his intended occupation of any land or buildings.

CHAPTER SEVEN

CONSULTATION AND MONITORING

- 7.7.1 Consultation with, and the prior agreement of, the Countryside Commission or their Agents is required for:
- i) any change in land use, agricultural improvement or intensification or forestry operation which would affect the scenic quality of the Heritage land.
 - ii) any new building, installation or engineering works whether or not requiring permission under the Town & Country Planning Acts, as well as any development such as farm or forestry or Estate roads which carry deemed consent under the General Development Order.
 - iii) any departure from the aims or provisions of this Management Plan.
- 7.7.2 Consultations under the terms of Inheritance Tax Exemption are additional to any consultations required in connection with planning permission, grant aid applications or other such matters where different criteria and considerations may apply. The Estate will also make it clear to tenants and other interested parties that the Commission's agents should always be consulted at the earliest possible stage in order to avoid misunderstandings and possibly abortive work.
- 7.7.3 The Estate in consultation with the Commission's agents will prepare a programme of action to implement this Management Plan. This programme will be reviewed and rolled forward on an annual basis and the Estate will provide a written statement annually to the Commission's agents setting out how they have complied with the spirit and undertakings of the Plan. Whenever possible, a meeting will be held at the time of the preparation of this written statement. The Management Plan itself will be reviewed at 5 year intervals.
- 7.7.4 The Estate also agrees that any person authorised by the Countryside Commission may, at all reasonable times, by appointment, enter on and inspect the land to ascertain that the Management Plan is being implemented and that no breach has occurred, and to undertake work to extend knowledge of features and areas of conservation interest.

A P P E N D I X 1

CLAIM FOR CAPITAL TRANSFER TAX EXEMPTION

CLAIM FOR EXEMPTION AND UNDERTAKING UNDER SECTIONS 76 AND 77 FINANCE ACT 1976

BOLTON ABBEY ESTATE - CHATSWORTH SETTLEMENT

Whereas a claim for Capital Transfer Tax arose in connection with the Deeds of Revocation and New Appointment dated 28 March 1977.

by THOMAS EDWARD SYDNEY EGERTON and IAN HAMISH LESLIE MELVILLE both of 21 Buckingham Gate London SW1E 6LS ("the Trustees") and THE MOST HONOURABLE HEREGRINE ANDREW MORNY CAVENDISH MARQUESS OF HARTINGTON ("the life tenant") make application for conditional exemption under Section 76 Finance Act 1976 in respect of the following :-

1. Bolton Abbey Priory Church and ruins to the extent owned by the Trustees.
2. The Boyle Room.
3. The Old Rectory.
4. The Perimeter Wall.
5. The Mill and Aqueduct.
6. The Great Barn.
7. Barden Tower.
8. The former Chapel and Priest's House.

The land edged green on the attached map but excluding the structure listed on the six page schedule accompanying the letter from the Capital Taxes Office dated 5 August 1983 to Messrs. Currey & Co.

The undersigned undertake that until Lord Hartington dies or the said property is disposed of, whether by sale gift or otherwise, reasonable steps will be taken, having full regard to the character and amenities of the Bolton Abbey Estate, to maintain, repair and preserve the property described above and to secure reasonable public access thereto.

The application of the above undertaking in the circumstances relating to the property has been considered with the Treasury and, without prejudice to the generality of the undertaking, we have agreed to pursue the management and public access objectives set out in the Schedules A and B annexed hereto.

will notify the Capital Taxes Office, Minford House, Rockley Road, London
ODF immediately possession of the property is relinquished or the property
otherwise disposed of whether by sale, gift or otherwise.

Signatures

Date

TRCA [Signature]

3rd February 1986

[Signature]

3rd February 1986

[Signature]

28 January 1986

CTT EXEMPTION CLAIM - BOLTON ABBEY ESTATE

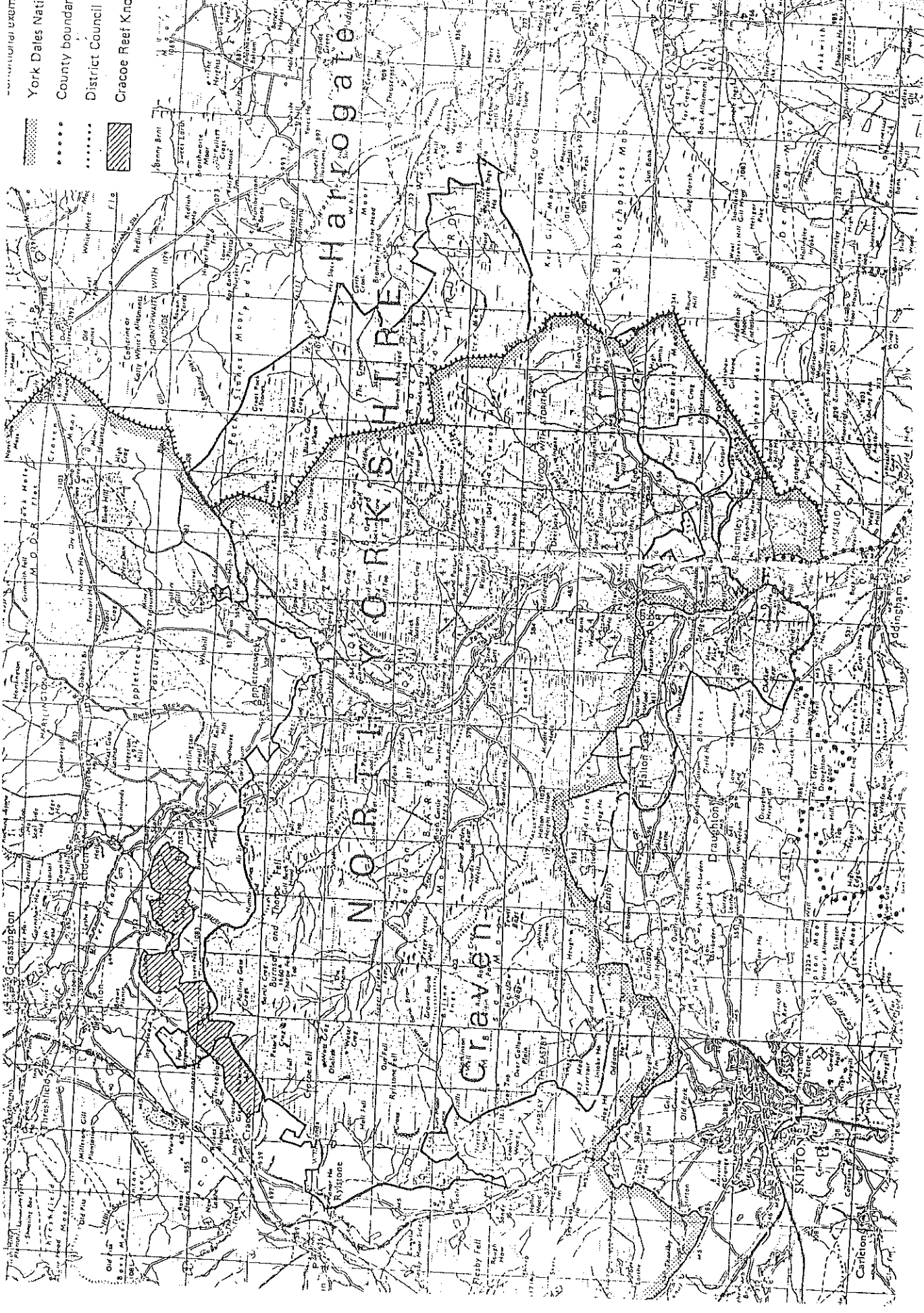
MANAGEMENT CONDITIONS A

The life tenant and Trustees will undertake with regard to the buildings listed at A 1-8 on the claim for exemption;

- (i) To maintain, repair and preserve those buildings (other than Barden Tower) having regard to their historic and architectural interest, and, in particular, so far as appropriate:
 - a. To eradicate any dry rot, wet rot or major beetle infestation.
 - b. To repair roofs and rainwater goods in permanent and suitable materials.
 - c. To repair stonework and brickwork in so far as repairs are necessary to protect the fabric of the buildings.
 - d. To repair and repaint or treat external woodwork.
 - e. To effect repairs necessary to maintain the historic interiors.
- (ii) To take reasonable steps to ensure that the remaining fabric of Barden Tower is not damaged or allowed to deteriorate further.
 - a. In respect of the buildings listed at A 1, 2, 3, 4, 5, 7 and 8 to maintain the present means of public access.
 - b. In respect of the Great Barn to permit public access by appointment.

We will advertise the access arrangements in one or more suitable publications with national circulation and inform the British Tourist Authority of those arrangements. We will display notices outside the properties giving details of those arrangements.

National map
 York Dates National
 County boundary
 District Council boundary
 Cracoe Reef Knol



DF23/2/18

CTT EXEMPTION CLAIM - BOLTON ABBEY ESTATE

MANAGEMENT CONDITIONS B

The Life Tenant and Trustees will undertake:

1. To prepare a landscape conservation and recreation plan in consultation with the National Park Authority and to consult with the Countryside Commission's Agents, the Yorkshire Dales National Park Authority, on any proposal that might be expected to affect the scenic interest of the land, including both developments requiring planning consent and developments such as farm or forestry buildings or estate roads, which carry deemed planning consent under the General Development Order 1977.
2. Similarly to consult in respect of any proposals involving the ploughing out of moorland or permanent pasture, the reduction of areas of natural and semi-natural woodland, the planting of additional woodland, and the provision of additional drainage.
3. To consult on major departures from Woodland Dedication Schemes or Plans of Operations agreed with the Forestry Commission.
4. To review where woodlands are already the subject of Dedication Schemes, in consultation with the Nature Conservancy Council, the Countryside Commission, the National Park Authority, and the Forestry Commission, the agreements already reached with the latter, with the aim of re-emphasising amenity and scientific considerations. Where schemes are replaced with Plans of Operation, the objectives of such plans shall be similar to those in the schemes, and such plans shall run for the period of the tax exemption. Any review of such plans shall be subject to consultation with the CC, the NCC, the National Park Authority and the Forestry Commission.
5. To consult the Nature Conservancy Council (North East Regional Office) on any proposal affecting the scientific interest of the estate under the terms of separate undertakings agreed with the Nature Conservancy Council.
6. To carry out the following in relation to public access:
 - a. On Barden Fell and Barden Moor, where an Access Agreement is already in existence, the terms within that Agreement will not be interfered with in any way and all footpaths within the Access Area will continue to be governed by that Agreement whenever the following provisions would otherwise conflict with it.
 - b. The private "permissive" footpaths listed below will not be closed to the public for the period of the tax exemption except for the following reasons;
 - i. maintenance and repair;
 - ii. public safety;
 - iii. extraction of timber or an overriding agricultural need;
 - iv. sporting;
 - v. fire danger; and
 - vi. trespass, public nuisance or damage to adjoining land or property

- and in the event of a closure, the Trustees will provide a suitable temporary or permanent alternative route, except for those footpaths which come within the area of the Access Agreement and are already subject to the terms and conditions and by-laws thereunder.

The permissive footpaths referred to above are:

Footpath from the stepping stones at Bolton Abbey to Barden Bridge - as a route for the "Dalesway". A precise route for this section of the Dalesway is to be agreed by the Trustees with the Countryside Commission and the Nature Conservancy Council.

Footpath 5A from Embsay via High Dock Reservoir to Burnsall.

Footpath 5D from Waterfall Cottage via Valley of Desolation to Simons Seat and Dale Head Farm.

Footpath 5E from Simons Seat to Howgill.

Footpath 5B from Embassy via the moor boundary wall (Crookrise) to Waterfall Gill via High Bark to the Green Lane at Rylstone.

Footpath 5C from Bolton Park Farm via Rocking Hall to West End.

c. Elsewhere on the estate, the Trustees will ensure that within the context of good estate management and the securing of farming and sporting objectives, there will be access for the public along rights of way and that these could include new rights of way created by agreement with the National Park Authority.

d. Way marking and signposting of the rights of way and the permissive paths referred to above will be undertaken in co-operation with the National Park Authority.

e. To give such publicity to the terms of public access as are agreed with the Countryside Commission or Nature Conservancy Council.

f. To permit the Countryside Commission or Nature Conservancy Council or its agents to divulge to enquirers the access arrangements.

7. To allow any person authorised by the Countryside Commission or its Agents in that behalf at all reasonable times to enter on and inspect the land for the purposes of ascertaining that the undertakings in Paragraphs 1 to 6 are being complied with.

A P P E N D I X 2

NATURE CONSERVATION

1. English Nature
2. S.S.S.I: Strid Wood - management prescription see Appendix 4
Hambleton Quarry
Cracoe Reef Knolls
3. Avifauna on the Estate:
Wader Survey (N.C.C.) 1983
4. Other Wildlife on the Estate:
Butterflies, Mammals, Reptiles, Amphibians, Bats
5. See MAP 4 for Items of Conservation interest:
 - a) Source: Phase 1 Botanical Survey of the Yorkshire Dales National Park 1985-88 with Target Note reference numbers.*
 - b) Ancient Woodland
Source: Nature Conservancy Council - Craven and Richmondshire 1986.*
 - c) Areas of land not to be improved.
 - d) Sites of Special Scientific Interest

*Copies may be inspected by appointment at the offices of the Yorkshire Dales National Park.

ENGLISH NATURE

The Estate will consult English Nature and endeavour to accommodate the advice given with respect to management affecting the following:

- i) S.S.S.I: Strid Wood, Hambleton Quarry, Cracoe Reef Knolls.
- ii) Moorland, as shown on Map 4.
- iii) The avifauna of the Estate, in particular any endangered or scarce species including birds of prey, the populations of which English Nature will be permitted to monitor.

Consultation will normally take place as part of an annual review and planning meeting with ad hoc contacts if necessary.

NORTH YORKSHIRESTRID WOOD

Status:

Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981.

Local Planning Authority:

Yorkshire Dales National Park
(Craven District Council)

National Grid Reference:

SE 070560

Ordnance Survey Sheets:

1 : 50,000 : 104

1 : 10,000 : SE05NE

Area:

58.91 hectares 145.57 acres

First notified:

1985 (December)

Description

Strid Wood contains the largest area of acidic oak woodland and the best remnant of oak wood pasture in the Yorkshire Dales National Park. The wood is set astride the River Wharfe which here runs through a deep steep-sided valley cut into Millstone Grit and Carboniferous Limestone.

The north-east side of the valley supports oak forest with a largely acidic ground flora of woodrush (Luzula sylvatica), bilberry (Vaccinium myrtillus), wavy hair-grass (Deschampsia flexuosa) and several species of fern. Holly (Ilex aquifolium), birch (Betula pubescens) and hazel (Corylus avellana) are also present as well as a number of both self-sown and planted beech and sycamore. There are occasional flushes where the limestone influence is more strongly felt, and here the canopy comprises elm (Ulmus glabra) and alder (Alnus glutinosa), with a ground flora containing such species as opposite-leaved golden-saxifrage (Chrysosplenium oppositifolium), wood melick (Melica uniflora) and mountain melick (M. nutans). Above the road, there is an area of relict wood pasture in which old pollards of oak, holly and birch are growing amongst bracken and acid grassland.

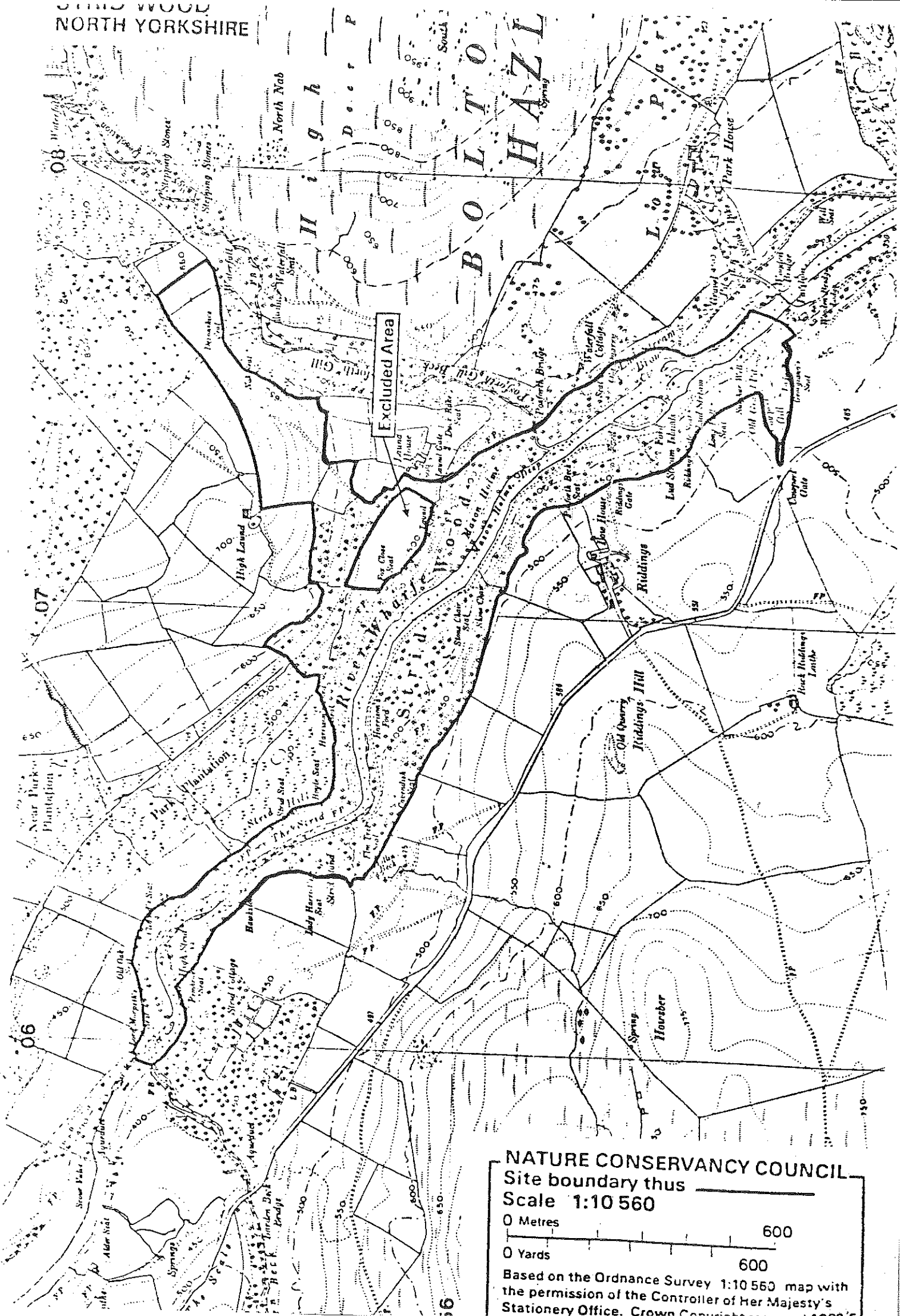
The south-west bank has been much altered by forestry practice. The native oak (Quercus petraea), and ash (Fraxinus excelsior) are accompanied by plantations of beech (Fagus sylvatica), sycamore (Acer pseudoplatanus), poplar (Populus sp) and conifers such as larch and Douglas fir. The very edge of the river however remains largely natural, with elm and alders. Soil conditions on this side of the valley appear less acidic, and the ground flora is rich, with stands of dog's mercury (Mercurialis perennis), ramsons (Allium ursinum), sanicle (Sanicula europaea) and sweet woodruff (Asperula odoratum). The uncommon yellow star-of-Bethlehem (Gagea lutea) is found here.



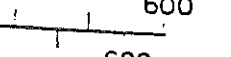
The wood is valued by naturalists for its important populations of many groups of plants and animals. There is a rich bryophyte flora, several species being rare or very local in distribution, including Dicranum montanum, Cinclidotus macronatus, Fissidens rufulus, Nowellia curvifolia and Sphagnum quinquefarium. A wide variety of fungi occur, two species, Coprinus subpurpureus and Deconica rhombispora, being first British records. Woodland management by selective felling rather than clear-felling has ensured a continuity of tree cover, and has favoured the growth of a rich lichen flora: indeed Strid Wood is considered one of the best lichen woods in Yorkshire. Amongst the most notable species recorded are Arthonia didyma, Thelotrema lepadinum, Cladonia parasitica and Endocarpon pusillum. The wood is also noted for the occurrence of the local molluscs Acanthinula lamellata and Lauria anglica.

Over sixty species of birds have been recorded, forty-four of these breeding, including pied flycatcher, wood warbler and goosander.

Other Information

1. This is a new site.
2. The south-west bank is intensively used for recreation, and nature trails have been set out.



NATURE CONSERVANCY COUNCIL
 Site boundary thus 
 Scale 1:10 560
 0 Metres  600
 0 Yards  600
 Based on the Ordnance Survey 1:10 560 map with
 the permission of the Controller of Her Majesty's
 Stationery Office. Crown Copyright



NATURE CONSERVANCY COUNCIL

North-East England Regional Sub-Office
Thornborough Hall, Leyburn, North Yorkshire, DL8 5AB.
Telephone 0969 (Wensleydale) 23447, or 0969 (Wensleydale) 23148

1e/00/49/Ex 1

Mr Edgerton Esq
Trustee of the Chatsworth Settlement
c/o Currey & Co
21 Buckingham Gate
London SW6

Your reference

Our reference Cracoe Reef Knolls SD

Date 2 March 1987

Dear Mr Edgerton

SITE OF SPECIAL SCIENTIFIC INTEREST : CRACOE REEF KNOLLS

NOTIFICATION UNDER SECTION 28 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981 AS AMENDED

The Nature Conservancy Council (NCC) hereby notify you that they are of the opinion that the land delineated by the solid black line on the map attached to this letter is of special interest by reason of the flora, fauna or geological or physiographical features specified in the attached citation. The NCC consider that the operations specified in the attached list are likely to damage the flora or fauna or the features described.

The land not delineated by hatching has already been notified under the National Parks and Access to the Countryside Act, 1949 and no representations or objections may be made to its notification under the 1981 Act and it is not necessary for the notification to be confirmed so far as that land is concerned. If, however, you wish to make representations or objections to the notification of the land delineated by hatching you should do so in writing to the NCC at the above address by 2 July 1987. The NCC will consider any representations or objections made before deciding whether to withdraw or confirm the notification with or without modifications in respect of the land. The notification in respect of the land delineated by hatching shall cease to have effect if it is not withdrawn or confirmed by the 2 December 1987; the notification in respect of the remainder of the land shall remain in force until such time as the NCC may otherwise give you written notice.

While the notification in respect of all or part of the land remains in force as the owner or occupier you must give the NCC written notice of a proposal, by you or any other body or person, to carry out any of the listed operations, specifying its nature and the land on which it is proposed to carry it out; and you must not carry out the operation proposed, or permit it to be carried out, unless either (i) the NCC have agreed to it in writing or (ii) it is carried out under a management agreement with the NCC or (iii) four months have expired from the giving of the notice of the proposal to carry out the operation.

As this notification may restrict the way you wish to use this land you may wish to consult a solicitor or other adviser about its effects.

Yours sincerely

Pippin Merricks

pp Ben Mercer
Assistant Regional Officer
(North Yorkshire)

Enclosures: map
description of special interest of the land
list of operations likely to damage the special interest

NORTH YORKSHIRECRACOE REEF KNOLLS

Status:

Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981, as amended.

Local Planning Authority:

Yorkshire Dales National Park
(Craven District Council)

National Grid Reference:

SD 988603; SD 996609; SE 003608;
SE 007615; SE 015614; SE 026618

Ordnance Survey Sheets:

1 : 50,000 : 98
1 : 10,000 : SD 96 SE; SE 06 SW

Area:

141.1 ha 348.6 acres

First notified*: 1952

Date of revision: 1987

Description

Cracoe Reef Knolls is the classic site for the study of knoll-reefs in the Asbian Carboniferous Limestone of England. The base of the reef here may be of Holkerian age, but the bulk of the reef contains a rich and varied Asbian fauna and flora. In part the reefs form an apron-fringe at the edge of the Askrigg Block, but the more southerly reefs are regarded as having formed as knolls within the Craven Basin. Considerable argument has raged for years over the structure and origins of the Dinantian knollreefs, with this site as a focus for the controversy. This is a key locality in the study of Lower Carboniferous carbonate environments and it is essential for an understanding of reef communities and their palaeoecology, having great potential for future research on reef development and palaeontology.

Other Information

1. This site is listed within the Geological Conservation Review.
2. During the 1986 revision the boundary of this site has been amended by extensions and deletions.

Date notified: 2 March 1987

Site Name: CRACOE REEF KNOLLS CRAVEN NORTH YORKSHIRE

OPERATIONS LIKELY TO DAMAGE THE FEATURES OF SPECIAL INTEREST

<u>Standard</u> <u>Ref No</u>	<u>Type of Operation</u>
7.	Dumping, spreading or discharge of any materials.
13b.	Modification of the structure of water courses (eg rivers, streams, springs, ditches, dykes, drains), including their banks and beds, as by re-alignment, regrading and dredging.
20.	Extraction of minerals, including topsoil, subsoil, lime, limestone pavement and spoil.
21.	Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
22.	Storage of materials on or against rock outcrops.
23.	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
24.	Modification of natural or man-made features, clearance of boulders, large stones, loose rock, scree or spoil and battering, buttressing, grading or seeding rock-faces, outcrops or cuttings. Infilling of pits and quarries and blocking or infilling of old mine workings.

ENGLISH
NATURE

North-East Region: Leyburn Office

Nature Conservancy Council for England

Thornborough Hall, Leyburn
North Yorkshire DL8 5AB
Telephone (0969) 23447 Fax (0969) 24190

Mr B Heyes
Estate Office
Bolton Abbey
SKIPTON
North Yorkshire
BD23 6EX

Your reference:

Our reference: SE05.CV.6.L

Date:

26 November 1991

Dear Mr Heyes

**CONFIRMATION OF NOTIFICATION UNDER SECTION 28(4A) OF THE
WILDLIFE AND COUNTRYSIDE ACT, 1981, AS AMENDED**

HAMBLETON QUARRY SITE OF SPECIAL SCIENTIFIC INTEREST

The Nature Conservancy Council for England have considered representations and objections and hereby give notice confirming the notification of the above-named Site of Special Scientific Interest as made to you on 28 February 1991 with the following modifications to that notification.

1. The quarry floor (up to the level of the railway line but excluding a 5 m clearway at the base of all faces) and the eastern part of the site are now deleted from the SSSI.
2. PDO 12 applies only to a 5 m clearway at the base and behind the top of all quarry faces.

The modified notification is enclosed.

Yours sincerely



Jackie Craft
Conservation Officer
(North Yorkshire West)

Enclosures: map showing deletions
 amended PDO list
 map showing new boundary of site and description.

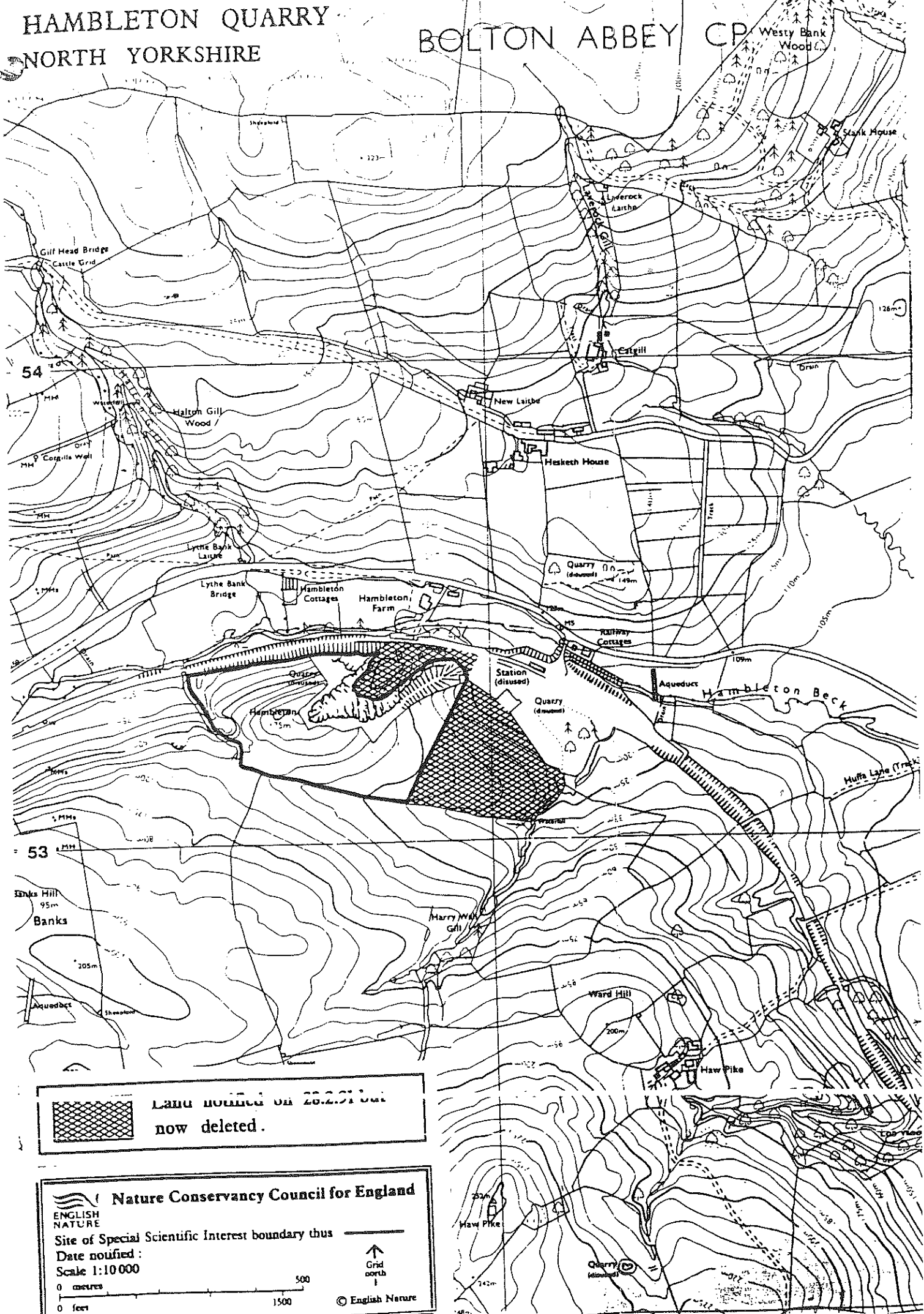


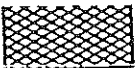
North-East Region Headquarters, Archbold House, Archbold Terrace, Newcastle Upon Tyne NE2 1EG





Please reply to the address at the top of the page

HAMBLETON QUARRY NORTH YORKSHIRE

BOLTON ABBEY CP



 Land notified on 28.2.91 but now deleted.

 **Nature Conservancy Council for England**
 ENGLISH NATURE
 Site of Special Scientific Interest boundary thus 
 Date notified:
 Scale 1:10 000
 0 metres 
 0 feet  1500
 ↑ Grid north
 © English Nature

NORTH YORKSHIRE

HAMBLETON QUARRY

Status:

Site of Special Scientific Interest (SSSI)
notified under Section 28 of the Wildlife
and Countryside Act, 1982, as amended

Local Planning Authority:

Craven District Council

National Grid Reference:

SE 058533

Ordnance Survey Sheets:

1 : 50,000 : 104
1 : 10,000 : SE05SE

Area:

12.28 hectares 30.34 acres

First Notified:

1991

Description

This site shows a fine section through the marine Carboniferous Limestone of the Craven Basin. This consists of the Asbian Draughton Limestone and Draughton Shale, the former including the best section of Tiddeman's Breccia, a turbiditic deposit containing reworked sediments and fossils derived from the shallow-water reef-belt on the southern edge of the Askrigg Block. This is a critical site of an understanding of the depositional processes and palaeoenvironments present in the Craven Basin in later Dinantian times.

Other Information

This is a new site which has been identified as of national importance in the Geological Conservation Review.

Date Notified: 28 February 1991

Site Name: HAMBLETON QUARRY CRAVEN NORTH YORKSHIRE

OPERATIONS LIKELY TO DAMAGE THE FEATURES OF SPECIAL INTEREST

Standard

Ref No

Type of Operation

7. Dumping, spreading or discharge of any materials.
12. The introduction of tree and/or woodland management and changes in tree and/or woodland management+ within a 5 m clearway at the base and behind the top of all faces

+ (including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management).
14. The changing of water levels through the use of disused quarry for water storage.
20. Extraction of minerals, including topsoil, subsoil, lime, limestone pavement and spoil.
21. Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
22. Storage of materials on or against rock outcrops.
23. Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
24. Modification of natural or man-made features, clearance of boulders, large stones, loose rock, scree or spoil and battering, buttressing, grading or seeding rock-faces, outcrops and cuttings, infilling of pits and quarries.

This site may become a working quarry again and operation numbers 12, 20, 21, 22 and 23 would constitute normal working practice. We do not therefore require to be consulted over these operations during the period of active working but will require consultation if any of them are proposed after cessation of mineral extraction. We do, however, require consultation over battering, buttressing, grading or seeding rock-faces, outcrops or cuttings, infilling of pits and quarries (listed in the latter part of PDO 24) during the active life of the quarry.

Date Notified: 28/2/91

NORTH YORKSHIRE

HAMBLETON QUARRY

Status:

Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1982, as amended

Local Planning Authority:

Craven District Council

National Grid Reference:

SE 058533

Ordnance Survey Sheets:

1 : 50,000 : 104
1 : 10,000 : SE05SE

Area:

12.28 hectares 30.34 acres

First Notified:

1991

Description

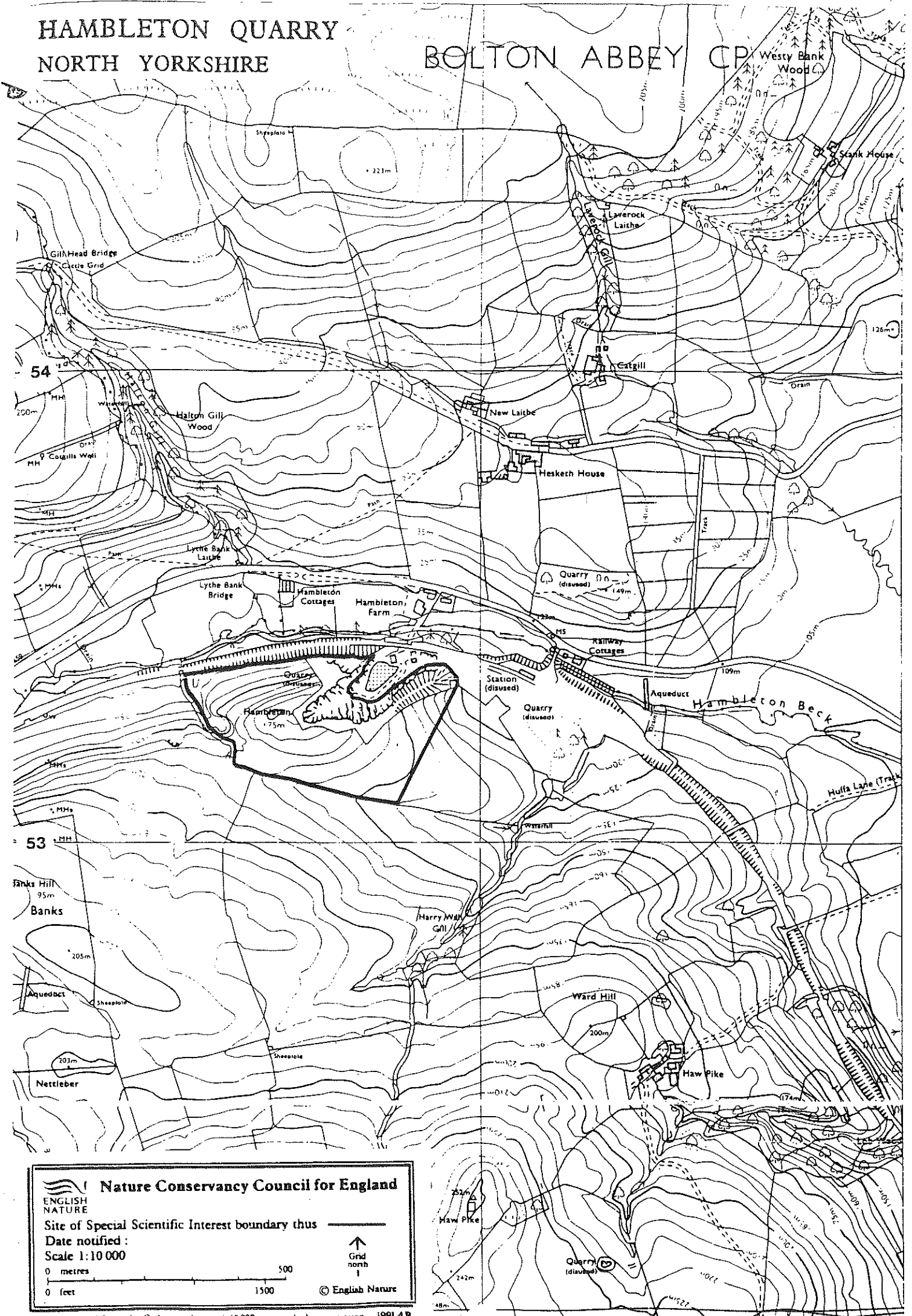
This site shows a fine section through the marine Carboniferous Limestone of the Craven Basin. This consists of the Asbian Draughton Limestone and Draughton Shale, the former including the best section of Tiddeman's Breccia, a turbiditic deposit containing reworked sediments and fossils derived from the shallow-water reef-belt on the southern edge of the Askrigg Block. This is a critical site of an understanding of the depositional processes and palaeoenvironments present in the Craven Basin in later Dinantian times.


Other Information



This is a new site which has been identified as of national importance in the Geological Conservation Review.


**HAMBLETON QUARRY
NORTH YORKSHIRE**

BOLTON ABBEY CP



Nature Conservancy Council for England
ENGLISH NATURE
 Site of Special Scientific Interest boundary thus 
 Date notified:
 Scale 1:10 000

0 metres  500
 0 feet  1500

 Grid north
 © English Nature

THE BOLTON ABBEY ESTATE

B I R D S

Key:

- (B) Breeding bird
- R Resident
- S Summer migrant
- W Winter migrant
- P Passage (Spring or Autumn migration)

(B)	R	Little Grebe	(B)	R	Barn Owl
(B)	R	Great Crested Grebe	(B)	R	Little Owl
		Grey Heron	(B)	R	Tawny Owl
			(B)	R	Short-eared Owl
	P	Greylag Goose			
(B)	R	Canada Goose	(B)	S	Swift
	W	Barnacle Goose	(B)	S	Sandmartin
			(B)	S	Swallow
	P	Shelduck	(B)	S	House Martin
	W	Widgeon			
(B)	R	Teal	(B)	R	Kingfisher
(B)	R	Mallard			
	W	Shoveller	(B)	R	Green Woodpecker
	W	Pochard	(B)	R	Great Spotted Woodpecker
(B)	R	Tufted Duck			Lesser Spotted Woodpecker
	W	Goldeneye			
(B)	R	Goosander	(B)	S	Skylark
	W	Hen Harrier			Tree Pipit
	P	Goshawk	(B)	R	Meadow Pipit
(B)	R	Sparrowhawk			
	P	Buzzard	(B)	S	Yellow Wagtail
	W	Roughlegged Buzzard	(B)	R	Grey Wagtail
	P	Golden Eagle	(B)	R	Pied Wagtail
	P	Osprey		P	White Wagtail
(B)	R	Kestrel			
(B)	S	Merlin	(B)	R	Dipper
	P	Hobby			
	P	Peregrine	(B)	R	Wren
			(B)	R	Dunnock
(B)	R	Red Grouse	(B)	R	Robin
	R	Red-legged Partridge	(B)	S	Whinchat
(B)	R	Grey Partridge	(B)	W	Stonechat
(B)	R	Pheasant			
			(B)	S	Ring Ouzel
(B)	R	Moorhen	(B)	R	Blackbird
(B)	R	Coot		W	Fieldfare
(B)	S	Oystercatcher	(B)	R	Song Thrush
	P	Little Ringed Plover		W	Mistle Thrush
	P	Ringed Plover		W	Redwing
(B)	S	Golden Plover			
(B)	R	Lapwing	(B)	S	Lesser Whitethroat
(B)	S	Dunlin		S	Whitethroat
(B)	R	Snipe	(B)	S	Garden Warbler
(B)	R	Woodcock	(B)	S	Chiffchaff
	P	Whimbrel	(B)	S	Willow Warbler
(B)	S	Curlew	(B)	R	Goldcrest
(B)	S	Redshank	(B)	S	Spotted Flycatcher
	P	Greenshank	(B)	S	Pied Flycatcher
(B)	S	Common Sandpiper			
(B)	R	Black-headed Gull	(B)	R	Long-tailed Tit
(B)	R	Lesser Black-backed Gull	(B)	R	Marsh Tit
(B)	R	Stock Dove	(B)	R	Willow Tit
(B)	R	Wood pigeon	(B)	R	Coal Tit
(B)	R	Collared Dove			
(B)	S	Cuckoo	(B)	R	Starling
			(B)	R	House Sparrow
(B)	R	Blue Tit	(B)	R	Chaffinch
(B)	R	Great Tit		W	Brambling
(B)	R	Nuthatch	(B)	R	Greenfinch
(B)	R	Tree Creeper	(B)	R	Goldfinch
(B)	R	Jay		W	Siskin
			(B)	R	Linnet
(B)	R	Magpie	(B)	R	Twite
(B)	R	Jackdaw	(B)	R	Redpoll
(B)	R	Rook	(B)	R	Crossbill
(B)	R	Carrion Crow	(B)	R	Bullfinch
	P	Raven		W	Snow Bunting
			(B)	R	Yellow Hammer
			(B)	R	Reed Bunting

This information has been supplied from records held by the Yorkshire Dales National Park and the Wharfedale Naturalist Trust.



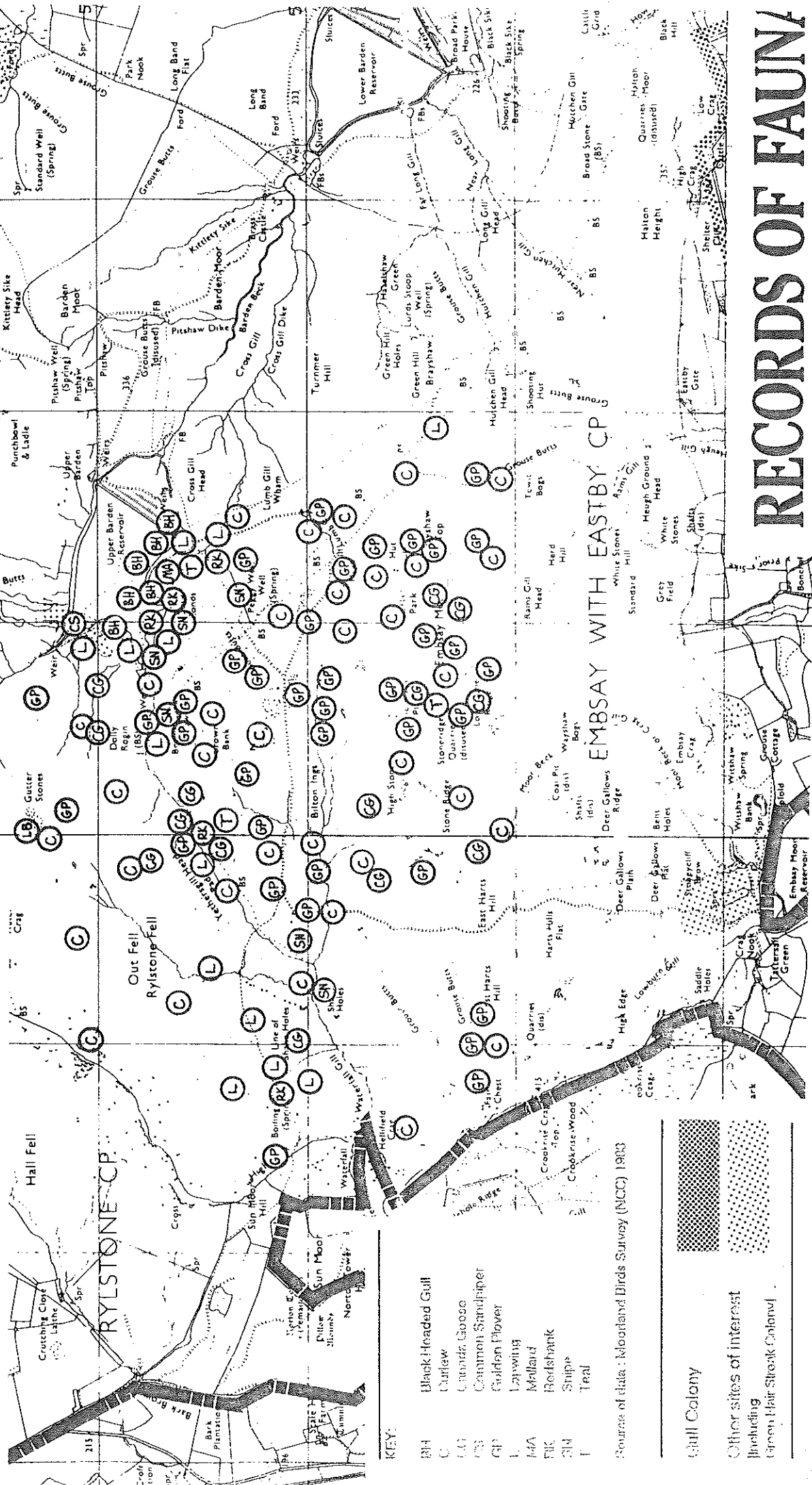
BOLTON ABBEY ESTATE

THE TRUSTEES OF THE CHATSWORTH SETTLEMENT
THE ESTATE OFFICE BOLTON ABBEY SKIPTON
NORTH YORKSHIRE BD23 6EX

Scale 1:25 000

Drawn by: *BMH*
Date: May 1943

KEY:
Estate Boundary



KEY:

- BH Black Headed Gull
- C Curlew
- CG Canada Goose
- CS Common Sandpiper
- GP Golden Plover
- L Lapwing
- MA Mallard
- FK Redshank
- SM Snipe
- T Teal

Source of data: Moorland Birds Survey (NCC) 1983

- Gull Colony
- Other sites of interest including Green Hair Siskin Colony

RECORDS OF FAUNA

THE BOLTON ABBEY ESTATE

OTHER SPECIES

BUTTERFLIES

MAMMALS

REPTILES

AMPHIBIANS

BATS

OTHER SPECIES

BUTTERFLIES

Large Skipper
Large White
Green Veined White
Orange Tip
Small White
Small Copper
Green Hairstreak
Common Blue
Small Tortoiseshell
Red Admiral
Peacock
Small Heath
Meadow Brown
Wall Brown

REPTILES

Adder
Slow Worm
Common Lizard

AMPHIBIANS

Frogs
Toads
Newts

MAMMALS

Roe Deer - most woodlands on the Estate contain Roe Deer
Sika Deer - have been seen on the fringes of the Estate

Fox
Badger
Stoat
Weasel
Feral Mink
Brown Hare
Rabbit
Grey Squirrel
Mole
Brown Rat
Plus several species of mice, voles and shrew

BATS

Although identification of bats can only be done accurately in the hand, several different species of bat have been seen and are thought to include:

Noctule
Pipistrelle
Brown Long-eared
Daubentons

This information has been supplied from records held by the Yorkshire Dales National Park and the Wharfedale Naturalist Trust.

A P P E N D I X 3

1. List of buildings (Section 57 The Town & Country Planning Act 1971)
2. Description of buildings in Management Conditions A numbered 1 - 8.
3. Bolton Abbey Village - Conservation Area.
4. List of exempt buildings on exempt land.

TOWN AND COUNTRY PLANNING ACT 1971

SECTION 57

LIST OF BUILDINGS AND MONUMENTS

Nos. 1 - 55

See also Map 3

LISTED BUILDINGS - See Map 3

Parish.	Map Ref. No.	Address	Listing
BARDEN	1	Holme House Farmhouse	II
	2	Laund House Farmhouse	II
	3	Gamsworth Farmhouse and barn	II
	4	Barden Tower - ruin	I
	5	Barden Chapel	I
	6	Priest's House	I
	7	Wood End Farmhouse	II
	8	Scale Cottage	II
	9	Scale Farmhouse	II
	10	Barn at Drebley Farm (Cruck barn)	II
	11	Fold House Farmhouse	II
	12	Littlegate Farmhouse	II
	13	Crossfield House	II
	14	Eastwood Head Farmhouse	II
	15	Cruck barn (rear of Drebley Cottage)	II
	16	Barn (10 metres NW of Watergate)	II
BEAMSLEY	17	Bridge End Cottage	II
	18	Rose Cottage	II
	19	Ivy Cottage	II
	20	Pacegate Farmhouse and outbuilding	II
	21	Beamsley Hall	II
	22	Barn at Beamsley Hall	II
	23	Hardy Grange Farmhouse	II
	24	Barn at Hardy Grange Farm	II
	25	Beamsley Mill	II
BOLTON ABBEY	26	Stank House	II
	27	Ferry House	II
	(28	The Tithe Barn	II*
	(29	Precinct Wall to Priory	II
	(30	Aqueduct	II
	(31	The Mill	II
	(32	Priory Ruins	I
	(33	The Old Rectory and Boyle Room	II*
	(34	Fireplace & chimney (Old Rectory)	II
	(35	Arches Farmhouse	II
	(36	The Tea Cottage	II
	((1 The Green	II
	(37	(2 The Green	II
((3 The Green	II	
((4 The Green	II	
	38	Cavendish Memorial	II
	39	Riddings Cottage (Low Riddings Cottage)	II
DRAUGHTON	40	Farfield Farmhouse (formerly Lobwood House)	II

cont/..

EMBSAY WITH EASTBY	41	Dale Head Farmhouse	II
	42	22/24 Barden Road	II
HALTON EAST	43	Bramham Cottage and Barn	II
	44	White House	II
	45	The Fold	II
HAZLEWOOD WITH STORITHS	46	Bolton Park Farmhouse	II
	47	Stables and barn (Bolton Park Farm)	II
	48	Stables and Threshing Barn (Bolton Park Farm)	II
	49	Black Hill Farmhouse and barns	II
	50	Hill End Farmhouse and barn	II
	(51	1 Hazlewood Cottages	II
	(2 Hazlewood Cottages	II
	52	Crag Cottage (formerly Adam Slack)	II
53	Town End Farmhouse		
RYLSTONE	54	Manor Cottage	II
	55	Norton Tower - ruin	II

LIST OF BUILDINGS

Buildings of Heritage Importance

1. **Bolton Priory - Ruins** **Grade I** **(Map Ref: 32)**

The most important building in the landscape is the remains of Bolton Priory. The walls of the nave, north aisle, north transept, choir, chancel, east end and part of the south transept and the whole of the west tower to a height in line with the roof of the nave are still standing. Only the nave, north aisle and tower are roofed - these parts being used as the parish church and the responsibility of the Diocese of Bradford.

Ground level ruins depict the foundations of the chapter house, cloister and parts of the former living accommodation. The grounds and ruins remain the responsibility of the Estate Owners.

The ruins are Scheduled as Grade I under the Town and Country Planning Act 1971. A three year programme of repair to stabilise the ruins has been agreed with the Department of the Environment and this work was carried out in 1986 - 1989.

The Estate grants public access to the ruins as an extension of the public footpath system to the Priory grounds and church. There is no admission charge. The grounds surrounding the ruins (other than the graveyard) are maintained by the Estate and a small display board is provided.

The Estate wishes to keep the area free of vehicles (church personnel excepted) and other structures to preserve its ancient character and protect the modest amount of parkland type trees.

The church authorities provide information through guide books and leaflets on the church building and discussions are continuing with the Rector to explore the usefulness of more literate and visitor information.

2. **The Boyle Room** **Grade II** **(Map Ref: 33)**

(Situated adjacent to the Old Rectory).

The Boyle Room is a Grade II listed building, built as a schoolroom in 1700 on thereabouts, over the mediaeval and 15th Century foundations of a former Infirmary. The room is now used by the church as the church room, access being afforded by a doorway in the east wall.

The Estate will keep the property in good serviceable order. The church are responsible for fittings and decorations.

cont/...

3. The Old Rectory Grade II (Map Ref: 33)

A Grade II listed building built in 1700 as a boys Grammar School house. The house is in good repair and divided at present into three separate occupancies, house, flat and office.

The Estate will continue to be responsible for the maintenance of the fabric and the occupiers of the house for the internal decorations.

The present public access is as seen from its present curtilage boundaries.

4. Perimeter Wall Grade II (Map Ref: 29)

The old Priory Wall, extending from the Tea Cottage in the village to the south end of Bolton Hall is listed and scheduled as Grade II.

It is a mortared wall of very solid construction containing a gap - for access to the Priory church and grounds and a "hole" for pedestrian access from the village to the riverside.

5. The Mill and Aqueduct Grade II (Map Refs: 31/32)

A Grade II listed building, the stone aqueduct spans the B6160 public highway to join the Mill on the roadside. The latter is presently used as garages and stores with the upper storey converted to residential use.

Although damaged from time to time by public vehicles, the Estate will continue to repair the aqueduct. The Mill House is in good repair having been re-roofed in 1986 and treated by Rentokil for woodworm in 1987

Plans for resurrecting the water supply and fitting a water wheel to the Mill to create a tourist attraction may be considered in the future.

Present public access is as seen from the highway.

6. The Great Barn (Tithe Barn) Grade II (Map Ref: 28)

The age of the barn is not known, although it is believed to be a 17th century building.

It is a scheduled building Grade II with a floor area of 9,027 square feet. The framework is built entirely of oak timbers, with a main central aisle 150 feet long, divided by 10 trusses. The roof is covered by stone slates and sweeps down to an eaves height of 9 ft. Each end is hipped and the south side has two gabled entrance porches.

Attached to the barn is an ancient ridge roofed building constructed for use as a joiners workshop.

cont/...

Both the barn and the workshop were re-roofed in 1987.

The barn houses the Estate workshops and is in daily use.

7. **Barden Tower** **Grade I**

The remains of the late mediaeval Tower, formerly a small fortification with domestic amenities, has still most of its outer wall standing to three storey height. It has not had a roof since the late 18th Century.

Public access is granted to the building and surrounds all the year round and a booklet is on sale locally describing the building and its history.

Access inside is not advised due to the condition of the building. Any repair work necessary would be subject to approval by the Department of the Environment. A Money box for voluntary contributions towards the cost of maintenance has been installed by the Estate.

8. **Former Chapel and Priest's House, Barden** **Grade B and II**

Situated adjoining the Tower is the 16th century Chapel and Priest's house. Grade B and II respectively.

The private chapel became a Chapel of Ease for Bolton Priory Church but has now been closed down and is no longer used as such.

Both the Chapel and house were re-roofed recently and some pointing to the walls carried out. The house was discreetly improved internally with the addition of a bathroom and central heating in 1981.

A specification of repair work has been drawn up for its restoration and it is intended to put the work in hand as soon as funds can be made available.

The owners recognise the importance of these mediaeval buildings in their unique setting and will endeavour to find a suitable use for them which will permit their historic importance to be recognised and yet produce a realistic income in order that they can be kept in a good state of repair.

6. **Bolton Abbey Village** (see attached map)

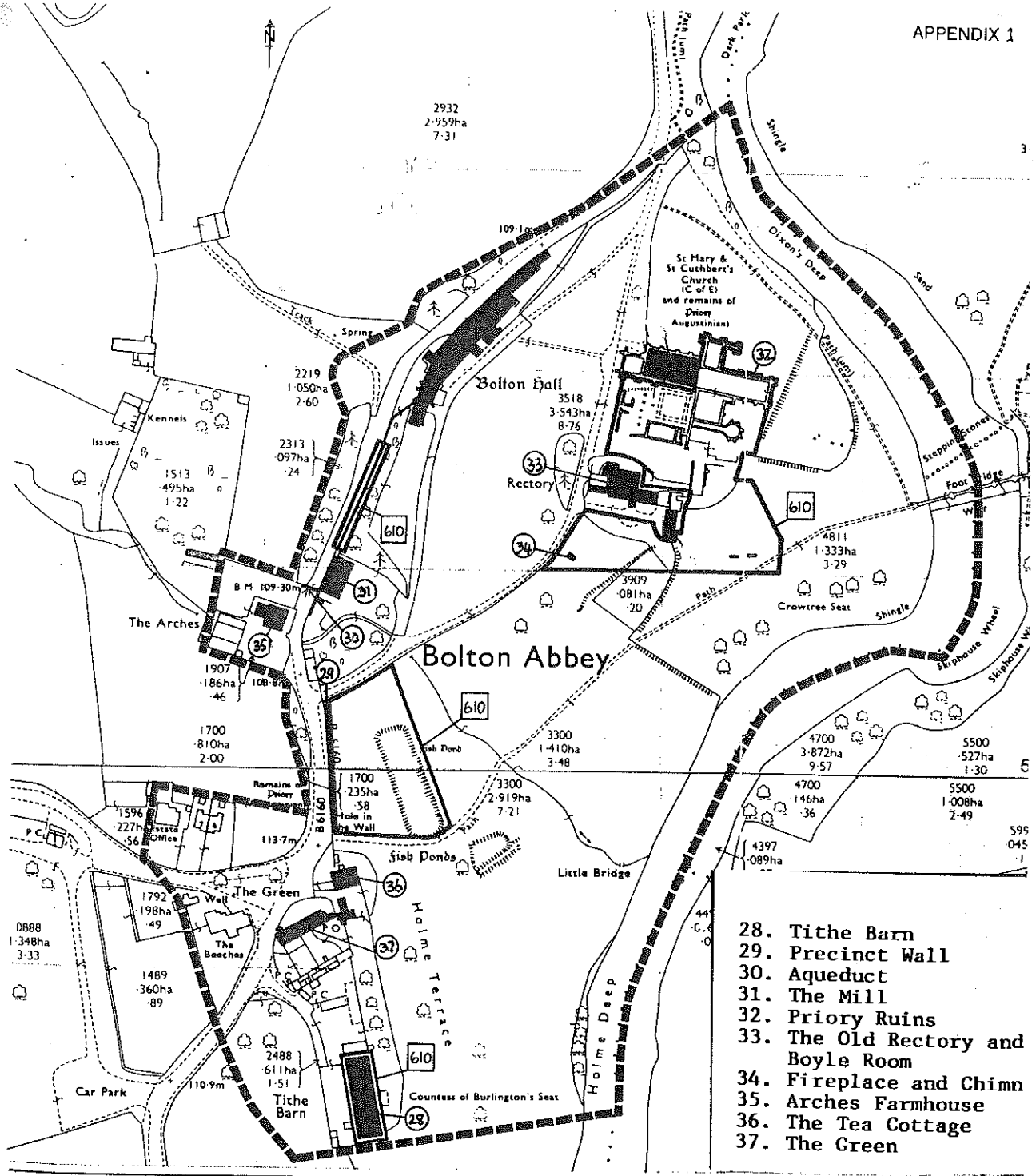
Bolton Abbey Village has been designated a Conservation Area, the boundaries extending from the Tithe Barn in the south to Church Garth Gate in the north. Certain buildings within the area are listed as of historic and architectural interest, the others are all built of stone with stone slate roofs and will receive the same care and standard of maintenance as those listed.

The Village Hall is not owned by the Estate and is outside the

Conservation Area.

At the present time the Estate maintains the village green, provides seats, has recently constructed the steps from the "Hole in the Wall" to the bottom the slope, provides litter bins and collects and disposes of all litter, cuts the grass on the roadside verges as far as the Memorial Fountain, trims the hedges on Bolton Lane and generally endeavours to keep the village tidy.

The Bolton Lane avenue of trees requires maintenance and is, with other roadside trees, inspected annually. This avenue, together with the hedges is considered an important feature and requires further work on it to maintain the hedges and replace trees that are gradually removed, on account of age or safety.



- 28. Tithe Barn
- 29. Precinct Wall
- 30. Aqueduct
- 31. The Mill
- 32. Priory Ruins
- 33. The Old Rectory and Boyle Room
- 34. Fireplace and Chimn
- 35. Arches Farmhouse
- 36. The Tea Cottage
- 37. The Green



BOLTON ABBEY ESTATE
 THE TRUSTEES OF THE CHATSWORTH SETTLEMENT
 THE ESTATE OFFICE BOLTON ABBEY SKIPTON NORTH YORKSHIRE DD23 6EX

KEY:

	ANCIENT MONUMENT [Schedule ref. no.] 610		CONSERVATION AREA
	LISTED BUILDING (see map 5) - index n ^o 21		

Scale 1:25 00

Drawn by: *SAH*
 Date: May 1993

A P P E N D I X 4

ESTATE FORESTRY

STRID WOOD MANAGEMENT PRESCRIPTION 1985

ESTATE FORESTRY REPORT - J Cumberland 1983

Appendix 4

Woodlands

The main forestry areas on the Bolton Abbey Estate comprise 450.5 hectares managed under a Forestry Commission Dedication Deed of Covenant under basis II, dated July 1958. These woodlands are virtually all located on the sides of the valley of the River Wharfe, which bisects the Estate in a North/South direction at elevations ranging from 100 to 335 metres above sea-level. Access is by county maintained roads running parallel to the river with farm and timber extraction tracks into the individual woods. There is an average rainfall of some 1,000 mm per annum. The woods are situated on moderately fertile soils derived from boulder clays overlying millstone grits.

The origins of the woodland areas, in the southern part of the valley, may be said to derive from long established woodland much of which is classified as ancient woodland or semi natural ancient woodland. In the northern part of the valley the woods in their present form were created as a result of the fashion for landscape planting in the early part of the 19th century, some 3.6 million trees being planted between 1809 and 1819, principally of European Larch and Scots Pine. The enclosures of Intake, Barden Fell, Nelly Park and Laund dating from this period in their present form together with Upper Barden Fell below Simon Seat, which was felled and never replanted in the early part of the 20th century.

These areas have been subject to control by the Forestry Commission through a Plan of Operations, updated by agreement every 5 years. In 1983 a comprehensive review of the woodlands was undertaken by a consultant who recommended that the Forest Estate be divided into two working cycles. A coniferous management unit of 251 hectares, principally on the upland northern parts of the valley and a broadleaf management unit of 99 hectares comprising the Strid Wood and valley bottom woodlands in the south of the valley.

The primary objective of the coniferous area aimed at production of a commercial crop of timber whilst satisfying the esthetic demands of the valley treescape by retention of the traditional Larch where visual amenity demands are important, but moving towards species with greater productivity where appropriate as felling and replanting occur. Rotation length being reduced from the traditional 90 to 100 years to maximise the mean annual increment of the crops. The Broadleaf areas being worked on a more extended basis with high amenity and difficult extraction areas managed on a group felling or stem by stem selection basis, with rotations of 120 to 150 years. The Broadleaved woods away from the main tourist areas exploiting the rapid quality growth of Sycamore and Ash on shorter 70 to 80 year rotations.

In all cases early and adequate thinning of plantations takes place and care and maintenance of crops is carried out, together with exclusion of sheep and rabbits from plantation areas and control of Roe Deer and Grey Squirrels.

In addition to the main dedicated woodlands, there are further areas of small woodlands, shelterbelts, farm copses and many individual and groups of trees which together with the dedicated woodlands, form the treescape of the area. One of the main characteristics of the Wharfe valley being the rich colourations of treescape in Spring and Autumn, and the way in which trees form the link between the river in the valley bottom and the fells enhancing the visual amenity of the area by framing views, enhancing land form, providing secluded dells as well as shelter to stock and farmsteads.

Dutch Elm Disease, natural ageing and wind damage is taking a toll, not only of woodland trees but also on roadside farm trees. A programme of survey work, tree surgery and replanting such trees has been drawn up, but inability to obtain financial assistance for such work inevitably limits the amount that can be done. In recent years requests for memorial trees to be planted has provided a useful addition to the replacement programme.

In 1985 the Nature Conservancy Council (now English Nature) designated the Strid Wood as a Site of Special Scientific Interest (S.S.S.I.). Whilst still retaining its dedicated woodland status it is now subject to a detailed management plan reviewed every 5 years to coincide with the Forestry Commission Plan of Operation for the main woodland. Essential to the management philosophy of this area is the conservation of the flora and fauna whilst allowing public access to the wood, (some 100,000 per annum on the Nature Trails established in 1973), reinstatement of the early 19th century seats and views and a gradual move towards a larger proportion of native species of trees, together with modifications of tree cover where necessary to provide optimum habitat for the rarer species of flora and fauna.

A new woodland at Barden was established in 1992 using Oak from seed produced in Strid wood in the good mast year of 1990. Established under a woodland grant scheme this woodland of 9 hectares is the first significant new planting in recent years other than planting of small shelterbelts at the southern end of the Estate at Beamsley. Established as a purely broadleaf plantation with native species only, it is hoped that this will form the basis of a management unit through the woodland grant scheme for woods outside the present dedicated woodland area.

The changes in forestry taxation in the 1988 budget created a lack of confidence in the forest industry. All woodland owners have had to review their management policies and consider

carefully the implications of the loss of Schedule D tax relief. No improvement in levels of grant aid under the Dedication Scheme coupled with the loss of Schedule D tax relief has resulted in significant increases in the net costs of forest operations. One direct result of this has been the decision to seek release from the Dedication Scheme and an application to join the Woodland Grant Scheme as at 1st April 1993 (the end of the 5 year transition period announced in the 1988 budget changes).

The opportunity was taken to review the Management Plan for Strid Wood to coincide with the new 5 year Plan of Operation required to be agreed with the Forestry Commission, both plans now running for 5 years as from 1st April 1993. Copies of these plans and previous dedication plans and the Strid Wood management plan are available for inspection during normal working hours at the Estate Office. The review of the Strid Wood management plan, included for the first time a stem by stem enumeration of the Strid Wood enabling far more detailed management decisions on tree species ratios, type and intensity of thinning to be made. By also recording data on the recruitment class (0 - 5 cm stem diameters) statistical data on young growth including natural regeneration is now also available in a form not previously recorded.

In order to build more flexibility into woodland management the original labour force of 9 men plus a Foreman and Forest Manager was reduced to 3 men with Forester and Manager in 1993, plus local subcontractors, several of whom have been trained on the Estate over the past ten years and have gone on to obtain formal qualifications in Forestry and returned to work in the area.

The principal aims of woodland management on the Estate continue to be:-

- a) Production of timber
- b) The conservation of and regeneration of the woodlands
- c) The enhancement of the landscape
- d) The provision of public recreation including educational use

These four aims constitute the primary aim of the woodland management, all of equal standing. Because of the importance of the woodlands in the landscape and the number of visitors to the area (some 500,000 p.a.) each wood is subject to specific prescriptions of work to be carried out by compartments. Design of felling coupes to enhance land form, species selection on replanting are all agreed with the Forestry Commission through the Plan of Operations for all areas, and subject to consultation by them with interested parties.

The location of the woodlands is shown on the plan.

S T R I D W O O D

SSSI AREA

MANAGEMENT PRESCRIPTION

1 9 8 5

The Oak Pasture Site There are four main areas here :-

- (i) The area immediately northwest of Laund House and above the back road. It is open to the public highway, covered in bracken. The individual trees are beginning to die back in most cases, albeit slowly, one tree at the western end having been blown down in the January 1984 gale. The holly trees have been regularly raided for berries at Christmas time. An extension of this area goes in front of Laund House, where perhaps the oldest oak is barely surviving. Three oak saplings were planted opposite this in 1985 as replacements for the old oak.

Car parking and picnicking is very prevalent in this area with up to 20 cars, on Bank Holidays and sunny Sundays, regularly parked here.

The area has a limited sheep grazing value at present as there is no way of preventing cattle or sheep straying along the public highway.

Prescription: This area is to be retained as the main oak pasture area extending to the line XY. Over the next 20 years oak with some holly in mixture to be planted in cages at approximately 60 ft. centres to perpetuate the oak pasture characteristics (at the rate of 6 oak, 2 holly per annum over the whole oak pasture area). The bracken, which would not be original, be eradicated in consultation with NCC to avoid damage to lichen flora and invertebrate fauna associated with the trees.

The possibility of two cattle/sheep grids being incorporated into the road at A (Laund Gate) and at B, provided substantial grant aid is forthcoming, be investigated; to allow the area to be grazed. If reseeded required after bracken eradication a *Festuca/Agrostis* mixture to be used. This area also to include, for management purposes, the triangular area recently planted below the council road which although not a part of the SSSI would respond to similar treatment and once the hardwoods that have been planted are fully established could well be opened up for stock to graze under the trees.

- (ii) The area to the west of the track leading to Laund Plantation. This is enclosed and is let on a grazing licence, originally being part of the Laund Farm holding. Bracken is extensive on the lower part but this with few trees higher up becoming rough grass pasture with no trees. Most of the area is improvable. There is no fence on the northern side where it is open to pasture land.

Prescription: It is to be put into farm use as pasture with eradication of bracken and reseeded if required as in area (i) above - no clearance of trees.

- (iii) The area to the east of the track to Laund Plantation. Covered in bracken, forms part of the grazing let, a dryish bank. It is open to area (ii). Adjoins Posforth Gill Plantation of which it forms a natural extension.

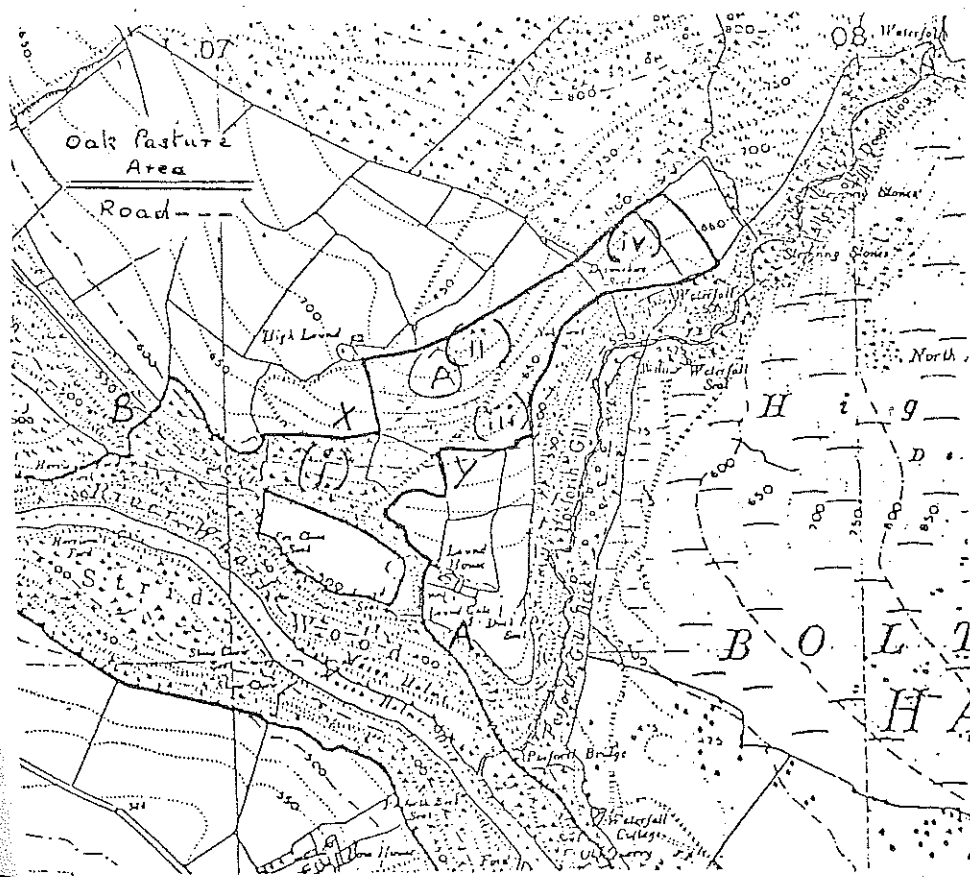
Prescription: Retain as an oak pasture area as in (i) above.

(iv) The northernmost part was originally in-bye fields and unlikely to have ever been part of the original oak pasture. Estate records indicate use as in-bye and as far as we can tell for several generations. It is let as part of the Laund grazing licence area.

Prescription: The existing oak trees to be retained within these enclosed fields. The Estate can use these fields in this area for pasture grazing or for short rotation crops such as kale or young Christmas trees.

The whole area is full of rabbits and a control programme is under way to keep numbers down to an acceptable level. The amenity value of this area is rated extremely highly by the Duchess of Devonshire as tenant of Laund House.

Cattle grids, etc.: the Estate to obtain a specification from County Highways for cattle grids on the road and investigate grant position with MAFF, YDNP and NCC. Fencing of the roadside is not considered a suitable alternative to cattle grids. No public access is allowed on the track to Laund Plantation but public access and parking adjacent to the public highway is traditional and acceptable.



AREA I

Posforth Bridge area and Mason Holme

The dangerous, roadside and pathside, trees to be taken down. This area - especially by Posforth Bridge and Waterfall Cottage together with Laund Gate constitute the heaviest visitor pressure on this side of the Wharfe. On good weekends there are many cars parked, producing traffic problems. Even on weekdays cars frequent Posforth Gill and Waterfall Cottage areas. This is to be expected as the more adventurous and "mean" motorists explore the lesser known roads and avoid paying the now 70p per car, car park tariff. Mason Holme in particular gets very heavy traffic entering from cars parked on the roadsides to the east of the Gill and at the bridge. The area is used by walkers, picknickers and fishermen.

From the end of Mason Holme to the Lud Stream bank is the most accessible area on this northeast bank for forestry and maintenance operations. It is also the most accessible to public pressure. At present there is an unsatisfactory use of poplar on Mason Holme. Originally a plantation of sycamore was planted here which developed to pole stage and was virtually wiped out by grey squirrels over a very short period. It was then replanted with poplar which have either failed or are doing badly. The banks above Mason Holme reflect the underlying condition, the soil being fertile and in some places very sandy (an extension of the Laund sandbed). There are oak, elm, alder, sycamore, beech and ash.

The paths on the slopes (2), one is very eroded in places and requires work to be carried out to make it safe. The other is only irregularly used.

The Estate would wish to see this area more productively used. It is believed that it is one of the few areas on this northeast side where a more active policy of growing hardwoods might succeed, due to ease of access. Although choice of species requires careful consideration as the oak would be shaken on the sandbeds.

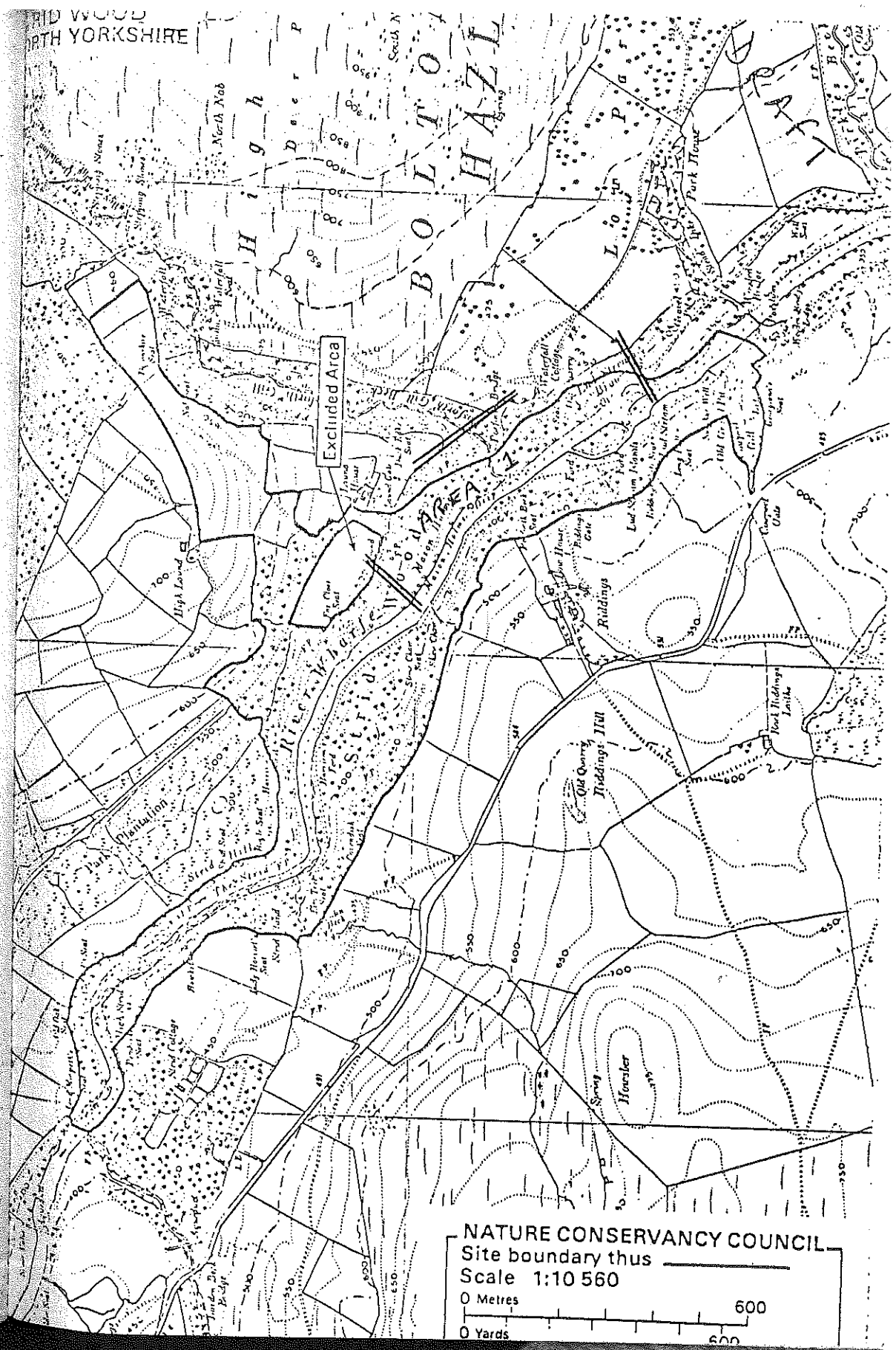
The group felled areas to be replanted with tube oaks. Mason Holme, replant with oak, ash mixture in tubes not in rows, say, 15 ft. spacing, oaks with ash between. On the bank, holly and gean should be introduced. There is a small stand of sycamore, these to be thinned.


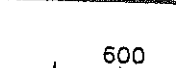
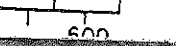
The area above the road and outside the SSSI area pt. compt. 53D and 26A to be treated as if part of SSSI for species and management.

The area will not be fenced, therefore individual tree protection.

NCC scheduled area of Mollusca - like *Acanthinula lamellata*, either side of Posforth Gill where it enters the River Wharfe.

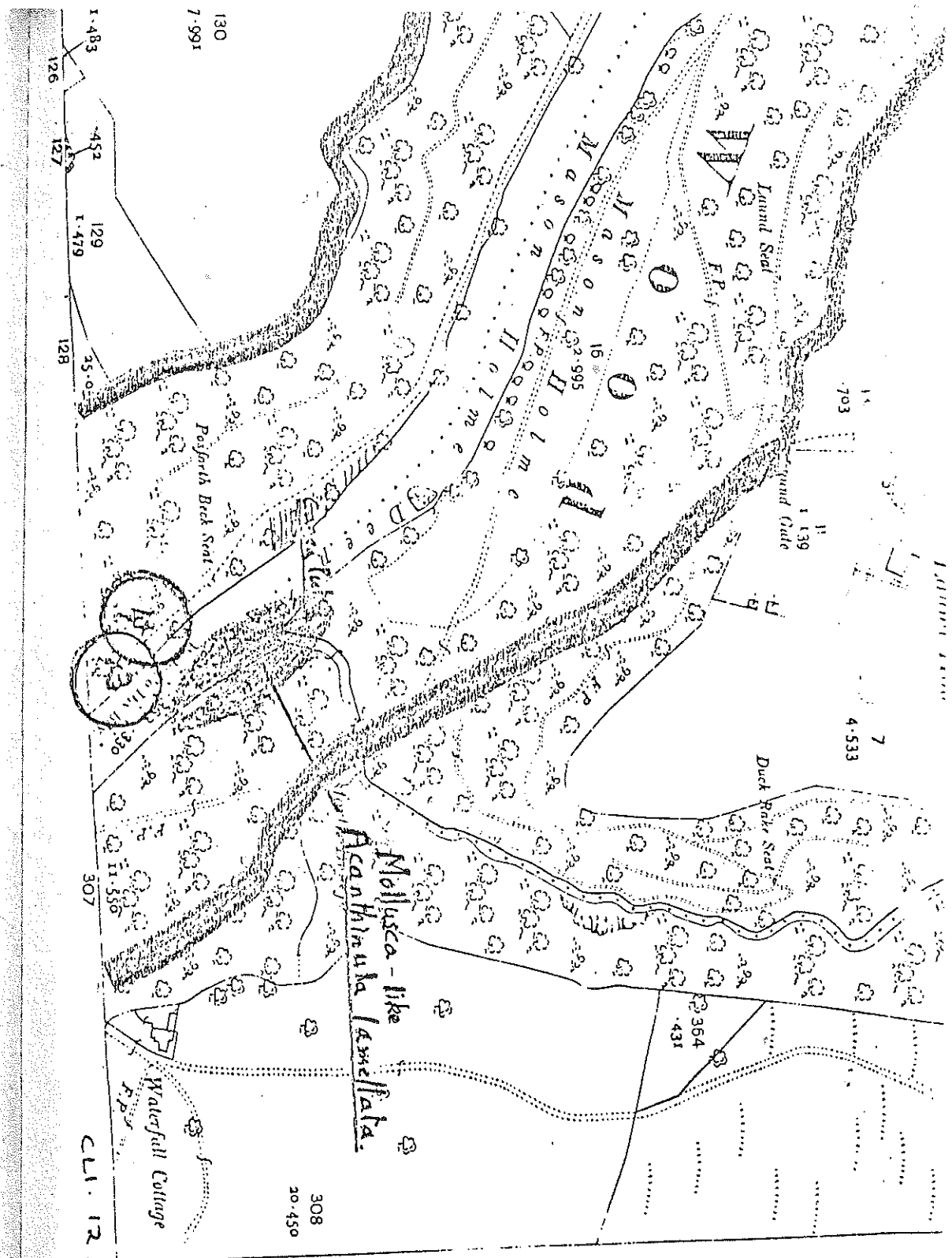
OLD WOOD
NORTH YORKSHIRE



NATURE CONSERVANCY COUNCIL
 Site boundary thus 
 Scale 1:10 560
 0 Metres  600
 0 Yards  600

HAZLEWOOD WITH STORTIS PH.
BOLTONS PARK

Low Park

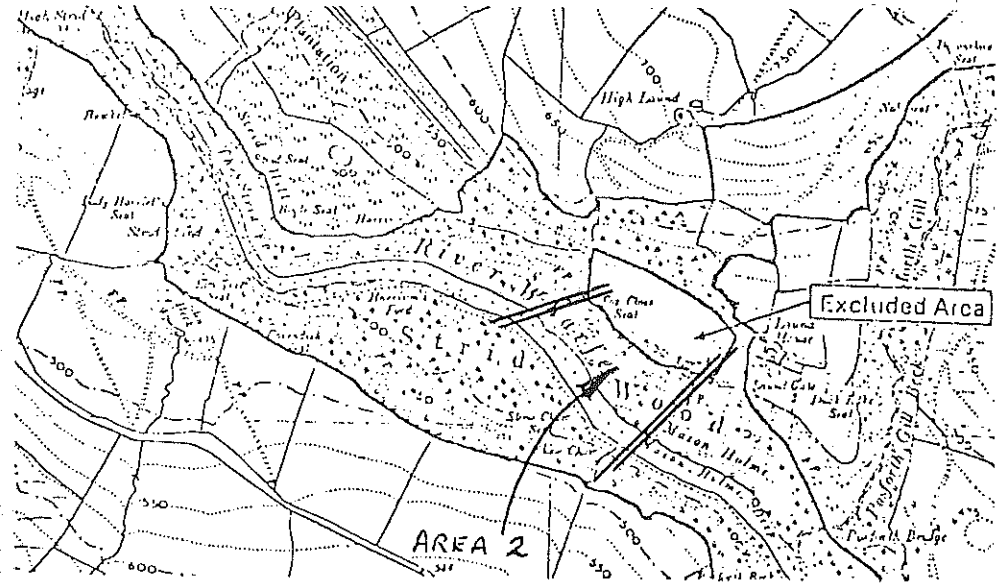


130
7.991

1-483
126
127
129
128
25.0

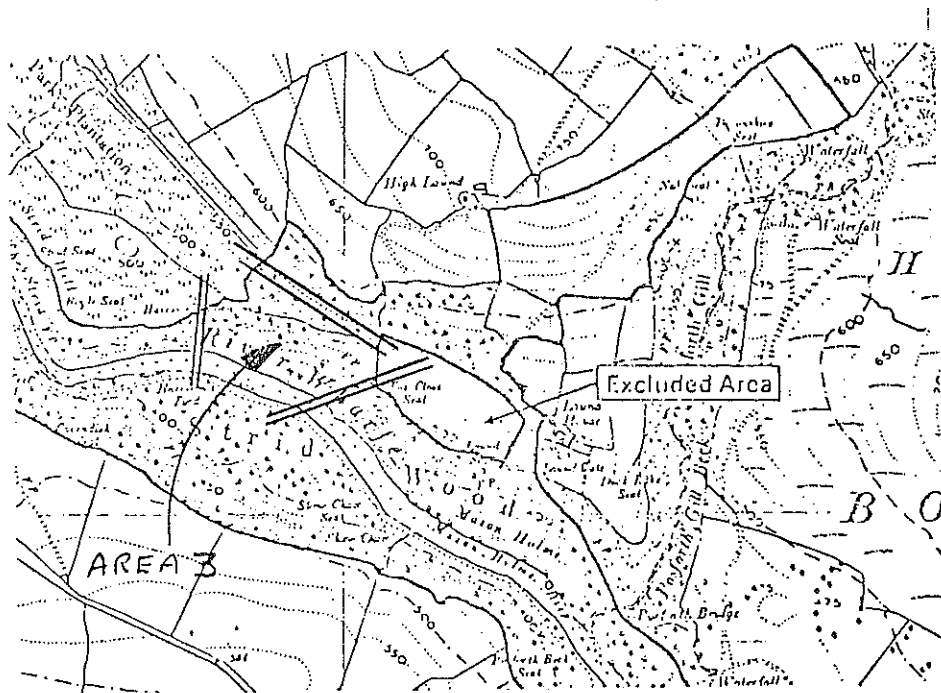
CL1. 12.

This area is of difficult access. It therefore must be restricted in its treatment. If and when dangerous trees develop and cannot safely be left they will be taken down and likely be left lying. Small group planting of oak only will be undertaken using native stock grown on the Estate (pot grown) and individually protected.



A3

Access to this area is possible through the level above. There is a clearing it is proposed to replant with oak in tubes. Birch to be cleared to enable replanting with native oak and other HWs. Area 3 as with Area I being designated as areas where oak and other HWs may be harvested as a forest crop with replacement by oak using, say, 120 year rotation and stem by stem selection forest methods.



As for Area 4 but there are older beech trees in here and in one section it is possible to obtain access from the fields. If replacing beech, then oak to be planted in tubes together with holly and ash.

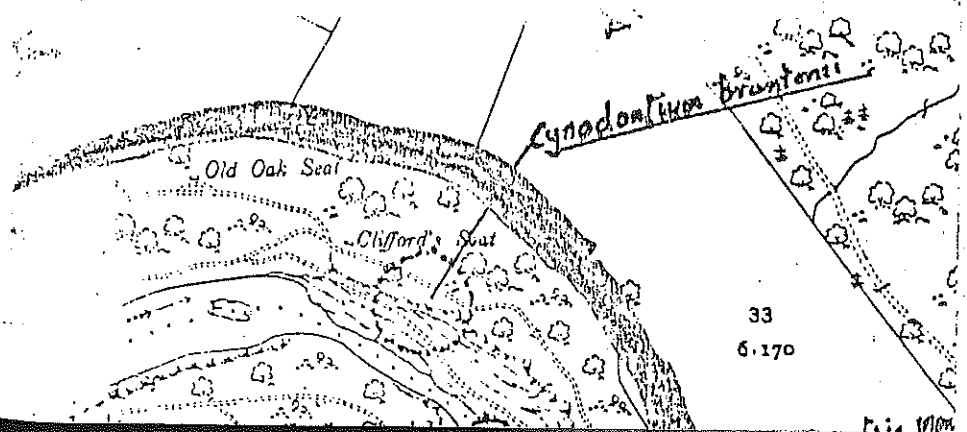
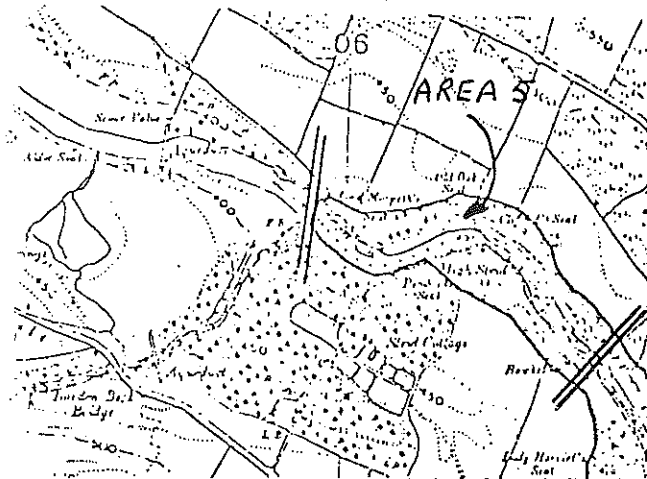
East Bank - General

Along the whole of this side path maintenance will be required from time to time as will maintenance of stream crossings on footpath, some localised drainage problems to be left to provide species diversification except where it leads to footpath damage.

Riverside Fishing access is required along this side. Mason Holme Deep requires good access, therefore on this stretch open access to the banks and relatively clear banks to be maintained. If existing trees become dangerous or die, replace as we have done below wooden bridge. Some limited pruning of lower braches acceptable. Other fishing locations required on either bank and any associated work to be cleared of scrub growth every 5 years as an aid to fishermen.

The Dales Way footpath (although shown on the new series 2½" to 1 mile OS maps on the west side) runs through this eastern bank woodland.

NCC schedule area, just below Clifford's Seat an area of *Cynodotium brantoni*.



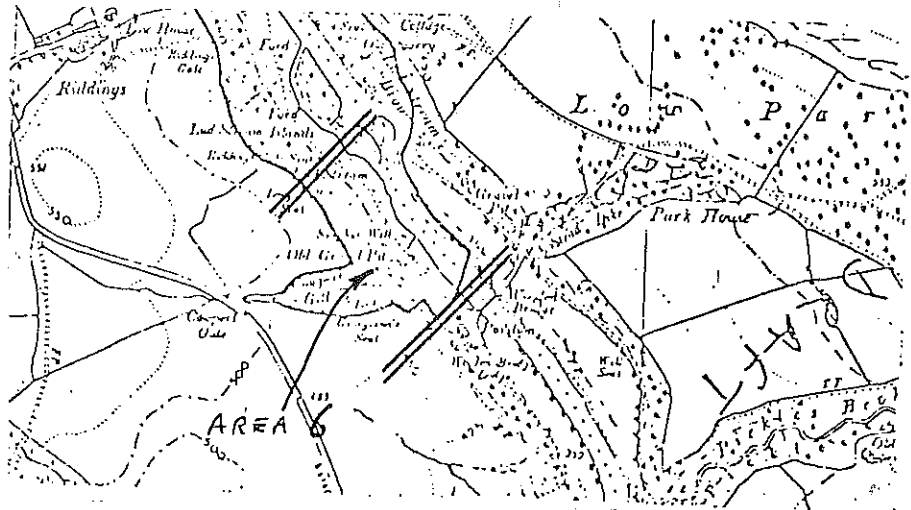
6

This area contains two basic elements. A few individual trees of interesting type and plantation trees of two ages, older trees in need of thinning either side of Cowpert Gill and a younger element of mixed species which requires clearing to discourage birch and allow plantation type trees to flourish.

The sulphur well area requires improvement to the track and the well surround.

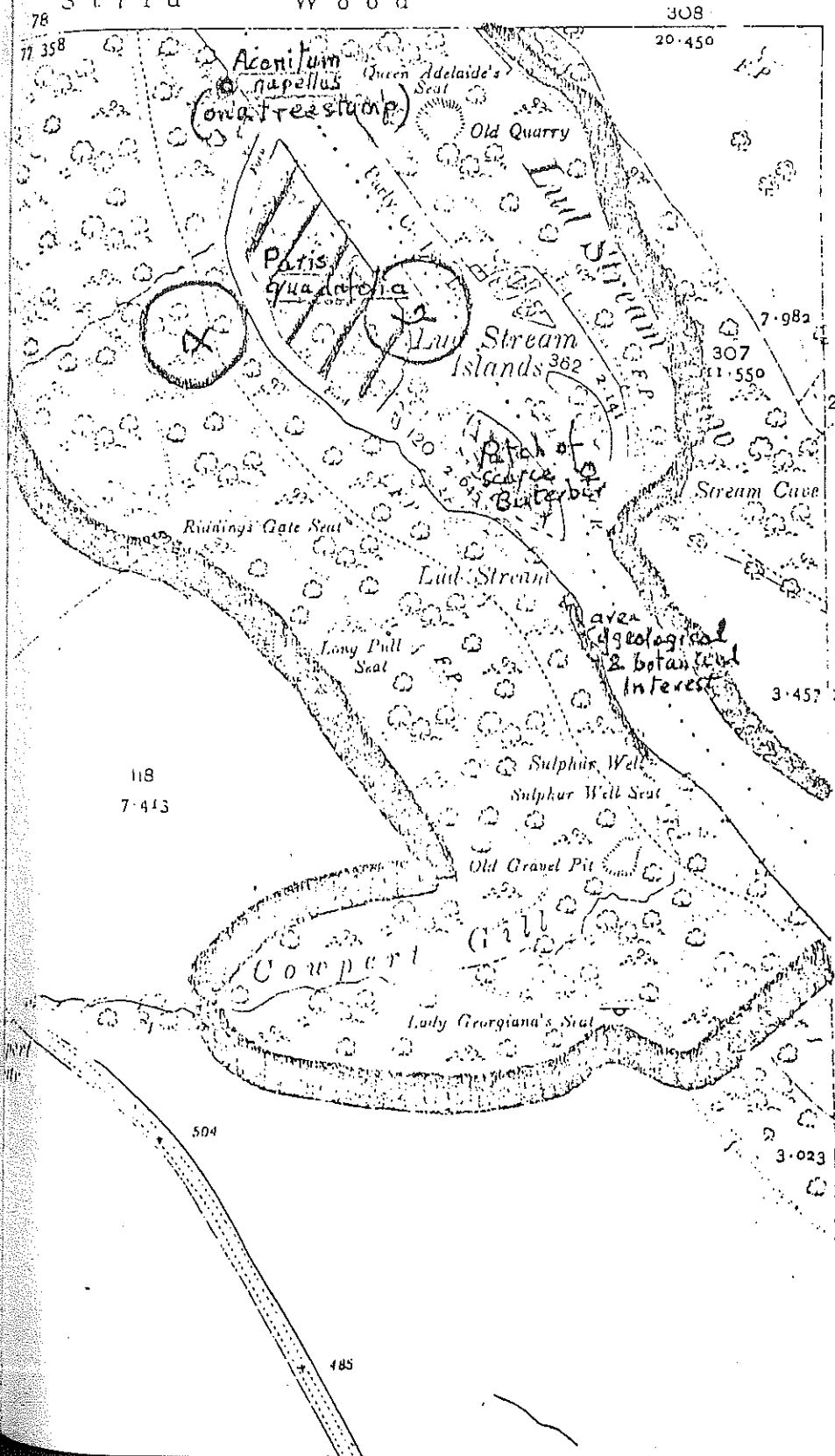
Specimen trees should be encouraged here with as long a life expectancy as possible but with adequate replacements growing on in selected locations.

NCC scheduled area - area of geological and botanical interest lies north of the sulphur well and an area of scarce female butterbur on the southernmost of the Lud Stream Islands.



151
YORKSHIRE [WEST RIDING] SHEET CLI. 16.

Strid Wood



BOLTON PARK — HILFEROOD WITH STORTHS
OTLEY DIVISION

St. Holme
Riv.

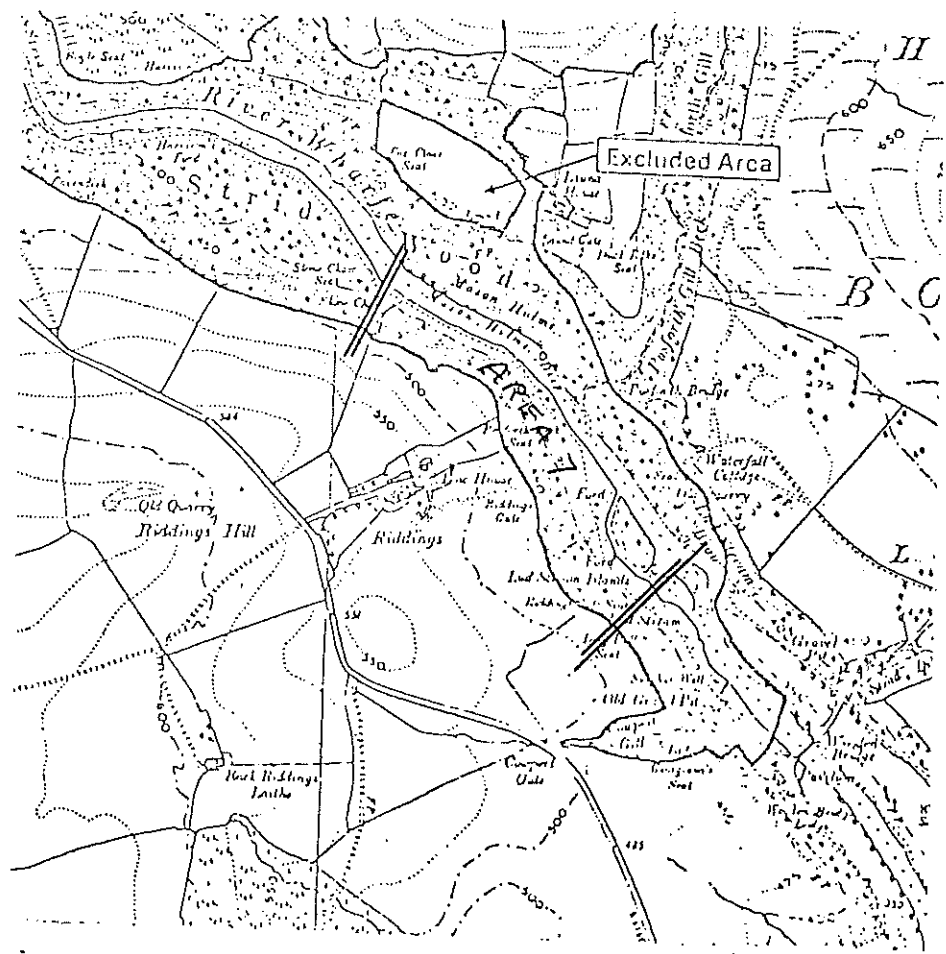
W

2
An area of typical Wharfedale (Strid) forest to be maintained by group felling and replanting on a stem by stem basis. Access to and maintenance of hide required.

NCC scheduled areas. There are several notified areas in this section.

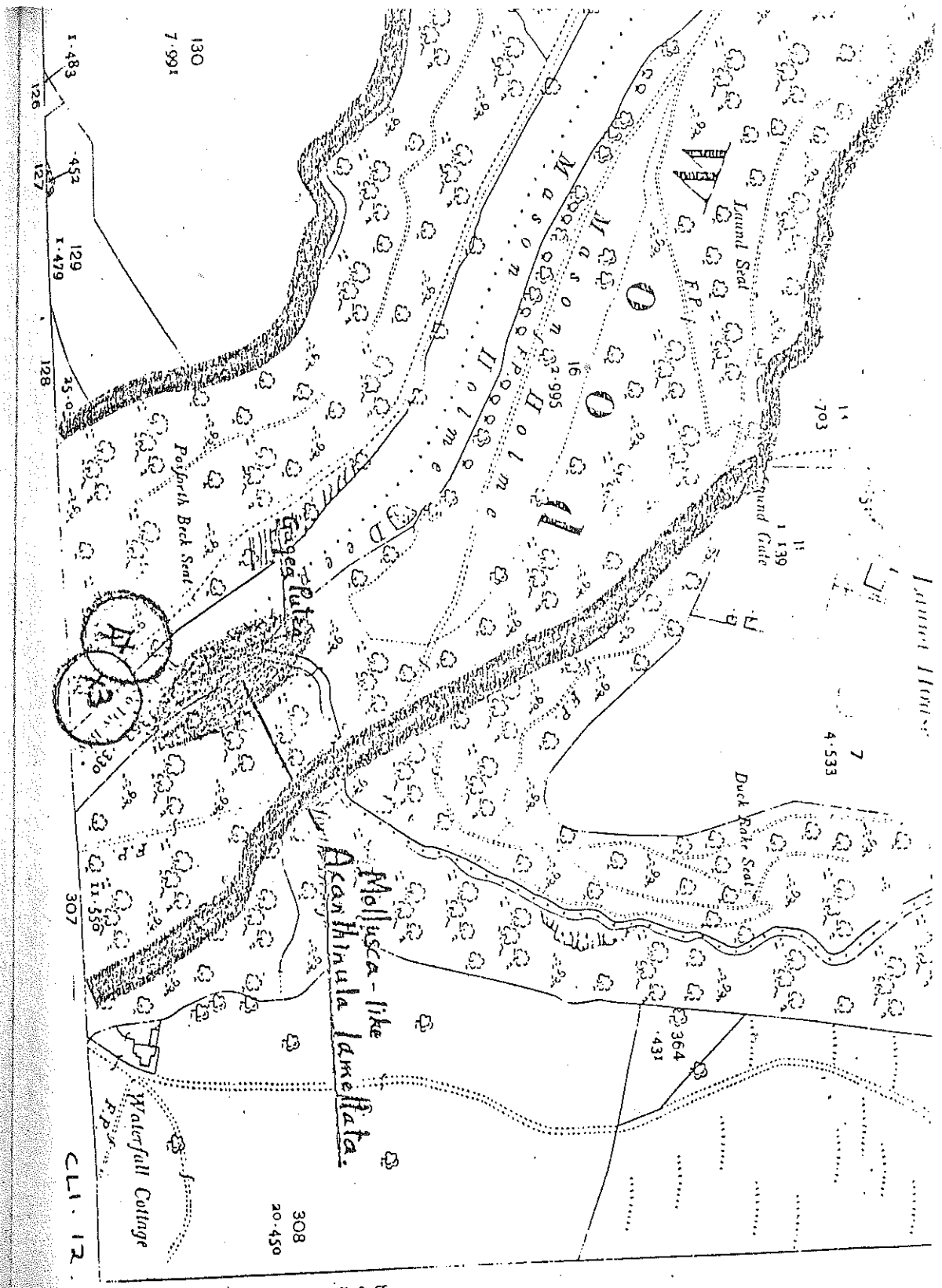
Southernmost of the Lud Stream Islands a patch of scarce female butterbur. Main Lud Stream Island an area of Paris quadrifolia and a marked tree number 2 on easternmost corner. North of the main Island on the western bank Aconitum napellus (on a tree stump) and a marked tree number 1 to west of the track opposite the main island.

Two marked trees numbers 3 and 4 near junction of path and track just south of Posforth Beck Seat and an area of Gagea Putea north of the seat between the track and river.



HAZLEWOOD WITH STORLTHS PH.
BOLTON PARK

Low Park



130
7.991

CL1. 12.

308
20.450

Waterfall Cottage

Mollusca-like
Acanthinula lamellata.

Postford Beck Seat

1.483
452
129
127
128

Duck Pond Seat

Inund Seat

Lantern House

364
431

4.533
7

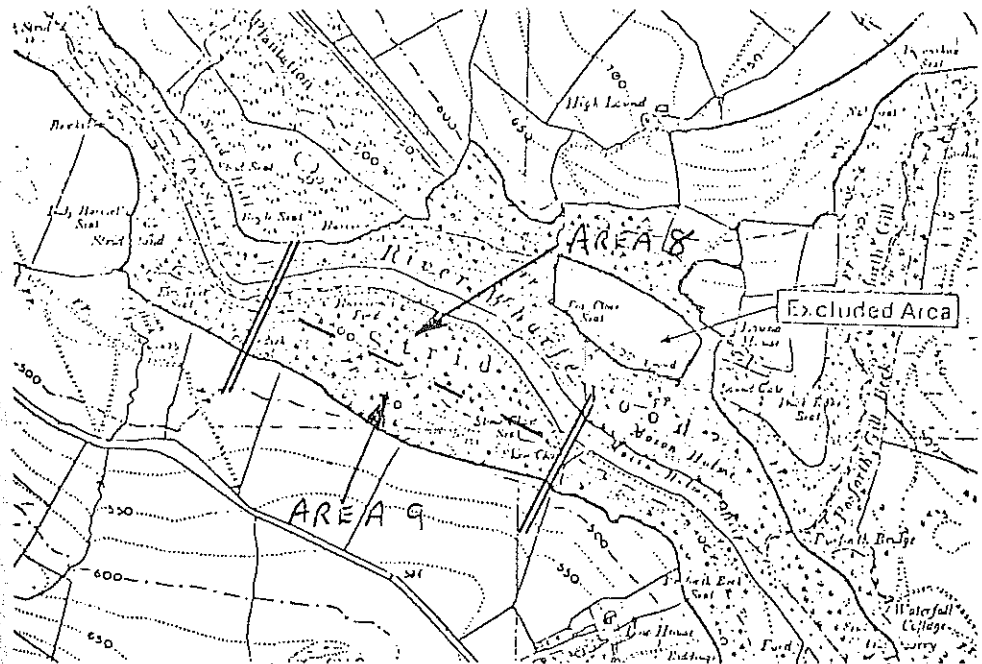
703

11
1.139

Mosses
Holme

8

The riverside flat, fishing access, to river is required - copious ash growth in amongst bramble. Selectively encourage ash growth. Introduce groups of oak and other hardwood species in approximately the same proportion as they are now. Never clear fell again on account of frost problems for establishment but accept forest crop by group felling (small $\frac{1}{4}$ acre plots).



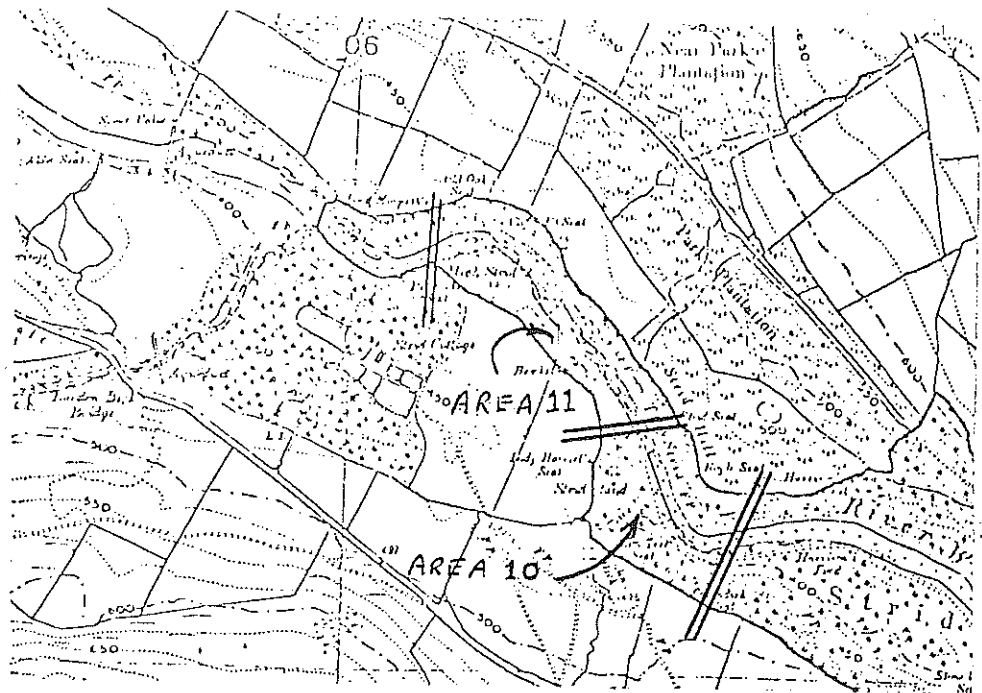
9

Retain specimen DF in the larch areas, thin larch and in 10-20 years time fell out larch after opening up to retain windfirm trees surrounding them. Thin as required 5 year intervals. Replace by oak in larch matrix keeping both oak and larch in final crop, oak lasting two rotations of larch.

10

Birch area, clear out at an early date and replant with oak/hardwood species mix and larch in same proportions as at present - rabbit fence and group plant in existing hardwood areas with selective stem by stem replacement and removal.

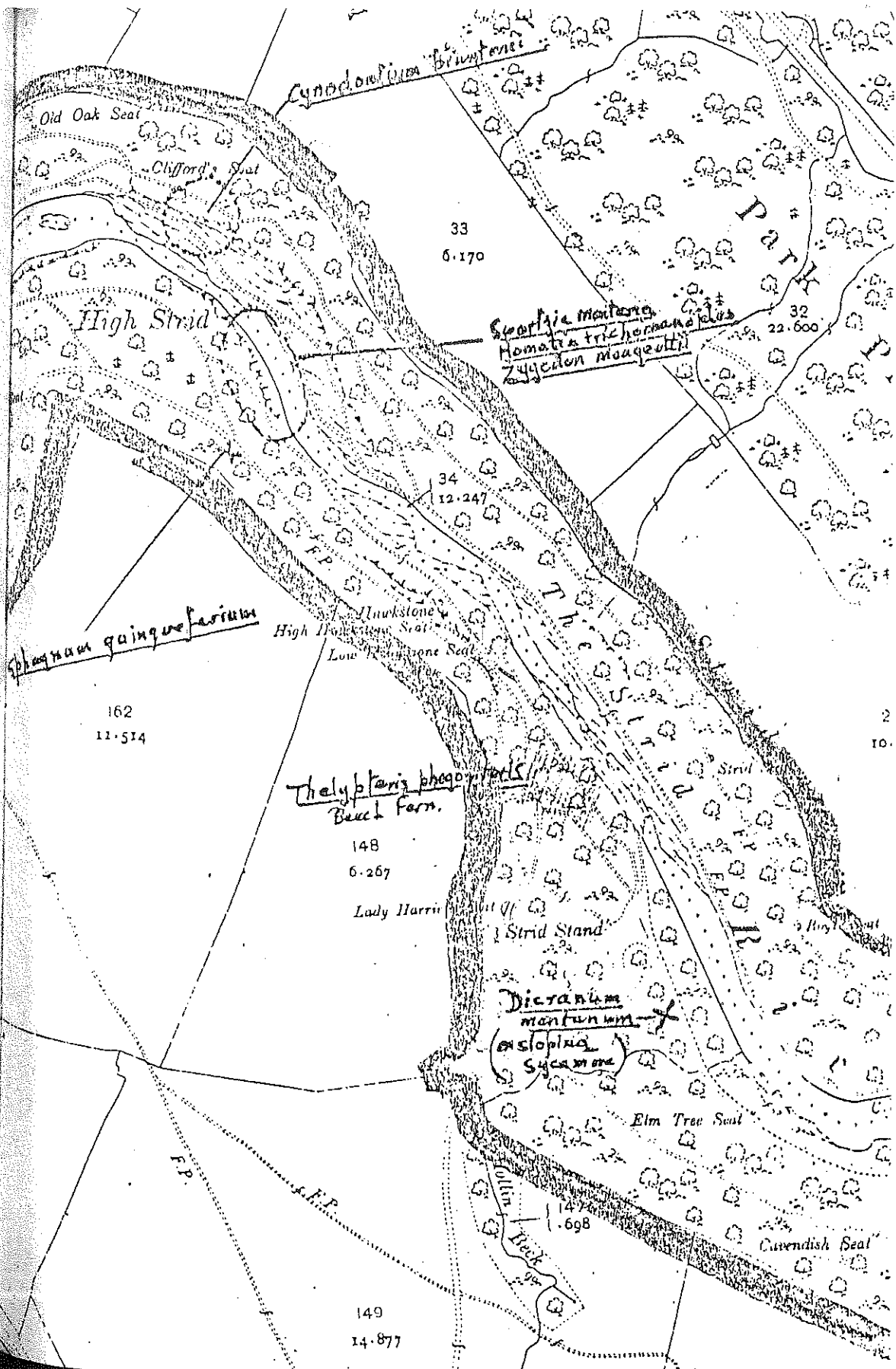
NCC scheduled area. *Dicranum montanum* (on sloping sycamore) to west of main track. An area of *Thelypteris phegopteris* to west of the narrowest part of the Strid itself on northern boundary of this area.



The Strid proper. Specimen trees. Replant failed area where beech felled and ensure very long rotation of maturing specimen trees of oak, sycamore, beech, hornbeam, ash, holly, gean. None commercial.

NCC scheduled area - an area of *Thelypteris phegopteris* (beech fern) on southern boundary of this area, opposite the Strid.

An area of *Swartzia montana*, *Homatin trichomanoides* and *Zygodon mougeottii* on the riverside at High Strid and *Shagnum quinquefarium* at the junction of the two paths at High Strid.



Old Oak Seat

Clifford's Seat

High Strid

High Horse Stone Seat

Low Horse Stone Seat

Spartina maritima
Homalium trichomanes
Zizania moqueletii

Sphagnum quinquefarium

Thelypteris phaeopylla
 Beech Fern.

Dicranum montanum
 (sloping)
 Sycamore

Elm Tree Seat

Cavendish Seat

33
6.170

34
12.247

162
11.514

148
6.267

149
14.877

32
22.600

147
1.698

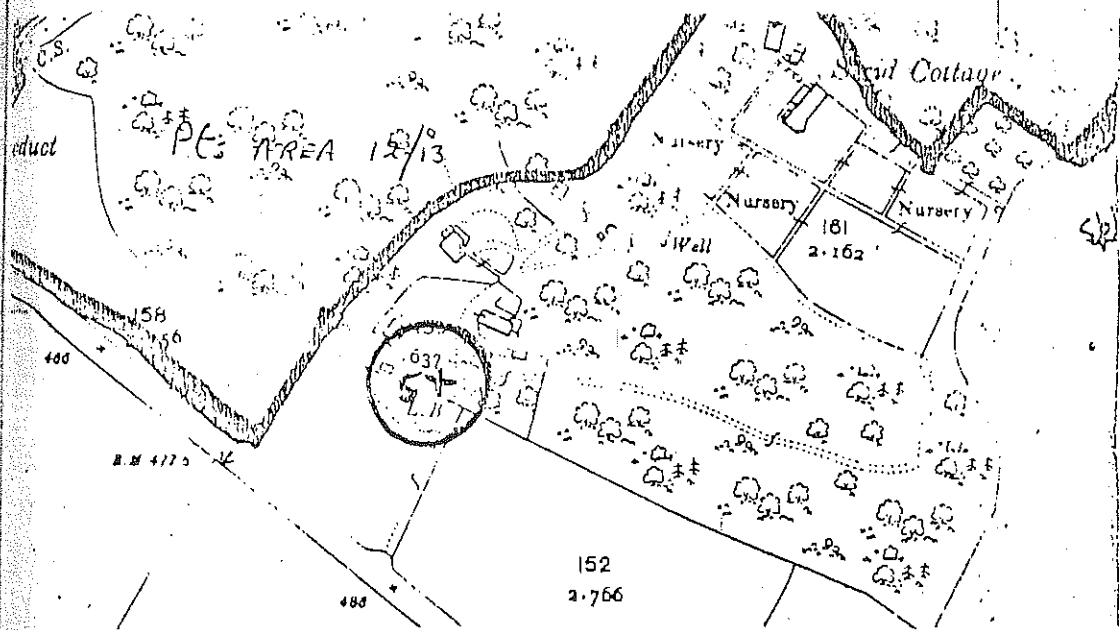
PARK

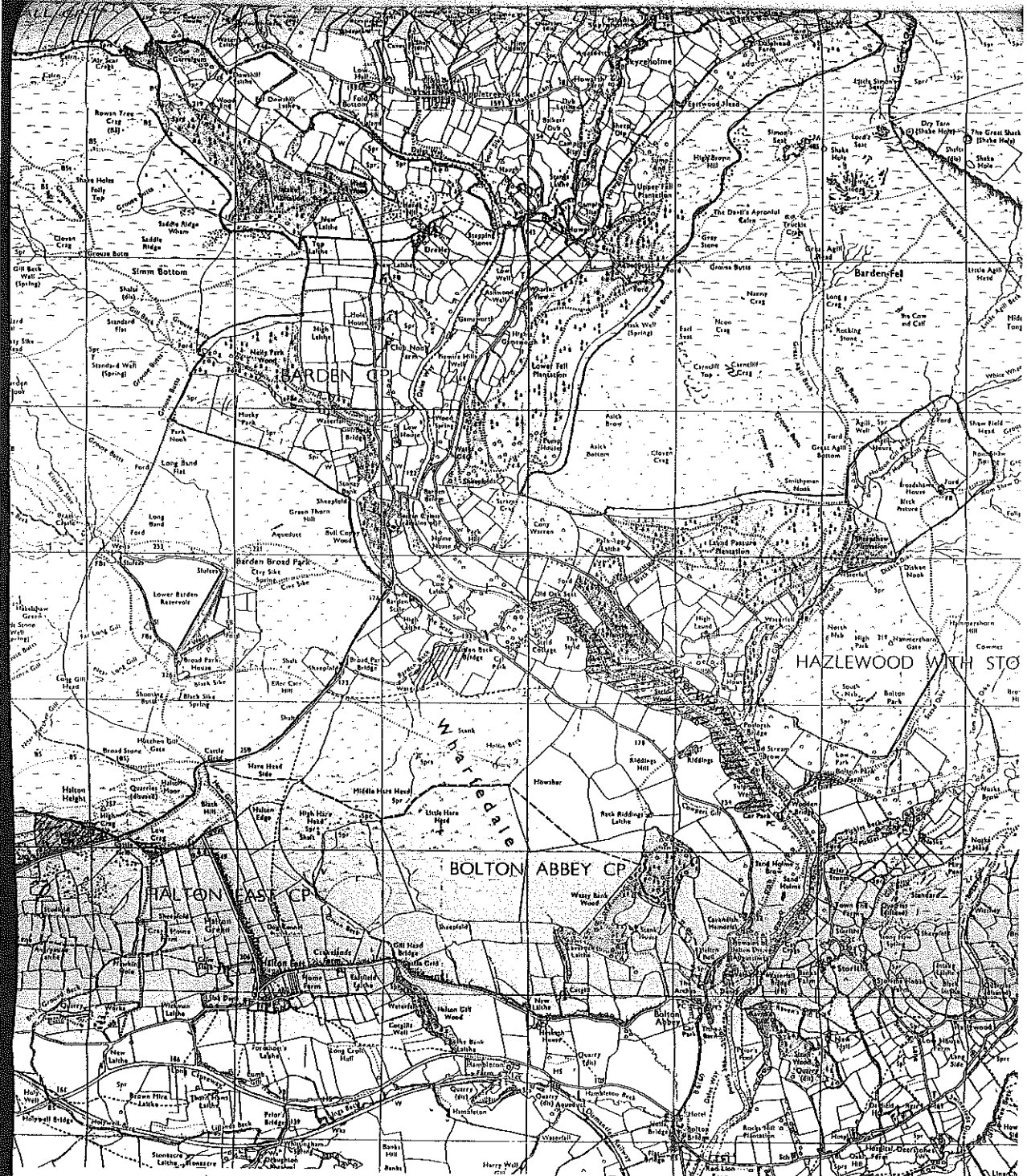
2
10.

12/13

This area is not within the SSSI area. It has been used in the past as something of an arboretum area. Its present character to be retained with a retention of the arboretum approach. Species will as at present be oak/larch (European) to predominate but some ash/sycamore/beech. Arboretum trees to be made more conspicuous by naming? Thin every 5 years as required, group replacement fellings and plantings. Specimen arboretum type trees to be introduced as and where appropriate.

NCC scheduled area. A marked tree number 5 to the left of the entrance to Strid Wood below the Nature Trails kiosk.





Reproduced from the Ordnance Survey

1/25000

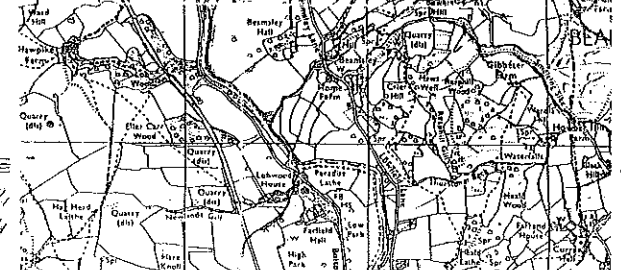
scale map with the permission
of the controller of H.M. Majesty's
Stationery Office

Licence No. ES 73244E

Trustees of the Chatsworth Settlement
Yorkshire Estate
Estate Office
Bolton Abbey
Skipton

WOODLAND AREAS

- DEDICATED CONIFER
- BROADLEAF
- S.S.S.I.
- OTHER W.G.S.
- S.W.R.G.
- OTHER



Strid Wood General

The Estate policy will be one of support for the SSSI whilst at the same time allowing public access. The Estate agrees to maintain the woodland to preserve the specified locations and species detailed in the plan and its appendix. It also agrees to maintain the general acidic oak woodland aspect, particularly on the east bank with the emphasis there of a gradual strengthening of the oak content. On the west bank the existing proportions of species mix to be retained.

It is agreed that timber, especially oak, may be removed from the woodlands under the agreed plan and used either on the Estate or sold to contribute towards the cost of maintaining the woodland.

The control of pests (e.g. foxes, rabbits, mink, grey squirrels) is to continue to be the Estate's responsibility and the exercise of fishing rights on the river is to continue as at present.

This document is to be used as the agreed management policy by the Estate, NCC and Forestry Commission. It is to be subject to review and revision every five years to coincide with the Forestry Commission Plan of Operations revision. During the final five years all sides will carefully monitor progress to avoid misunderstandings and achieve the best results.



FORESTRY REPORT

BOLTON ABBAY ESTATE

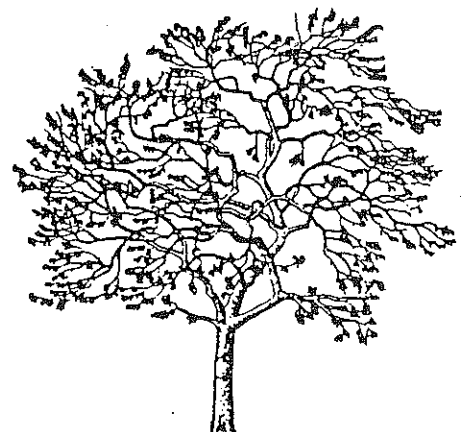


JOHN CUMBERLAND

BSi Forestry

Member of the Institute of Chartered Foresters

Forestry Consultant



Wood Edge, Hebers Ghyll Drive, Ilkley, West Yorkshire LS29 9QH

Telephone Ilkley (0943) 608961 evenings

SUMMARY OF RECOMMENDATIONS

Divide the forest estate into two working cycles.

- (a) A coniferous management unit 251 ha. upland sites
- (b) A hardwood management unit 99 ha. valley bottom sites.

Plant all bare land up.

Replant failed plantations.

Maintain Bu and weed new planting properly.

Rabbit fence all new planting, eradicate rabbits within the new planting and regularly inspect to keep clear of sheep and rabbits.

Thin plantations at an earlier age and respace if necessary at 10 years old to obtain maximum diameter growth and prevent check.

Fertilise checked areas, carry out routine foliar analysis at 5 years old.

Change to more productive species, DF on lower slopes, SS on upper areas. Sycamore in valley bottoms.

Reduce rotation lengths to 45 years, conifers, 70 years H/WS.

Establish piece working.

Budgetary control.

Establish a stake making enterprise with pressure treatment tank.

Establish a woodland sales point for stakes, rustic work, Christmas trees.

JOHN CUMBERLAND

August, 1983.

The forestry estate at Bolton Abbey comprises 450.5 ha. of forest land with a wide range of sites from highly fertile valley bottom riverside plantations to steep sided valley slopes at higher elevations. In general the land can be said to be very fertile and sheltered with only a few areas subjected to moderate exposure. Integration of management with other estate requirements of sporting, shelter and timber are essential to smooth running of the estate as a whole. Tourism is becoming a major factor affecting both the estate as a whole and in particular the riverside woodlands.

Access. County maintained roads serving the valley are generally in good condition and adequate for timber hauling. Farm roads/tracks exist to most woodland but in many cases are not suitable for contract hauliers' lorries to negotiate whilst within the larger woodland there are no roads/tracks suitable for timber lorries at all. Extraction is at present carried out by forwarder to county roadside. This is costly and results in a reduction in the price paid by merchants. Consideration needs to be given to (a) improving the present tracks to the major commercial woodland blocks (b) improving the junction of these tracks where they meet the county roads and (c) the construction of all weather roads capable of taking timber lorries through certain of the larger commercial woodlands on the estate.

Boundaries. The prime requirement of the estate and its tenants is for stockproof fencing against the forest boundaries and these are generally in good condition. However, from the forestry viewpoint the major requirement is to be able to turn both rabbits and sheep. There are large numbers of rabbits present in all plantations. It is considered essential that internal rabbit netting is erected for all new planting using 3 line wires and a top barb wire to turn sheep. The bottom edge of the netting to be properly dug in or turfed over to ensure a rabbit proof boundary, all gates to the new plantations to be netted.

Cleaning of Plantations. The removal of weed tree species in both coniferous and hardwood crops is essential and needs to be carried out as a priority, firstly during weeding operations and secondly, just prior to canopy closure. There are several areas where damage is being done to crop trees from birch, etc..

Drainage. By and large, the plantation areas are fairly well drained by the natural slope of the land. It is not appropriate to suggest any overall scheme but rather that at planting, local drainage problems should be dealt with by open ditches being dug to drain wet areas. These drains to be led away to water courses at an angle not exceeding 15° to the contour to avoid erosion of the drain.

Fertilising. The whole of the uplands in this area are deficient in phosphate and on the upland forest areas it is believed that there is a deficiency at Bolton Abbey. It does not appear to be serious on its own but when combined with locally poor drainage or adverse weed competition in the form of calluna, erica or vaccinium, retardation of growth due to mineral deficiency is possible. A free advisory service exists run by the Forestry Commission Research Branch at Alice Holt Lodge. It is recommended that on the higher, poorer areas a 3 cwt. per acre phosphate treatment is applied either just before or just after planting and that all coniferous areas be sampled 5 years after planting by taking foliage samples and having them analysed by the F.C.; any corrective treatment can then be applied in year 6. There are a number of plantations which are suffering from heather/vaccinium competition where a general fertiliser should be used to boost the crop out of check as soon as possible.

Pest Control. There is very little evidence of active control of either sheep or rabbits in young plantation areas. It is essential to good establishment that strict control of young plantations up to 10 years of age is exercised and that all rabbits and sheep are removed prior to planting, thereafter regular inspections to remove both sheep and rabbits and any hares within the plantation area.

Squirrels have caused surprisingly little damage but require to be kept under control and any increase in their numbers or damage controlled.

There are no signs of deer at present in the woodlands but roe deer are present at Ilkley, in Nidderdale and in Wensleydale. It is envisaged that as part of the national pattern of migration that sooner or later roe deer will find their way to Wharfedale and become permanent residents. When this happens, it is essential to control their numbers to prevent stripping and fraying damage.

Sporting. The woodlands are not at present fully exploited for their sporting potential. A sporting plan should be drawn up for all woodlands on the estate; from this can be designated ideal release and feeding areas, flushing points, and where appropriate species can be selected for key areas which will enhance sporting cover and holding potential, where necessary felling and thinning regimes may require modification from the ideal.

Weeding. To judge from existing young plantations this appears to have been sadly neglected in the past. It is essential that weeding is properly carried out either by hand or chemically and carried on for long enough, particularly in bracken areas, so that the trees survive to produce a full crop. At weeding, an estimate of tree losses should be made and these replaced during the first two winters following planting.

Existing Young Plantations. Of the plantations planted since 1971 (a total of 39.5 hectares) only some 17.3 hectares survive and many of these are not fully stocked. A total of 22.2 hectares (or 55 acres) have failed either totally or have only some 25% - 35% of the crop left. This is totally inadequate and indicates a lack of control of planting, (bu,) pest control and or weeding. Under the Dedication Scheme, the owner is required to maintain the plantations on which grant aid has been paid. Where failure of the

plantation has occurred the owner is obliged either to replace the missing trees or to repay the grants with interest. In this case, I feel the F.C. must also bear some of the blame for not exercising their inspection rights as the Forest Authority and drawing the owner's attention to this problem. It is important that these areas be replanted and upgraded at the earliest moment to enable the ground to be brought back into full production and so that there will not be too big a discrepancy in ages and size between surviving plants and the replanting. These areas will be costly to establish as in many cases rabbit netting will either be required or repairs will be needed and competition from weed growth will be excessive. The use of herbicides and fertiliser is recommended to boost the replanting and reduce weeding costs.

Species. The estate falls fairly naturally into two main areas and I have defined these as a commercial area of conifers called the conifer management unit and the valley bottom woodlands where, because of the nature of the site, the existing crops and the amenity and tourist considerations, I have defined not as an amenity area but as a hardwood management unit. I regard this latter area as a positively managed hardwood crop. By exercising correct H/W management principles based on a compromise between a group felling system and a stem by stem selection system the main amenity woods can continue on an extended rotation of perhaps 120 - 150 years to produce a return of high quality timber for a modest outlay. Hardwood areas away from the main tourist areas being managed on a shorter rotation, for example, with sycamore, aiming at rotation lengths of around 70 years. The level of silvicultural skill required for the more intimate small group or stem by stem selection system is well within the scope of the average forester but it is essential that there is a continuity of management philosophy in the management of these woodlands.

In the commercial conifer management unit it is envisaged that the principle involved becomes one of maximising the commercial return and that rotation lengths should be reduced to not more than the

period at which the mean annual growth increment peaks. For larch this could be as short as 35 years, for pine up to 60 years, for Douglas fir 45 years, spruce 45 - 55 years. Before considering the rotation length it is appropriate to consider species choice.

The estate traditionally has grown European larch and Scots pine. It has been fortunate in that the larch used has been of good quality and produced excellent if slow grown timber. However, on the same site there are many species which are capable of producing higher yields than larch, notably Douglas fir, silver fir, Norway and Sitka spruce, and western hemlock. In the Bolton Abbey area both Douglas fir and Sitka spruce are capable of dramatically higher returns of both volume and cash.

For a given site EL yield class 12 is at the very top of the F.C. management tables whereas for DF or SS a yield class of 12 would be regarded as poor. The estimation of the yield class of a given site on bare ground is always speculative but on the Bolton Abbey estate there are sufficient random specimens of DF and SS through the larch plantations to show very dramatically that the growth capability of both DF and SS are considerably above that of larch for each site over a 45 year rotation. We can look at the differences between YC 12 larch and 18 to 20 YC DF and SS. This difference produces a final crop yield of

250 m ³ at 45 years for larch
400 m ³ at 45 years for DF
420 m ³ at 45 years for SS.

On this basis alone there are good arguments in a forest environment for replacing larch by the higher yielding DF on the lower plantations and SS on the higher ground.

In cash terms DF is likely to produce slightly more income per cubic metre than SS and larch of the same quality will probably be comparable to SS price values.

Cash incomes from fellings at 45 years of age of good quality DF crops are currently capable of exceeding £3,500 per acre or £8,500 per hectare, SS currently being around £3,000 per acre, £7,500 per hectare for good quality crops. These prices are achievable over most of the conifer management unit at Bolton Abbey given proper establishment and good silvicultural management throughout their life.

With an area of 350 hectares in the conifer management unit on a sustained yield basis (45 year rotation) felling 7 hectares per annum an income in excess of £50,000 from felling alone should be readily achievable. In addition to this, there should be an income from thinnings based on 10 m³ per hectare per annum, say, 1500 m³ per annum @ prices of £10 per m³.

In full production the conifer unit should be capable of sustaining an income in excess of £60,000 and perhaps as high as £70,000 or £80,000 per annum.

The area is a long way from achieving this sort of return and will only reach this by exercising proper management and silvicultural control.

Thinning. There is ample evidence that in the past thinning has been carried out very late in the life of the plantations resulting in long spindly trees with a small live crown. Even in more recently planted areas thinning has been carried out somewhat later than desirable. Examination of cut stumps in larch indicate the need for a first thinning or respacement not later than 15 years of age and ideally perhaps on the best sites as early as 10 years of age. This is particularly true of the faster growing larch and for spruce areas where early thinnings are not so profitable as larch. A respacement exercise at 8 to 10 years of age as canopy is closing will eliminate first thinning, encourage greater diameter growth and a deeper crown thus achieving an earlier attainment of saw log diameter and so a higher price per m³ at an early date. It will also eliminate the partial growth check as live crowns meet and start to die back up the trees on closure of canopy.

The sale of thinnings is always a problem in (a) getting the job done at the right time and carefully, to avoid damage to final crop trees (b) finding a profitable market. It is suggested that the estate should consider working all early thinnings themselves as a silvicultural operation which is made profitable by conversion to stake material and retailing treated stakes of all sizes. The

The installation of a small pressure treatment plant would enable the estate to sell a quality product and ensure sales of the smaller sizes of roundwood which at present are very much a liability on the market.

PLAN OF OPERATIONS AND CONTROL

The present plan of operations is unnecessarily detailed and although useful as a reference document, is relatively cumbersome and excessively detailed for day to day working. I have attempted to simplify by combining areas needing similar treatment within the existing compartment breakdown. Control of operations should start by reference to the management unit. Within each unit, areas of urgent work have been noted. Based on the assumption that it is required to bring the estate back to as profitable a basis as quickly as possible, I have listed priorities as :

1. The thinning, resplacement and cleaning of crop first in early pole stage and thicket stage.
2. The replanting of failed areas and boosting the growth of areas of check and areas suffering from heavy weed competition.
3. Thinning of pole stage plantations.
4. Replanting of felled areas.

Within these 4 items above it is difficult to establish prior claim but the point must be made that where a plantation is on a 50 year rotation, one year's delay in replanting is 2% loss on total return. In many cases 3 years has elapsed before felled areas have been replanted, thus not only losing potential income but incurring greater expense, as the area becomes reinvaded by competing grasses and weed tree species. Planting immediately on felling reduces competition and produces an earlier return.

An outline 5 year programme of work should be produced showing areas to be thinned, felled, replanted, weeded, cleaned, fenced, drained, maintained, and areas over which pests 'must be controlled'.

A detailed one year programme which should be costed and used as an approved budget for day to day working is the ideal working document and the authority for the forester to proceed. Weekly or fortnightly checks against physical progress need to be carried

out with monthly or quarterly cost control. Where labour is on day rates only the physical progress checks are of greater importance but wherever possible consideration should be given to the institution of piece work working. This should enable the estate to reduce unit costs but it requires greater management effort and a cost control system against budget. Budgets and subsequent cost control should be against such suitable account heads that are acceptable to the accountants and Inland Revenue so as to maximise Schedule D and Schedule B claims and avoid grey areas e.g. fencing should where appropriate be classed as temporary rabbit netting (a revenue claim), drainage should be specified as either maintenance or new (revenue or capital). In an established estate one would envisage the minimum of capital claims as virtually all woodland work is repair or reinstatement of previous works.

MANAGEMENT UNITS

The classification into Management Units arises because of the widely different aspects of the woodland areas. Firstly there are some very clearly defined commercial conifer areas such as Laund Pasture, Lower Fell, Nelly Park, Intake, Westy Bank, Bull Coppy and Park Plantations. By and large these are free from the intense public pressure and are on somewhat poorer or steeper ground. They fall naturally into a coniferous 'working circle' or Management Unit. They are shown in brown shading on the accompanying plan.

Likewise the areas of public access either side of the Wharfe - Strid Wood, etc. being valley bottom sites together with the outlying woods south of Bolton Bridge and Struff Wood, also valley bottom sites of considerable potential for hardwood growth, seem naturally to fall into a hardwood 'working circle' or Management Unit and although the constraints in Strid Wood due to public access may be more severe than, say, Struff Wood, the silvicultural requirements are very similar. There is no doubt that sycamore, *and* beech and oak will all grow extremely well on these valley bottom sites. Commercially one needs to look at the sycamore as being the mainstay of the commercial return and rotation of 70 years should be regarded as the maximum for sycamore on these sites. (Mean annual increment for sycamore YC 12 is reached at 50 years of age with a volume of 250 m³ per ha.). Beech reaching its maximum M.A.I. at age 75 - 80 years for YC 10. Both species attaining volumes per ha. of about 300 m³ at age 70 but with sycamore averaging somewhat larger diameters at that age. Oak reaches M.A.I. at a similar age to beech but with lower volumes and diameter classes.

It therefore depends on the relative importance of amenity as to the proportion of the 3 species recommended. In Strid Wood where a lower forestry activity level has to be tolerated then a high proportion of oak is recommended with a rotation length of 120 years being anticipated. By utilising a small group felling principle it would be possible to select areas every 5 or 10 years for selective felling of individual trees, replanting with oak using sycamore or

beech as nurse trees for early removal. It is important that regeneration of the woodland is programmed and accepted by the amenity people so that the woodland as a whole will continue to survive the pressure of visitors. Failure to do so will result in a collection of old stag headed trees all decaying at once. Particularly as visitor pressure increases, footpaths become lost in a general access pressure and extensive root damage soil puddling occur leading to older trees suffering extensive root loss and die back. By fencing out small group planting areas scattered through the woodland one provides a 20 year period of recovery whilst the young crop re-establishes itself. As pressure increases in the woodlands it may be necessary to devise attractions to funnel off visitors to areas of interest outside the forest, perhaps retaining the forest flavour by means of sales of rustic furniture, Christmas trees, handmade furniture both garden and domestic. The ability to mount a permanent woodland exhibition illustrating woodland life in the area - perhaps using Tourist Board funds and ex F.C. show/display material could provide attractions which remove pressure from the woods, educate the public to woodland awareness and provide a cash income.

REGULATION OF YIELD - CONIFER MANAGEMENT UNIT

- Assumptions:
1. That maximum commercial return is required.
 2. Choice of species to give maximum yield in volume and value therefore mainly SS/DF.
 3. A YC of 18 average for SS and DF.
 4. Rotation length 45 years on average.
 5. Aim for a 'normal' age class distribution.
 6. Therefore fell and plant 7.7 ha. per annum or 38.5 ha. per 5 year period.

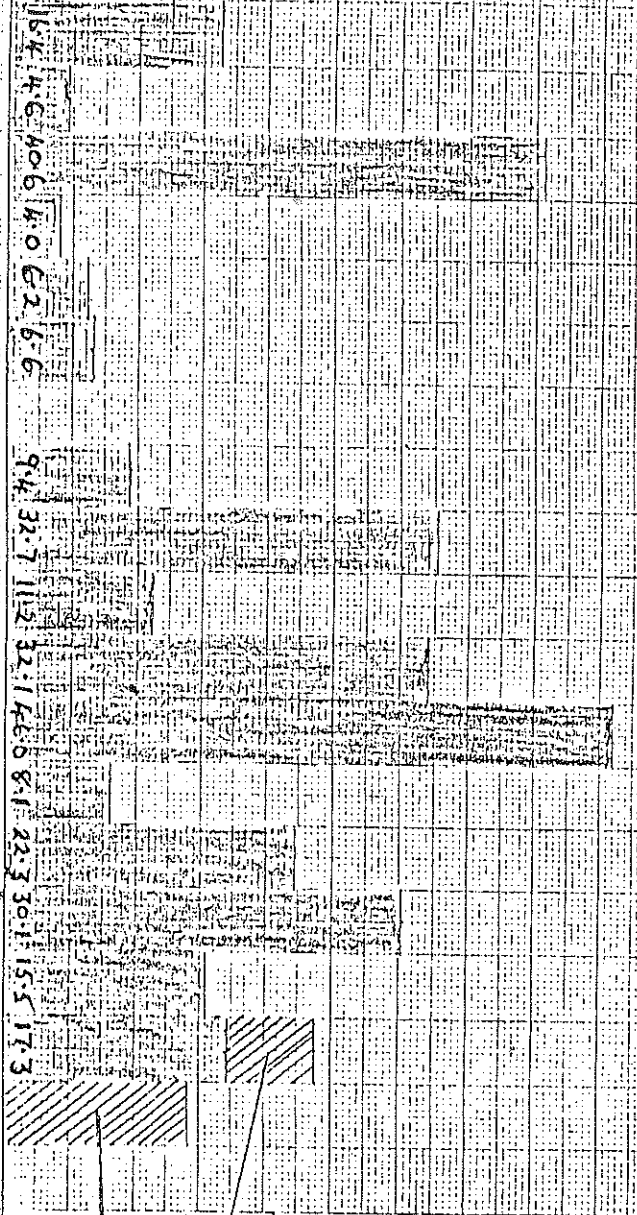
To enhance production of the 'failed areas' amounting to 22.2 ha. and to ensure that the gap in age is effectively reduced it is recommended that these areas are re-established using strong fertiliser regimes and an 'oceanic' approach. Under these systems rotations of 30 - 35 years are considered possible using a respacement technique and no thinnings. By this method the incompatibility of ages will be lessened and a major step towards a 'normal' forest can be taken. The attached sheet illustrates the quickest way to 'normality'. This should not be taken as a firm prediction but as a guide to normality which can be revised as occasion requires.

Regulation of thinning yield should be based on assessment of yield class, using F.C. management tables as a guide. Felling should take place as near to maximum MAI as practicable.

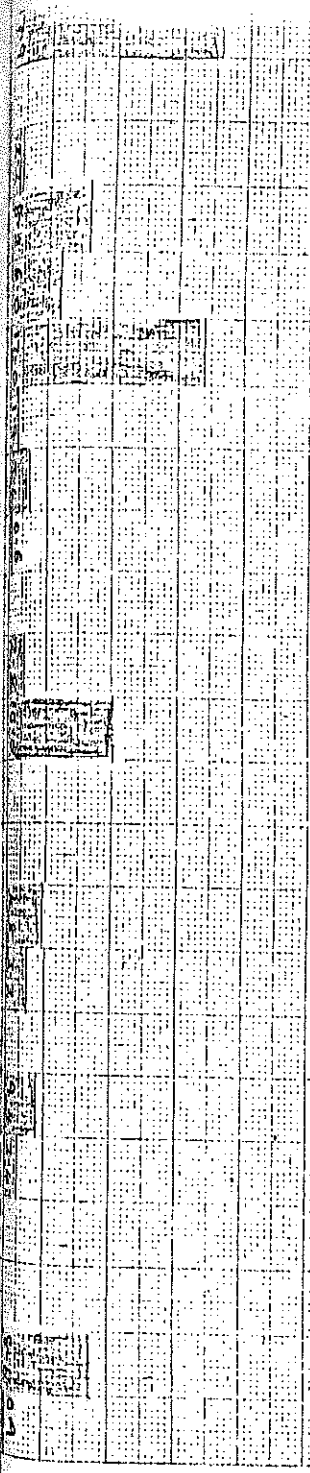
Priorities of yield. Any windblow allocated to be cleared first, thinning and then felling areas.

341 51 61 71 81 91 01 06 11 16 21 26 31 36 41 46 51 56 61 66 71 76 81
 350 60 70 80 90 1900 05 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

CONIFER MANAGEMENT UNIT



HARDWOOD MANAGEMENT UNIT



T0
be
TEMPORARY

T0
be
TEMPORARY

48-7

A P P E N D I X 5

ACCESS AGREEMENT

- PLANS
- BYELAWS

One thousand nine hundred and sixty-eight BETWEEN THE COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE (hereinafter called "the County Council") of the one part and THE MOST NOBLE WALTER JOHN DUKE OF BUCCLEUCH and THE MOST NOBLE MARY ALICE DUCHESS OF DEVONSHIRE (Trustees of the Chatsworth Settlement) (hereinafter called "the Owners") of the other part



WHEREAS

- (1) The Owners are equitably entitled in fee simple in possession to (and entitled by purchase to call for the legal estate in) the land hereinafter described
- (2) The County Council are the local planning authority for the area of the Administrative County of the West Riding of Yorkshire
- (3) Part V of the National Parks and Access to the Countryside Act 1949 (hereinafter called "the Act") makes provision for enabling the public to have access for open air recreation to open country to which the provisions of Section 60 of the Act are applied by an access agreement made under the Act
- (4) The Minister of Housing and Local Government (hereinafter called "the Minister") has approved in principle the making of this Agreement

NOW the Owners as trustees and the County Council as such local planning authority as aforesaid and in exercise of the powers conferred upon them by Section 64 of the Act and all other powers then hereto enabling

IN CONSIDERATION of the provisions relating to compensation referred to in Clause 4 hereof HEREBY AGREE AND DECLARE as follows:-

1. This Agreement relates to the land described in the First Schedule hereto which land is except in Clause 2 hereof hereinafter called "the land comprised in this Agreement" and to the footpaths shown coloured blue on the plan attached to this Agreement which footpaths are hereinafter called "the footpaths"
2. Subject to the provisions of Part V of the Act and to the provisions of this Agreement as from the respective dates indicated in the three parts of the First Schedule hereto the public shall have for the purposes of open air recreation the right to traverse on foot the land described in the three parts of the said schedule and for the purpose of having access to and from the parts of the said land the right to traverse on foot the footpaths
3. This Agreement shall take effect from the date hereof for a period of fifty years and thereafter from year to year provided that either party hereto may by twelve months notice in writing given to the other terminate this Agreement at the expiration of fifty years from the said date or at the expiration of any subsequent period of twelve months and further provided that if at any time after this Agreement has been in effect for five years the Owners shall give to the County Council six months notice in writing of any deficiencies in the warden service provided under Section 92 of the Act and shall not at the expiration of such notice be satisfied that such service is operating to the Owner's satisfaction they may by six further months notice in writing terminate this Agreement as respects the whole or

apply to this Agreement

(b) If at any time this Agreement shall be terminated by either party in accordance with the provisions of Clause 3 hereof (whether in respect of the whole or of part only of the land comprised in this Agreement) and if within two years thereafter an access order shall be made by the County Council and confirmed by the Minister in respect of the same or substantially the same land as the land in respect of which this Agreement has been terminated then any payment by way of compensation under this Agreement made to the Owners by the County Council (or a proportionate part thereof) shall be deducted from any sum payable to the Owners as compensation for the said access order

(c) If at any time this Agreement shall be wholly or partly terminated by the Owners in accordance with the provisions of Clause 3 hereof and if in the event the last preceding sub-clause does not take effect the Owners shall repay to the County Council such proportion of any compensation paid by the County Council to the Owners as may be agreed between the parties hereto or failing agreement as may be decided by the Lands Tribunal.

(d) The expression "Owners" in this clause includes their successors in title

5. The said right of access by the public shall be subject to the restrictions set out in the Third Schedule hereto and to such other restrictions as may from time to time be agreed between the parties hereto or as the Minister after consultation with the parties hereto may impose by a direction in writing to the County Council

6. It is hereby agreed that the existence of this Agreement shall not, so far as the Council are concerned, prejudice any application by the owners to work or prospect for minerals or oils or to carry out any other development within the meaning of that word as defined in Section 12 of the Town and Country Planning Act, 1962 or any statutory modification or re-enactment thereof.

7. The said right to traverse the footpaths shall be subject to the restrictions set out in the Third Schedule hereto but these restrictions shall not apply to any footpath or footpaths which as a result of any action taken under Part IV of the Act may be shown on any definitive map or maps prepared by the County Council

8. For the purpose of improving access to the open country between Bardon Moor and Bardon Fell the Owners hereby dedicate for the use of the public on foot only a right of way over the land coloured yellow on the attached plan lying between the Aysgarth-Bolton Abbey-Addingham County Road and the Skipton and Bardon Scale County Road

9. For the avoidance of doubt it is hereby agreed that the coming into force of this Agreement shall not prevent the Owners from carrying out development on the land comprised in this Agreement for which permission has been or is deemed to be granted under Part III of the Town and Country Planning Act, 1962, or any re-enactment or modification thereof

First Schedule

Description of Land

(Part I) (As from the date this Agreement takes effect in accordance with the provisions of Clause 3)

Approximately 6329 acres of moorland on Bardon Moor and Bardon Fell

shown edged red on the attached plan
(Part III) (As from the 17th January 1974)
Approximately 2268 acres of moorland on Barden Moor and Barden Fall
shown edged purple on the attached plan

Second Schedule

(Compensation)

1. Compensation

(a) Where the Owners' land is damaged in consequence of the coming into operation of this Agreement then subject to the following provisions of this Agreement the County Council shall pay to the Owners compensation therefor as if this Agreement were for an unlimited period provided that nothing in this paragraph of this Schedule shall confer on the Owners a right to compensation for damage to land which is not comprised in this Agreement or if so comprised is excepted land except if and insofar as it adjoins land comprised in this Agreement which is not excepted land

(b) Such compensation shall include compensation for damage resulting from any fire started on the land comprised in this Agreement if it is proved (either by direct evidence or by circumstantial evidence sufficient to make it reasonably probable) that it was attributable to the public having access to the land under this Agreement. Provided that compensation shall not be payable under this paragraph if the fire is proved in the manner aforesaid to have been started at a time when the particular part of the said land was closed for shooting in accordance with clause 7 and Paragraph 1 of the Third Schedule hereof

2. Compensation to be assessed with regard to effect of first five years of access

Any such compensation shall not save as hereinafter provided be claimed or payable before the expiration of a period of either 5 years from the coming into operation of this Agreement or (at the option of either party) the 16th January 1974

3. Claims for compensation and interest

(a) Within twelve months after the end of the period after which under paragraph 2 of this Schedule compensation may be claimed the Owners or any person claiming under them in respect of that compensation may apply in writing to the County Council addressed to the Clerk of the County Council for the payment of the compensation

(b) Such application shall state the amount of compensation claimed by the applicant and shall be accompanied by evidence of the title of the applicant to the compensation

(c) Any compensation payable under this paragraph shall become due when on an application for the payment thereof duly made under this paragraph the amount of compensation has been agreed or in default of agreement has been determined in manner hereinafter provided and any such compensation shall be payable with interest at the rate hereinafter provided from the date on which this agreement came into operation to the date on which the compensation is paid

(d) The rate of interest payable on compensation under this Agreement shall be the rate under sub-section (1) Section 32 of the Land Compensation Act, 1961, in respect of compensation on land compulsorily purchased on which entry has been made before the payment of compensation

Payment on account in cases of special hardship At any time during the period after which under paragraph 2 of this Schedule compensation may be claimed in respect of the coming into operation of this Agreement a person claiming to be entitled to such compensation may apply to the County Council for a payment on account of the compensation on the grounds of special circumstances whereby the postponement of compensation until after the end of the said period will cause him undue hardship And if the County Council are satisfied that such circumstances exist they shall make him a payment on account of the compensation of such amount as may be agreed between the person claiming and the County Council or failing agreement as may be decided by the Minister

5. Compensation payable at five yearly intervals in future

(a) Further compensation may be claimed in respect of each later period of five years of the operation of this Agreement and in respect of any broken period ending with the date on which this Agreement is terminated under Clause 3 hereof

(b) The foregoing paragraphs of this Schedule shall apply to each of such claims as if this Agreement had come into operation at the beginning of the period in respect of which each claim is made and all time limits and other provisions relating to such claims shall be construed accordingly

6. Reference to Lands Tribunal

(a) Any dispute arising on a claim for any compensation under this Agreement shall be determined by the Lands Tribunal

(b) For the purpose of any reference to the Lands Tribunal under this paragraph Section 4 of the Land Compensation Act, 1961 (which relates to costs) shall have effect with the substitution for the references to the acquiring authority of references to the County Council

(c) Rules 2 to 4 of the Rules set out in Section 5 of the Land Compensation Act of 1961 (which provides rules for valuation on a compulsory acquisition) shall apply to the calculation of any such compensation insofar as it is calculated by reference to the depreciation of the value of an interest in land

7. Definitions The expression "Owners" in this Schedule includes their successors in title and the expression "exempted land" shall have the meaning given to it by sub-section (5) of Section 60 of the Act

Third Schedule

Restrictions on public access

1. The land and footpaths comprised in this Agreement shall be closed to the public when shooting is taking place provided that except by agreement between the parties hereto shooting shall not take place on more than thirty days in any calendar year

2. No dogs shall be allowed except by permission of the Owners

3. No person shall without the Owners' permission bring or have on the land comprised in this Agreement any gun engine instrument or apparatus used for shooting .

IN WITNESS whereof the Owners have herunto set their hands and seals and the County Council have caused their Common Seal to be herunto affixed the date and year first before written

SEALED With the Common Seal of the County Council of the West Riding of Yorkshire pursuant to Resolutions of the Yorkshire Dales National Park (W.R.) Planning Committee and the West Riding Town and Country Planning Committee of 18th August, 1966 and 26th February, 1968 in the presence of:-

The Member of the County Council having the custody of the key of the Common Seal

Clerk of the County Council

Number in County Council Register:-

SIGNED, SEALED AND DELIVERED by

The Most Noble Walter John Duke of Buccleuch

in the presence of:-

M. to ma MacEwen

PROVINCIAL CLERK,
WESTRIDE.

Buccleuch

SIGNED, SEALED AND DELIVERED by

The Most Noble Mary Alice Duchess of Devonshire.

in the presence of:-

Edward Waterhouse

5 Chayne Walk

(Butler)

London SW3

Mary Devonshire



the North Yorkshire County Council, as successors to the West Riding County Council, do hereby in pursuance of Section 90 of the National Parks and Access to the Countryside Act, 1949, confirm the following byelaws for behaviour on Access land set out in the Schedule to such Byelaws, that is to say:

INTERPRETATION In the construction of these byelaws "The County Council" means the North Yorkshire County Council and "Access Land" means, except where inconsistent with the context, the lands described in the Schedule hereto and any land within the administrative County of North Yorkshire which becomes subject to an Access Order or an Access Agreement or is acquired for public access under Part V of the National Parks and Access to the Countryside Act, 1949.

EXTENT OF BYELAWS These byelaws shall apply to access land but without prejudice to the exercise by any person of any lawful right or privilege.

FIRES No person shall so as to be likely to cause damage by fire to anything growing on the access land light any fire or place or throw or let fall any lighted match or any substance or thing in among or near to grass, fern, heather, bushes or trees on such land.

HUNTING, SHOOTING AND FISHING No person except with the permission of the owners, shall kill, take, molest or wilfully disturb any animal, bird or fish or take or injure any egg or nest or engage in hunting, shooting or fishing or the setting of traps or nets or the laying of snares.

KITE FLYING No person except with the permission of the owners shall fly a kite on the access land.

CARRYING OF GUNS ETC. No person shall without lawful authority bring or have on the access land any gun, engine, instrument or apparatus used for shooting.

POLLUTION OF WATER No person shall wilfully, carelessly or negligently, foul or pollute any lake, pond, stream or other water.

OBSTRUCTION OF WATER COURSES No person shall obstruct the flow of any drainage or watercourse, or open, shut, or otherwise interfere with any sluice-gate or other similar apparatus.

SHOOTING CABINS No person shall open or alter any shooting cabin, hut, or other structure which is secured against entry.

DAMAGE TO HEDGES, WALLS No person shall break through any hedge or carelessly or negligently injure or destroy any hedge, fence or wall.

REMOVAL OF ROCK AND OTHER MATERIAL No person shall remove from the access land any rock or other mineral or any other material whatsoever.

GATES Where the Council, or the owner or occupier of the land on which the gate is situated with the approval of the Council, have indicated by a notice conspicuously placed on or by a gate that failure to shut or fasten the gate is an offence, every person who opens or unfastens that gate shall ensure that it is shut or fastened as the case may be.

PUBLIC MEETINGS No person shall without the permission of the owner of the access land hold any public meeting or deliver any public speech thereon.

STONE ROLLING No person shall wilfully, carelessly or negligently throw, roll or discharge any stone or

er missile so as to cause, or to be likely to cause injury, danger or annoyance to any person or injury, danger or molestation to any animal.

15. DISUSED MINE SHAFTS No person shall wilfully interfere in any way whatsoever with any mine shaft covers, protective guards or fences or similar installations designed to safeguard the public and livestock on the access land.

16. TRANSISTOR RADIOS AND NOISY INSTRUMENTS No person shall by operating or causing or suffering to be operated any wireless set, gramophone, amplifier or similar instrument make or cause or suffer to be made any noise which is so loud and so continuous or repeated as to give reasonable cause for annoyance to other persons on the access land.

17. OBSTRUCTION OF WARDENS No person shall obstruct any warden, engaged by the Council in the execution of his duties.

18. CAMPING AND CARAVANNING No person shall on the land without lawful authority camp or erect a tent or use any vehicle including a caravan as sleeping accommodation or occupy such a vehicle overnight.

19. SALE OF GOODS No person shall use or permit to be used any vehicle on the land for or in connection with the sale of any article or animal or other thing or the offer of any service for reward.

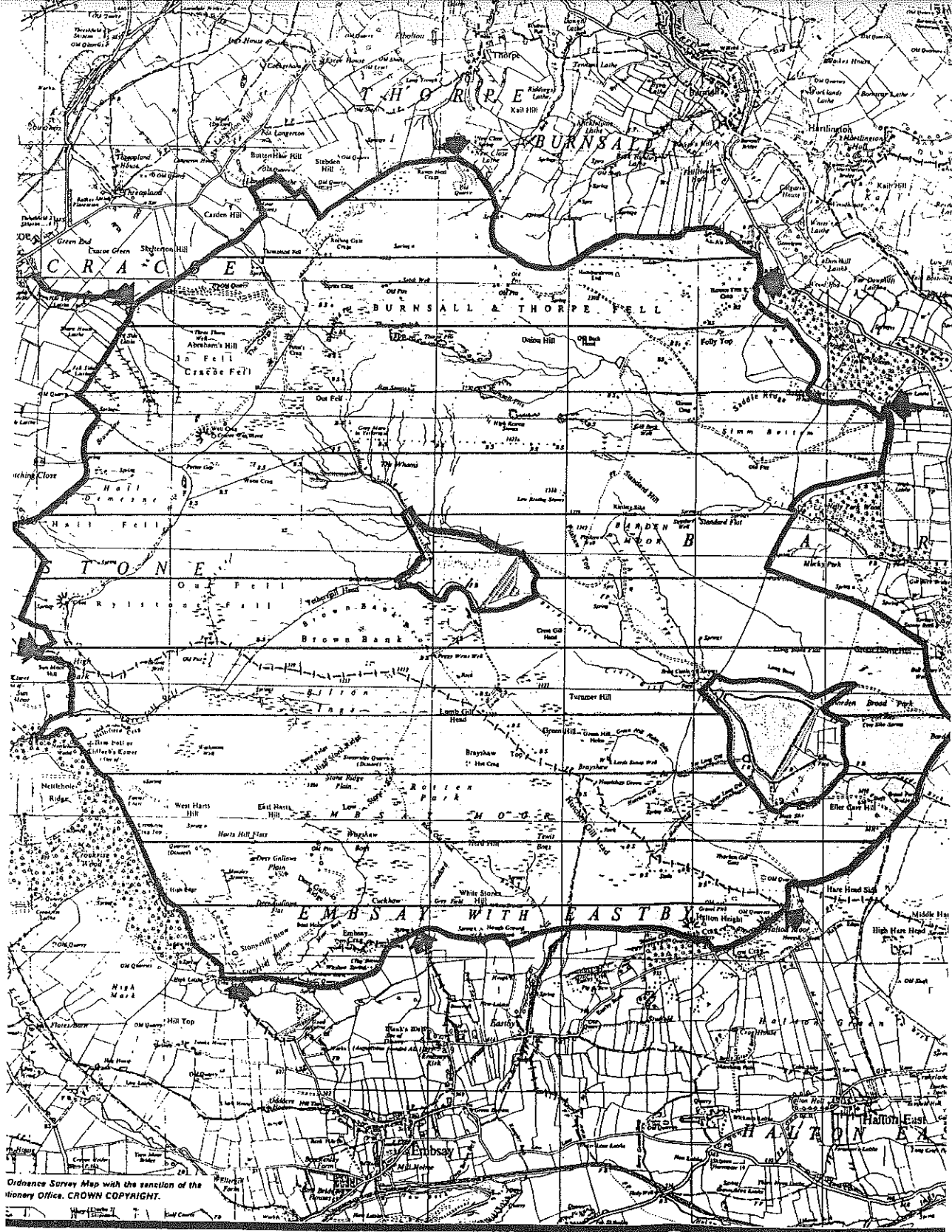
20. SAVING FOR OFFICERS An act necessary to the proper execution of his duty on the land by an officer of the Council or by any servant of any person employed by or acting with the authority of the Council shall not be deemed an offence against these byelaws.

21. PENALTY Every person who shall offend against any of the foregoing byelaws shall be liable on summary conviction to a fine not exceeding £20.

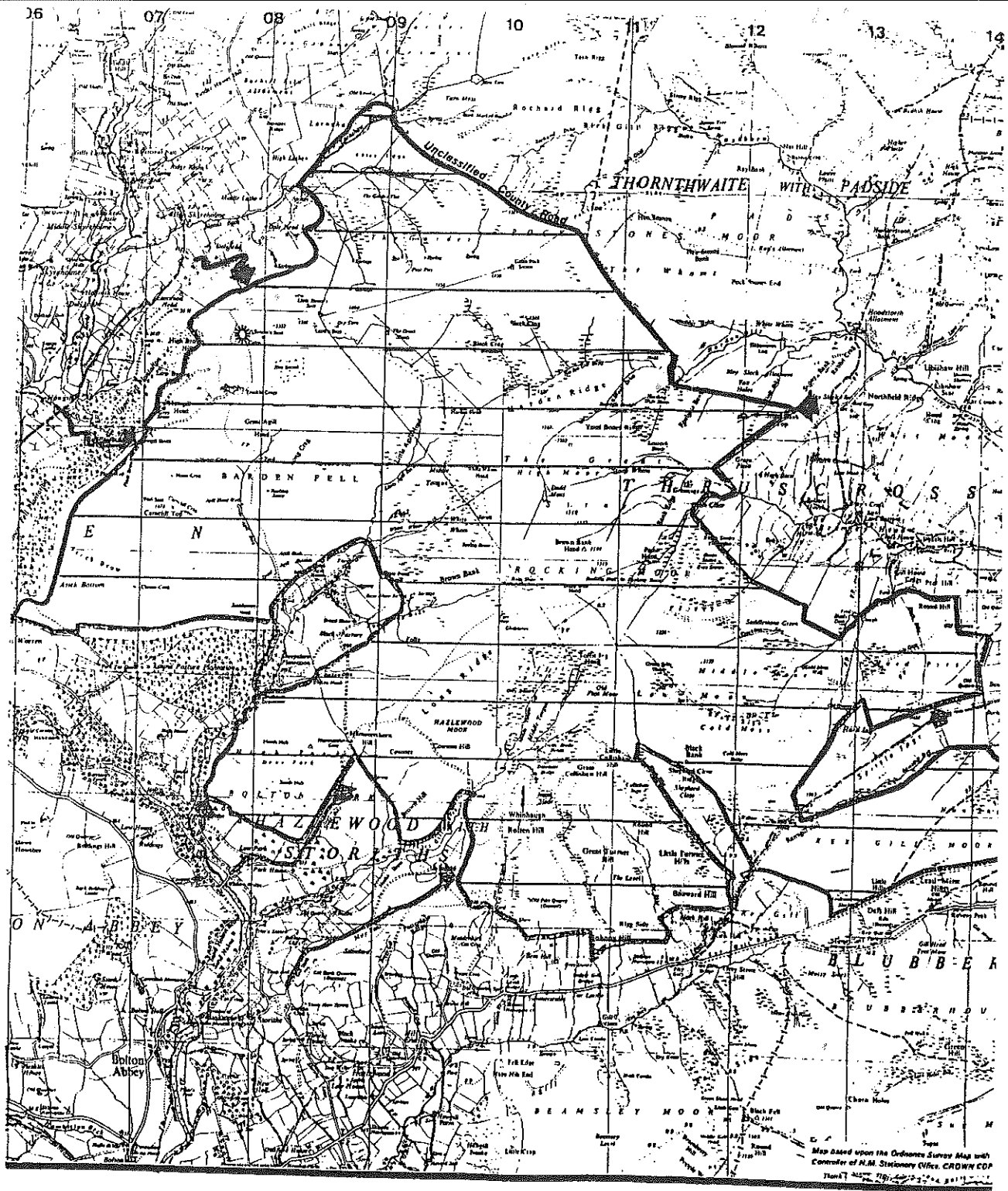
FOOTNOTE: It is pointed out that under the terms of the Access Agreements covering Barden Moor and Barden Fell, no dogs are permitted on the access land, so that anyone who takes or permits a dog to be on the land is committing a trespass.

THE SCHEDULE BEFORE REFERRED TO:

Access Agreement (Stages 1, 2 & 3)		
Date on which Access Agreement takes effect	Parties to the Agreement	Description of land
12 July 1968	North Yorkshire County Council as successors to the West Riding County Council; The Trustees of the Chatsworth Settlement	From the date on which the Agreement takes effect 6,329 acres of land at Barden Moor and Barden Fell including parts of Burnsall and Thorpe Fell, Cracoe Ffll, Hall Fell, Embsay Cran, Hattan Height, Cross Gill Head, High Park, Rocking Moor and Simon Seat
17 January 1970		From the date on which the Agreement takes effect 5,224 acres of land at Barden Moor and Barden Fell including parts of Out Fell, Standard Hill, Green Thorn Hill, Embsay Moor, Carncliff Top, Hazlewood Moor and Cold Moss
17 January 1974		From the date on which the Agreement takes effect 2,268 acres of land at Barden Moor and Barden Fell including part of Rylstone Fell, Brown Bank, Green Hill, Eller Carr Hill, Rotten Hill, Great Turner Hill and Little Turner Hill
17 January 1974	North Yorkshire County Council as successors to the West Riding County Council; Mr J C Cadman	From the date on which the Agreement takes effect 417 acres of land at Kex Gill Moor



Barden Moor Access Area



Barden Fell Access Area

Appendix 2: Bolton Abbey Tourism Development Strategy

Bolton Abbey

Tourism Development Strategy



Will Kemp
Chatsworth Settlement Trustees
October 2014

CONTENTS

1. INTRODUCTION	3
1.1 Purpose.....	3
1.2 Structure	3
2. CONTEXT	4
2.1 Core Visitor Area.....	4
2.2 Supply-side Issues.....	6
2.3 Demand-side Issues	9
3. APPROACH	11
3.1 Internal Liaison.....	11
3.2 External Liaison	11
4. DEVELOPMENT	12
4.1 Strategic Direction	12
4.2 Tourism Development Projects	12
4.3 Other Development Projects.....	12
4.4 Next Steps	12
5. CONCLUSION	15
5.1 Findings	15
5.2 Next Steps.....	15

Appendices

Appendix A – Original Lists of Ideas (August 2013)

Appendix B – Economic Appraisal of Ideas (May 2014)

Appendix C – Planning Appraisal of Ideas (June 2014)

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to take stock of key assets owned by the Chatsworth Settlement Trustees (CST) in the “core visitor area” of the Bolton Abbey Estate between Bolton Bridge and Barden Bridge, and to provide a strategy for related development in the future.

This will help CST to reject “unwinnable” project ideas, determine investment priorities and help inform the development plans of the Yorkshire Dales National Park Authority (YDNPA) and Craven District Council (CDC) so as to facilitate development accordingly.

As such, this strategy takes into account: CST’s business needs; the strengths, weaknesses, opportunities and threats relating to both the core visitor area; the informal views of CDC and the YDNPA on the same.

1.2 Structure

This strategy is structured as follows:

- Section 1 (Introduction) introduces the purpose and structure of this document
- Section 2 (Context) takes stock of the core area
- Section 3 (Approach) outlines how CST has prepared this document
- Section 4 (Development) presents the preferred development strategy and projects
- Section 5 (Conclusion) summarises findings and next steps.

2. CONTEXT

This section takes stock of the core visitor area and related key issues.

2.1 Core Visitor Area

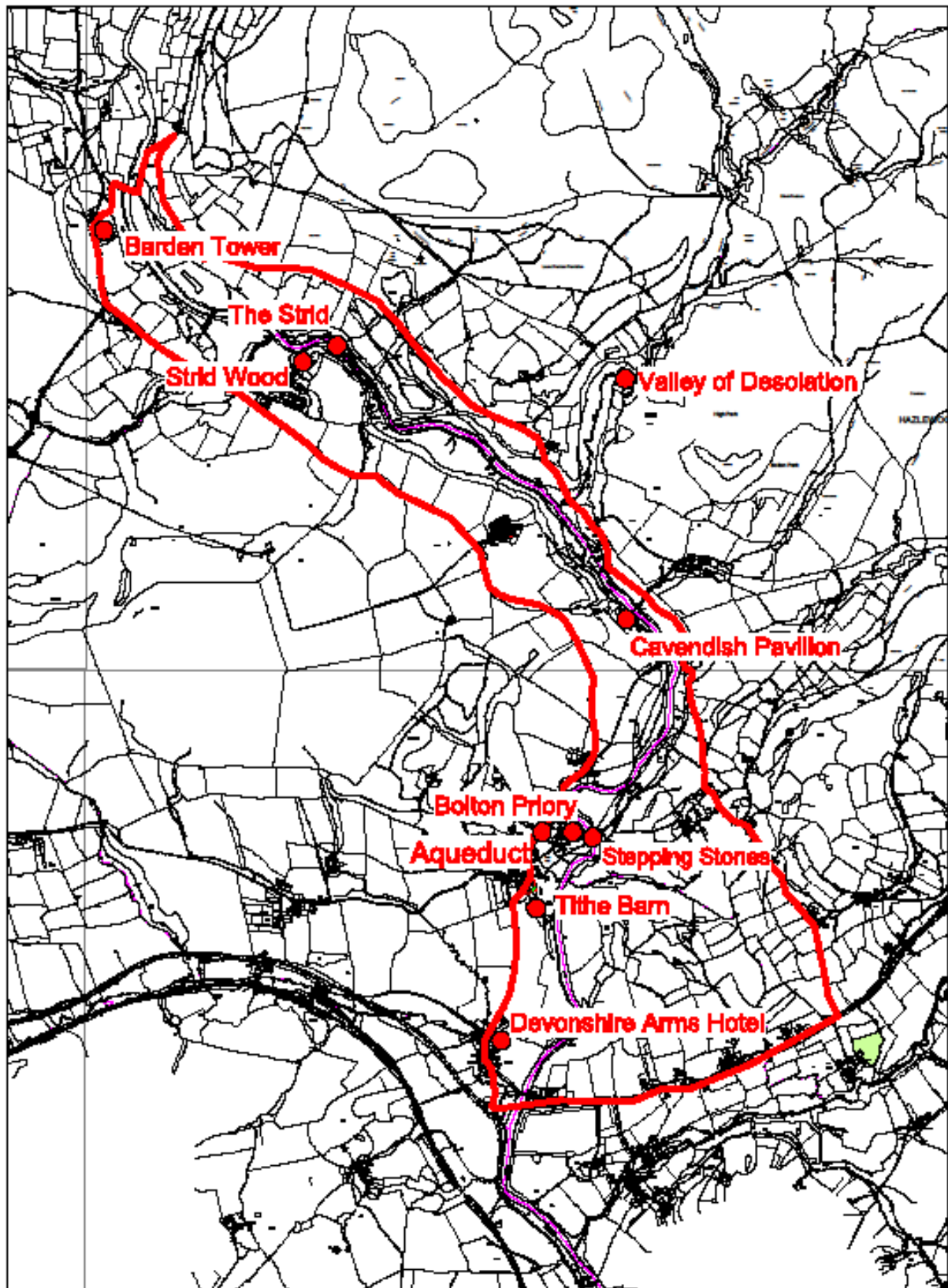
The core visitor area comprises c.150 Ha between Bolton Bridge and Barden Bridge, and occupies a strategically important position as the southern “gateway” for most visitors to the Dales.

It contains several nationally important buildings and landmarks, including:

- Barden Tower (castle ruin dating back to the late fifteenth century)
- The Strid (famous landmark where the River Wharfe is constricted to a “stride” of 2m wide)
- Strid Wood (Site of Special Scientific Interest) with strategically positioned vistas of the Strid
- The Valley of Desolation (scenic countryside leading to open moorland)
- Cavendish Pavilion (distinctive Edwardian structure and café by the River Wharfe)
- The Priory, Bolton Abbey (picturesque ruins of an Augustinian Abbey dating back to 1154)
- The Tithe Barn, Bolton Abbey (unique Grade II* listed building dating back to c.1530)
- The Devonshire Arms Hotel (historic 4 star country house hotel)
- The Stepping Stones by The Priory
- The Aqueduct, Bolton Abbey.

The location of these existing landmarks is shown in Fig.1 (on following page).

Fig.1. Plan showing Existing Landmarks, Core Visitor Area



Scale 1:2,500

2.2 Supply-side Issues

The core visitor area is a sensitive environment of national importance. It is therefore heavily protected by planning designations. These include:

- National Park status (for almost all land in the core visitor area)
- Site of Special Scientific Interest (Strid Wood)
- Flood Zones 2 and 3 (medium and high risk of flooding)
- Scheduled Ancient Monument (The Priory)
- Conservation Area (Bolton Abbey village)
- Listed Buildings (eg The Tithe Barn, Barden Tower, Devonshire Arms Hotel)
- Public Rights of Way (PRoWs)
- Tree Preservation Orders (TPOs)
- Open Greenspace.

It is virtually impossible to get planning permission for development in a SAM, SSSI or Flood Zone 3, and difficult to do so with regard to listed buildings, Flood Zone 2 and national parks.

It is also very difficult to get planning permission for a development *near* a SSSI or *within view of* a SAM.

Moreover, the YDNPA takes a very restrictive approach to development in the National Park, and in particular prohibits any “major development” (ie an application site of 1 Ha or more).

Furthermore, the core visitor area is also governed by the Bolton Abbey Heritage Landscape Management Plan as agreed the YDNPA, English Heritage and Natural England.

CST needs therefore to understand that the core visitor area is highly constrained, and thereby to focus on “winnable” projects (rather than “dead ducks”).

Figure 2 shows a plan of the core visitor area with planning constraints (on following page).

Figure 3 provides an inset plan of Bolton Abbey Village with related planning constraints (on page thereafter).

Fig.2. Plan showing Planning Constraints, Core Visitor Area

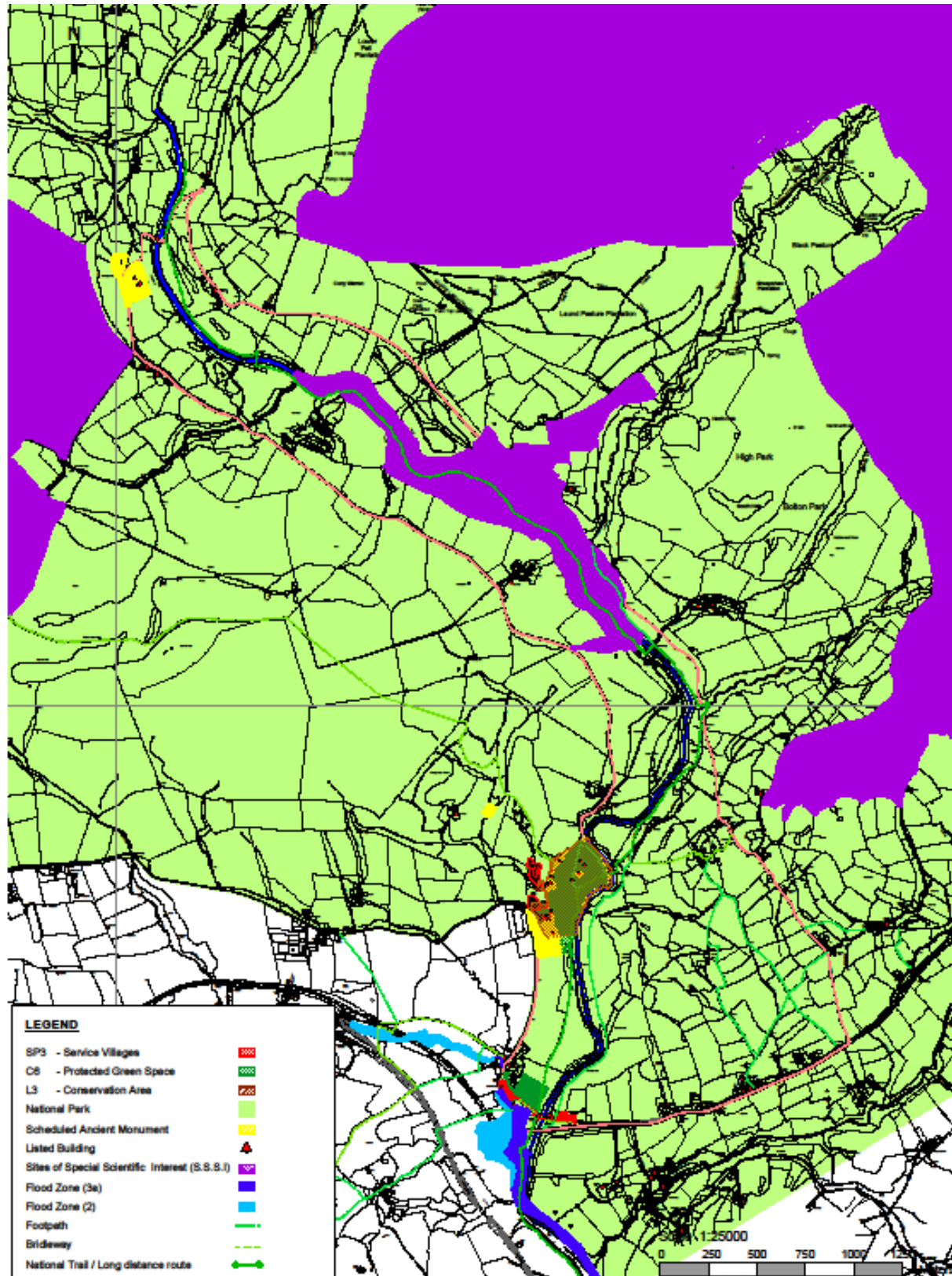
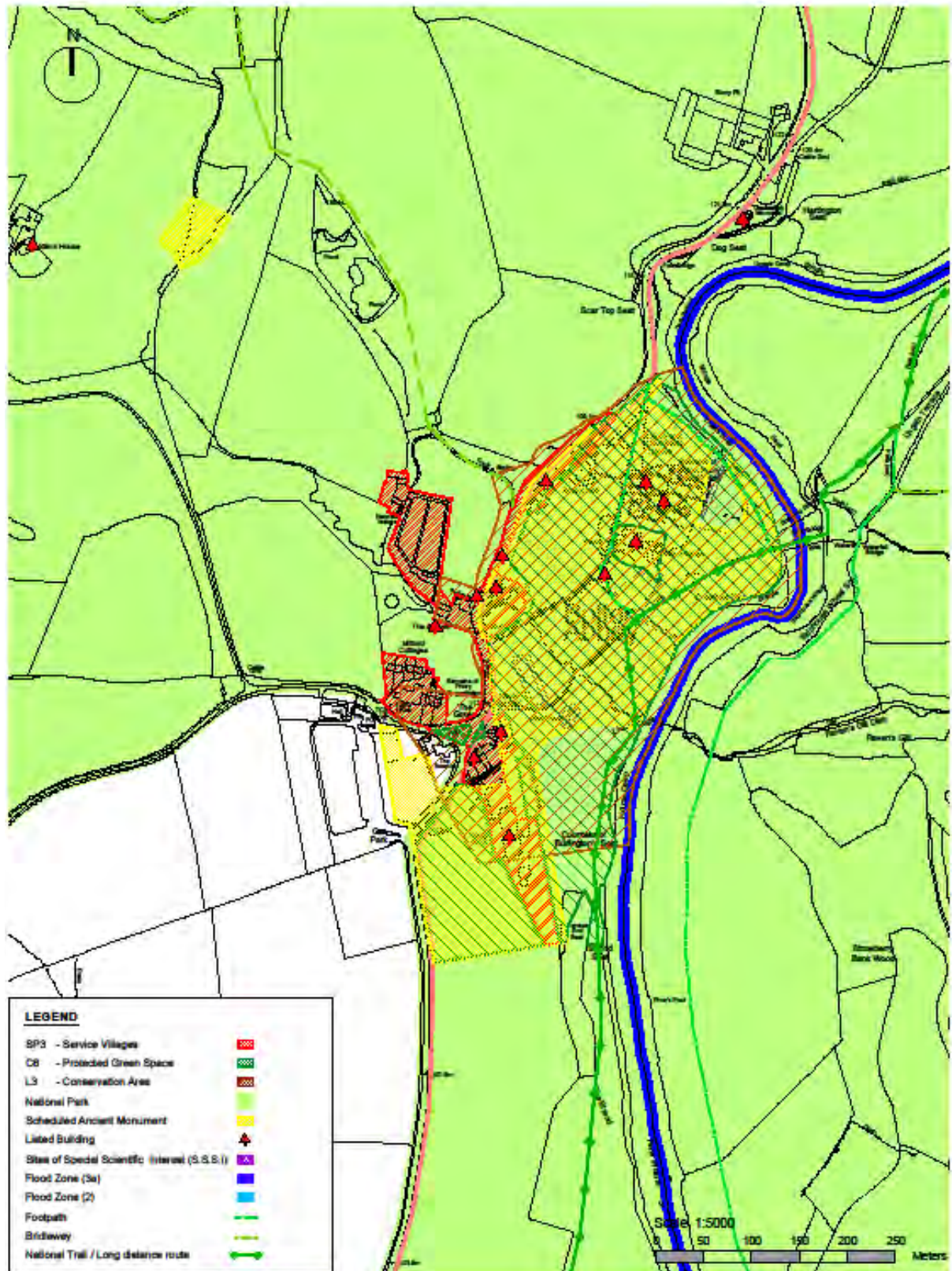


Fig.3. Inset Plan showing Planning Constraints, Bolton Abbey Village



2.3 Demand-side Issues

3.5 million visitors come to the Yorkshire Dales National Park each year (90% by car). Wharfedale is considered to be the most popular Dale (then Wensleydale, Swaledale and the Three Peaks).

c.450,000 visitors come to Bolton Abbey each year. Related parking charges provide revenue and in effect fund the environmental management of the core area to a high standard.

If there are say 1.5 million visitors to Wharfedale each year, then less than a third are stopping at Bolton Abbey (since Wharfedale is accessed via Bolton Abbey). This may be due to the non-identity of the village and “lack of arrival” at Bolton Abbey. This must therefore be a key challenge to CST.

At present, surpluses generated from admissions are reinvested in the maintenance and administration of the estate and revenue from visitor trips does not match that at Chatsworth. This is because:

- visitor trips are brief (ie mainly day-trippers), in part due to lack of visitor accommodation
- visitor trips are weather-dependent (ie if it rains, nobody comes)
- visitor trips contain little or no “secondary spend”
- the high standard of environmental management comes at a cost
- visitor perception that the countryside is “free”.

Moreover, CST faces other pressures:

- increased competition from other attractions
- greater costs from rising energy prices and further legislation
- wider fluctuations in weather due to climate change
- staffing issues due to high house prices and long journeys to work.

This has led CST to consider its current visitor operation and how best to lengthen/diversify the visitor experience so as to generate more income.

Visitors to the core visitor area fall into main categories: families and the over-50 year olds. This latter group enjoy the core visitor area as couples, but increasingly as grandparents bringing their grandchildren. This is a growing market which CST must target and strive to meet.

Furthermore, 78% of our visitors travel from Yorkshire (61% of visitors) and from the North-West (17% of visitors). This suggests that the core visitor area is – unlike Chatsworth – attractive in mainly regional rather than national terms.

CST’s visitor research (2009) showed that visitors suggested we should push local and outdoor pursuits, and broaden our appeal to younger families and young single markets.

All these issues pose challenges for CST to address.

For an outline of the key strengths, weaknesses, opportunities and threats relating to the core visitor area, see Figure 4 for the related SWOT Analysis on the following page.

[NB: the “Opportunities” in the SWOT Analysis seek to address the specific weakness identified.]

Fig.4 SWOT Analysis, Core Visitor Area

Strengths

Heritage assets

Natural features

Landscape quality

Location: **southern gateway to Dales**

Visitor infrastructure/facilities

Devonshire brand (quality)

450,000 visitors pa

Single land ownership/control

Opportunities

Climate change (warmer winters)

Expand/**enhance BA village** (into Craven district)

New green/pub, BA village (arrival/stopping point)

Farm shop by main road, BA village

Wedding barn, Tithe Barn

Stepping stones/cycleways

Staff/market/visitor accommodation, BA village

Entry sign (Welcome to Bolton Abbey)

Link to Bolton Abbey Station?

NPPF/L Plan preparation processes

Increase events/trails/"things to do"

Indoor attraction (ie **wet weather facility**)

Visitor Centre (& cycle hub)

Weaknesses

No sense of arrival (or departure)

Weather/school holiday dependent tourism

Brief trips/**little secondary spend**

Major **planning constraints** (NP, SAM, SSSI)

High maintenance costs

Loss-making entities (eg Post Office)

Staffing (journeys to work)

Limited/low value offer

Limited visitor accommodation

Ad hoc ideas/no agreed long term vision

Could we achieve 650,000 visitors pa?

Threats

Climate change (wetter summers)

Limited staff/other accommodation

Increased competition elsewhere

Rising costs (especially energy)

Planning constraints (NP, EH)

Ad hoc ideas harm quality of asset base

Listed buildings at risk

3. APPROACH

This section sets out how CST has prepared this document and sought views from key stakeholders.

3.1 Internal Liaison

Key staff and stakeholders within CST met at Bolton Abbey in August 2013 to consider the future development of the core visitor area relative to business needs and planning constraints.

As such, it was agreed that a masterplan should be prepared for the development and management of the core visitor area (so as to focus resources on “winnable” development proposals), and that a draft version should be shared informally with the local planning authorities (LPAs) as appropriate.

The meeting generated 50 ideas for development projects (see Appendix A for list of original ideas) and considered that the process for preparing the masterplan should broadly comprise:

- Stage 1: sift of the 50 projects ideas in terms of economic viability (see Appendix B)
- Stage 2: sift of the remaining ideas in terms of planning viability (see Appendix C)
- Stage 3: selection of the remaining ideas by the family (see Chapter 4).

Further “non-tourism” ideas have been generated within CST, mostly concerned with the need for related infrastructure (eg accommodation for staff/visitors/others in Bolton Abbey village).

3.2 External Liaison

CST met YDNPA officers in December 2013 to discuss CST’s needs and the Local Plan (YDLP). It was agreed that the YDLP should: take a less restrictive approach to commercial development in the core visitor area; designate Bolton Abbey village within the settlement hierarchy due to its spatial planning role as the southern gateway to the Dales AND the provider of social/economic services.

CST also met CDC officers in June and July 2014 to discuss the need for more commercial development at Bolton Abbey and the masterplan respectively. This suggested in-principle support for emerging project ideas subject to environmental assessment/mitigation and limits to housing growth; it also identified some scope for greater connectivity to Bolton Abbey Station.

CST also met YDNPA officers in June 2014 to discuss the draft masterplan. This identified potential environmental concerns about the quantum and rate of development, but also identified which project ideas should be acceptable in principle subject to the submission of high quality proposals and consideration/resolution of specific environmental/other issues.

NB: The YDNPA is preparing its Local Plan (Submission Draft) for consultation in summer 2014; CDC is also preparing its Sites and Boundaries (Preferred Options) Development Plan Document for consultation at the same time. It is hoped that this this masterplan (and/or a variant thereof) will inform and influence deliberations accordingly.

4. DEVELOPMENT

This section presents the chosen development strategy and projects at Bolton Abbey.

4.1 Strategic Direction

CST's strategy is to **focus on winnable projects that will generate income and help to lengthen, diversify and enhance the visitor experience without harming the resource base in the long term.**

As such, CST needs to recognise the difficulty of gaining planning permission in the core visitor area (especially with regard to "major development" in the national park).

CST also needs to improve the sense of "arrival" of the visitor at Bolton Abbey village (ie at the car park), provide a better "offer" of things to do and see, and "spread & steer" visitors accordingly.

CST therefore needs to focus effort in and around Bolton Abbey village itself, and in particular seek to expand housing and commercial opportunities to the south-west (ie in Craven District).

4.2 Tourism Development Projects

In view of the foregoing, CST considers that it should focus on "tourism" projects such as:

- New village green with pub/accommodation, BA village (to provide "arrival"/stopping point)
- Farm Shop with café/play area and visitor/cycle centre, BA village
- Stepping stones, cycle routes and other walkways (including path to BA Station?)
- Events (eg large annual event, sculpture trail, indoor structure for wet weather)
- Play attraction (eg Go Ape/adventure trail in Westy Bank Wood).

4.3 Other Development Projects

CST also considers it should also focus on "other" development projects such as:

- Wedding facility, Tithe Barn (and related enabling development?)
- Staff/market (rented)/visitor accommodation, BA village
- Renewable energy (community heating scheme - ground-source heat pumps, biomass).

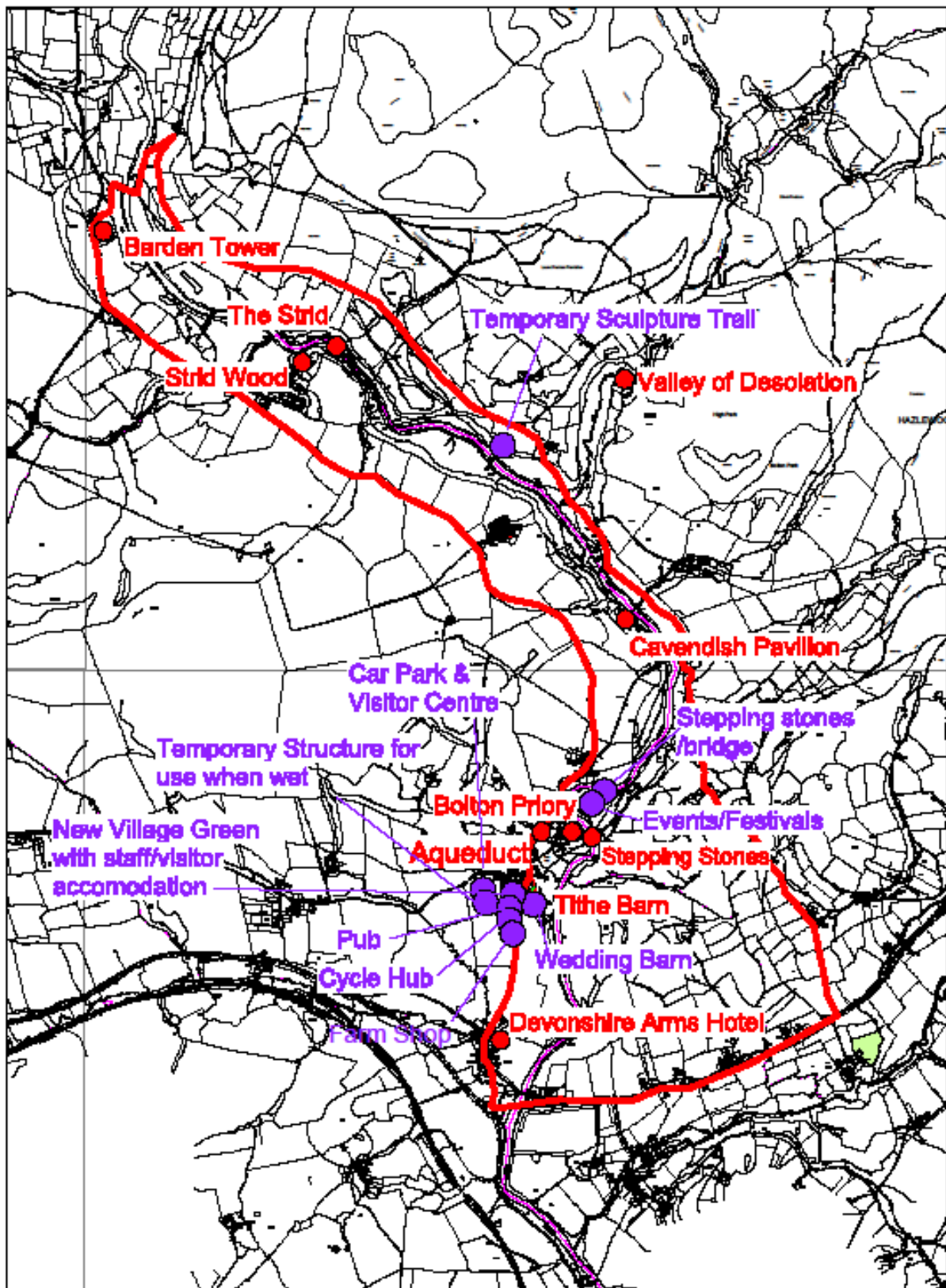
The location of the priority development projects is shown in Fig.5 on the following page. The indicative layout of the concept scheme is shown in Fig. 6 thereafter.

4.4 Next Steps

In order to implement these projects, CST needs to prioritise action as follows:

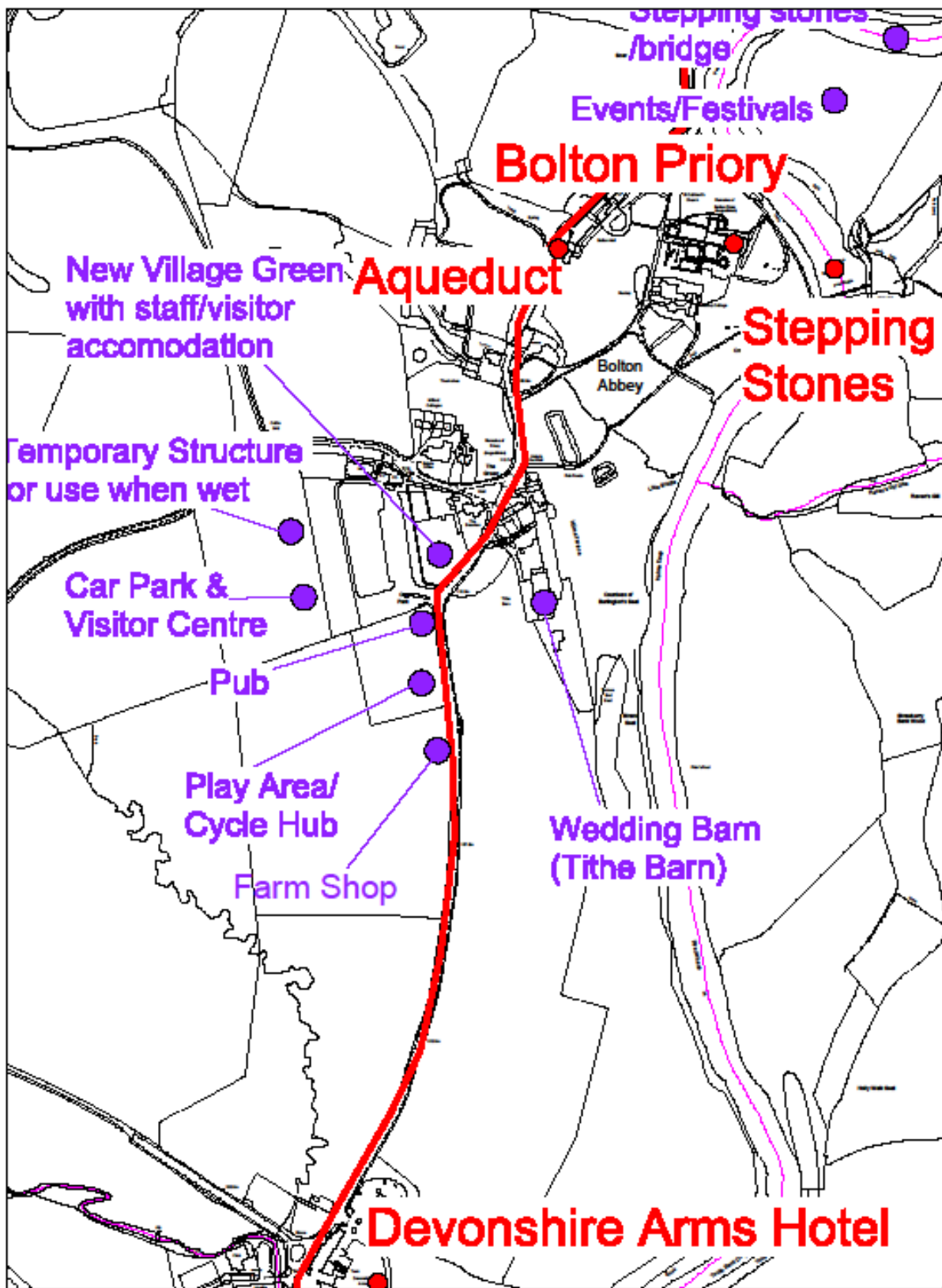
- A. Secure favourable planning context in the YDLP and the CDLP
- B. Complete projects already underway (eg Tithe Barn)
- C. Undertake feasibility studies of key projects (eg pub, farm shop)
- D. Prepare/submit applications for planning permission for related development
- E. Develop further projects (Farm Shop, cottages in Bolton Abbey).

Fig.5. Plan showing Existing Landmarks and Strategic Priorities, Core Visitor Area



Scale 1:2,500

Fig.6. Inset Plan Showing Indicative Concept Scheme, Bolton Abbey Village



Scale 1:500

5. CONCLUSION

This section summarises related findings and next steps.

5.1 Findings

In short, the challenge facing CST in relation to the core visitor area at Bolton Abbey is:

1. We currently cover maintenance costs in the core visitor area but need to find ways of generating (and sustaining) **more income**
2. In doing so, we face 5 key problems: **no sense of arrival**; weather-dependent operation; no secondary spend; no visitor accommodation; **huge planning constraints** (national park)
3. As such, we need to **focus growth outside the national park AND make Bolton Abbey Village more of a destination in its own right** so as to **capture** visitors (to get them to **stop and spend**) via beautiful village green/farm shop/play area/pub/wet weather play barn/etc
4. In doing so we can also provide **visitor/staff/affordable/market (ie rented) housing**
5. This will attract **families/grandparents** (our target markets), **increase secondary spend** and provide **social/economic/environmental benefits** both now and in the **long term**.

As such, CST will achieve its intended development strategy to **focus on winnable projects that will generate income and help to lengthen, diversify and enhance the visitor experience at Bolton Abbey without harming the resource base in the long term.**

This development strategy would also be consistent with CST's **core values** to ensure growth is: ground-breaking; welcoming (warmth); high quality (a cut above the rest); family-orientated.

5.2 Next Steps

The next steps for CST are to:

- Undertake surveys to establish evidence of need for staff/visitor accommodation/other
- **Prepare detailed masterplan for village green scheme and secure buy-in from CDC**
- **Secure favourable planning policies** in the YDLP and CLP respectively
- Undertake feasibility studies of key projects (eg pub, farm shop)
- Complete projects already under way (eg Tithe Barn)
- Prepare/submit applications for planning permission for related development
- Develop projects (farm shop, pub, cottages around new village green).

APPENDICES

APPENDIX A

ORIGINAL LIST OF IDEAS (August 2013)

Original List of Ideas (August 2013)

Development Ideas (Tourism)

The original 46 development ideas generated and considered by CST in 2013 included:

- Tithe Barn as wedding barn venue
- Tithe Barn as education centre (with adventure/activity/play area outside)
- Tithe Barn as biomass centre/other
- Tithe Barn as "Wacky Warehouse"/other
- Events programme (like Harlow Carr)
- Investment in marketing
- Events licence (in progress)
- Visitor engagement training for staff
- Ice cream hatch, Village shop
- Play trail
- Play area
- Adventure playground
- "Go Ape"
- Sculpture trail
- Land take, farm amalgamation
- Farm shop
- Farm attraction
- Strid Wood Caravan site extension
- Park shop/office, Dusty Bluebells
- Glamping/lodges, Christmas Tree Wood
- Fractional ownership/timeshare
- Strid Cottage
- Yurts/Tipis
- Static caravans
- Campsite at Catgill
- Time share holiday properties
- Cycle hub
- Mountain bike trail
- 3 day mountain bike event as a "one-off" (rather than a permanent facility)
- Investment in an indoor activity facility outside the estate
- Stepping stones, Ungain
- Village green widening

- Bypass, Bolton Abbey
- Ice rink
- Triathlon
- Asian festival
- Rock concert
- Glastonbury type event
- Exhibition field
- Tough Mudder
- Devonshire Arms Hotel extension
- Christmas Fayre, Cavendish Pavilion
- Take in hand catering outlets (Tea Cottage, Abbey Tea Rooms)
- “Grab & go” food /drink outlet, Cavendish Pavilion
- Use of wooden bridge Lodge, Cavendish Pavilion
- Garden Centre.

Further Ideas (Other Development)

In addition to the foregoing, CST also generated and considered ideas for commercial development and/or development to support the tourism-related ideas above. These included:

- cottages/apartments for holiday lets
- residential units for staff/workers
- enabling development (eg market housing to facilitate refurbishment of Tithe Barn)
- market housing (to support provision of social infrastructure, Bolton Abbey)
- affordable housing
- live/work units
- other employment uses
- heritage stone quarry (to facilitate stone to meet YDNPA’s specifications)
- community heating scheme (biomass)
- other renewable energy development (ground-source heat pumps, biomass).

APPENDIX B
ECONOMIC APPRAISAL OF IDEAS (May 2014)

Economic Appraisal of Ideas (May 2013)

CST agreed to shorten the list of 50 original ideas to those as below.

Events

- Event premises license
- Indoor temporary structure for large events to provide a wet weather attraction in peak seasons
- Large annual events (eg Glastonbury, Tough Mudder)
- Sculpture trail

Play attraction

- Develop permanent trails in Wandsworth Wood and Picklesgill Wood. Theme type of experience to be explored (eg Bewilder Wood, Adventure Trail, Go-Ape type)

Village

- Wedding facility, Tithe Barn
- Farm shop (off the B6160/south of Bolton Abbey)
- Restaurant (off the B6160/south of Bolton Abbey)
- Play area (off the B6160/south of Bolton Abbey)
- Cycle hub (off the B6160/south of Bolton Abbey)

Holiday

- Strid Wood car park, Christmas Tree plantation, Cumberland Trail and Barden Beck – to form 1 developed site along same lines of Centre Parcs. Possibilities to explore include Shepherds Trailers next to Barden Beck, play area next to Cumberland Trail, Strid Shop concerted into site office/shop/etc

Sporting

- Cycle routes (proposed routes identified but not attached). Additional purpose-built family trails around the village would need creating perhaps using an alternative surface to limestone to reduce maintenance costs and visual impact.

Other

- Stepping Stones

APPENDIX C

PLANNING APPRAISAL OF IDEAS (June 2014)

Planning Appraisal of Ideas (June 2013)

CST considered the likelihood of planning permission for the economically viable project ideas by way of traffic light colours as below; however, all ideas must be promoted in the Local Plans too.

Project idea	Likelihood of planning permission	Comments
New village green with tree & ivy-clad pub/cottages, BA village (in CDC)	Amber	Planning permission likely subject to archaeological survey & design in SAM
Wedding facility, Tithe Barn (in YDNP)	Amber	Planning permission likely subject to bat mitigation, design in SAM & amenity
Chatsworth-style farm shop & play area by B6160, BA village (in CDC)	Amber	Planning permission likely subject to scale, design in landscape & sale of local produce
Wet weather play barn (in CDC)	Amber	Planning permission likely subject to scale, design in landscape and materials
Market/staff/visitor accommodation, BA village (in CDC)	Amber	Planning permission likely in development limit subject to design/evidence of need
2 nd set of stepping stones, The Ungain (in YDNP)	Amber-green	Planning permission likely subject to design near SAM but potential safety issues
Temporary sculpture trail, Strid Wood (in YDNP)	Amber-green	Permitted development (28 day rule) unless YDNPA has LDO in place under Article 4
Themed trails, Wandsworth/Picklesgill Wood (in YDNP)	Amber-red	Planning permission unlikely due to SAM & amenity (but possible in W Bank Wood?)
Big events/festivals (eg Glastonbury, Tough Mudder) (in YDNP)	Amber	Permitted development (28 day rule) unless YDNPA has LDO in place under Article 4
Cycle hub/visitor centre, BA village (in CDC)	Amber-green	Planning permission likely (accessibility) subject to design & use of local materials
Cycle routes & walkways (in CDC and YDNP)	Amber-green	Planning permission likely subject to design, location (outside SSSI) & materials (stone)
Centre Parc style facility, Strid Wood car park/Barden Beck (in YDNP)	Red	Planning permission v unlikely due to scale (major dev) and landscape/SSSI impact

Appendix 3: Bolton Abbey Visitor Accommodation Needs Assessment Report



Visitor Accommodation Needs Assessment

BOLTON ABBEY

MARCH 2015

Frey Consulting Ltd



CHATSWORTH

Dr. Sibylle Frey
Frey Consulting Ltd

Saxton
Tadcaster
LS24 9QF
01937-557800
info@freyconsulting.co.uk

Executive Summary

The purpose of this report is to provide evidence on visitor accommodation needs in support of changes sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

Bolton Abbey is a service village and popular tourist destination that currently attracts around **450,000 visitors per year**. CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the Yorkshire Dales National Park, YDNP), which has led to its "Bolton Abbey Development Strategy" (2014). In order to provide a more attractive all-year-round visitor offer at Bolton Abbey and thereby sustain the high level of services that the settlement provides to local communities, this review identified the need for development (including visitor accommodation) during the plan period. In particular, CST seeks an allocation of land for mixed-use development. As one of five inter-related pieces of evidence in support of that allocation, this summary identifies the key results from the Visitor Accommodation Needs Assessment, which includes:

1. An assessment of the supply of existing visitor accommodation within a 5km (3.1mi) radius (i.e. walking distance) of Bolton Abbey Village;
2. A basic survey of visitors at Bolton Abbey car park during half-term week in October 2014 to see if they would use visitor accommodation around Bolton Abbey if available;
3. A detailed visitor survey on visitor attitudes towards visitor accommodation over two days during half-term week in October 2014.

The key results from this assessment are:

The **current supply of visitor accommodation** within a 5km radius of Bolton Abbey comprises only 17 accommodation units (including hotels, self-catering and camping/caravan sites). In terms of permanent beds offered per day, the existing supply can only cater for around 17% of the daily visitors to Bolton Abbey on average. Moreover, the four-star Devonshire Arms Hotel provides 81% of these permanent beds, but at the high-end of the market only. This suggests that the existing supply is inadequate to meet the need (and market demand) for permanent beds in terms of both numbers of beds and affordable choices for visitors.

The results from the **basic survey** of 457 visitors at the car park in Bolton Abbey suggest that 49% of visitors would use visitor accommodation if available. Based on these preliminary figures, the annual demand for visitor accommodation in the area was estimated at approximately 220,000 visitors per year.

The **detailed survey** of 188 visitors interviewed face-to-face over two days during half-term (October 2014) established the following:

1. **54% of respondents were in favour of visitor accommodation at Bolton Abbey**; 37% were neutral and only 9% were not in favour;
2. Most respondents would prefer to stay in **self-catering, hotels and B&B**, which corresponds largely with the existing pattern of usage;
3. **40% of respondents would stay in visitor accommodation if it were available**; this indicates a basic market potential of around 180,000 visitors who would be likely to use accommodation in the area;
4. Of those who were *not at all likely* to use visitor accommodation, at least 65% lived locally, 7% stayed with friends or family and 19% were other day visitors. In addition, 6% of respondents did use visitor accommodation (despite saying they were '*not at all likely*' to use it). This suggests that some of these visitors may use visitor accommodation at Bolton Abbey if it were available. **Taking these 6% into account, this would increase the visitor accommodation potential to at least 197,000 visitors per year**;
5. 91% of respondents used visitor accommodation in general; this indicates that **visitors to Bolton Abbey are generally willing to spend money on overnight stays**;
6. General comments about visitor accommodation around Bolton Abbey centred on concerns about potential **sustainability impacts** (e.g. such development should fit in with the scale and character of the area; public transport should be provided). It should be noted that CST's current development concept addresses a range of these sustainability issues.

It is therefore concluded that there is currently a substantial under-supply of visitor accommodation at Bolton Abbey (especially self-catering, affordable hotels and B&Bs); there is considerable demand for such accommodation (i.e. at least 180,000 to 197,000 visitors per year), with most visitors being in favour of such development. This indicates a need for and a strong demand for additional and more diverse visitor accommodation at Bolton Abbey.

Contents

EXECUTIVE SUMMARY	3
1. INTRODUCTION.....	7
1.1 PURPOSE OF THE REPORT	7
1.2 STRUCTURE OF THE REPORT.....	7
2. CONTEXT.....	8
2.1 LANDOWNER	8
2.2 BOLTON ABBEY AND RELATED AREA	8
2.3 THE NEED FOR DEVELOPMENT.....	12
2.4 DEVELOPMENT PROPOSAL.....	12
2.5 PLANNING POLICY	15
2.6 BENEFITS	16
3. METHODOLOGY AND ASSUMPTIONS	17
3.1. ASSESSMENT OF PRESENT SUPPLY OF VISITOR ACCOMMODATION	17
3.2. BASIC SURVEY OF VISITOR ATTITUDES	17
3.3. DETAILED SURVEY ON VISITOR ATTITUDES.....	17
4. RESULTS.....	19
4.1. PRESENT SUPPLY OF VISITOR ACCOMMODATION	19
4.2. BASIC VISITOR SURVEY	19
4.3. DETAILED SURVEY – OVERALL RESULTS	20
4.3.1 Responses to Question 1	21
4.3.2 Responses to Question 2	21
4.3.3 Responses to Question 3	22
4.3.4 Responses to Question 4	23
4.3.5 Responses to Question 5	24
4.3.6 Responses to Question 6	25
4.3.7 Responses to Question 7	26
4.4 DETAILED SURVEY – RELATIONSHIPS BETWEEN CATEGORIES.....	28
4.4.1 Comparison of responses from Question 1 with Question 2.....	28
4.4.2 Comparison of responses from Question 1 with Question 3.....	28
4.4.3 Comparison of responses from Question 1 with Question 4.....	29
4.4.4 Comparison of responses from Question 1 with Question 5.....	30
4.4.5 Comparison of responses from Question 1 with Question 6.....	31
4.4.6 Comparison of responses from Question 1 with Question 7.....	32
5. INTERPRETATION OF RESULTS.....	34
5.1 PRESENT SUPPLY OF VISITOR ACCOMMODATION	34
5.2 BASIC SURVEY	34
5.3 DETAILED SURVEY RESULTS.....	34
5.3.1 Overall results.....	35
5.3.2 Comparison of responses	36

6. CONCLUSION.....	38
7. APPENDIX	39
A1: LIST OF EXISTING VISITOR ACCOMMODATION	39
A2: MAP OF EXISTING VISITOR ACCOMMODATION	41
A3: QUESTIONNAIRE	42
A4: COMMENTS TO QUESTION 7	43
A5: CONTINGENCY TABLES.....	45

1. Introduction

1.1 Purpose of the report

The purpose of this report is to provide evidence on visitor accommodation needs in support of changes sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

CST is seeking an allocation of land for mixed use development at Bolton Abbey. As such, this report comprises one of the following five inter-related pieces of evidence in support of that proposed allocation as follows:

- **Bolton Abbey Visitor Accommodation Needs Assessment (Frey Consulting Ltd)**
- Bolton Abbey Staff Accommodation Needs Assessment (Frey Consulting Ltd)
- Bolton Abbey Heritage Assessment (ArcHeritage)
- Bolton Abbey Landscape and Visual Appraisal (Gillespies)
- Bolton Abbey Village Masterplan (CST and Rural Solutions Ltd)

1.2 Structure of the report

This report summarises the key results from the **Visitor Accommodation Needs Assessment** and addresses the following:

- Context (provided by CST);
- Methodology for assessment of existing visitor accommodation, basic survey and detailed visitor survey;
- Results for the above;
- Interpretation of the above, and
- Conclusion.

2. Context

2.1 Landowner

Chatsworth Settlement Trustees (CST) is a business that owns and manages property on behalf of the Cavendish family, which has owned land between Bolton Bridge and Barden Bridge as well as the surrounding countryside (c.10,000 hectares) since 1753. CST is part of the Devonshire Group of companies and is committed to sustainable development.

CST derives incomes from rents, trading (e.g. admissions), high quality food/retail outlets (e.g. the Farm Shop at Chatsworth) and other income streams. It thereby funds a range of high quality environmental management activities (e.g. woodland management, architectural conservation). As such, CST takes a responsible, long term and pro-active view of conservation whilst ensuring that projects provide a commercial return

2.2 Bolton Abbey and related area

Bolton Abbey comprises three settlements: Bolton Abbey Village; Bolton Bridge; Bolton Abbey Station. It is situated on high ground east of the River Wharfe, less than a mile north of the junction of the A64 and the B6160 (Figure 1). It therefore acts as the southern gateway to the Yorkshire Dales National Park (YDNP) and attracts 450,000 visitors per year.

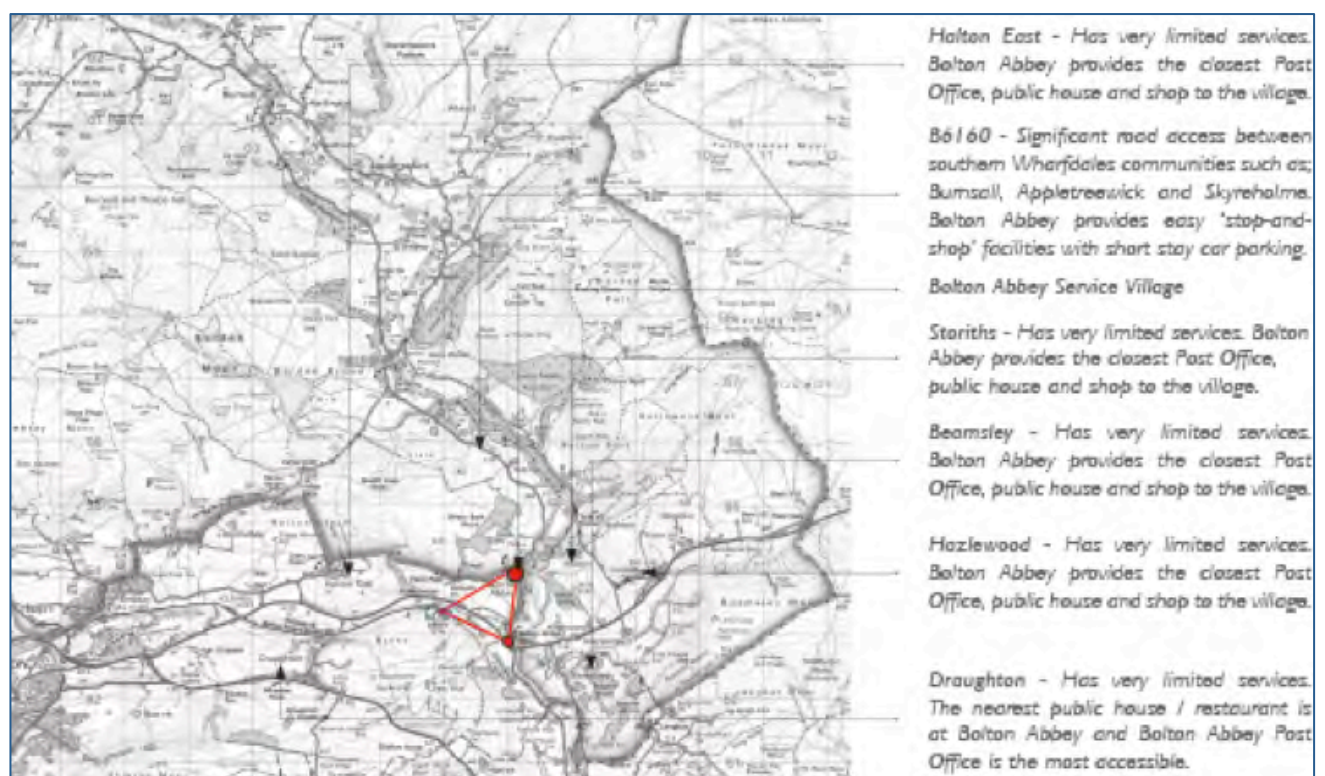


Figure 1. Location plan showing Bolton Abbey and related settlements

The settlement at Bolton Abbey dates back to at least the twelfth century. The Augustinian Abbey was founded in 1154, and the Tithe Barn dates back to 1530. The popularity of Bolton Abbey as a visitor attraction began with the publication of an illustrated guidebook entitled *Fourteen Views in Lithography of Bolton Abbey* by J Scarlett Davis in 1829. This led to the Strid and the Priory ruins attracting Turner, Wordsworth and other Romantics, which in turn led to the development of Bolton Abbey Station and the Devonshire Arms Hotel. The quality and importance of the area is recognised by a high number of planning designations (Figure 2).

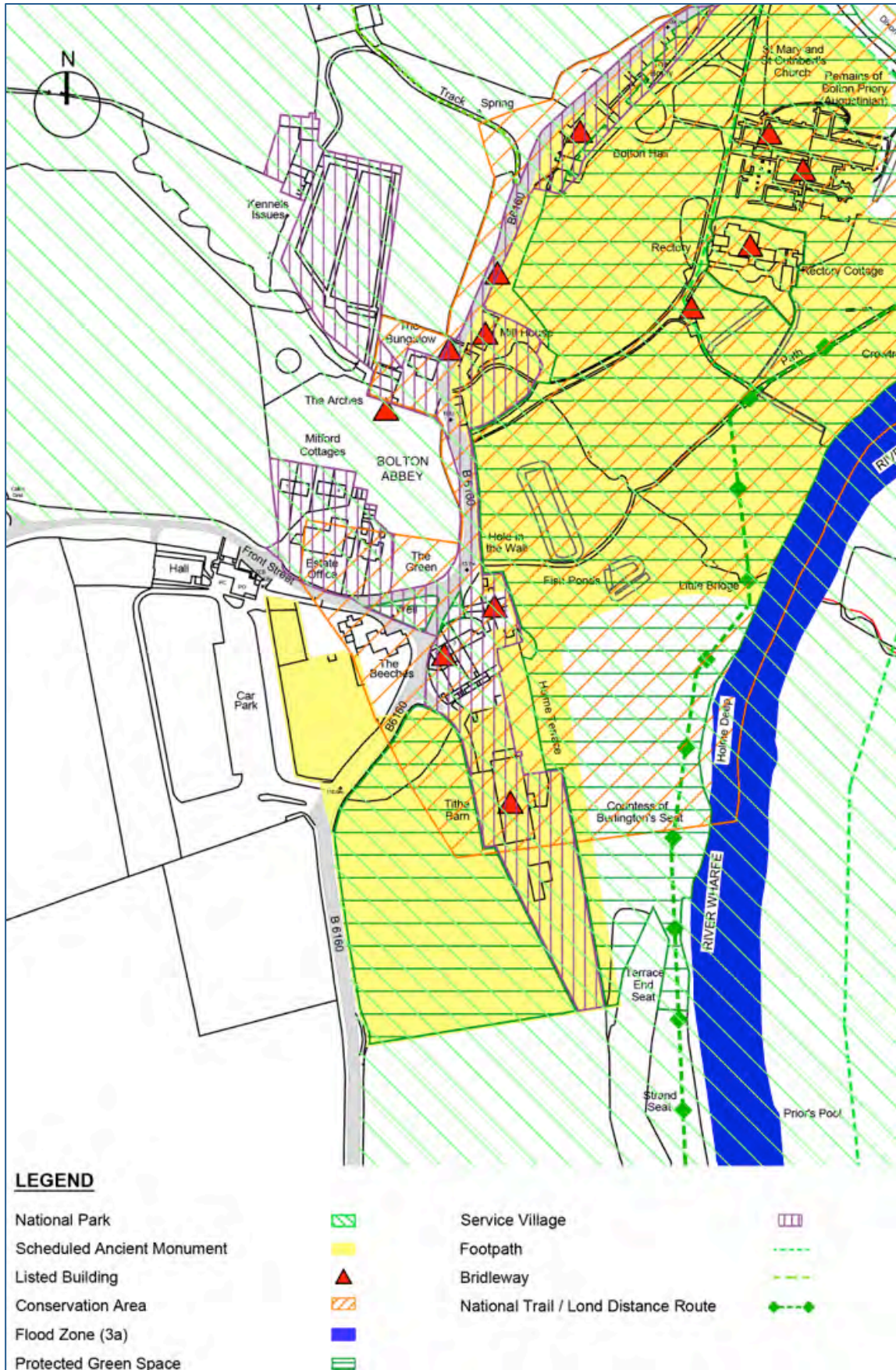


Figure 2. Plan showing planning constraints, Bolton Abbey Village (all land owned by CST)

The Bolton Abbey Heritage Landscape Management Plan provides for open access for visitors, and CST funds the high level of environmental management for the related area (e.g. woodland management, architectural conservation).

The built settlement is attractive, with a mixture of historic buildings and traditional stone houses surrounded by semi-improved pasture. It is therefore a popular place to live. Bolton Abbey contains 58 properties, 39 of which comprise dwelling units (seven of these are occupied by existing or former estate workers on reduced rents).

Bolton Abbey makes an important economic contribution to the local area as follows:

- Employment: CST has 159 full-time equivalent (FTE) staff at the Estate Office, the Devonshire Arms Hotel, the Cavendish Pavilion and the Devonshire Fell Hotel
- Commercial premises owned by CST: farms; hotel; estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; tea rooms; farm shop; café/restaurant.
- Visitor economy: 450,000 visitors to Bolton Abbey per year (though there is only one 4 star hotel and very few B&Bs/self-catering units nearby to accommodate them).

Bolton Abbey also provides a very high level of services for a rural area as follows:

- Bolton Abbey Village: post office; bus stop; public toilets; village hall; church; car park; coach park; book shop; tea room/café; delicatessen; café/restaurant; gift shop; tourist information; litter and recycling bins;
- Bolton Bridge: bus stop; garage; hotel; tea shop; gym/health spa; farm shop; community cricket club
- Bolton Abbey Station: community railway; café.

The village is “active” due to: major employment within the village; the Estate office’s role as a central ‘hub’ for the Estate; the high proportion of people living and working locally.

Bolton Abbey acts as the main “service village” for the related area of Appletreewick, Barden, Beamsley, Draughton, Halton East, Hazlewood, Storiths and Skyreholme (see Figure 1 above). These settlements will accommodate further development over the next fifteen years (i.e. there is a need to support the role of Bolton Abbey as the service village for the area).

As such, Bolton Abbey is not just a visitor attraction with some houses but a genuine service village in the Southern Dales area, which CST considers, can and should accommodate more development.

2.3 The need for development

CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the YDNP), which has led to its "Bolton Abbey Development Strategy" (2014). This business plan identifies the main business strengths at Bolton Abbey (e.g. heritage assets, natural features and landscape quality), but also identifies issues for CST to address:

- A lack of sense of arrival (and departure) for visitors
- Tourism is dependent on weather and school holidays
- Trips tend to be brief, with little or no secondary spend
- Major planning constraints severely limit opportunities for growth
- High maintenance costs
- Services at risk (e.g. loss-making Post Office)
- Staff cannot afford local house prices (i.e. long journeys to work)
- Very limited visitor accommodation in the area in terms of supply and choice
- Bolton Abbey Village currently provides a limited and low value offer to visitors.

In order to address these issues, the business plan identifies the need for:

(...) the enhancement of Bolton Abbey (within CDC) to provide a new village green, pub, farm shop, play area, play barn (i.e. wet weather facility)...staff/visitor/market accommodation, entry sign (welcome to Bolton Abbey), link to Bolton Abbey Station...and visitor centre/cycle hub.

2.4 Development proposal

In view of the foregoing, CST has considered several potential development sites in the area (e.g. the Cavendish pavilion) and identified one (3.9 ha) in Bolton Abbey village, which currently contains a mix of uses (housing, retail, parking; open countryside). Most of the site (3.2 ha) is already in use (for housing/parking/retail) and none of it is subject to flooding. CST owns all of the land (except highways) shown in the photograph below (Figure 3).



Figure 3. Proposed allocation site (3.9 ha) for mixed use development, Bolton Abbey

In seeking a site allocation in the emerging CDLP, CST has liaised informally with CDC, undertaken the five related pieces of work identified above (see Section 1.1) and sought to design an indicative scheme, which will:

- Create a special place and gateway to the Dales with a real sense of arrival
- Provide for high quality design, optimal layout and access arrangements (with planting and use of local stone as appropriate)
- Respect the scale and character of the village and its historic setting (i.e. avoid development in the Bolton Priory Scheduled Ancient Monument area and complement both the Bolton Abbey Village Conservation Area and YDNP)
- Fit with the existing “dispersed” built form and low density of the settlement
- Have regard to (and implement) extant and emerging planning policy
- Reflect local precedents (e.g. Arncliffe village green, estate housing at Harewood and Ripley, Hesketh Park Farm, the Yorkshire Dales Ice Cream Parlour at Halton East)
- Reflect local comparables (e.g. CST developments granted planning permission by CDC or YDNPA such as: the Village Shop/Post Office, the Estate Office extension, the Mitford Cottages, the Cavendish Pavilion extension, the Devonshire Spa barn)
- Reflect other comparables (e.g. CST developments granted planning permission by the Peak District NPA such as: Chatsworth Farm Shop, Chatsworth Adventure Play Area, Chatsworth Renewable Energy Centre, Devonshire Arms at Pilsley).

In doing so, CST asked ArcHeritage and Gillespies to do “interim” heritage assessments and landscape appraisals so as to gauge the capacity of the site to accommodate change. Amongst other things this established the importance/sensitivity of: some medieval earthworks beyond the western edge of the SAM area; views from high ground (in the YDNP) to the north of the site; views from the south and east (in the YDNP).

This led to CST considering a series of development options for the site, and in particular:

- Adjusting the indicative layout/footprint of the proposed buildings to retain the medieval earthworks feature immediately beyond the west of the SAM area
- Significantly increasing the amount of planting (trees, hedges) to screen development from sensitive views to the north and enhance the parkland feel of the wider landscape
- Removing a sizeable area of prominent ground at the southern end of the site (and thereby reducing the overall size of the site).

As such, CST has undertaken a comprehensive masterplanning process informed by specialist input which has resulted in its indicative scheme for the “village green site” (Figure 4).

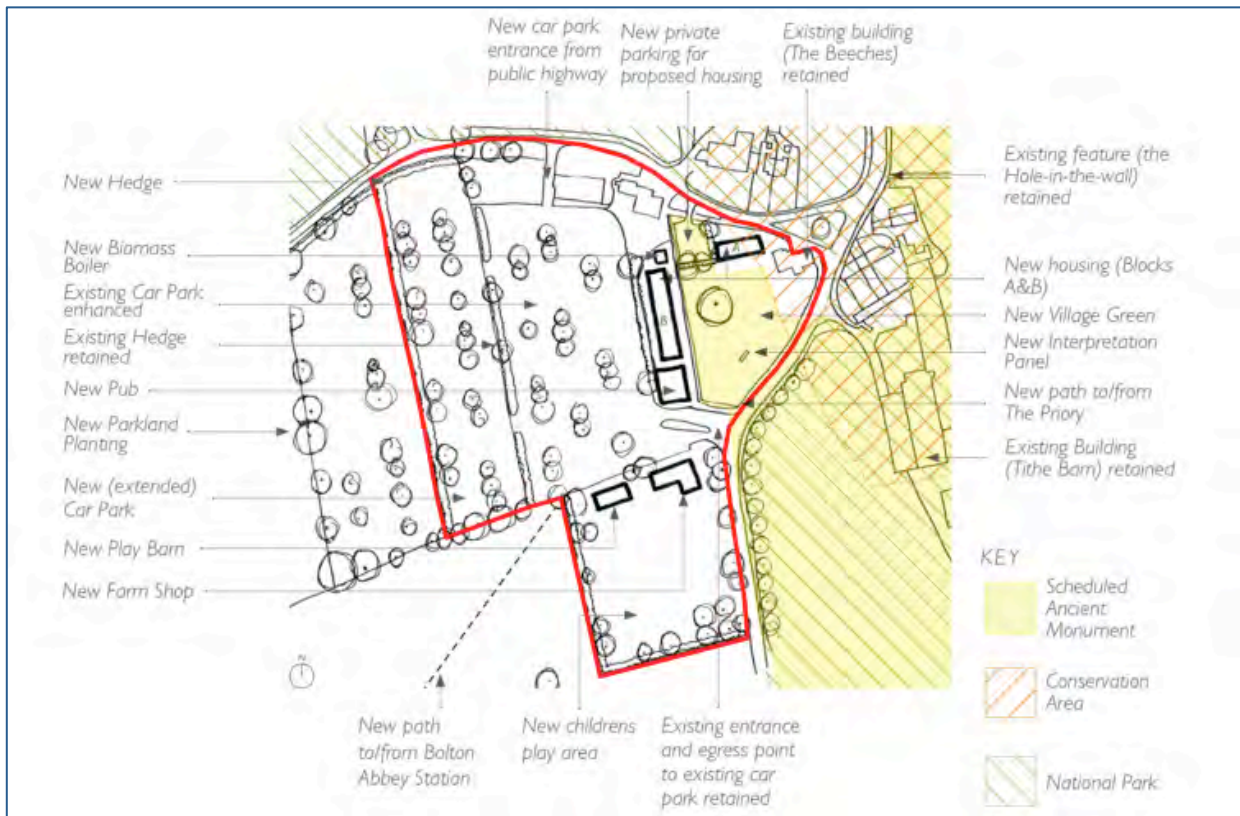


Figure 4. Proposed Village Green Scheme, Bolton Abbey

2.5 Planning Policy

The planning context for the site is unusual. Most of the village is in the YDNP but the site itself is in Craven District. Whilst the Craven District Council (Outside the Yorkshire Dales) Local Plan (CDLP) 1999 provides no designations to negate development of the site, the draft YDLP Local Plan 2014 includes Bolton Abbey as a “service village” (i.e. capable of accommodating growth).

As such, CST considers that the new CDLP should recognise the spatial planning role of Bolton Abbey as a focus for growth and allocate the site for masterplan-led growth so as to :

- Provide for suitable development
- Retain services in the village
- Allow CST to meet its business needs
- Ensure consistency with key planning documents (e.g. CDLP’s strategic objectives, the emerging YDNP Local Plan, the National Planning Policy Framework 2012, the National Planning Policy Practice Guidance 2014, the key findings of the Taylor Review of Rural Economy and Affordable Housing 2008).

CST therefore welcomes references to Bolton Abbey in CDC’s ‘Pre-Publication’ draft CDLP 2014 for consultation but would like the CDLP to recognise the service village role of Bolton

Abbey and allocate the proposed village green site for mixed use development. CST considers that a failure to do so will risk the loss of important services to the village and the communities it serves, and also engender uncertainty for investment in the area.

2.6 Benefits

CST considers that the main benefits of the intended scheme include:

- New village green to create attractive focal point/feature of interest in settlement and provide public open greenspace
- New interpretation panel to enhance awareness of the former Barnyard (working yard for Tithe Barn) within the medieval Abbey precinct
- New biomass boiler to provide district heating scheme for development
- New dwelling units to provide high quality accommodation for visitors/staff/others
- New planting in existing and extended car park to improve visual amenity, integrate development with surrounding parkland and minimise impact to wider landscape
- New pub to consolidate local community and enhance sense of arrival/departure for visitors
- New play area to provide learning-through-play facilities for mixed age groups and soften the approach into the village along the B6160
- New play barn to comprise the only children's wet weather play facility in the Dales area
- New farm shop to sell local/organic/estate produce (as with the Farm Shop at Chatsworth)
- New path to link village to/from the steam railway at Bolton Abbey Station
- New path to increase visibility splay by B6160 and improve pedestrian safety/access to/from The Priory
- Scope for wider visibility splays to improve road safety for visitors and pedestrians by "The Hole-in the-wall"
- Scope for more people to live in the village
- Scope to retain more staff and reduce carbon footprint (of staff journeys to work)
- Scope for village to meet the social and economic needs of the local and wider community
- Creation of at least 27 extra full-time equivalent high quality/high value jobs.

As such, CST considers that the comprehensive redevelopment of the site is needed to sustain the role of Bolton Abbey village as both a major tourist destination and a service village for the local area in the long term, and that the site should therefore be allocated accordingly.

3. Methodology and assumptions

3.1. Assessment of present supply of visitor accommodation

In order to estimate the present supply of visitor accommodation within a 5 km (3.1 mi) radius of Bolton Abbey, data on visitor accommodation was collected from the Yorkshire Tourist Board (www.yorkshire.com), Tripadvisor (www.tripadvisor.co.uk), and Yellow Pages. A map of present visitor accommodation listings was collated and a GIS based map provided by the CST (see Appendices 1 and 2). The present visitor accommodation capacity was estimated from the information given on websites, and by phoning the respective accommodation providers.

3.2. Basic survey of visitor attitudes

To establish if there is a market for visitor accommodation at Bolton Abbey, visitors at the Bolton Abbey car park were asked by staff in the car park kiosk if they were in favour of visitor accommodation in the vicinity: *"If there were suitable accommodation in the vicinity would you stay?"* The question was designed to provide a quick and simple indication of the potential level of demand for visitor accommodation in the area, and to obtain a sufficiently large number of responses in a short time. The kiosk attendant recorded the responses of "yes", "no", or don't know (N/A) in a tick-off list over a period of six days (Monday to Friday) between 27th October and 1st of November 2014, during term-time. Overall, 457 visitor responses (N=457) were collected.

3.3. Detailed survey on visitor attitudes

In addition to the foregoing, a more detailed survey was conducted during the same period, on the 28th and 30th of November, using face-to-face interviews. The survey comprised six Lykert-type questions (one of which allowed for more than one answer) to indicate the strength of preference, and one open-ended question (Question 7). The questionnaire has been included in Appendix 3. Responses to Question 7 were subsequently grouped into the following categories depending on the issue concerned:

1. Environment/landscape;
2. Affordability;
3. Capacity;
4. Social issues, and
5. Accommodation type/design.

The responses to questions 1 to 6 were recorded using tick-off boxes. Overall 188 responses (N=188) were collected. Due to time constraints a random sampling of interviewees over

more dispersed time periods was not possible. To avoid double counting, responses from the detailed survey were not combined those from the screening survey. The survey results were evaluated in Excel for Macintosh, including the Chi-square statistic for multinomial tests to estimate the differences between sets.

4. Results

This section presents the summarised results from the analysis of present visitor accommodation within the 5km radius of Bolton Abbey, the basic visitor survey on attitudes towards visitor accommodation at Bolton Abbey, and the more detailed visitor accommodation survey.

4.1. Present supply of visitor accommodation

This search identified 17 existing types of visitor accommodation within the 5km of Bolton Abbey: 11 self-catering places, 3 hotels/inns, and 3 camping/caravan sites (Appendix 1). It was estimated that on an average 'bed per day' basis the present accommodation has a capacity of approximately **212 permanent beds**, plus another 188 non-permanent beds, at camping/caravan sites. Although the hotels/inns provide most of the permanent beds (54%) the majority of these (81%) are located at the four-star Devonshire Arms hotel, i.e. in the high-end price bracket. Self-catering units currently provide 46% of permanent beds. In addition, camping/caravan parks provide approximately 47% of all beds (which are not available all year round). On average, in terms of permanent beds per day the existing visitor accommodation has a capacity for just 17% of the daily visitors numbers to Bolton Abbey.

4.2. Basic visitor survey

The basic visitor survey at Bolton Abbey visitor car park returned 457 responses (N=457) to the question "*if there were suitable accommodation in the vicinity would you stay?*" 212 respondents (46%) answered *yes*, 239 respondents (52%) answered *no*, and 6 respondents (1%) did not respond (N/A; Figure 5).

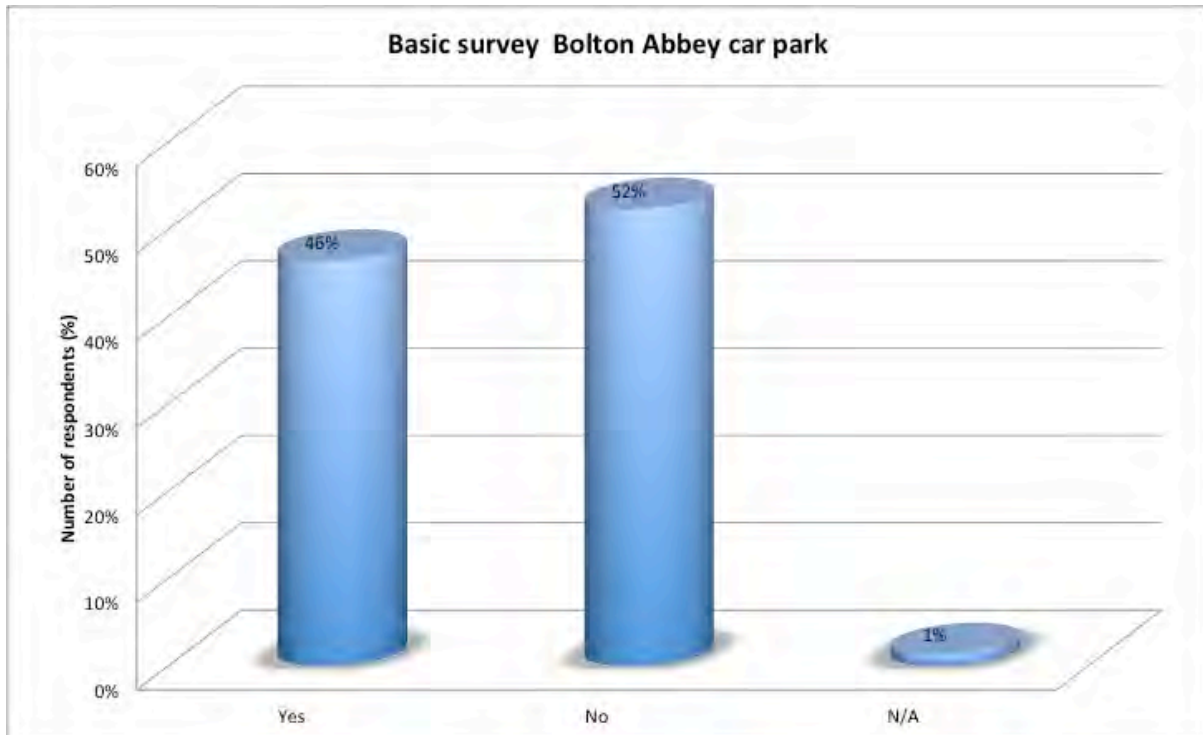


Figure 5. Frequency of respondents to basic survey question, "If there were suitable accommodation in the vicinity, would you stay?" (N=457).

The results further show that that the proportion of visitors who indicated they would use visitor accommodation was higher during the week (weekly average of 49%) than at weekends (36%; Table 1). It was therefore assumed that a greater proportion of weekend visitors live relatively locally than is the case with mid-week visitors.

Date	Yes	No	N/A	Daily total
Mon 27/10	22	28	-	50
Tues 28/10	64	32	1	97
Weds 29/10	21	18	-	39
Thurs 30/10	24	42	-	66
Fri 31/10	41	46	-	87
Sat 1/11	40	73	5	118
Total (N)	212	239	6	457
Total (%)	46%	52%	1%	100%

Table 1. Breakdown of frequencies to basic question, "If there were suitable accommodation in the vicinity, would you stay?" (N=457).

4.3. Detailed survey – overall results

The detailed survey over two days during half-term week in October 2014 returned a total of 188 responses (N=188) and contained seven questions: six Lykert-type questions to test the strength of a response, and one open question that was optional (Appendix 3).

4.3.1 Responses to Question 1

In response to Question 1 ("What is your first reaction to potential visitor accommodation in the area?"), 23% of the responses were very positive, 31% were somewhat positive, 37% were neutral, 8% somewhat negative, and 1% very negative (Figure 6). Hence, 54% of all responses were in favour of potential visitor accommodation, 37% were neutral, and 9% not in favour of visitor accommodation.

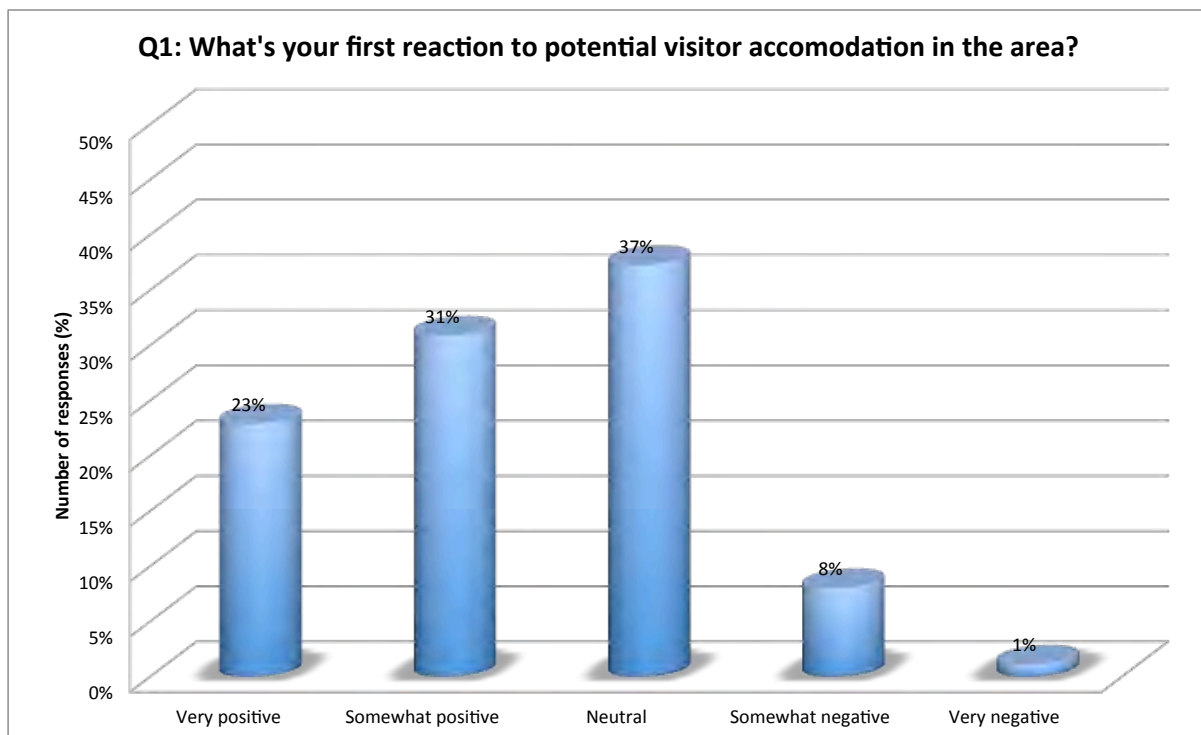


Figure 6. Frequency distribution to Question 1 on the initial reaction to potential visitor accommodation (N=188)

4.3.2 Responses to Question 2

In response to Question 2 ("How long are you staying in the Bolton Abbey area?"), 79% were day visitors, 10% visited for 2 to 3 days, 11% for up to than a week, and no one stayed for longer than a week (Figure 7). Of the 149 day visitors, 70 respondents (37%) lived locally.

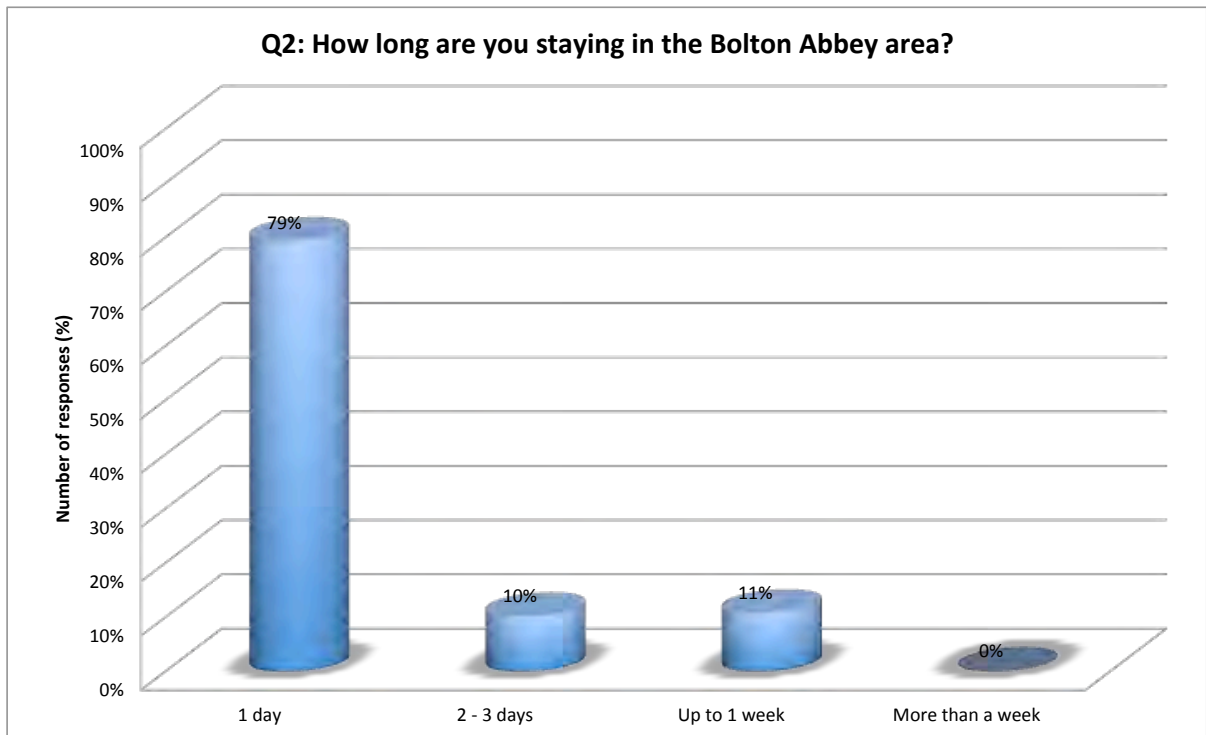


Figure 7. Frequency distribution to Question 2 on visitors' length of stay at Bolton Abbey (N=188)

4.3.3 Responses to Question 3

In response to Question 3 ("In which type of visitor accommodation are you currently staying?"), 5% of visitors stayed in a hotel, 3% in a B&B, 8% in a self-catering cottage, 1% in a hostel, and 3% on camping or caravan-lodge site. 150 visitors (80%) did not use any visitor accommodation (N/A); of these, 72 respondents (48%) stated that they lived too locally (Figure 8).

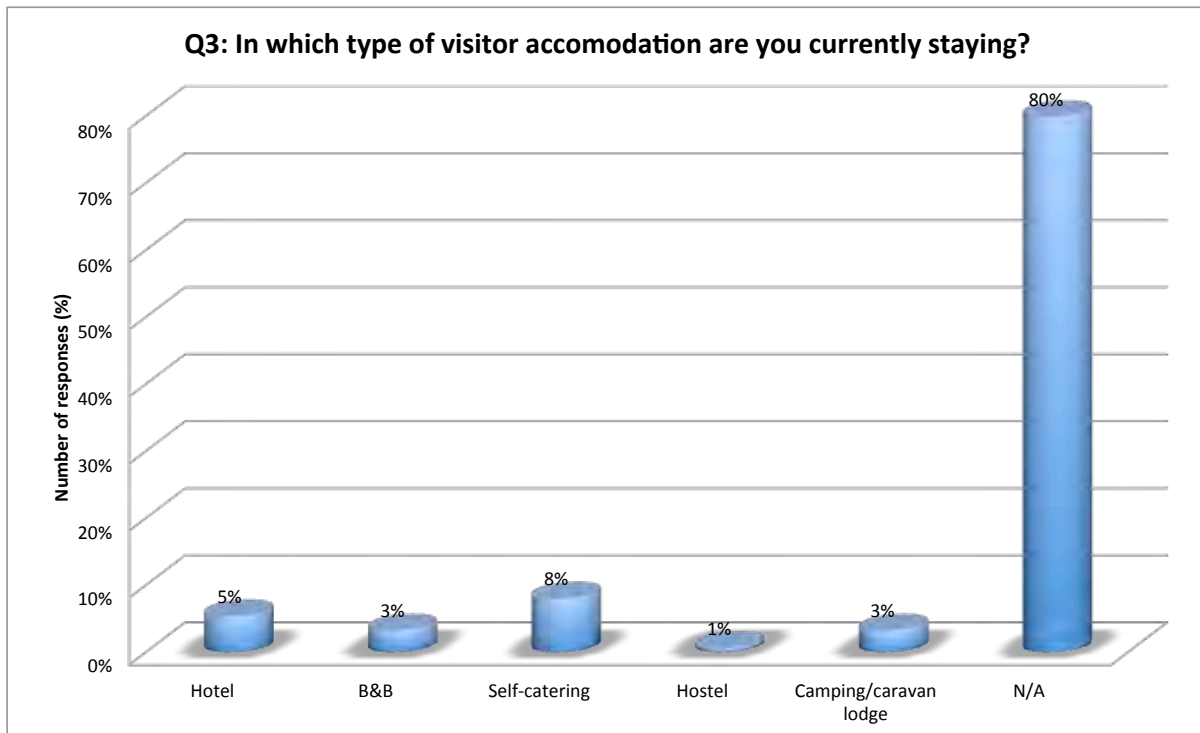


Figure 8. Frequency distribution to Question 3 on current type of visitor accommodation (N=188). 48% of the N/A fraction lives in the vicinity.

4.3.4 Responses to Question 4

In response to Question 4 ("If visitor accommodation were available here today, how likely would you be to stay in it?"), 3% of the respondents stated to be *extremely likely* to be staying in visitor accommodation if it became available, 11% were *very likely*, 16% *moderately likely*, 11% *slightly likely*, and 60% *not at all likely* (Figure 9). Of these 112 visitors, 73 respondents (65%) said that they lived too locally to use it and another 8 respondents (7%) said they stayed with friends or family. 19% were other day visitors (of which some could also live relatively close but did not mention this).

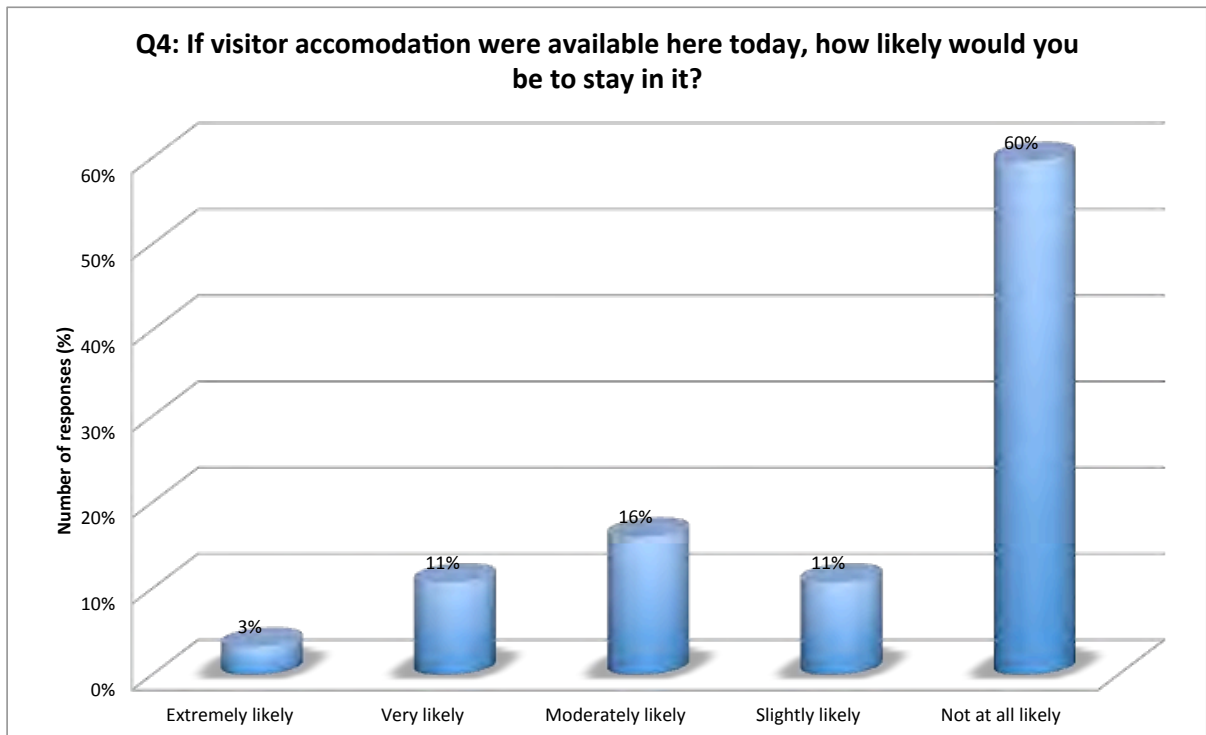


Figure 9. Frequency distribution to Question 4 on the likelihood of staying in visitor accommodation if it became available (N=188). 65% of those stating *not at all likely* (N=73) live locally.

4.3.5 Responses to Question 5

Question 5 (*"If visitor accommodation were available, which type would you stay in?"*) allowed for more than one answer and was skipped for those who answered *not at all likely* in Question 4 (leaving a total of 76 respondents for Question 5). Self-catering, hotel and B&B were the most preferred types of visitor accommodation (20%, 18%, and 17%, respectively).

Multiple answers were given for hotel and B&B (12%), camping/caravan lodge (8%), and hotel & self-catering (7%), then *B&B/self-catering* and *self-catering/camping* (4%, respectively). *All five types* of accommodation and the combination *hotel/camping* were chosen by 3%, respectively. Combinations of *B&B/hostel*, *hotel/B&B/camping*, and *hotel/B&B/self-catering*, were preferred options for 1% of respondents, respectively. A *hostel* was not a preferred choice on its own (Figure 10).

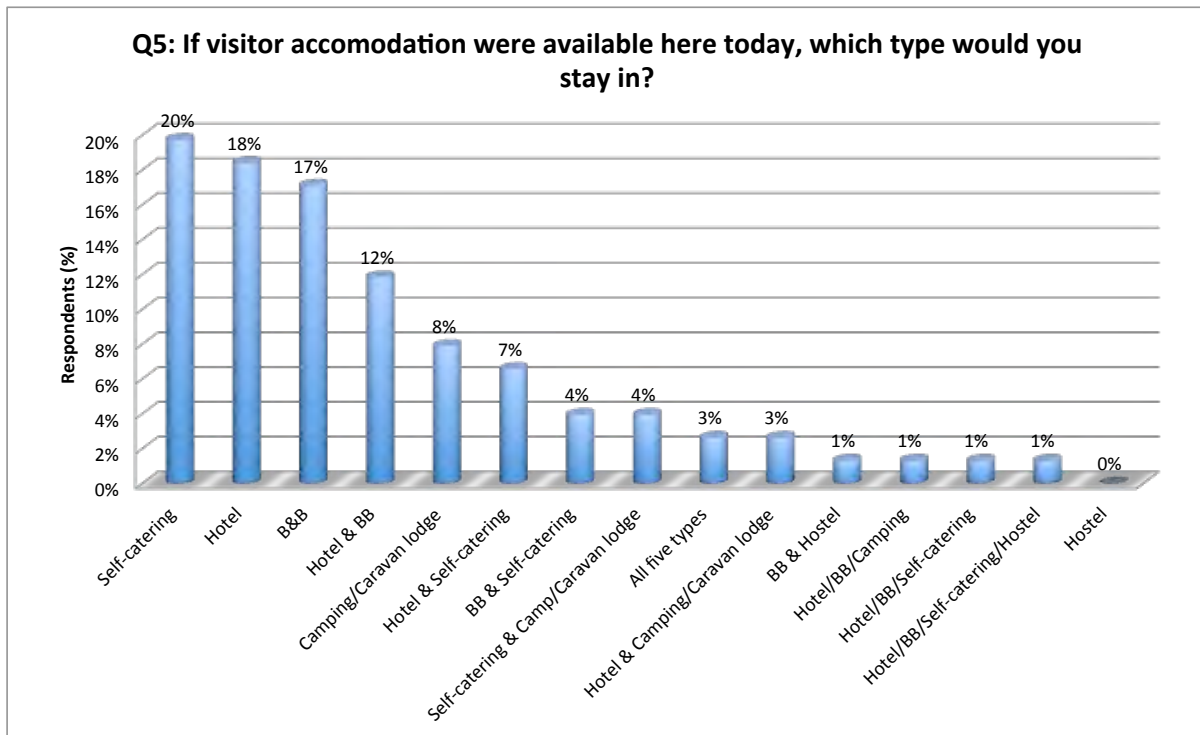


Figure 10. Frequency distribution to Question 5 on the preferred type of visitor accommodation (N=76, without N/A).

4.3.6 Responses to Question 6

In response to Question 6 ("How often, if ever, do you stay in visitor accommodation elsewhere?"), 3% of respondents said they stayed in visitor accommodation extremely often, 16% stated very often, 44% moderately often, 29% slightly often, and 9% not at all often. Therefore, the majority of respondents (91%) use visitor accommodation to some degree throughout the year (Figure 11).

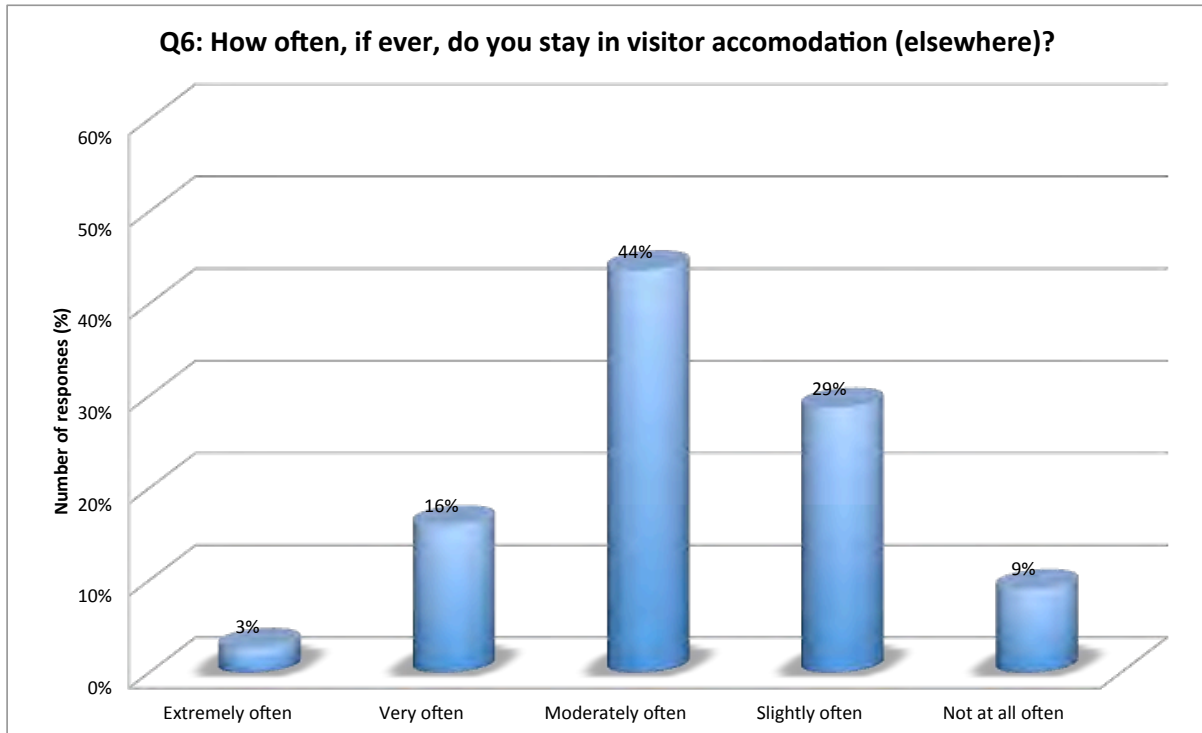


Figure 11. Frequency distribution to Question 5 on the frequency of using visitor accommodation in general (N=188).

4.3.7 Responses to Question 7

Question 7 (*"Is there anything else you would like to share about visitor accommodation in Bolton Abbey?"*) was designed for open-ended and optional comments. Responses were grouped into five categories: environment/landscape, affordability, capacity, social issues, and accommodation type/design (Figure 12).

56 visitors (N=56; i.e. 30% of all respondents) commented on Question 7. Of these comments, 27% were related to concerns about environment and landscape, 25% to capacity concerns in the area, 23% to affordability, and 13% to social issues and to accommodation type/design, respectively.

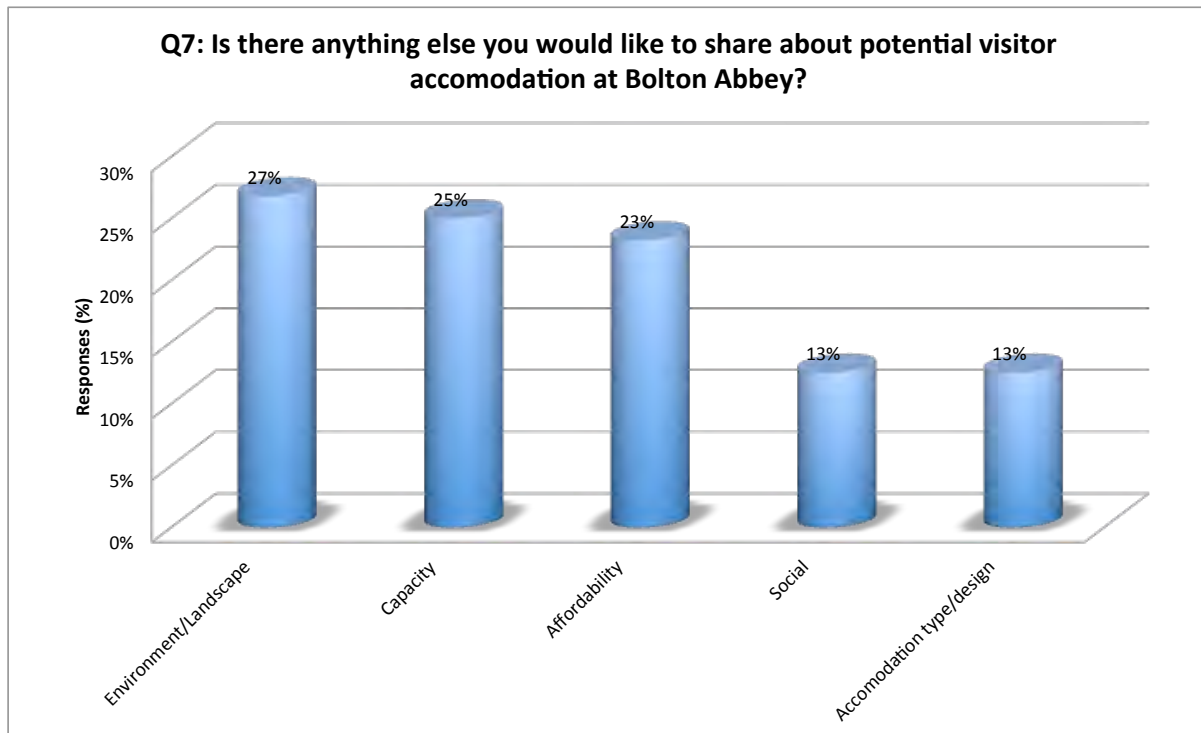


Figure 12. Frequency distribution to Question 7 on open responses, grouped into five categories (N=56).

The comments in these categories can be summarised as:

- **Environment and landscape:** Visitor accommodation should fit in with the environment and must not spoil the landscape or negatively affect the surroundings in any way (100% of all comments in this category were concerned about this topic);
- **Capacity:** There is enough supply of visitor accommodation in the area already, i.e. no need for additional accommodation (71% of comments in this category were concerned about this topic), concerns about increased traffic (14%), village capacity has to be considered (7%), and that it would bring tourism to the area (7%);
- **Affordability:** If there were new visitor accommodation it would need to be moderately priced/ cheaper as the Devonshire Arms hotel was too expensive (100% of all comments in this category);
- **Social issues:** Visitor accommodation should be dog and child-friendly (71% of comments in this category), ability to shop for basics/groceries is important (14%), it is important how residents will be affected (14%);
- **Accommodation type/design:** Accommodation should be of quality standard and tasteful design (43% of comments on this topic); it should have sheltered outdoor seating area and/or garden (29%); more outdoor accommodation / camping sites like Appletreewick preferred (29%).

The full list of comments is included in Appendix 4.

4.4 Detailed survey – relationships between categories

To obtain more detailed data, this section examines the relationships between the attitudes towards potential visitor accommodation (i.e., responses obtained from Question 1) with responses from the other survey questions (i.e., responses obtained from Questions 2 to 7). To make this task more manageable, the initial five attitude categories in Question 1 were aggregated into three categories, i.e. into those who were *overall positive*, *neutral*, *overall negative*, and then compared with the other variables. This required arranging the data in so-called contingency tables. (NB: The *Total %* figures in the right column refer to the total counts per row of the *Grand Total* counts in the right column, e.g. a count of 149 one-day visitors = 79% of 188 total responses). The tables with the frequency counts are included in Appendix 5.

4.4.1 Comparison of responses from Question 1 with Question 2

Comparing the initial responses from Question 1 (“What is your first reaction to potential visitor accommodation in the area?”) with those from Question 2 (“How long are you staying in the Bolton Abbey area?”) indicate that there is an even spread across the categories in Question 1 (initial reaction) and variables (length of stay). The length of stay at Bolton Abbey did not vary with the initial reaction towards accommodation, as expected (Table 2).

Frequency	Q1: Initial reaction to potential visitor accommodation at Bolton Abbey			
	Overall positive	Neutral	Overall negative	Total
Q2: Length of stay				
1 day	79%	81%	71%	79%
2-3 days	12%	7%	12%	10%
1 week	9%	11%	18%	11%
Grand Total	100%	100%	100%	100%

Table 2. Comparison of responses for Questions 1 and 2 (N=188). Length of stay does not vary with initial response to visitor accommodation ($X^2=5.26$, $df=8$, $p>0.05$).

4.4.2 Comparison of responses from Question 1 with Question 3

Comparing the initial responses from Question 1 (“What is your first reaction to potential visitor accommodation in the area?”) with those from Question 3 (“In which type of visitor accommodation are you currently staying?”) suggests that a higher proportion of visitors with a positive or neutral initial reaction did not stay overnight (N/A average of 82%) compared with those with a negative initial reaction (65% with N/A response), Table 3. Of those with a negative reaction, 36% used visitor accommodation and of those with a positive and neutral initial reaction, 22% and 14% used visitor accommodation, respectively.

Frequency	Q1: Initial reaction to potential visitor accommodation at Bolton Abbey			
Q3: Type of current visitor accommodation	Overall positive	Neutral	Overall negative	Total
Hotel	7%	1%	12%	5%
B&B	3%	1%	12%	3%
Self-catering	9%	6%	12%	8%
Hostel	1%	-	-	1%
Camping/Caravan lodge	2%	6%	-	3%
N/A	78%	86%	65%	80%
Grand Total	100%	100%	100%	100%

Table 3. Comparison of responses for Questions 1 and 3 (N=188). Type of accommodation does not vary with initial response to visitor accommodation ($X^2=31.41$, $df=20$, $p>0.05$).

4.4.3 Comparison of responses from Question 1 with Question 4

Comparing the initial responses from Question 1 (“What is your first reaction to potential visitor accommodation in the area?”) with those from Question 4 (“If visitor accommodation were available here today, how likely would you be to stay in it?”) indicated that of those with an overall positive reaction, 51% were overall likely (i.e. *extremely, very, moderately, or slightly likely*) to use visitor accommodation compared to 30% of those with a neutral reaction and 18% of those with a negative reaction (Table 4). **Therefore, those 18% who reacted negatively may use visitor accommodation in the future.**

Frequency	Q1: Initial reaction to potential visitor accommodation at Bolton Abbey			
Q4: Likelihood to stay in visitor accommodation	Overall positive	Neutral	Overall negative	Total
Extremely likely	6%	-	-	3%
Very likely	15%	7%	-	11%
Moderately likely	19%	11%	18%	16%
Slightly likely	12%	11%	-	11%
Not at all likely	49%	70%	82%	60%
Grand Total	100%	100%	100%	100%

Table 4. Comparison of responses for Questions 1 and 4 (N=188). Likelihood of stay does vary slightly with initial response to visitor accommodation ($X^2=22.76$, $df=16$, $p<0.2$). (The Total % figures in the right column refer to the total counts per row of the Grand Total; e.g. a count of 6 responses for ‘overall positive’ who are ‘extremely likely’ =3% of 188 counts, see Appendix 5).

The fraction of interviewees (60% or 112 respondents) who were *not at all likely* to stay in visitor accommodation is largely explained by the 150 day visitors (80%) who live locally (N/A response in Question 3). This gap indicates that some of the N/A respondents in Question 3

would generally be likely to stay overnight if accommodation were available. To quantify this, responses from Question 3 were compared with responses from Question 4 below.

4.4.3.1 Comparison of responses from Question 3 with Question 4

Comparing the initial responses from Question 3 ("In which type of visitor accommodation are you currently staying?") with those from Question 4 ("If visitor accommodation were available here today, how likely would you be to stay in it?") indicated that of those 150 visitors who did not stay overnight (N/A), 30% are generally likely to use visitor accommodation if available, and that 7 respondents (6%) of the 112 respondents actually did use visitor accommodation (despite saying they were 'not at all likely'), (Table 5).

Frequency	Q3: Type of current visitor accommodation						
Q4: Likelihood of stay if available	Hotel	B&B	Self-catering	Hostel	Camping/Carav.	N/A	Total
Extremely likely	-	-	7%	-	17%	3%	3%
Very likely	20%	33%	27%	100%	17%	7%	11%
Moderately likely	40%	33%	40%	-	17%	11%	16%
Slightly likely	10%	17%	13%	-	33%	9%	11%
Not at all likely	30%	17%	13%	-	17%	70%	60%
Grand Total	100%	100%	100%	100%	100%	100%	100%

Table 5. Comparison of responses from Questions 3 and 4 (N=188). Likelihood of stay does vary with type of visitor accommodation ($\chi^2=51.76$, $df=20$, $p<0.05$).

4.4.4 Comparison of responses from Question 1 with Question 5

Because Question 5 allowed for multiple responses, these had to be split into separate variables (Table 6). Those who responded *not at all likely* in Question 4 skipped Question 5 and continued with Question 6.

Frequency	Q1: Initial reaction to potential visitor accommodation at Bolton Abbey			
	Overall positive	Neutral	Overall negative	Total
Q5: Preference for type of visitor accommodation if av.				
Hotel	17%	24%	-	18%
B&B	15%	19%	33%	17%
Self-catering	15%	29%	33%	20%
Camping/Caravan lodge	4%	19%	-	8%
Hotel & B&B	17%	-	-	12%
Hotel & Self-catering	8%	5%	-	7%
Hotel & Camp/Carav.	4%	-	-	3%
B&B & Hostel	2%	-	-	1%
B&B & Self-catering	6%	-	-	4%
Hotel/B&B/Camping	2%	-	-	1%
Hotel/B&B/Self-catering	2%	-	-	1%
Hotel/B&B/Self-catering/Hostel	2%	-	-	1%
Self-catering & Camp/Carav.	4%	5%	-	4%
All five types	2%	-	33%	3%
Grand Total	100%	100%	100%	100%

Table 6. Comparison of responses from Question 1 and 5 (N=76). Preference for type of visitor accommodation does not vary with initial response to visitor accommodation ($\chi^2=52.07$, $df=52$, $p>0.05$).

Comparing the initial responses from Question 1 (*“What is your first reaction to potential visitor accommodation in the area?”*) with those from Question 5 (*“If visitor accommodation were available, which type would you stay in?”*) indicated that those with an overall positive reaction preferred hotels, B&B, and self-catering (65%); 71% of those with a neutral reaction preferred the same types of accommodation, followed by camping/caravan lodges (19%). Those three visitors with an overall negative reaction preferred B&B, self-catering, or all five accommodation types (33%, respectively); i.e. there was no distinct difference between attitudes and preferences.

4.4.5 Comparison of responses from Question 1 with Question 6

Comparing the initial responses from Question 1 (*“What is your first reaction to potential visitor accommodation in the area?”*) with those from Question 6 (*“How often, if ever, do you stay in visitor accommodation elsewhere?”*) indicated that the general frequency for using visitor accommodation is spread relatively equally around the middle section of the table, i.e. **most respondents said they use visitor accommodation moderately often** (average 46%). Those with a negative initial reaction used it slightly more than the other respondents (53%). There was no clear difference between the categories (Table 7).

Frequency	Q1: Initial reaction to potential visitor accommodation at Bolton Abbey			
Q6: General frequency of stay in visitor acc.	Overall positive	Neutral	Overall negative	Grand Total
Extremely often	3%	3%	-	3%
Very often	18%	13%	18%	16%
Moderately often	43%	43%	53%	44%
Slightly often	28%	33%	18%	29%
Not at all often	9%	9%	12%	9%
Grand Total	100%	100%	100%	100%

Table 7. Comparison of responses from Question 1 and 6 (N=188). General frequency of stay in visitor accommodation does not vary with initial response to visitor accommodation ($\chi^2=16.18$, $df=16$, $p>0.05$).

4.4.6 Comparison of responses from Question 1 with Question 7

Comparing the initial responses from Question 1 (“What is your first reaction to potential visitor accommodation in the area?”) with those from Question 7 (“Is there anything else you would like to share about visitor accommodation in Bolton Abbey?”) showed that visitors with a **positive initial reaction towards visitor accommodation provided most of the comments (63%)**. Of these, 31% wanted more affordable accommodation, 23% had concerns about the impact of visitor accommodation on environment and landscape; 20% commented on accommodation type and design, followed by concerns about the area’s capacity to accommodate more visitors/traffic, and social issues (14% and 11%, respectively).

20% of comments came from visitors with a neutral initial reaction and most of these had concerns about the environment and landscape (55%) followed by social issues (27%). Capacity and affordability concerns were mentioned by 9%, respectively.

Visitors with a negative initial reaction provided 18% of the comments; 80% of these with regard to capacity issues and the remainder concerned with environment and landscape (20%), Figure 13.

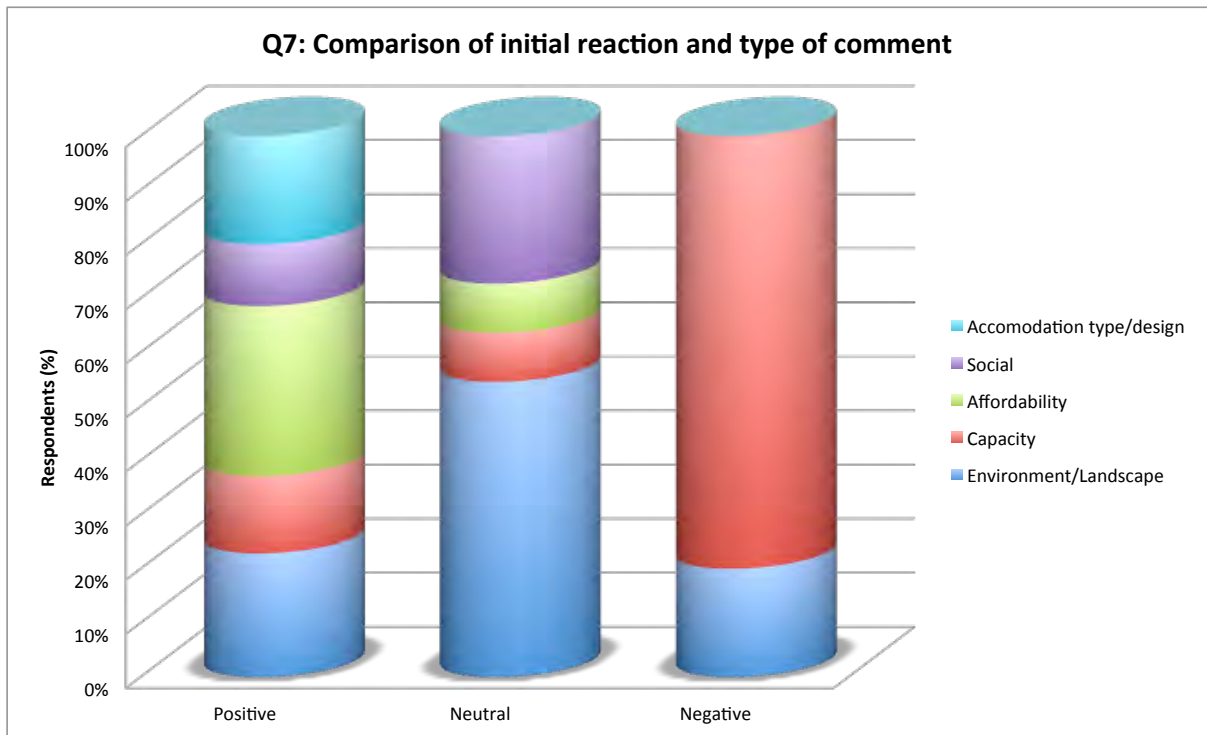


Figure 13. Frequency distribution within Question 7 (N=56). Type of comment varied with initial reaction to visitor accommodation ($\chi^2=30.04$, $df=16$, $p<0.05$).

5. Interpretation of results

5.1 Present supply of visitor accommodation

Within the 5km radius of Bolton Abbey, the existing visitor accommodation consists of 17 types, i.e. 3 hotels/inns, 11 self-catering units, and 3 camping/caravan sites. On an average bed per day basis, there are an estimated **212 permanent beds** (i.e., not accounting for camping/caravan sites), of which hotels/inns supply 54%. However, the majority of these beds (81%) are in the Devonshire Arms hotel, which is in the high-end price bracket. Self-catering units provide 46% of beds. In addition, camping and caravan parks provide approximately 188 non-permanent beds (around 47% of all beds) but are only open for six to seven months per year. In terms of permanent beds per day the existing visitor accommodation is able to cater for just 17% of the average number of daily visitors to Bolton Abbey. **This suggests a substantial shortage of visitor accommodation in the area, in particular in terms of numbers of affordable beds, and their all-year-round availability.**

5.2 Basic survey

Although sampling was not at random but over a week during term time, the results from the initial screening of attitudes towards visitor accommodation suggest that a sample size of 457 is a sufficiently large sample to represent the annual visitor population of 450,000 at Bolton Abbey¹. The proportion of visitors who indicated they would stay overnight was higher during the week (weekly average of 49%) and lower at the weekends (36%). It was presumed that of the 73 weekend visitors who said *No*, about 50% live relatively locally. Based on these preliminary figures it was estimated that the annual demand for visitor accommodation in the area was for about 220,000 people, which is slightly higher than the estimates from the detailed survey.

5.3 Detailed survey results

For the detailed survey, 188 visitors were interviewed face-to-face, over two days. For the comparisons between Questions 1 and 4, there was variation at the 20% level, and at the 5% level between Questions 1 and 7 and Questions 3 and 4; otherwise there was no significant variation within the variables, as would be expected.

¹ Under random sampling, a sample size of N=457 would suggest an error margin of +/- 3% at the 95% level; i.e. that the sample estimate does not differ from the true population of annual visitors.

5.3.1 Overall results

The overall survey results indicated that the **majority of respondents (54%) were in favour of the idea of visitor accommodation at Bolton Abbey; 37% were neutral and only 9% were not in favour.**

Most respondents (79%) came for the day and the remainder stayed for up to a week (11%) or 3 days (10%).

Most visitors (80%) did not stay over night; **almost half of these (48%) said that they live locally**, which supports the assumption from the basic survey. **Those 20% who did use visitor accommodation stayed in a self-catering cottage (8%), hotel (5%), B&B or a camping/caravan site (3% respectively).** Only one person stayed at a hostel.

40% of respondents said that they would stay in visitor accommodation if it were available. This indicates a basic market potential of approximately 180,000 visitors per year who would use this accommodation.

Most respondents would prefer **self-catering, hotel and B&B, which is similar to the present usage pattern.**

91% of respondents said they use visitor accommodation to some degree; therefore, **visitors to Bolton Abbey are generally willing to spend money on overnight stays.**

Most comments in Question 7 were concerned about the sustainability impacts of new visitor accommodation. Key issues included: a) potential impacts on the landscape and environment from additional visitor accommodation at Bolton Abbey and that such a development must respect the character and surroundings of the village (these comments were often made conditional to a positive initial reaction); b) doubts about the need for additional visitor accommodation in the area and concerns about increased road traffic and influx of people; c) if visitor accommodation was available then it should be affordable, dog and child friendly; there should also be an opportunity to buy basics/groceries etc., and d), if visitor accommodation, then it should be of good quality, with outdoor seating areas or garden, and include camping/caravan sites.

5.3.2 Comparison of responses

To obtain more detailed data, responses from different questions were compared. In some cases differences in preferences were identified depending on the initial reaction to visitor accommodation.

As expected, the length of the visit did not vary with the initial reaction towards accommodation. However, of those with a negative reaction towards tourist accommodation, 36% did stay overnight. This shows that on its own, the initial reaction was not a reliable indicator for its future market potential.

A higher proportion of visitors with a positive or neutral initial reaction did not stay overnight; this would suggest that local people may be slightly more in favour towards visitor accommodation than non-locals.

Respondents with a positive reaction were more likely to stay overnight than those with a neutral or negative reaction. **However, 18% of those who reacted negatively to visitor accommodation, and 30% of those who did not stay overnight, said they would use visitor accommodation in the future.**

Of the 60% who were *not at all likely* to use visitor accommodation, at least 65% were locals, 7% stayed with friends or family, and 19% were other day visitors. **Another 6% of respondents did use visitor accommodation despite saying they were 'not at all likely' to use it** (some of these objected to the idea of visitor accommodation in the area which might explain this). This indicates that some of these 'other' day visitors (of whom some may well live relatively locally, e.g. Harrogate or Leeds), and particularly those 6% who used visitor accommodation (despite saying they were unlikely to use it), are potential users of visitor accommodation in the future. **Taking these 6% into account, this would increase the accommodation potential to at least 197,000 visitors per year.** Comparing this in terms of permanent beds currently offered per day, the existing supply of visitor accommodation meets just 39% of this potential demand.

Self-catering, hotel and B&B were the preferred types of accommodation for most respondents and there was no significant variation with the initial response. **It can be assumed therefore that the highest demand is generally for self-catering, hotels and B&B.**

Contrary to what one might have expected, visitors with a **positive** reaction provided the majority of comments and most of these addressed **affordability and environmental issues** before commenting on accommodation type and design. Those with a **neutral** reaction worried most about **environment and landscape**, and those with a **negative**

reaction were mostly concerned about the area's capacity, followed by concerns about the environment and landscape.

6. Conclusion

In conclusion of the above, there is a substantial under-supply of visitor accommodation at Bolton Abbey at present, in particular self-catering cottages, more affordable hotels, and B&Bs. At the same time, there is a considerable level of demand for such accommodation (i.e. currently for 180,000 to 197,000 visitors per year), and the majority of visitors are in favour of such a development. This indicates a strong need for additional, and more diverse, visitor accommodation at Bolton Abbey.

7. Appendix

A1: List of existing visitor accommodation

SELF-CATERING HOLIDAY COTTAGES etc.

Beech House Barns (Langbar, Ilkley, North Yorkshire)

Sleeps 1-7

Little Beck Cottage (Addingham)

Sleeps 4; more information available at www.littlebeckaddingham.co.uk

Daisy Nook (Main Street, Addingham)

Details: www.addinghamcottages.co.uk

Sleeps up to 4/5

Rose Cottage (Nesfield)

Tel: 01943 608020

Sleeps 4

Christmas Cottage (Addingham)

Sleeps 6

Tel: 44 (0) 1244.357716

Little Tree Cottage (Addingham)

Sleeps 3

Tel: 44 (0) 1244.357716

Darkwood Cottage (Addingham)

Sleeps 5

http://www.tripadvisor.co.uk/VacationRentalReview-g528758-d4743037-Darkwood_Cottage-Ilkley_West_Yorkshire_England.html

Delph House (Draughton)

Country cottages converted from a 17th-century farmhouse

Sleeps 10

Grange Farm House (Draughton)

Country cottages converted from a 17th-century farmhouse. Sleeps 6.

Beamsley Project (Beamsley)

Self-catering for the disabled; tel. 01756 710 255

Sleeps 24

Barden Bunkbarn (Barden, Bolton Abbey)

Tel. 01756 720 616

Sleeps 24

HOTELS/PUBS

The Devonshire Arms Country House Hotel (Bolton Abbey)

Former 17th-century coaching Inn with fine dining, luxury health club and spa

40 double rooms and in 11 to 12 of these, extra bed can be added (sleeps 92) (Telcon D.A., Beth, 24 Nov. 14).

The Craven Heifer (Main Street, Addingham)

7 luxury themed rooms; more details: <http://www.thecravenheifer.com/>

The Crown (Main Street, Addingham)

2 En-suite rooms; more details: www.thecrowninnaddingham.co.uk or tel.01943 830278

Sleeps 4/5

CARAVANS & CAMPING

Olicana Caravan Site (High Mill Lane, Addingham, Ilkley LS29 0RD)

Residential & touring caravans & sales. April-October.

Hosting 50 privately owned static caravans with room for tourers. (Estimate: Sleeps 125)

Strid Wood Caravan Club Site (Barden, Bolton Abbey)

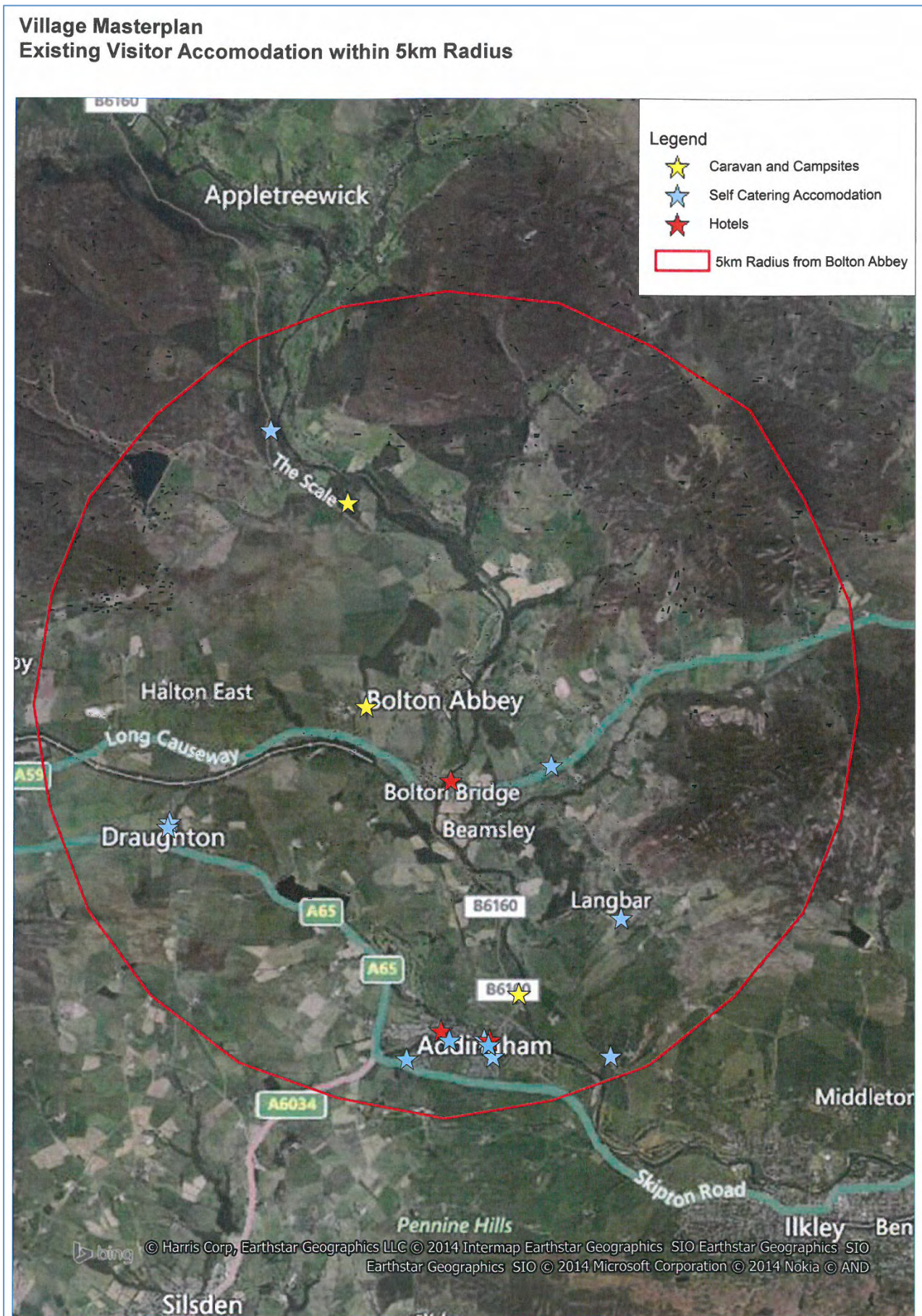
Open to non-members

Total pitches 57 (Est. sleeps 143)

Catgill Campsite (Bolton Abbey)

30 Pitches (Est. 75)

A2: Map of existing visitor accommodation



A3: Questionnaire

Visitor Accommodation Survey – Bolton Abbey

The Bolton Abbey Estate wants to find out if there is a need for visitor accommodation in the area. Your answers to this questionnaire will help us to do this. Do you have a minute of your time to answer a few questions? Thank you.

1. What's your first reaction to potential visitor accommodation in and around B.A.?

Very positive Somewhat positive Neutral Somewhat negative Very negative

2. How long are you staying in the Bolton Abbey area?

1 day 2-3 days Up to 1 week More than a week

3. In which type of visitor accommodation are you currently staying?

Hotel B&B Self-catering Hostel Camping/Caravan N/A

4. If visitor accommodation were available here today, how likely would you be to stay in it?

Extremely likely Very likely Moderately likely Slightly likely Not at all likely

5. If visitor accommodation were available here today, which type would you stay in?
(More than 1 answer allowed)

Hotel B&B Self-catering Hostel Camping/Caravan

6. How often do you currently stay in visitor accommodation (elsewhere)?

Extremely often Very often Moderately often Slightly often Not at all often

7. Is there anything else you would like to share about visitor accommodation at B.A.?

Thank you - your feedback is important.

Frey Consulting

27-Oct-14

A4: Comments to Question 7

Environment/Landscape

- As long as accommodation is in keeping with other buildings & environment (no visual/env. Impact)
- Depends on what accommodation (no high rise or similar)
- Accommodation/building should not spoil area
- If visitor accommodation affected area in any way = negative
- Should be in keeping with surroundings
- You don't want to change the area - has to fit in
- Could spoil the area, also parking costs will go up
- Must not spoil landscape and fit in with village
- Should fit in with background/landscape
- Could become too busy and spoil the area
- As long as not building up the place
- Shouldn't spoil landscape, in-keeping with surroundings
- Don't spoil the area
- Shouldn't spoil landscape, in-keeping with surroundings
- Accommodation must fit in with environment

Capacity

- Village capacity to be considered, you don't want to spoil area
- Already good level of visitor accommodation
- Enough accommodation in area already
- Already enough accommodation in area
- Would be a shame if more VA -enough choices to stay already
- Plenty of accommodation already in area, would spoil it
- No need for additional v.a.
- Would mean too many cars
- Roads already very busy, esp. for cyclists
- Enough accommodation in area - too many people already
- Enough accommodation in area
- Already good mix of v.a. here
- Enough accommodation in area
- Would bring tourism to the area

Affordability

- Devonshire Arms is expensive
- Glamcamping (i.e. cheaper v.a.) would be good
- Price should be right
- Should be affordable (D.A. too expensive) - mid-range acc. Plus camping pods
- As long as competitively priced
- Less expensive (than D.A.) VA needed
- Something basic/less expensive to stay (reasonably priced)
- Should be reasonably priced but of quality
- D.A. etc. very expensive, something mid-range needed
- Needs to be affordable

- Shortage of mid-range v.a; e.g. when friends/family staying
- Not much in mid-range v.a. in Bolton Abbey
- If, then more affordable v.a.

Social

- How residents affected is important
- V.A. should be child-friendly
- Ability to shop for basics (groceries) important
- Should accommodate dogs
- Should be dog friendly
- Should be dog and child friendly
- Must be dog-friendly

Accommodation type/design

- Should have garden/ nice seating area, on-suite bathroom for guests staying
- Should be of quality standard
- As long as it's tasteful and not too expensive
- Should have sheltered outdoor place (gazebo e.g.) if weather is bad
- Should be of quality standard
- Outdoor accommodation preferred (camping etc.)
- More camping sites like Appletreewick

A5: Contingency tables

Count Respondent ID	Q1: Initial reaction			Grand Total
	Overall positive	Neutral	Overall negative	
Q2: Length of visit				
1 day	80	57	12	149
2-3 days	12	5	2	19
1 week	9	8	3	20
Grand Total	101	70	17	188

Count Respondent ID	Q1: Initial reaction			Total
	Overall positive	Neutral	Overall negative	
Q3: Type of visitor acc.				
Hotel	7	1	2	10
BB	3	1	2	6
Self-catering	9	4	2	15
Hostel	1	0	0	1
Camping/Caravanlodge	2	4	0	6
N/A	79	60	11	150
Grand Total	101	70	17	188

Count of Respondent ID	Q1: Initial reaction			Total
	Overall positive	Neutral	Overall negative	
Q4: Likelihood of stay				
Extremely likely	6	0	0	6
Very likely	15	5	0	20
Moderately likely	19	8	3	30
Slightly likely	12	8	0	20
Not at all likely	49	49	14	112
Grand Total	101	70	17	188

Count Respondent ID	Q3: Type of visitor accommodation						
	Hotel	BB	Self-catering	Hostel	Camping /Caravan lodge	N/A	Total
Q4: Likelihood of stay							
Extremely likely				1	1	4	6
Very likely		2	2	4	1	1	10
Moderately likely		4	2	6	1	17	30
Slightly likely		1	1	2	2	14	20
Not at all likely		3	1	2	1	105	112
Grand Total	10	6	15	1	6	150	188

Count Respondent ID	Q1: Initial reaction			Total
	Overall positive	Neutral	Overall negative	
Q5: Preference for type of v.a. if available				
Hotel	9	5		14
BB	8	4	1	13
Self-catering	8	6	1	15
Camping/Caravanlodge	2	4		6
Hotel & BB	9			9
Hotel & Self-catering	4	1		5
Hotel & Camp/Carav	2			2
BB & Hostel	1			1
BB & Self-catering	3			3
Hotel/BB/Camping	1			1
Hotel/BB/Self-catering	1			1
Hotel/BB/Self-catering/Hostel	1			1
Self-catering & Camp/Carav	2	1		3
All five types	1		1	2
Grand Total	52	21	3	76

Count Respondent ID	Q1: Initial reaction			Total
	Overall positive	Neutral	Overall negative	
Q6: Frequency of stay in v.a. elsewh.				
Extremely often	3	2	0	5
Very often	18	9	3	30
Moderately often	43	30	9	82
Slightly often	28	23	3	54
Not at all often	9	6	2	17
Grand Total	101	70	17	188

**Appendix 4: Bolton Abbey Staff
Accommodation Needs Assessment Report**



Staff Accommodation Needs Assessment

BOLTON ABBEY

MARCH 2015

Frey Consulting Ltd



CHATSWORTH

Dr. Sibylle Frey
Frey Consulting Ltd

Saxton
Tadcaster
LS24 9QF
01937-557800
info@freyconsulting.co.uk

Executive Summary

The purpose of this report is to identify staff accommodation needs in Bolton Abbey in support of changes sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

Bolton Abbey is a service village and popular tourist destination that currently attracts around 450,000 visitors per year. CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the Yorkshire Dales National Park), which has led to its "Bolton Abbey Development Strategy" (2014). In order to provide a more attractive all-year-round visitor offer at Bolton Abbey and sustain the high level of services that the settlement provides to local communities, the business plan concerned identified the need for development (including staff accommodation) during the plan period. In particular, CST needs an allocation of land for mixed-use development.

This Staff Accommodation Needs Assessment comprises one of five inter-related pieces of evidence in support of that allocation. It consisted of two main work streams:

- A survey of managers at CST's work centres at Bolton Abbey: The Estate Office and the three hospitality centres - the Devonshire Arms Hotel, Devonshire Fell Hotel, and the Cavendish Pavilion. The survey included questions about staff, travel to work patterns and staff recruitment issues; it was carried out in early 2015.
- A review of average salaries for key operational staff relative to the current housing market around Bolton Abbey.

The key results from the survey of managers were as follows:

1. The CST runs a strong and varied business comprising both hospitality (hotels and restaurants) and traditional estate management. A flexible and reliable workforce is vital in the hospitality industry, especially during peak-times and periods of ad-hoc demands; similarly, positions such as gamekeepers and foresters need to be able to respond to unforeseen circumstances and emergencies.
2. The CST has 156 employees and provides permanent staff accommodation (houses and flats) for 20 employees and 26 temporary accommodation (rooms) for staff accommodation. However, the temporary accommodation is already filled before the start of the peak season.
3. All four work-centres face problems in recruiting suitable staff. For the Estate Office, difficult positions to fill are predominantly **forestry workers, apprentices, temporary staff and trainees**; for the other centres difficult roles to fill are **chefs** and **servicing staff**. Nevertheless, the problems seems more acute for the hospitality

work-centres than the Estate Office since the former have a higher demand for temporary/seasonal staff.

4. These positions are difficult to fill due to the isolated rural location, lack of public transport, need for a car and high property prices. Some hospitality centres rely on hiring local staff who are not entirely suitable for meeting CST's business needs. An inability to recruit the best candidate at the Estate Office may lead to positions not being filled at all. This poses an **economic risk** for CST, especially at peak times.
5. **Lack of accommodation for staff was seen as the main barrier for recruiting the right staff. Providing additional accommodation for staff was seen as a major factor to ease the problem of staff shortages and for dealing with out-of hours call outs and emergencies.**
6. In terms of **travel to work**, 33% to 45% of staff at the hospitality centres **travel an average of 21.4km to work each day** (17km to 61 km, one-way). This is significantly longer than the national average of 15km. Almost 80% of these employees are kitchen and servicing staff - **in particular chefs, bakers, waiters, housekeepers and (night) porters**. Only 13% of staff travel less than 5km.
7. At the Estate Office 29% of staff travel less than 5km to work. Still, **22% of employees live more than 15km away**; of these, 10 staff members are housekeepers at the Hall, gardeners, shop assistants and car park attendants. **Therefore, almost a quarter (24%) of all CST staff in hospitality and maintenance positions have travel distances significantly longer than the national average. This suggests challenges to recruit suitable staff from the vicinity, especially during peak times and when work-centres have an ad-hoc demand.**
8. 90% of staff from all work-centres travel to work by car - underlining the **dependence on private transport** for staff that live further away.
9. **Shared houses and flats** were the preferred option for staff accommodation by the managers of the hospitality work-centres, and houses or flats as the preferred option by managers of the Estate Office, if it could be made available.
10. It is considered that additional staff accommodation would have socio-economic benefits beyond meeting CST's business needs, i.e. by helping to reverse the trend of young workers leaving the area, support the village's services, and create a more diverse community.
11. It is also considered that the provision of accommodation for staff would reduce travel to work distances and in combination with the installation of a biomass boiler for district heating in the planned Bolton Abbey development scheme, could help to reduce CST's carbon footprint.

The key results from the review of staff salaries relative to the current housing market around Bolton Abbey were as follows:

12. For the majority of hospitality and ground maintenance staff, typical full time salaries start below £15,000, with median salaries below £18,000 per year. This compares with an **average asking price of around £394,000 for a property in the Bolton Abbey area**¹. The nearest properties for sale were 5km outside Bolton Abbey and only two properties were offered below £150,000. Without a significant deposit it is therefore virtually impossible for most staff to buy a property in the vicinity, and especially for **young workers and first-time buyers**.
13. Although renting would be an option, especially for seasonal staff and apprentices/students, **there is a very limited amount of rental property in the lower price bracket** (only one flat was offered below £500 pcm). For incomes between £15,000 to £18,000 per year before tax, an average rent of £536 pcm for a 1-bed property, would mean 39% to 46% of salary per month would be spent on rent alone - excluding council tax, utility bills, transport and other living costs. This would comprise a disproportionate amount of disposable income being spent on rent.
14. Sharing a property on the open market currently equates to around £296 per person per month (ppm) for a 2-bed and £244 ppm for a 3-bed property. As such, sharing a property may be the only viable option for some staff (especially temporary staff). **However, there were very few 2- and 3-bed properties available in the area at the time of writing, and not all landlords may allow sharing.**

The main findings of this report are therefore:

- CST runs a strong and varied business comprising both hospitality and estate management;
- A flexible and reliable workforce in the hospitality industry is vital, especially during peak times and periods of ad-hoc demands. Similarly, gamekeepers, foresters and others need to be able to respond to unforeseen circumstances and emergencies;
- CST Yorkshire currently provides permanent and temporary accommodation for 29% of its staff;
- CST's four work-centres have problems in recruiting staff (especially foresters, apprentices, temporary staff, chefs and other hospitality staff) due to the isolated rural location of the work-centres, lack of public transport, need for a car, and high property prices. This leads to the recruitment of unsuitable staff or situations where positions remain vacant, and poses a significant economic risk to CST as a business;

¹ February 2015 estimate by Zoopla Property Group

- 31% of all CST staff currently travel on average 23km to work each day, 8km above the national average; 90% of all CST staff travel to work by car;
- The average house price in the Bolton Abbey area is around £394,000 and is therefore entirely unaffordable for CST staff who are employed in hospitality and ground maintenance roles with average salaries between £15,000 to 18,000 per year;
- There is a very limited amount of affordable rental property in the area (shared or otherwise) and not all landlords facilitate sharing;
- The CST managers consider that the answer to the foregoing problems is the provision of some dedicated accommodation for staff (i.e. predominantly shared houses and flats);
- The benefits of dedicated accommodation for CST staff would include: reduced business risk for CST and more stability, reduced risk of young workers leaving the area, greater support for services and facilities in Bolton Abbey, creation of a more diverse community in Bolton Abbey.

The above findings therefore demonstrate a strong need for additional accommodation for staff at Bolton Abbey in order for CST to run an economically sustainable business.

Contents

EXECUTIVE SUMMARY.....	3
1. INTRODUCTION	9
2. CONTEXT	10
2.1 LANDOWNER	10
2.2 BOLTON ABBEY AND RELATED AREA	10
2.3 THE NEED FOR DEVELOPMENT	14
2.4 DEVELOPMENT PROPOSAL.....	14
2.5 PLANNING POLICY.....	17
2.6 BENEFITS.....	18
3. METHODOLOGY AND APPROACH	19
3.1. SURVEY OF CST MANAGERS	19
3.2. REVIEW OF AVERAGE SALARIES OF KEY STAFF AND THE CURRENT LOCAL HOUSING MARKET ..	19
4. RESULTS	20
4.1. INFORMATION ON WORK-CENTRES AND STAFF ACCOMMODATION	20
4.2 INFORMATION ON TRAVEL TO WORK	20
4.2.1 Devonshire Arms Hotel.....	20
4.2.2 Devonshire Fell Hotel	21
4.2.3 Cavendish Pavilion.....	21
4.2.4 Estate Office	21
4.3 MANAGER INTERVIEWS	23
4.3.1 Responses to Question 1.....	23
4.3.2 Responses to Question 2.....	24
4.3.3 Responses to Question 3.....	24
4.3.4 Responses to Question 4.....	25
4.3.5 Responses to Question 5.....	25
4.3.6 Responses to Question 6.....	25
4.3.6 Responses to Question 7.....	26
4.3.7 Responses to Question 8.....	26
4.3 AVERAGE SALARIES OF KEY STAFF AND THE CURRENT HOUSING MARKET AROUND BOLTON ABBAY.....	27
4.4 THE HOUSING MARKET AROUND BOLTON ABBEY	28
5. INTERPRETATION OF RESULTS	32
5.1 RESULTS FROM THE MANAGER SURVEY.....	32
5.1.1 Work-centres	32
5.1.2 Travel to work.....	32

5.1.3 Difficulties of hiring staff in key positions	33
5.1.4 The importance of staff accommodation for Estate operations	34
5.1.5 Typical salaries for operations staff compared to the local housing market	34
6. CONCLUSION	36
7. APPENDIX.....	37
A1: STAFF INFORMATION (ANONYMOUS)	37
A2: SURVEY QUESTIONS.....	40
A3: SALARY EXAMPLES.....	43

1. Introduction

The purpose of this report is to provide evidence on staff accommodation needs in support of changes sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

In particular, CST is seeking an allocation of land for mixed-use development. As such, this report comprises one of the following five inter-related pieces of evidence in support of that proposed allocation as follows:

- Visitor Accommodation Needs Assessment of Bolton Abbey and surrounds
- Staff Accommodation Needs Assessment of Bolton Abbey and surrounds
- Heritage Assessment of Bolton Abbey Village and surrounds
- Landscape Appraisal of Bolton Abbey Village and surrounds
- Bolton Abbey Village Masterplan (including land at Bolton Abbey Station).

This report summarises the key results from the **Staff Accommodation Needs Assessment** and addresses the following:

- Context (chapter provided by CST);
- Methodology for assessment of staff accommodation needs;
- Results for the above;
- Interpretation of the above, and
- Conclusion.

This report has been prepared and written by Dr Sibylle Frey of Frey Consulting Ltd. With more than 17 years experience in environmental research and consultancy, Frey Consulting Ltd works with large and small businesses to improve the sustainability performance of their organization, and its products and services.

2. Context

2.1 Landowner

Chatsworth Settlement Trustees (CST) is a business that owns and manages property on behalf of the Cavendish family, which has owned land between Bolton Bridge and Barden Bridge as well as the surrounding countryside (c.10,000 hectares) since 1753. CST is part of the Devonshire Group of companies and is committed to sustainable development.

CST derives incomes from rents, trading (e.g. admissions), high quality food/retail outlets (e.g. the Farm Shop at Chatsworth) and other income streams. It thereby funds a range of high quality environmental management activities (e.g. woodland management, architectural conservation). As such, CST takes a responsible, long term and pro-active view of conservation whilst ensuring that projects provide a commercial return

2.2 Bolton Abbey and related area

Bolton Abbey comprises three settlements: Bolton Abbey Village; Bolton Bridge; Bolton Abbey Station. It is situated on high ground east of the River Wharfe, less than a mile north of the junction of the A64 and the B6160 (Figure 1). It therefore acts as the southern gateway to the Yorkshire Dales National Park (YDNP) and attracts 450,000 visitors per year.

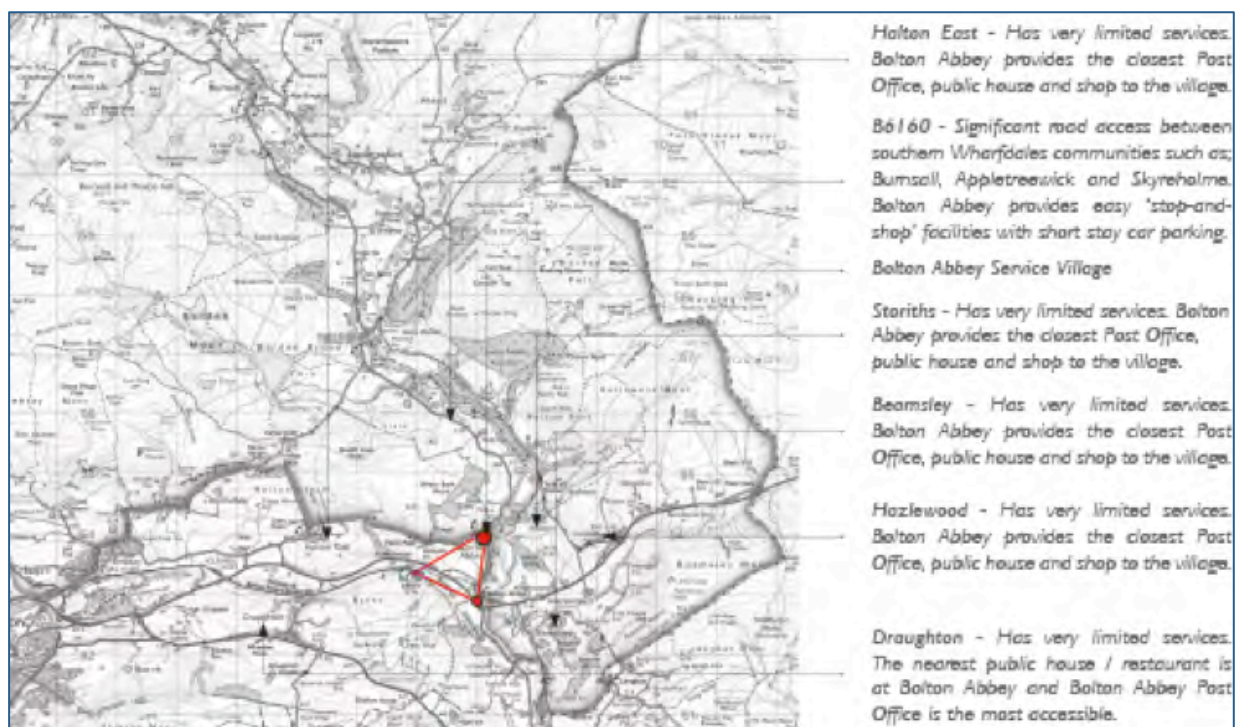


Figure 1. Location plan showing Bolton Abbey and related settlements

The settlement at Bolton Abbey dates back to at least the twelfth century. The Augustinian Abbey was founded in 1154, and the Tithe Barn dates back to 1530. The popularity of Bolton Abbey as a visitor attraction began with the publication of an illustrated guidebook entitled *Fourteen Views in Lithography of Bolton Abbey* by J Scarlett Davis in 1829. This led to the Strid and the Priory ruins attracting Turner, Wordsworth and other Romantics, which in turn led to the development of Bolton Abbey Station and the Devonshire Arms Hotel. The quality and importance of the area is recognised by a high number of planning designations (Figure 2).

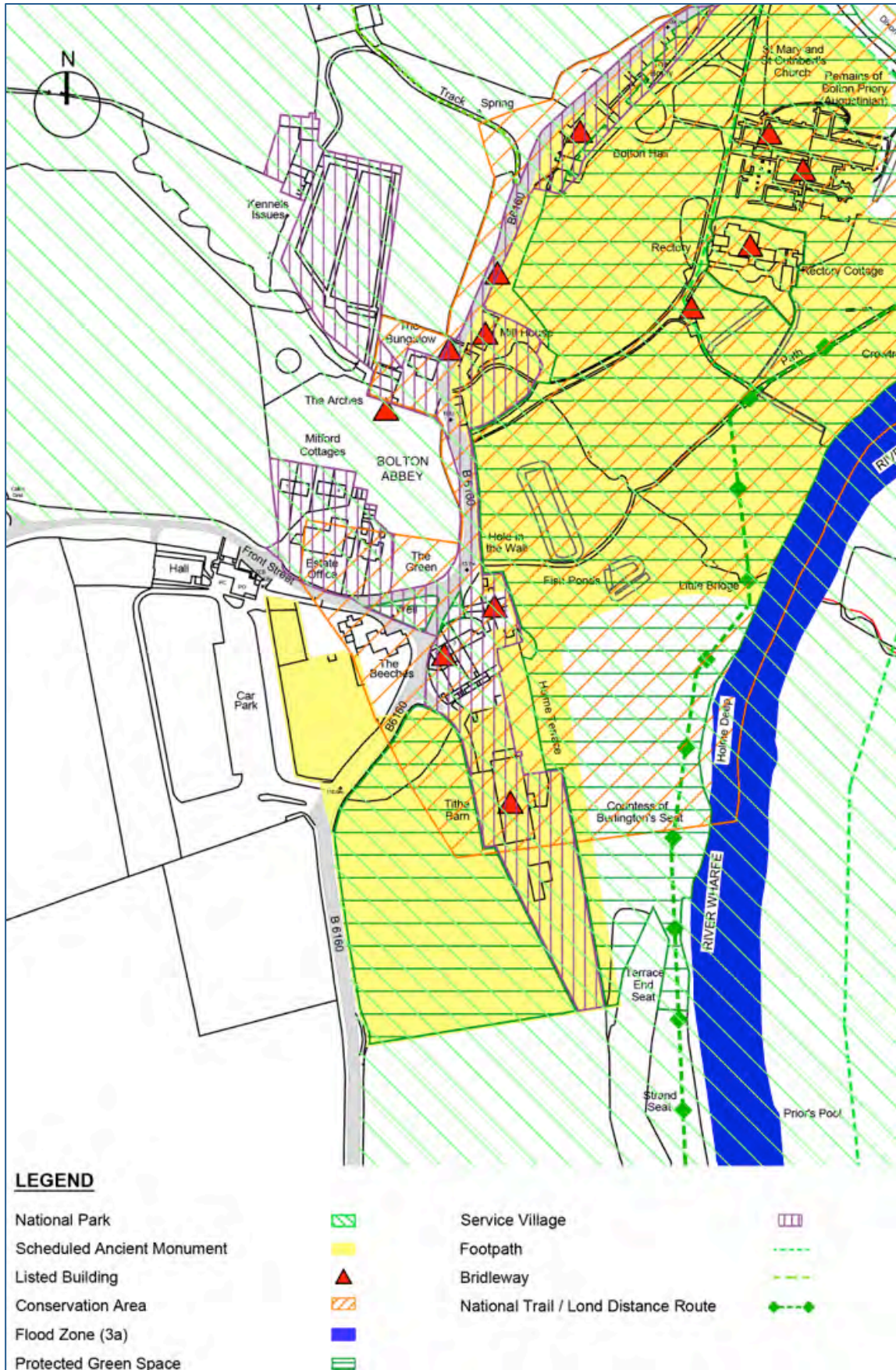


Figure 2. Plan showing planning constraints, Bolton Abbey Village (all land owned by CST)

The Bolton Abbey Heritage Landscape Management Plan provides for open access for visitors, and CST funds the high level of environmental management for the related area (e.g. woodland management, architectural conservation).

The built settlement is attractive, with a mixture of historic buildings and traditional stone houses surrounded by semi-improved pasture. It is therefore a popular place to live. Bolton Abbey contains 58 properties, 39 of which comprise dwelling units (seven of these are occupied by existing or former estate workers on reduced rents).

Bolton Abbey makes an important economic contribution to the local area as follows:

- Employment: CST has 159 full-time equivalent (FTE) staff at the Estate Office, the Devonshire Arms Hotel, the Cavendish Pavilion and the Devonshire Fell Hotel
- Commercial premises owned by CST: farms; hotel; estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; tea rooms; farm shop; café/restaurant.
- Visitor economy: 450,000 visitors to Bolton Abbey per year (though there is only one 4 star hotel and very few B&Bs/self-catering units nearby to accommodate them).

Bolton Abbey also provides a very high level of services for a rural area as follows:

- Bolton Abbey Village: post office; bus stop; public toilets; village hall; church; car park; coach park; book shop; tea room/café; delicatessen; café/restaurant; gift shop; tourist information; litter and recycling bins;
- Bolton Bridge: bus stop; garage; hotel; tea shop; gym/health spa; farm shop; community cricket club
- Bolton Abbey Station: community railway; café.

The village is “active” due to: major employment within the village; the Estate office’s role as a central ‘hub’ for the Estate; the high proportion of people living and working locally.

Bolton Abbey acts as the main “service village” for the related area of Appletreewick, Barden, Beamsley, Draughton, Halton East, Hazlewood, Storiths and Skyreholme (see Figure 1 above). These settlements will accommodate further development over the next fifteen years (i.e. there is a need to support the role of Bolton Abbey as the service village for the area).

As such, Bolton Abbey is not just a visitor attraction with some houses but a genuine service village in the Southern Dales area, which CST considers, can and should accommodate more development.

2.3 The need for development

CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the YDNP), which has led to its "Bolton Abbey Development Strategy" (2014). This business plan identifies the main business strengths at Bolton Abbey (e.g. heritage assets, natural features and landscape quality), but also identifies issues for CST to address:

- A lack of sense of arrival (and departure) for visitors
- Tourism is dependent on weather and school holidays
- Trips tend to be brief, with little or no secondary spend
- Major planning constraints severely limit opportunities for growth
- High maintenance costs
- Services at risk (e.g. loss-making Post Office)
- Staff cannot afford local house prices (i.e. long journeys to work)
- Very limited visitor accommodation in the area in terms of supply and choice
- Bolton Abbey Village currently provides a limited and low value offer to visitors.

In order to address these issues, the business plan identifies the need for:

(...) the enhancement of Bolton Abbey (within CDC) to provide a new village green, pub, farm shop, play area, play barn (i.e. wet weather facility)...staff/visitor/market accommodation, entry sign (welcome to Bolton Abbey), link to Bolton Abbey Station...and visitor centre/cycle hub.

2.4 Development proposal

In view of the foregoing, CST has considered several potential development sites in the area (e.g. the Cavendish pavilion) and identified one (3.9 ha) in Bolton Abbey village, which currently contains a mix of uses (housing, retail, parking; open countryside). Most of the site (3.2 ha) is already in use (for housing/parking/retail) and none of it is subject to flooding. CST owns all of the land (except highways) shown in the photograph below (Figure 3).



Figure 3. Proposed allocation site (3.9 ha) for mixed use development, Bolton Abbey

In seeking a site allocation in the emerging CDLP, CST has liaised informally with CDC, undertaken the five related pieces of work identified above (see Section 1.1) and sought to design an indicative scheme, which will:

- Create a special place and gateway to the Dales with a real sense of arrival
- Provide for high quality design, optimal layout and access arrangements (with planting and use of local stone as appropriate)
- Respect the scale and character of the village and its historic setting (i.e. avoid development in the Bolton Priory Scheduled Ancient Monument area and complement both the Bolton Abbey Village Conservation Area and YDNP)
- Fit with the existing “dispersed” built form and low density of the settlement
- Have regard to (and implement) extant and emerging planning policy
- Reflect local precedents (e.g. Arncliffe village green, estate housing at Harewood and Ripley, Hesketh Park Farm, the Yorkshire Dales Ice Cream Parlour at Halton East)
- Reflect local comparables (e.g. CST developments granted planning permission by CDC or YDNPA such as: the Village Shop/Post Office, the Estate Office extension, the Mitford Cottages, the Cavendish Pavilion extension, the Devonshire Spa barn)
- Reflect other comparables (e.g. CST developments granted planning permission by the Peak District NPA such as: Chatsworth Farm Shop, Chatsworth Adventure Play Area, Chatsworth Renewable Energy Centre, Devonshire Arms at Pilsley).

In doing so, CST asked ArcHeritage and Gillespies to do “interim” heritage assessments and landscape appraisals so as to gauge the capacity of the site to accommodate change. Amongst other things this established the importance/sensitivity of: some medieval earthworks beyond the western edge of the SAM area; views from high ground (in the YDNP) to the north of the site; views from the south and east (in the YDNP).

This led to CST considering a series of development options for the site, and in particular:

- Adjusting the indicative layout/footprint of the proposed buildings to retain the medieval earthworks feature immediately beyond the west of the SAM area
- Significantly increasing the amount of planting (trees, hedges) to screen development from sensitive views to the north and enhance the parkland feel of the wider landscape
- Removing a sizeable area of prominent ground at the southern end of the site (and thereby reducing the overall size of the site).

As such, CST has undertaken a comprehensive masterplanning process informed by specialist input which has resulted in its indicative scheme for the “village green site” (Figure 4).

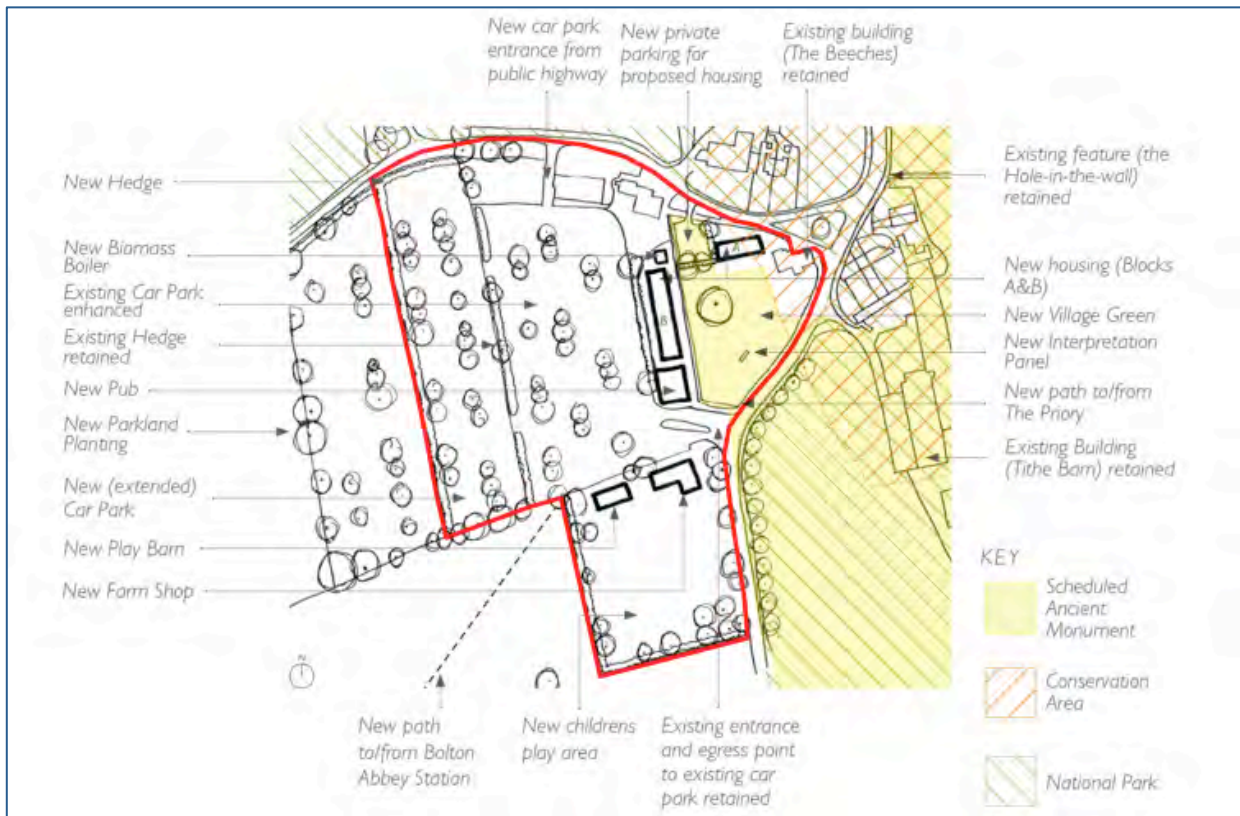


Figure 4. Proposed Village Green Scheme, Bolton Abbey

2.5 Planning Policy

The planning context for the site is unusual. Most of the village is in the YDNP but the site itself is in Craven District. Whilst the Craven District Council (Outside the Yorkshire Dales) Local Plan (CDLP) 1999 provides no designations to negate development of the site, the draft YDLP Local Plan 2014 includes Bolton Abbey as a “service village” (i.e. capable of accommodating growth).

As such, CST considers that the new CDLP should recognise the spatial planning role of Bolton Abbey as a focus for growth and allocate the site for masterplan-led growth so as to :

- Provide for suitable development
- Retain services in the village
- Allow CST to meet its business needs
- Ensure consistency with key planning documents (e.g. CDLP’s strategic objectives, the emerging YDNP Local Plan, the National Planning Policy Framework 2012, the National Planning Policy Practice Guidance 2014, the key findings of the Taylor Review of Rural Economy and Affordable Housing 2008).

CST therefore welcomes references to Bolton Abbey in CDC’s ‘Pre-Publication’ draft CDLP 2014 for consultation but would like the CDLP to recognise the service village role of Bolton

Abbey and allocate the proposed village green site for mixed use development. CST considers that a failure to do so will risk the loss of important services to the village and the communities it serves, and also engender uncertainty for investment in the area.

2.6 Benefits

CST considers that the main benefits of the intended scheme include:

- New village green to create attractive focal point/feature of interest in settlement and provide public open greenspace
- New interpretation panel to enhance awareness of the former Barnyard (working yard for Tithe Barn) within the medieval Abbey precinct
- New biomass boiler to provide district heating scheme for development
- New dwelling units to provide high quality accommodation for visitors/staff/others
- New planting in existing and extended car park to improve visual amenity, integrate development with surrounding parkland and minimise impact to wider landscape
- New pub to consolidate local community and enhance sense of arrival/departure for visitors
- New play area to provide learning-through-play facilities for mixed age groups and soften the approach into the village along the B6160
- New play barn to comprise the only children's wet weather play facility in the Dales area
- New farm shop to sell local/organic/estate produce (as with the Farm Shop at Chatsworth)
- New path to link village to/from the steam railway at Bolton Abbey Station
- New path to increase visibility splay by B6160 and improve pedestrian safety/access to/from The Priory
- Scope for wider visibility splays to improve road safety for visitors and pedestrians by "The Hole-in the-wall"
- Scope for more people to live in the village
- Scope to retain more staff and reduce carbon footprint (of staff journeys to work)
- Scope for village to meet the social and economic needs of the local and wider community
- Creation of at least 27 extra full-time equivalent high quality/high value jobs.

As such, CST considers that the comprehensive redevelopment of the site is needed to sustain the role of Bolton Abbey village as both a major tourist destination and a service village for the local area in the long term, and that the site should therefore be allocated accordingly.

3. Methodology and approach

3.1. Survey of CST managers

To assess whether there is a need for staff accommodation at Bolton Abbey village, data on employees was obtained from CST's Human Resources Department. Six managers at the Devonshire Arms Hotel, Devonshire Fell Hotel, Cavendish Pavilion and the Estate Office were then asked to provide information on their employees' travel to work origins, travel to work modes and issues regarding the recruitment or retention of staff. Travel distances were estimated from staff's origin of travel to work using Google maps. The (anonymized) staff information is included in Appendix A1; the related questionnaire in Appendix A2. The surveys were sent out electronically and returned by email and post in the second week of January 2015. The responses were evaluated and followed up by telephone calls between January and February 2015.

3.2. Review of average salaries of key staff and the current local housing market

To underpin the findings from the manager interviews, the average salaries of key hospitality and maintenance staff were established using publicly available data such as job advertisements between the months of December and January, and data from Payscale Human Capital (<http://www.payscale.com>) on UK average earnings using real-time salary data. In addition, the current housing and rental market within a 5km radius of Bolton Abbey was researched using information from the Zoopla Property Group (<http://www.zoopla.co.uk>). Average salary information and sources are included in Appendix A3 and maps on properties near Bolton Abbey for sale and rent in Appendix A4.

4. Results

This section presents the summarised results based on:

1. Information provided by CST on work centre staff, staff accommodation and origins of travel to work;
2. Manager interviews at the four work-centres (Devonshire Arms Hotel, Devonshire Fell Hotel, Cavendish Pavilion and Estate Office);
3. Assessment of housing affordability based on average salaries for key operational staff and the current housing market around Bolton Abbey.

4.1. Information on work-centres and staff accommodation

At present there are 156 staff in the four work-centres at Bolton Abbey (Devonshire Arms Hotel, Devonshire Fell Hotel, Cavendish Pavilion and Estate Office). These include fulltime and part-time/occasional staff. The different work-centres have different functions. The Devonshire Arms Hotel, Devonshire Fell Hotel and Cavendish Pavilion are hospitality businesses (i.e., two hotels and one bistro/café) and the Estate Office is responsible for managing the real estate.

At the Estate Office approximately 44% of positions are managerial/administrative and 56% are operational (e.g. forestry, game-keeping, maintenance of grounds and rivers). Many of the positions are permanent and many employees have been with the estate for a long time. 20 employees (32%) of the staff at the Estate Office live in permanent staff accommodation.

Due to the nature of the business the hospitality centres rely significantly on part-time and seasonal staff during peak times. Here, approximately 16% of staff are in managerial / administrative roles, and 84% are kitchen and servicing staff (including housekeepers, porters etc., Appendix A1). Of the 26 rooms currently available as temporary staff accommodation, hospitality staff already fills 21 rooms².

4.2 Information on travel to work

4.2.1 Devonshire Arms Hotel

Of the 58 employees at the Devonshire Arms Hotel, 14% travel less than 5 km to work (one-way); 50% travel between 5km and 10km, 3% between 10km and 15km, and 33% travel more than 15km (between 22km and 61 km, see Figure 5). Of those travelling more than 15km, 12 are kitchen and servicing staff (3 chefs, 7 waiters, porter and beautician).

² Telephone conversation with HR, 2 February 2015

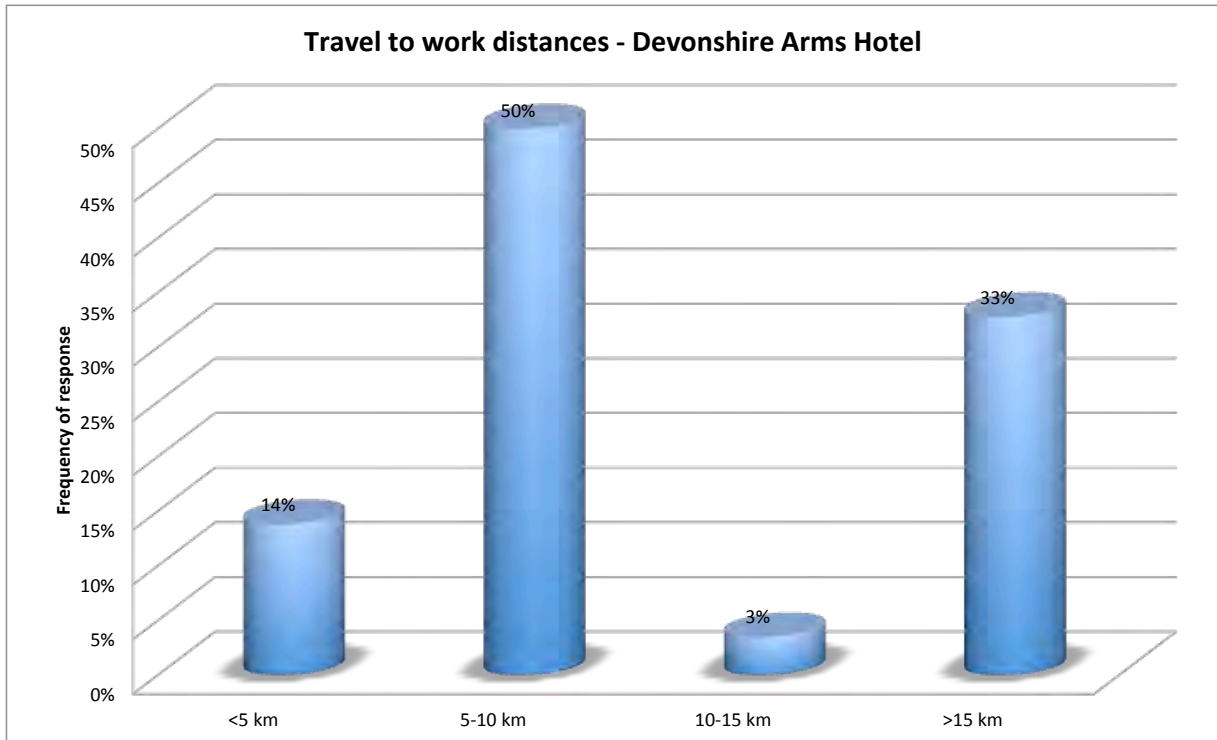


Figure 5: Travel to work distances, Devonshire Arms Hotel

4.2.2 Devonshire Fell Hotel

At the Devonshire Fell Hotel, of the 15 member of staff, 20% travel less than 5km to work, 27% travel between 5km and 10km, 13% between 10km and 15km, and 40% have travel to work distances above 15km (between 17.9km to 31.1km; Figure 6). Of those travelling more than 15km, all are in operational roles (servicing, housekeepers and night porters).

4.2.3 Cavendish Pavilion

Of the 20 member staff at the Cavendish Pavilion, 5% travel less than 5km to work, 10% travel between 5km to 10km, 40% travel 10km to 15km, and 45% travel more than 15km (between 25.9 to 25km; Figure 7). Of those travelling more than 15km, all are in operational roles (assistant manager, head and commis chefs, baker, and servicing staff).

4.2.4 Estate Office

Of the 63 member of staff at the Estate Office, 29% travel less than 5km to work, 33% travel 5km to 10km, 16% travel 10km to 15km, and 22% travel more than 15km (between 17km and 68km; Figure 8). Of those travelling more than 15km, 10 staff are in operational roles including housekeepers (at the Hall), gardeners, shop assistants and car park attendants.

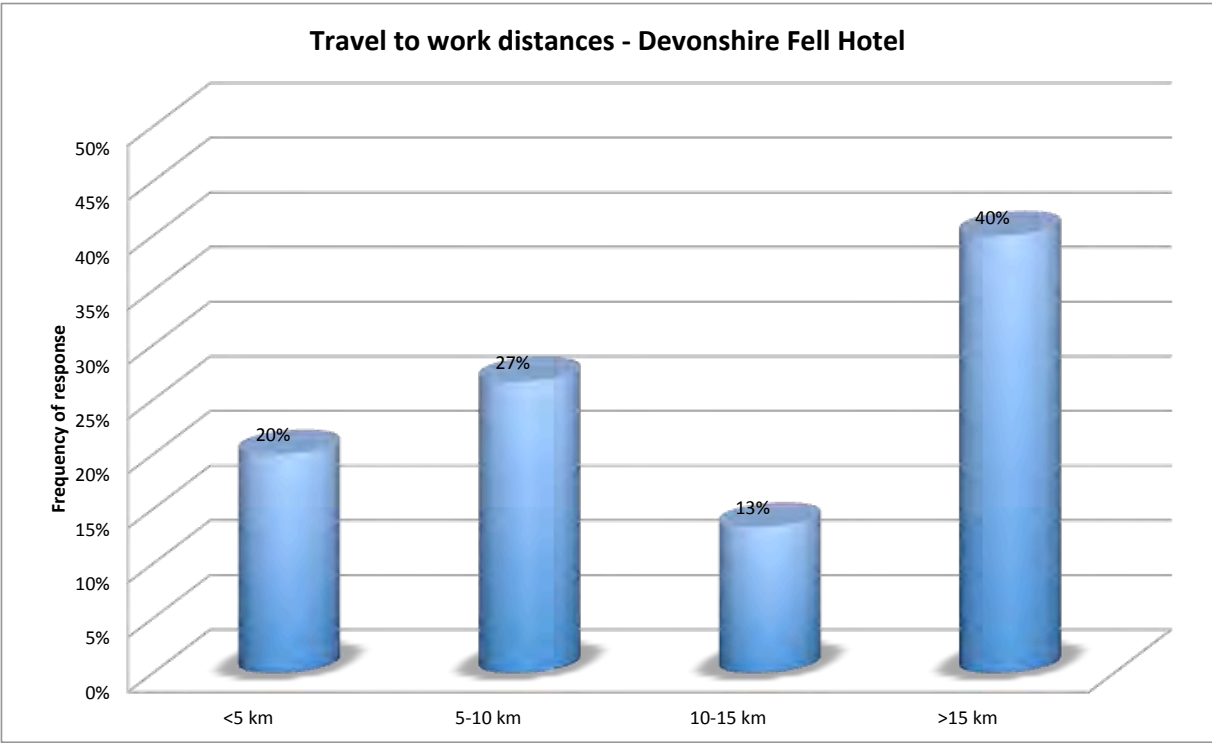


Figure 6: Travel to work distances, Devonshire Fell Hotel

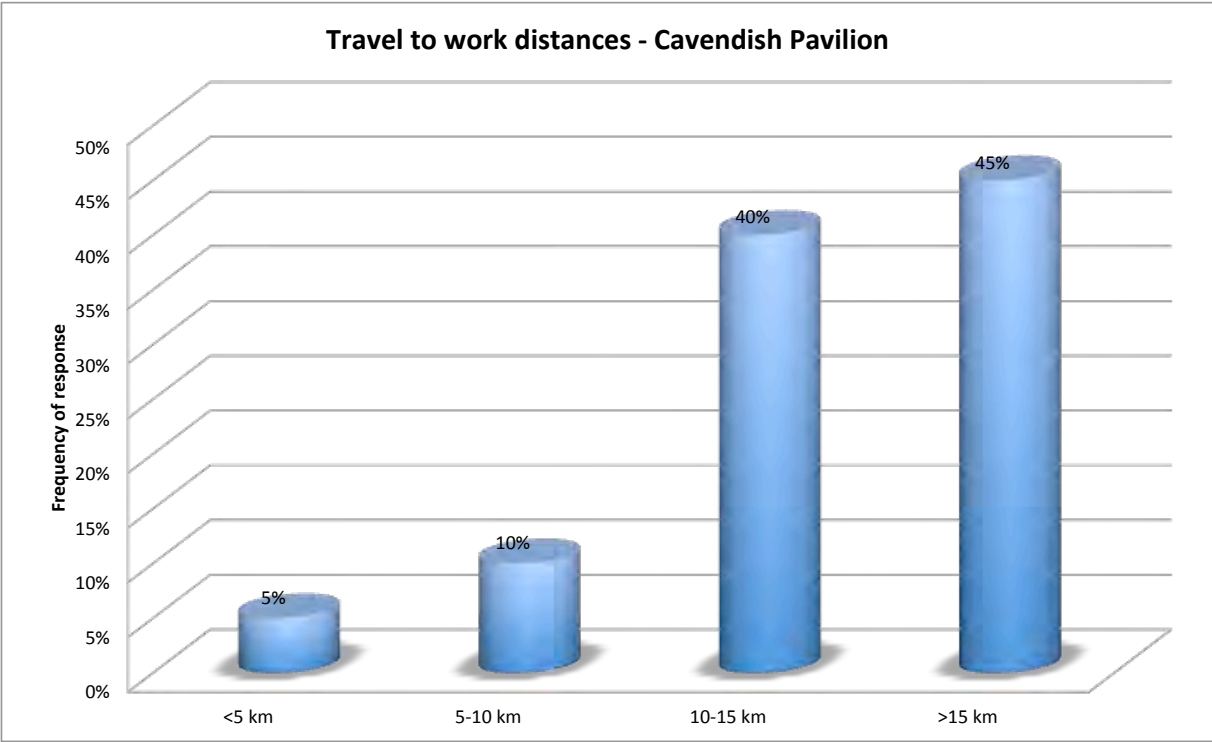


Figure 7: Travel to work distances, Cavendish Pavilion

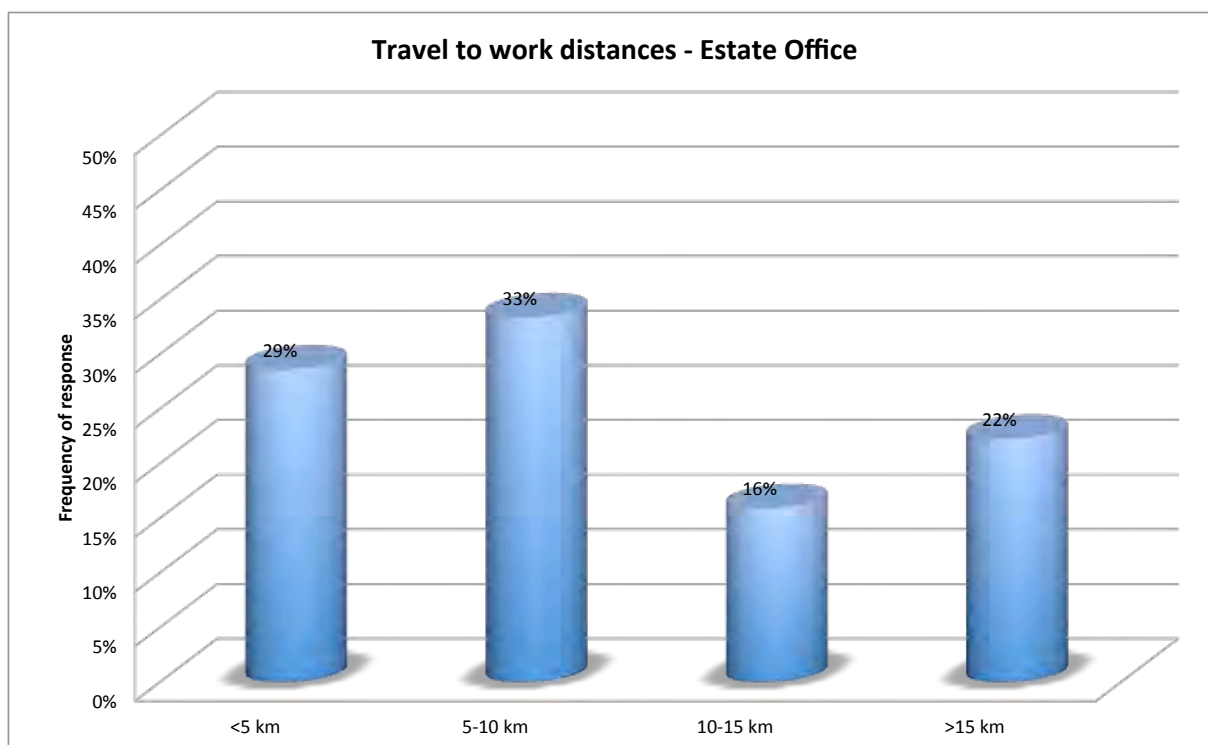


Figure 8: Travel to work distances, Estate Office

4.3 Manager interviews

This section summarises the results from the interviews of managers in the four work-centres (see questionnaire included in Appendix A2).

4.3.1 Responses to Question 1

Question 1 was "What proportion of your staff travel to work by the following modes of transport?" In response to this question, the majority of staff travel to work by car (86% to 95%). 5% of staff in the Devonshire Arms Hotel, Devonshire Fell Hotel, and Cavendish Pavilion walk to work. 14% in the Estate Office walk to work. 2% at the Devonshire Arms Hotel use public transport and 5% at the Devonshire Fell Hotel use public transport. A small fraction at the Devonshire Arms Hotel use motorbike and bicycle to get to work (1% and 2%, respectively, see Table 1).

Mode of transport (%)	Devonshire Arms Hotel	Devonshire Fell Hotel	Cavendish Pavilion	Estate Office
Car	90	90	95	86
Public transport	2	5	-	-
Motorbike	1	-	-	-
Bicycle	2	-	-	-
Walking	5	5	5	14
Total (%)	100	100	100	100

Table 1: Mode of transport to work, all Bolton Abbey work-centres

4.3.2 Responses to Question 2

Question 2 was *"Which positions/roles are difficult to hire and/or retain, if any?"* In response to this question, the manager at the Devonshire Arms Hotel stated that **all staff** were difficult to hire. For the Devonshire Fell Hotel and Cavendish Pavilion, difficult positions to fill were **chefs** and **servicing staff**. In addition, many of the serving staff at the Devonshire Fell Hotel are mothers who only work between 9am and 3pm; this presents a major challenge for running a hotel since staff are needed outside these hours.

For the Estate Office, positions difficult to fill were:

- **Apprentices, temporary staff and students** (Game Department)
- **Forestry workers** (Forestry Department);
- **Car park and shop attendants** (Tourism & Retail Department).

4.3.3 Responses to Question 3

Question 3 was *"Please say why it is difficult to hire/retain staff for these positions/roles"*. In response to this question, the managers in the hospitality centres responded that:

- *"The location is isolated and public transport is poor"* (Devonshire Arms Hotel and Cavendish Pavilion);
- *"Public transport is very poor in this area; unless staff have their own car or live close by it is impossible to get to and from"* (Devonshire Fell Hotel);

Responses from the Estate Office were as follows:

- *"There is no furnished accommodation on the estate that can accommodate these employees"* (Game Department);
- *"Travelling distances and lack of public transport into and out of the area make it difficult to recruit staff, particularly young workers and trainees who have no means of transport. Being able to offer subsidised housing would increase the potential to recruit staff; particularly within the Dales where housing is at a premium and locals have little opportunity to find work and housing to stay and live within the area"* (Forestry Department);
- *"It is more challenging to recruit employees with previous customer experience for the customer facing roles because the posts are part-time and seasonal. Some roles (e.g. game keepers, foresters and agents) demand out of office hours' commitment and availability - living close or on the estate is therefore essential. This makes recruitment*

difficult if housing cannot be offered. Securing property in the open market is challenging because of high cost given Bolton Abbey and its environs are a desirable place to live" (Tourism & Retail Department).

4.3.4 Responses to Question 4

Question 4 was *"What do you do at present in order to hire/retain staff who live far away or abroad?"* In response to this question, the managers of the hospitality centres stated that they do offer some live-in accommodation but this is limited (Devonshire Arms Hotel and Devonshire Fell Hotel); the Cavendish Pavilion cannot offer staff accommodation at present.

The managers from the Estate Office stated that:

- "They would need to employ the second best candidate or do not hire at all" (Game Department);
- "All employees have their own transport. However, the Estate has to pay staff mileage at weekends if needed, to work for minimal hours" (Grounds Maintenance Department);
- "No staff in the Forestry Department lives a long way from the estate (2 members of staff live in Estate housing and 1 lives approximately 5 miles away"; Forestry Department).

4.3.5 Responses to Question 5

Question 5 was *"Is there anything else you would like to do to hire/retain staff who live far away or abroad, if it were possible?"* The responses to this question were:

- They would like to be able to offer more live-in accommodation (Devonshire Arms Hotel, Devonshire Fell Hotel, Cavendish Pavilion);
- Offering (more) estate-subsidised housing would be helpful since having staff on hand would increase the estate's ability to deal with call outs for wind-blown trees or emergency works out of hours (Forestry Department at the Estate Office).

4.3.6 Responses to Question 6

Question 6 was *"If CST were to provide some staff accommodation locally, what difference would this make to your business?"* This was a Lykert-type question to indicate the strength of preference (i.e. *very positive, positive, no difference, negative, very negative*).

Four managers at the Devonshire Arms Hotel, Devonshire Fell Hotel, Cavendish Pavilion and the Estate Office said that the provision of some staff accommodation would make a "very

positive" difference to their business, and two managers at the Estate Office said it would make a "positive" difference.

4.3.6 Responses to Question 7

Question 7 was "If CST were to provide some staff accommodation locally, what form do you think would work best?" this question allowed for multiple responses for a preferred type of staff accommodation. 60% of a total of 10 responses indicated a preference for a shared house or flat, 20% for a house, and 10% for either a flat or "other" (Figure 9), e.g. a "combination (of types) to meet different personal needs and finances"

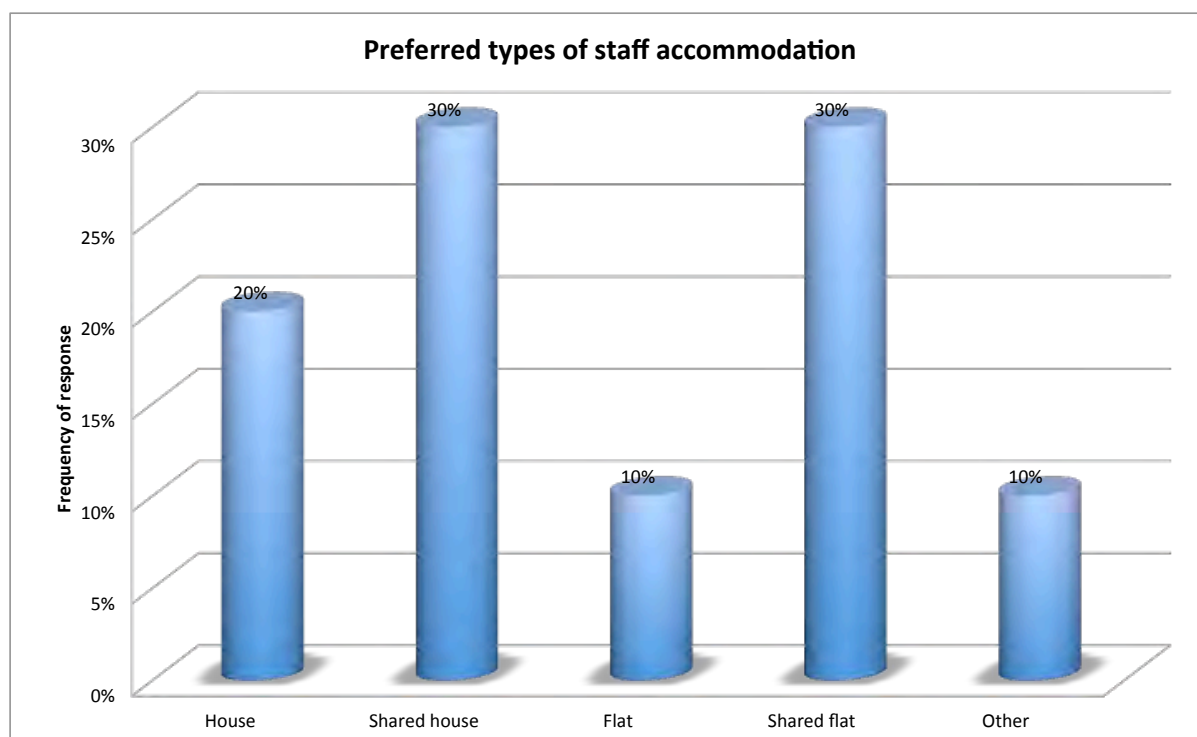


Figure 9: Preferences for different types of staff accommodation (multiple answers possible)

4.3.7 Responses to Question 8

Question 8 was "Are there any other comments you would like to make?" This question was optional and the only responses were from the managers at the Estate Office. These were:

- "There would be some benefits to the village to freeing up most of the cottages now used for hotel staff, to allow more families in, bringing some life back in to the area" (Game Department);
- "To make the accommodation affordable" (Grounds Maintenance);
- "The potential to offer subsidised housing would open up the market as far as recruiting staff is concerned. The agricultural wages we can offer limit the potential market for recruiting (...). Housing would give the estate more options and incentives

to offer workers applying for positions, particularly locals to the Dales who wish to remain in the area. Countryside housing has been a limiting factor in keeping young people living and working in the Dales due to the high prices of housing in the area. Additional housing within the village of Bolton Abbey would be helpful and assist in reversing the trend of locals throughout the Dales National Park leaving the area. Additional (staff) accommodation would also give the ability to recruit young families into the area, helping to maintain local services such as the Beamsley School“(Forestry Department);

- “Bolton Abbey is a wonderful place to work. For many it would be an idyllic place to live but without staff housing (this is) perhaps too expensive. If more employees were to live on-site it would support local businesses and amenities and develop a diverse community“(Tourism & Retail Department).

4.3 Average salaries of key staff and the current housing market around Bolton Abbey

Table 2 provides an overview of current full-time salaries for typical staff in the hospitality and land management sector in the UK³. This list is only indicative as it covers a wide range (i.e. it includes London and different levels of skill and experience). The currently advertised positions for hospitality staff at the Devonshire Arms Hotel, Devonshire Fell Hotel and Cavendish Pavilion are within the average UK salary ranges and are considered as typical for the region⁴.

Apart from positions such as head chefs, which may demand salaries above £30,000 per year depending on location and experience, the average starting salary for head chefs is £16,809 per year with a median of £24,689. The average salary for Commis chefs, Chefs de Partie and Sous Chefs is £17,147 per year, with starting salaries of £11,636 per year to £14,448 per year.

For the bulk of other non-managerial hospitality and maintenance staff, median wages are around £15,229, with starting salaries ranging from £8,069 to £14,560 per year. The average salary for foresters and gamekeepers is £17,109, with starting salaries of £11,914 per year on average.

For the majority of hospitality and ground maintenance staff, average salaries are therefore below £18,000 per year, with average starting salaries below £15,000 per year.

³ From www.payscale.com (last accessed 3 February 2015)

⁴ Telephone conversation HR, 2 February 2015

Positon	Median salary range UK (excl. bonuses)		Median
Head Chef	£16,809.00	£34,850.00	£24,689.00
Restaurant Manager	£15,389.00	£29,782.00	£21,666.00
Sous Chef	£14,448.00	£26,729.00	£19,799.00
Events & Wedding Co-Ordinator	£14,888.00	£26,749.00	£19,571.00
Front of House Supervisor	£12,099.00	£33,935.00	£19,518.00
Forester	£11,829.00	£30,791.00	£19,219.00
Brasserie Assistant Manager	£14,560.00	£23,341.00	£18,226.00
Spa Assistant	£15,000.00	£22,489.00	£17,999.00
General Assistant	£12,146.00	£22,060.00	£17,103.00
Senior Chef de Partie	£12,290.00	£21,510.00	£16,597.00
Porter	£11,469.00	£19,373.00	£15,380.00
Reservationist	£13,087.00	£24,328.00	£15,347.00
Restaurant Supervisor	£12,255.00	£18,049.00	£15,306.00
Commis Chef	£11,636.00	£20,560.00	£15,046.00
Gamekeeper	£12,000.00	£18,000.00	£15,000.00
Housekeeper	£10,586.00	£21,892.00	£14,677.00
Casual Serving Staff	£9,678.00	£27,590.00	£13,749.00
Casual Banqueting Staff	£9,678.00	£27,590.00	£13,748.00
Casual Bar & Lounge Serving Staff	£10,361.00	£16,236.00	£13,298.50
Casual Beauty Therapist	£8,069.00	£20,936.00	£12,688.00

Table 2: Average UK salaries per year for typical hospitality and land management staff (incl. London/South East)

4.4 The housing market around Bolton Abbey

Over the last 12 months (January 2014 to January 2015) the average price paid for a property around Bolton Abbey (BD23 postcode) ranged from £152,387 for a flat to £373,359 for a detached house (Figure 10), a change of 2.89% since last year. In February 2015 the average current asking price for a property was £393,383⁵.

At the time of writing, there were nine properties for sale within a 5km radius of Bolton Abbey: two 1-bedroom flats below £150,000 (the cheapest at £115,00) and the remainder between £185,000 and £455,00. No properties were for sale in Bolton Abbey itself (Figure 11).

⁵http://www.zoopla.co.uk/market/bd23/?q=Bolton%20Abbey%2C%20BD23%206EX%20%20%20&search_source=nav (last accessed 5 Feb. 2015)

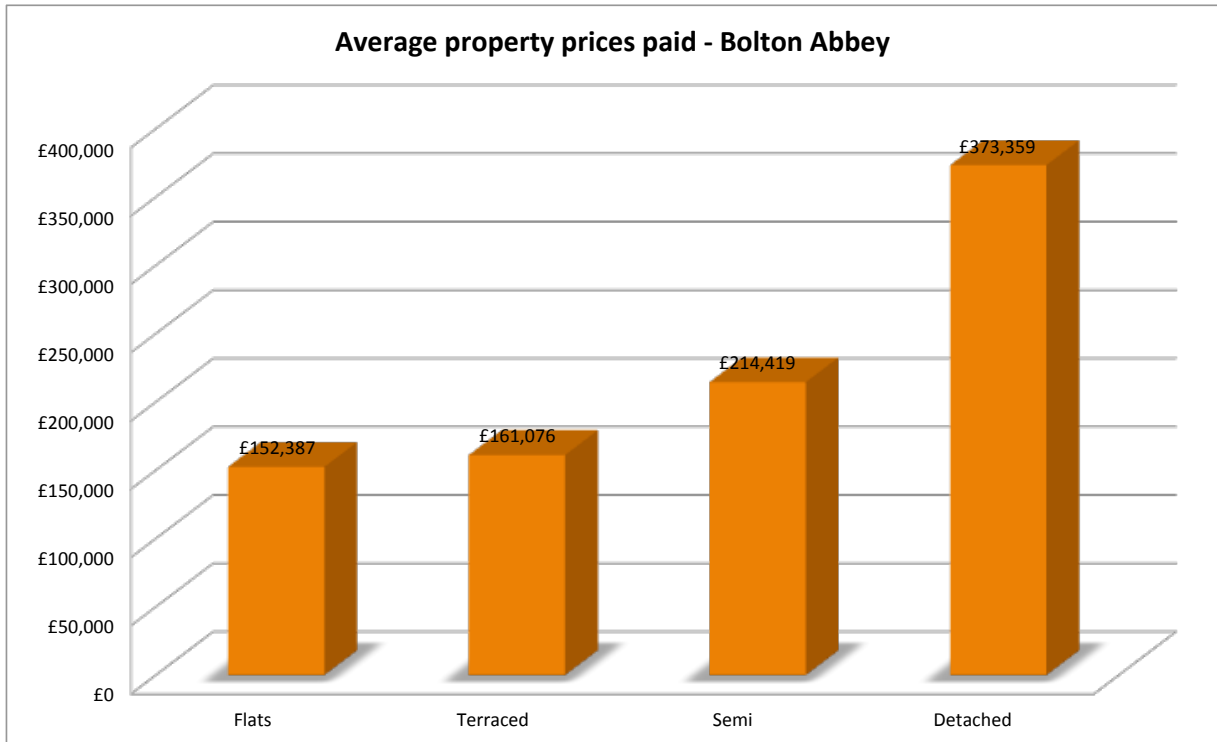


Figure 10: Average property prices paid over last 12 months, BD23 postcode (Zoopla Property Group, 2015)

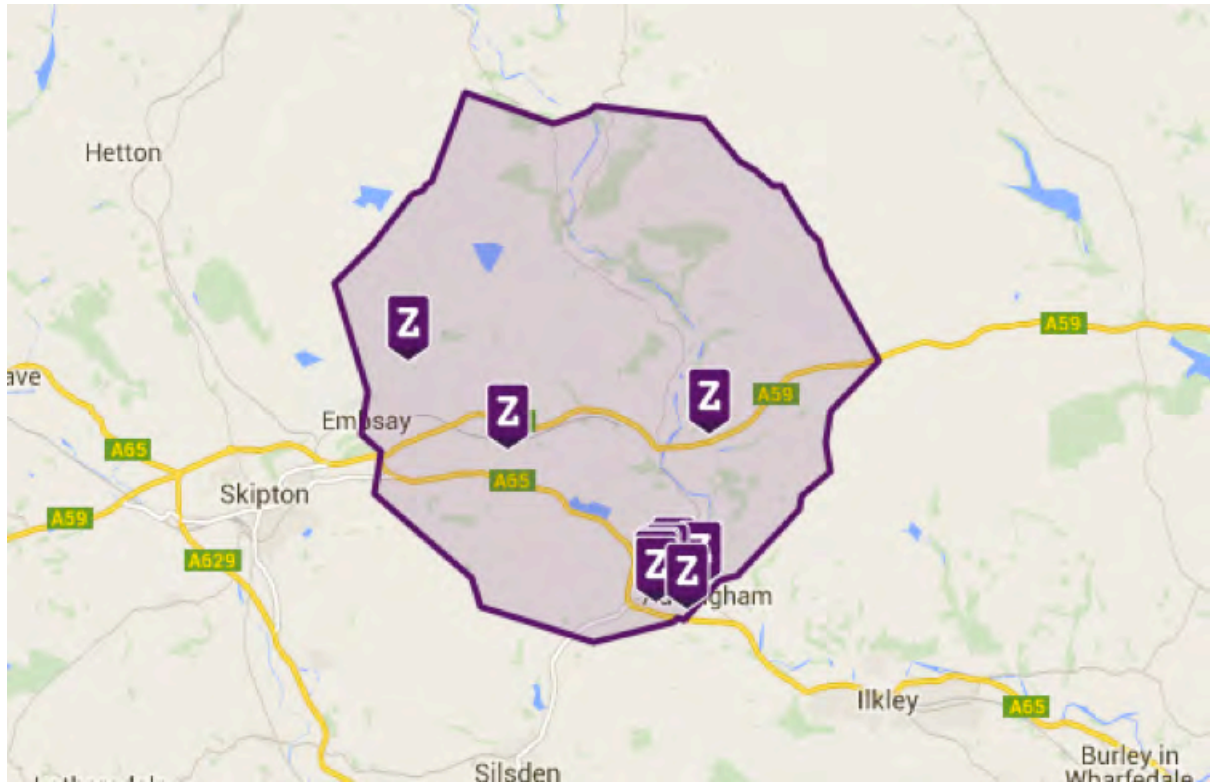


Figure 11. Properties for sale within 5 km (3mi) of Bolton Abbey (from Zoopla Property Group, 5 Feb. 2015)

The average asking rent within the BD23 area code is currently £1,706 per calendar month (pcm)⁶. During the last month average asking rents were £468 pcm for a 1-bed property to £1,108 pcm for a 4-bedroom place, (Figure 12; *ibid*)

At the time of writing, 11 rental properties were advertised within an 8km (5mi) radius of Bolton Abbey (four 1-bedroom properties, four 2-bedroom properties, three 3-bedroom properties and no 4-bedroom properties)⁷. No properties were available within a shorter distance (Figure 13). Rental prices ranged from £450 to £595 pcm for a 1-bedroom property (average rent £536 pcm), £525 to £695 pcm for a 2-bedroom property (average rent £591 pcm), and £595 to £850 pcm for a 3-bedroom property (average rent £732 pcm). This was slightly higher than the average prices above.

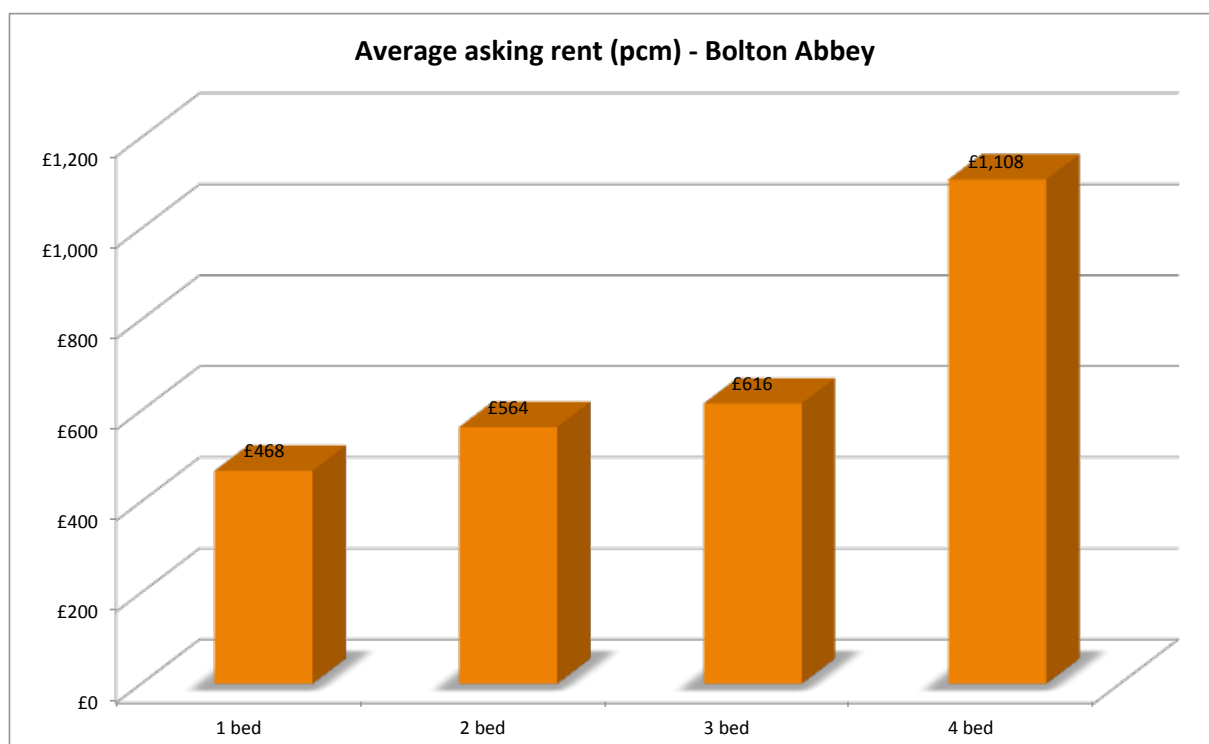


Figure 12: Average asking rents, BD23 postcode (Zoopla Property Group, January 2015)

⁶http://www.zoopla.co.uk/market/bd23/?q=Bolton%20Abbey%2C%20BD23%20EX%20%20%20&search_source=nav (last accessed 5 Feb. 2015)

⁷ http://www.zoopla.co.uk/to-rent/property/bd23-6aj/?include_retirement_homes=true&include_shared_accommodation=true&new_homes=include&price_frequency=per_month&q=BD23%20AJ&radius=5&results_sort=lowest_price&search_source=refine&page_size=25&pn=1&view_type=list (last accessed 4 Feb. 2015)

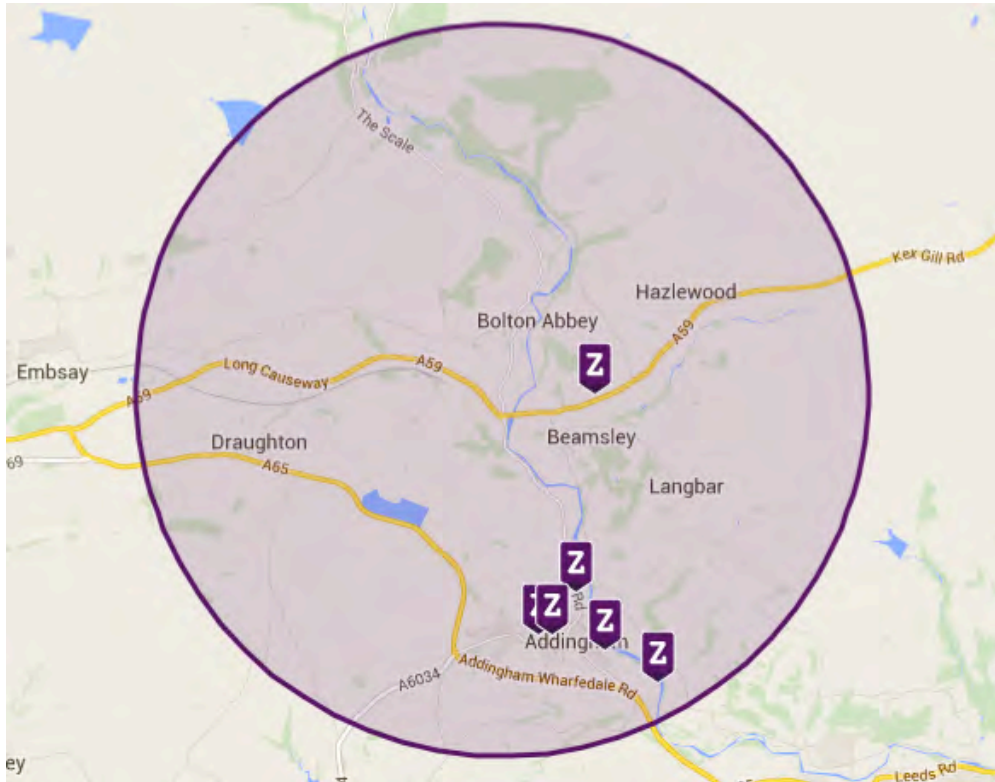


Figure 13. Rental properties within 8km (5mi) radius of Bolton Abbey (from Zoopla Property Group, 29 Jan. 2015)

5. Interpretation of results

5.1 Results from the manager survey

5.1.1 Work-centres

CST runs a strong and varied business comprising both hospitality (hotels and restaurants) and traditional estate management. A flexible and reliable workforce is vital in the hospitality industry, especially during peak-times and periods of ad-hoc demands; similarly, positions such as gamekeepers and foresters need to be able to respond to unforeseen circumstances and emergencies. The CST in Yorkshire has 156 employees and provides permanent and subsidized staff accommodation (houses and flats) for 20 employees; in addition there are 26 temporary rooms for staff accommodation but 21 of these are already filled before the start of the peak season.

5.1.2 Travel to work

37% of staff in the hospitality centres Devonshire Arms Hotel, Devonshire Fell Hotel and CF travel an average of 21km to work each day. This is significantly longer than the national average travel to distance of 15km⁸. **27 staff members (nearly 80%) who travel more than 15km to work are kitchen and servicing staff (in particular chefs, bakers, waiters, housekeepers and (night) porters).** This suggests that some of the lowest paid workers are living furthest away, which in turn suggests that CST is vulnerable to staff shortages, especially with regard to the hospitality staff (i.e. positions for which there are typically high ad-hoc and peak demands, and traditionally high turnover rates).

The situation at the Estate Office differs somewhat, with 29% of staff travelling less than 5km to work. This is partly due to a larger number of staff having been employed by the Estate for a long time (i.e. tens of years), with 20 staff (32%) living in subsidized accommodation owned by the Estate. This suggests that such accommodation is an important factor for attracting and retaining staff, and for providing a degree of stability for the business. **Nevertheless, 14 members of staff live more than 15km away (on average 28km); 10 of these staff have operational roles such as housekeepers at the Hall, gardeners, shop assistants and car park attendants.**

This means that 24% of CST staff in hospitality or operational positions have travel distances significantly longer than the national average. It is therefore considered that the provision of accommodation for staff would reduce travel to work distances and, in combination with the

⁸Office for National Statistics. For England and Wales: <http://www.ons.gov.uk/ons/rel/census/2011-census-analysis/distance-travelled-to-work/index.html>

installation of a biomass boiler for district heating in the planned Bolton Abbey development scheme, could also reduce CST's carbon footprint at Bolton Abbey.

The current travel-to-work pattern suggests that there are significant challenges to recruit suitable staff from the vicinity, especially for the hospitality work-centres, during peak times and when work-centres experience ad-hoc demands.

On average, 90% of all staff travels to work by car, which is not surprising for a rural location. Given the poor public transport⁹; this underlines the **dependence on private transport** for staff that live further away.

5.1.3 Difficulties of hiring staff in key positions

Both the Estate Office and the hospitality work-centres face similar problems in hiring suitable staff. For the Estate Office, difficult roles to fill are **forestry workers, apprentices, temporary staff (i.e. car park and shop attendants) and student interns** while for the hospitality centres these are **chefs and servicing staff**.

Hospitality roles are difficult to fill due to the isolated location and need for private transport. As a consequence, the Devonshire Fell Hotel in particular relies almost entirely on hiring local staff, which are not always suitable for meeting the needs of the business (i.e. mothers working limited hours during the day). **A flexible and reliable workforce, however, is essential in the hospitality industry; a lack of critical mass in terms of suitable staff therefore poses an economic constraint for hotels and similar businesses, especially during peak times.**

Equally, the Estate Office managers see travelling distances, poor public transport, premium house prices (especially for young workers, trainees and seasonal staff) as well as lack of subsidized Estate accommodation, as the main barriers to recruiting the right staff. **Being able to recruit the best candidate for a role, however, requires access to a wider market to ensure a critical mass of suitable labour is available.** The above findings resonate with a recent study by the University of Warwick¹⁰, which found that skill-shortage vacancies account for an increasing share of hard-to-fill vacancies, and equally, how quality of housing and transport in these areas were important from the workers' perspective. This would suggest that there is a very strong need for staff accommodation in and around Bolton Abbey.

⁹ Most bus services only run 3 times a day, with several indirect routes (Google maps)

¹⁰ M. de Hoyos and A. Green. Recruitment and retention issues in rural labour markets. Journal of Rural Studies, Volume 27, Issue 2, April 2011, Pages 171–180.

5.1.4 The importance of staff accommodation for Estate operations

Given the limited amount of staff accommodation on the Estate, work-centre managers face difficulties recruiting the best candidates for the role, or not filling the role at all. Another burden is paying extra staff mileage at weekends, even if only a few hours of work are required. Living in the vicinity is, however, paramount for many of the Estate's operations, in particular when dealing with unforeseen circumstances (esp. gamekeepers, foresters), and for hospitality staff during peak times (e.g. special events/weddings, bottlenecks etc.). **The provision of additional staff accommodation is seen as a major factor in alleviating the problem of staff shortages and being better equipped to deal with out-of-hours call-outs and/or emergencies.** Should accommodation for staff become available, **shared houses and flats** were considered the best options by the hospitality centres and a house, flat or other by the Estate Office.

5.1.5 Typical salaries for operations staff compared to the local housing market

For the bulk of hospitality and ground maintenance staff, typical (full time) salaries start below £15,000 and median salaries are below £18,000 per year. This compares to an **average asking price of around £394,000 for a property in the Bolton Abbey area**, suggesting that the purchase of a property in the Bolton Abbey area is well beyond the means of the majority of CST staff. Properties for sale were only found in a 5km radius of Bolton Abbey village: two 1-bedroom flats below £150,000 (the cheapest at £115,00) and the remaining seven properties between £185,000 and £455,00. Assuming average salaries between £15,000 and 18,000 per year and the given property prices suggests that **it will be very difficult for staff on these incomes to buy even the lowest properties on offer, especially for young workers and first-time buyers**¹¹.

Average rental prices in February 2015 were £536 pcm for a 1-bedroom flat, £591 pcm for a 2-bedroom property, and £732 for a 3-bedroom property. Renting would be an option especially for seasonal staff and apprentices/students. **However, there are very few rental properties in the lower price bracket** (only one flat was offered below £500 pcm and let within days of coming onto the market). This means that for incomes between £15,000 and 18,000 per year before tax and an average rent of £536 pcm for a 1-bed property, **39% to 46% per month are spent on rent alone** - not including council tax, utility bills, car and other living costs. This would comprise a disproportionate amount of disposable income being spent on rent alone.

¹¹ E.g. as a rough indication for incomes between £15,000 - £18,000 before tax, the maximum mortgages at present are c. £46,000 – £54,000; i.e. requiring deposits between c. £70,000 and £62,000 for a £115,000 property. (Estimated from various mortgage calculators incl. moneysavingexpert.com).

Sharing a property may therefore be the only other option available on the open market, especially for temporary staff. Based on the offers at the time of writing, the average rent per person and month (ppm) was calculated at £296 ppm for a 2-bed property and £244 ppm for a 3-bed property. **However, there were only four 2-bed and three 3-bed properties to rent at the time of writing, and not all landlords may allow sharing.**

6. Conclusion

The problems that the Bolton Abbey Estate managers face are very much determined by the geographical structures and demographics that characterize these settlements; i.e. a smaller pool of people available when a vacancy arises, and difficulties to find a suitable candidate in particular where higher levels of skill are required.

The findings therefore demonstrate a strong need for additional accommodation for CST staff at Bolton Abbey in order for CST to run an economically sustainable business. Additional staff accommodation may also have economic and social benefits beyond the requirements of the Estate, i.e. enabling local young workers and families to stay in the National Park, and thereby supporting the functions and services of the village.

7. Appendix

A1: Staff information (anonymous)

HR information on employees - DA			
Employee No.	Origin of journey to work	Position/role	TTW distance (km)
1	Kirby Longsdale	General manager	60.67061
2	Skipton	PA	9.33394
3	Keighley	Finance manager	15.93207
4	Embsay	Accounts manager	7.08092
5	Keighley	HR manager	15.93207
6	Keighley	HR admin	15.93207
7	Embsay	Finance assistant	7.08092
8	Skipton	Finance assistant	9.33394
9	Keighley	Chef	15.93207
10	Addingham	Brasserie manager	3.86232
11	Glusburn	Serving staff	20.43811
12	Glusburn	Serving staff	20.43811
13	Skipton	Serving staff	9.33394
14	Hebden	C&B manager	13.83998
15	Silsden	Head porter	9.97766
16	Settle	Porter	33.95623
17	Beamsley	Porter	2.09209
18	Skipton	Night porter	9.33394
19	Keighley	Beauty therapist	15.93207
20	Ilkley	Spa assistant	9.49487
21	Ilkley	Serving staff	9.49487
22	Skipton	Housekeeping supervisor	9.33394
23	Skipton	Housekeeper	9.33394
24	Skipton	Housekeeper	9.33394
25	Skipton	Housekeeper	9.33394
26	Skipton	Maintenance	9.33394
27	Skipton	Serving staff	9.33394
28	Leeds	Marketing manager	36.69204
29	Barnoldswick	Marketing assistant	23.33485
30	Keighley	Revenue manager	15.93207
31	Keighley	Chef	15.93207
32	Ilkley	Serving staff	9.49487
33	Barnoldswick	Serving staff	23.33485
34	Silsden	Serving staff	9.97766
35	Skipton	Serving staff	9.33394
36	Connonley	Serving staff	19.15067
37	Skipton	Serving staff	9.33394
38	Stirton	Serving staff	11.10417
39	Thornton-in-Craven	Serving staff	19.15067
40	Skipton	Serving staff	9.33394
41	Barnoldswick	Serving staff	23.33485
42	Bolton Abbey	Asstant manager	0.96558
43	Bolton Abbey	Chef	0.96558
44	Skipton	Serving staff	9.33394
45	Ilkley	Serving staff	9.49487
46	Beamsley	Serving staff	2.09209
47	Bradley	Serving staff	17.05858
48	Beamsley	Serving staff	2.09209
49	Ilkley	Serving staff	9.49487
50	Hazelwood	Serving staff	5.95441
51	Addingham	Serving staff	3.86232
52	Silsden	Serving staff	9.97766
53	Silsden	Serving staff	9.97766
54	Sutton	Chef	21.72555
55	Silsden	Serving staff	9.97766
56	Addingham	Serving staff	3.86232
57	Skipton	Serving staff	9.33394
58	Skipton	Serving staff	9.33394

HR information on employees - DF			
Employee No.	Origin of journey to work	Position/role	TTW distance (km)
1	Cowling	Night porter	31.05949
2	Skipton	Housekeeper	17.86323
3	Appletreewick	Serving staff	2.73581
4	Rylstone, Skipton	Assistant manager	10.46045
5	Skipton	Serving staff	17.86323
6	Skipton	Serving staff	17.86323
7	Eastby	Serving staff	9.49487
8	Skipton	Serving staff	17.86323
9	Threshfield	Serving staff	5.47162
10	Grassington	Serving staff	7.72464
11	Hetton	Serving staff	10.62138
12	Appletreewick	Serving staff	2.73581
13	Burnsall	Serving staff	0.96558
14	Skipton	Housekeeper	17.86323
15	Grassington	Chef	7.72464

HR information on employees - CP			
Employee No.	Origin of journey to work	Position/role	TTW distance (km)
1	Addingham	Serving staff	6.4372
2	Skipton	Supervisor	11.74789
3	Skipton	Serving staff	11.74789
4	Barnoldswick	Assistant manager	25.90973
5	Bolton Abbey	General manager	1.77023
6	Barden	Serving staff	5.95441
7	Pateley Bridge	Serving staff	22.85206
8	Ilkley	Serving staff	11.10417
9	Skipton	Serving staff	11.74789
10	Ilkley	Serving staff	11.10417
11	Skipton	Serving staff	11.74789
12	Keighley	Serving staff	19.15067
13	Keighley	Serving staff	19.15067
14	Ilkley	Serving staff	11.10417
15	Burley-in-Wharfedale	Serving staff	16.73672
16	Keighley	Serving staff	19.15067
17	Barnoldswick	Head chef	25.90973
18	Keighley	Commis chef	19.15067
19	Skipton	Commis chef	11.74789
20	Bingley	Baker	23.97857

HR information on employees - EO

Employee No.	Origin of journey to work	Position/role	TTW distance (km)
1	Hazlewood with Storiths	Agent	6.91999
2	Hazlewood with Storiths	Visitor Manager	6.91999
3	Keighley	Car Park Kiosk	16.89765
4	Addingham	Car Park Kiosk	4.8279
5	Leeds	Car Park Kiosk	37.65762
6	Leeds	Car Park Kiosk	37.65762
7	Addingham	Car Park Kiosk	4.8279
8	Bradley	Car Park Kiosk	18.02416
9	Ilkley	Car Park Kiosk	9.49487
10	Addingham	Car Park Kiosk	4.8279
11	Bolton Abbey	Head of Grounds Maintenance	0
12	Beamsley	Building Surveyor	3.05767
13	Bolton Abbey	Financial Controller	0
14	Hazlewood with Storiths	Admin Assist	6.91999
15	Burley-in-Wharfedale	Recep/Tourism Admin	15.12742
16	West End	Retail Supervisor	12.55254
17	Bolton Abbey	The Hall Housekeeper	0
18	Barden	Head Keeper	5.79348
19	Barden	Game Keeper	5.79348
20	Storiths	Game Keeper	4.66697
21	Barden	Game Keeper	5.79348
22	Barden	Game Keeper	5.79348
23	Barden	Game Keeper	5.79348
24	Barden	Game Keeper	5.79348
25	Bolton Abbey	Head Forester	0
26	Bolton Abbey	Agents PA	0
27	Bolton Abbey	Cashier	0
28	Skipton	Office Cleaner	10.13859
29	Silsden	The Hall Head Gardener	10.94324
30	Huby	Visitor Supervisor	34.27809
31	Bolton Abbey	River Keeper	0
32	Lothersdale	Building Secretary	23.81764
33	Hazlewood with Storiths	Deputy Agent	6.91999
34	Skipton	Receptionist	10.13859
35	Eastby	Shop Assist	9.49487
36	Beamsley	Shop Assist	3.05767
37	Beamsley	Gardener	3.05767
38	Colne	Gardener	30.09391
39	Skipton	Gardener	10.13859
40	Ilkley	Gardener	9.49487
41	Ilkley	Gardener	9.49487
42	Skipton	Gardener	10.13859
43	Silsden	Shop Assist	10.94324
44	Earby	Shop Assist	22.04741
45	Hazlewood with Storiths	Shop Assist	6.91999
46	Otley	Shop Assist	19.47253
47	Draughton	Car Park Kiosk Attendant	5.31069
48	Addingham	Shop Assist	4.8279
49	Glusburn	Car Park Kiosk Attendant	21.40369
50	Skipton	The Hall household staff	10.13859
51	Beamsley	Water Technician	3.05767
52	Bolton Abbey	Shop Assist	0
53	Harrogate	The Hall household staff	27.03624
54	Draughton	The Hall household staff	5.31069
55	Draughton	The Hall household staff	5.31069
56	Bolton Abbey	Forester	0
57	Ilkley	Forester	9.49487
58	Skipton	Sub Post Officer	10.13859
59	Eastby	Car Park Kiosk Attendant	9.49487
60	Skipton	The Hall staff	10.13859
61	Gargrave	Shop Assist	16.57579
62	Barden	Car Park Kiosk Attendant	5.79348
63	Saxton	Planning & Development	67.5906

A2: Survey questions

1. What proportion of your staff travel to work by the following modes of transport?

Please give approximate percentages for the travel modes below:

Mode of travel	%
Car	
Public transport	
Motorbike	
Bicycle	
Walking	

2. Which positions/roles are difficult to hire and/or retain, if any?

3. Please say why it is difficult to hire/retain staff for these positions/roles:

4. What do you do at present in order to hire/retain staff that live far away or abroad?

5. Is there anything else you would like to do to hire/retain staff that lives far away or abroad, if it were possible?

6. If CST were to provide some staff accommodation locally, what difference would this make to your business?

Please tick one of the following boxes:

Very positive	Positive	No difference	Negative	Very negative
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. If CST were to provide some staff accommodation locally, what form do you think would work best?

Please tick one or more of the following boxes:

House	Shared house	Flat	Shared flat	Other
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If "Other", please specify:

8. Are there any other comments you would like to make?

Please return form to: Dr Sibylle Frey
Frey Consulting Ltd
30 Dam Lane
Saxton, Tadcaster
LS24 9QF
sibylle@freyconsulting.co.uk

Thank you.

A3: Salary examples

Position	Median salary range UK (excl. bonuses)	Median	Source
Head Chef	£16,809.00 £34,850.00	£24,689.00	http://www.payscale.com/research/UK/Job=Head_Chef/Salary
Restaurant Manager	£15,389.00 £29,782.00	£21,666.00	http://www.payscale.com/research/UK/Job=Restaurant_Manager/Salary
Sous Chef	£14,448.00 £26,729.00	£19,799.00	http://www.payscale.com/research/UK/Job=Sous_Chef/Salary
Events & Wedding Co-Ordinator	£14,888.00 £26,749.00	£19,571.00	http://www.payscale.com/research/UK/Job=Event_Coordinator/Salary
Front of House Supervisor	£12,099.00 £33,935.00	£19,518.00	FoH manager; http://www.payscale.com/research/UK/Job=Front_of_House_Manager/Salary
Forester	£11,829.00 £30,791.00	£19,219.00	http://www.payscale.com/research/UK/Job=Forester/Salary
Brasserie Assistant Manager	£14,560.00 £23,341.00	£18,226.00	Restaurant assistant manager, http://www.payscale.com/research/UK/Job=Restaurant_Assistant_Manager/Salary
Spa Assistant	£15,000.00 £22,489.00	£17,999.00	assistant spa manager, http://www.payscale.com/research/UK/Job=Assistant_Spa_Manager/Salary
General Assistant	£12,146.00 £22,060.00	£17,103.00	http://www.payscale.com/research/UK/Job=Hotel_Housekeeping_Aide%2fAttendant%2fAssistant/Hourly_Rate
Senior Chef de Partie	£12,290.00 £21,510.00	£16,597.00	http://www.payscale.com/research/UK/Job=Chef_de_Partie/Salary
Porter	£11,469.00 £19,373.00	£15,380.00	http://www.payscale.com/research/UK/Job=Porter/Hourly_Rate
Reservationist	£13,087.00 £24,328.00	£15,347.00	http://www.payscale.com/research/UK/Job
Restaurant Supervisor	£12,255.00 £18,049.00	£15,306.00	http://www.payscale.com/research/UK/Job=Restaurant_Supervisor/Hourly_Rate
Commis Chef	£11,636.00 £20,560.00	£15,046.00	http://www.payscale.com/research/UK/Job=Kitchen_Chef/Hourly_Rate
Gamekeeper	£12,000.00 £18,000.00	£15,000.00	https://nationalcareersservice.direct.gov.uk/advice/planning/jobprofiles/Pages/gamekeeper.aspx . Those that work on larger farms with the
Housekeeper	£10,586.00 £21,892.00	£14,677.00	http://www.payscale.com/research/UK/Job=Housekeeper/Hourly_Rate
Casual Serving Staff	£9,678.00 £27,590.00	£13,749.00	http://www.payscale.com/research/UK/Job=Waiter%2fWaitress%2c_Hotel/Hourly_Rate
Casual Banqueting Staff	£9,678.00 £27,590.00	£13,748.00	Assumed same as serving staff. NB: London £6.50 to £7.50 p.hr., http://www.westonerecruit.co.uk/jobs/banqueting-staff-needed-1416.htm
Casual Bar & Lounge Serving Staff	£10,361.00 £16,236.00	£13,298.50	http://www.payscale.com/research/UK/Job=Bar_Attendant/Hourly_Rate
Casual Beauty Therapist	£8,069.00 £20,936.00	£12,688.00	http://www.payscale.com/research/UK/Job=Beautician/Hourly_Rate

Appendix 5: Bolton Abbey village Masterplan



BOLTON ABBEY VILLAGE MASTERPLAN

APRIL 2015

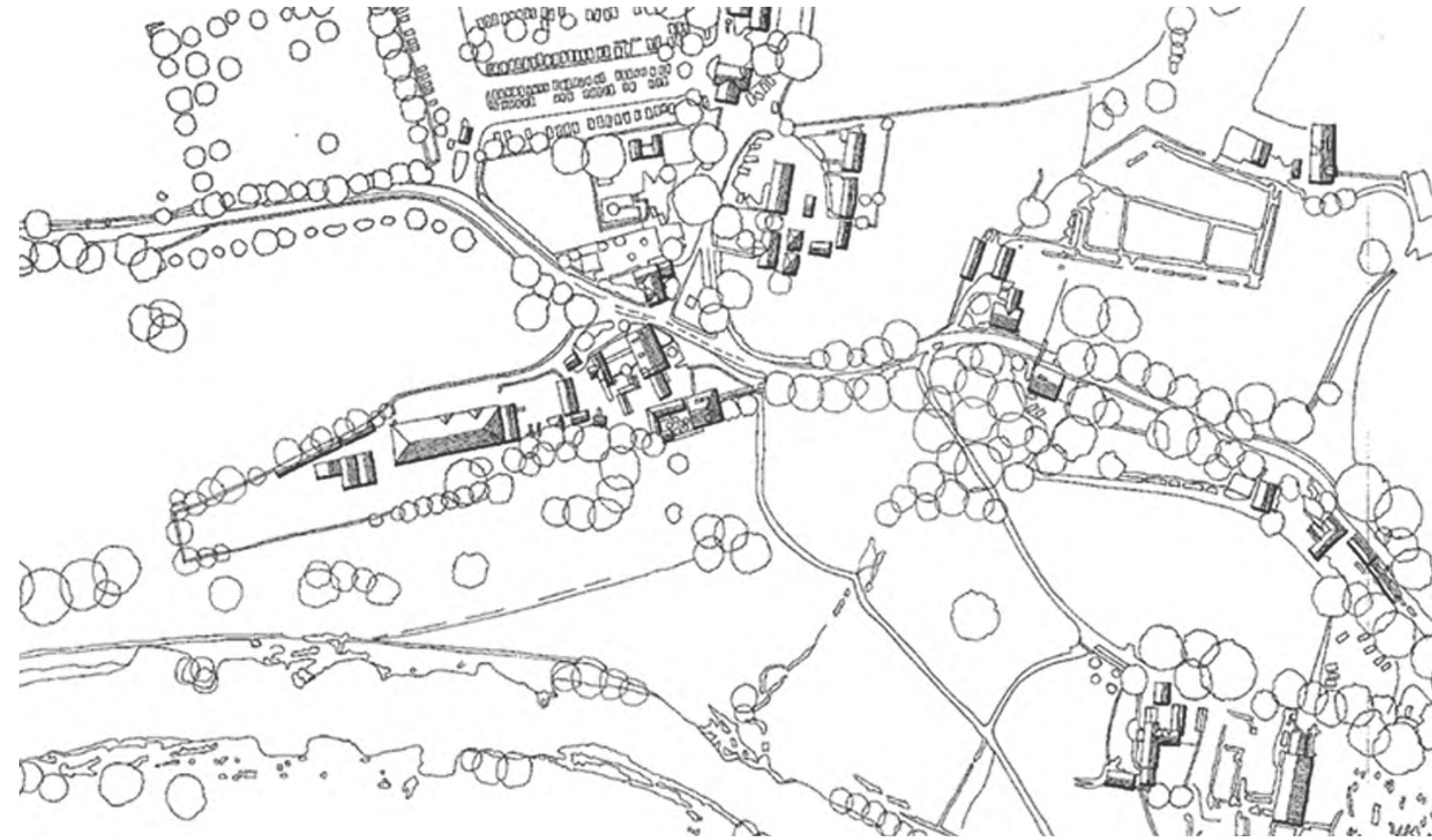


FREY CONSULTING • LTD

GILLESPIES

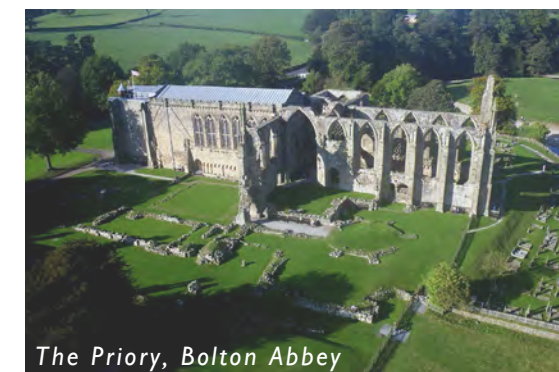


Rural Solutions
The Nationwide Planning and Development Specialists



CONTENTS

EXECUTIVE SUMMARY	PAGE 2
INTRODUCTION	PAGE 4
CONTEXT	PAGE 5
NEED FOR DEVELOPMENT	PAGE 7
SITE DESCRIPTION	PAGE 8
PLANNING	PAGE 9
DEVELOPMENT CONCEPT	PAGE 10
BENEFITS	PAGE 12
CONCLUSION	PAGE 14



The Priory, Bolton Abbey



The Tithe Barn, Bolton Abbey



The Hole-in-the-Wall, Bolton Abbey



The Viaduct, Bolton Abbey



The Cavendish Memorial, Bolton Abbey

EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this masterplan is to provide for the comprehensive redevelopment of part of Bolton Abbey so as to sustain its role as both a major tourist destination and a service village for the local area.

The masterplan provides evidence to support the allocation of land for mixed use development sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC), and has been informed by the Bolton Abbey Estate Business Plan and:

- The Bolton Abbey Visitor Accommodation Needs Assessment (by Frey Consulting)
- The Bolton Abbey Staff Accommodation Needs Assessment (by Frey Consulting)
- The Bolton Abbey Heritage Assessment (by ArcHeritage)
- The Bolton Abbey Landscape Appraisal (by Gillespies).

CONTEXT

Bolton Abbey is a village with historic buildings and stone houses in an attractive parkland setting within the Bolton Abbey Estate which is wholly owned by CST. It dates back to at least 1154 and acts as the southern gateway to the Yorkshire Dales National Park (YDNP), attracting 450,000 visitors per year. It is a popular place to live (though residents are quite old), and makes an important economic contribution to the local area since CST employs 159 staff locally and manages several premises and visitor facilities.

Significantly, Bolton Abbey provides a very high level of services for a rural area (including post office, bus stop, village hall, church, car park, shops, tea room/café, public toilets, recycling hub). It thereby acts as the main "service village" for the area of Appletreewick, Barden, Beamsley, Draughton, Halton East, Hazlewood, Skyreholme and Storiths. Since these settlements will accommodate further development over the next fifteen years, there is a need to support the role of Bolton Abbey as their service village.

NEED FOR DEVELOPMENT

CST is a business that owns and manages land on behalf of the Cavendish family, which has retained the Bolton Abbey Estate since 1753. It takes a responsible and pro-active view of conservation, provides for public access across its land and funds a range of high quality environmental management activities while ensuring a commercial return so as to sustain the stewardship of the estate in the long term.

CST's business plan identifies the main strengths at Bolton Abbey (e.g. heritage assets, natural features and landscape quality) and also key issues to address, including:

- lack of sense of arrival (and departure) for visitors
- vulnerability of tourism operation to weather and school holidays
- little or no secondary spend by visitors due to brevity of trips
- limited opportunities for growth due to major planning constraints (i.e. national park)
- major cost of maintaining natural and built environment to a high standard
- services at risk (e.g. loss-making/subsidised post office)
- inability of staff to afford local house prices (leading to long journeys to work)
- very limited supply and choice of visitor accommodation in the area.

CST has considered several development alternatives in Craven District and the YDNP to provide a higher value offer to visitors. As such, its Business Plan identifies the need to provide suitable facilities (e.g. pub, farm shop, play area, visitor/other accommodation) in Bolton Abbey in line with local precedents and comparables (e.g. CST development in Craven and two national parks).

SITE

CST has identified a site (3.9 ha of flat land) for related development in the south-west of Bolton Abbey village as shown in the aerial photograph below. Most of the site (c.3.2 ha) is already in use (for housing/parking/retail) and none of it is subject to flooding. CST owns all of the land concerned.



EXECUTIVE SUMMARY (CONTINUED)

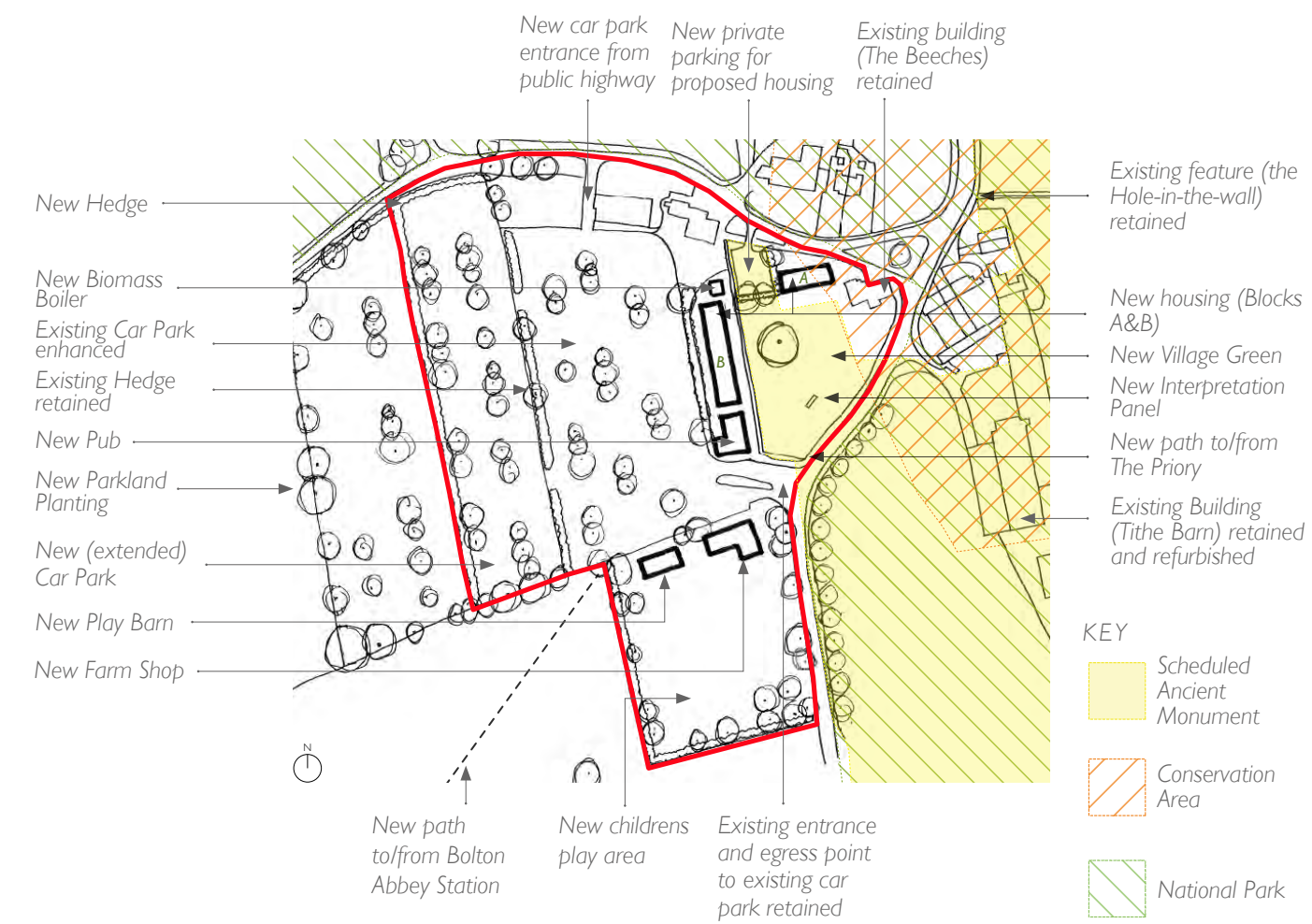
PLANNING

The planning context for the site is unusual. Most of the village is in the YDNP but the site is in Craven District. Whilst the CDLP 1999 has no designations to negate development of the site, the draft YDNP Local Plan 2014 includes Bolton Abbey as a "Service Village" (ie capable of accommodating growth).

As such, the CDLP should recognise Bolton Abbey as a focus for growth and allocate the site for masterplan-led growth so as to: provide for suitable development; retain services; allow CST to meet its business needs; ensure consistency with key planning documents (e.g. CDLP's strategic objectives, the emerging YDNP Local Plan, the National Planning Policy Framework 2012, National Planning Practice Guidance 2014 and the key findings of the Taylor Review of Rural Economy and Affordable Housing).

DEVELOPMENT CONCEPT

In order to design the best scheme for Bolton Abbey, CST liaised with CDC and evaluated the heritage and landscape capacity of the area. This led to CST: reducing the scale of its development aspirations; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from views in the YDNP. The subsequent indicative scheme is shown below.



The scheme would involve the development of only an extra 0.7 ha of land not already in use, be built from traditional materials (e.g. wood, stone) and designed to a high standard to respect the scale and character of the village. Both the heritage assessment and the landscape appraisal conclude the scheme would not have a significant impact on the heritage and landscape resource of the village and wider area.

BENEFITS

The main benefits of the intended scheme would include:

- New village green to create attractive focal point in settlement and provide public open greenspace
- New planting in existing and extended car park to improve visual amenity and integrate development with surrounding parkland and minimise impact to wider landscape.
- New interpretation panel to enhance awareness of the former Barnyard (working yard for Tithe Barn) within the medieval Abbey complex
- New dwelling units to provide high quality accommodation for visitors/staff/others
- New biomass boiler to provide district heating scheme for development
- New pub to consolidate local community and enhance sense of arrival/departure for visitors
- New play area to provide learning-through-play facilities for mixed age groups of children and soften the approach into the village along the B6160
- New play barn to act as the only children's wet weather play facility in the Dales area
- New farm shop to sell local/organic/estate produce (as with the farm shop at Chatsworth)
- New path to link village to/from Bolton Abbey Station (steam railway)
- New path by B6160 to improve pedestrian safety
- Scope for wider visibility splays to improve road safety for visitors and pedestrians by the 'Hole-in-the-Wall'
- Scope for more young people to live in the village
- Scope to retain more staff and reduce carbon footprint (of staff journeys to work)
- Scope for village to meet the social and economic needs of the local and wider community
- Scope to refurbish and enhance the Tithe Barn (built c.1520)
- Scope for CST to meet its business needs
- Creation of at least 27 extra full-time-equivalent high quality/value jobs.

CONCLUSION

It is concluded that:

- Bolton Abbey is a major tourist destination and a genuine service village for the local area which can and should accommodate more development as appropriate
- CST is a responsible business with a need for additional development to sustain the stewardship role of the Bolton Abbey Estate and meet the needs of the twenty-first century visitor
- The site has capacity for development but a masterplanned approach is needed to respect and complement the sensitive nature of the site and surrounding area
- The scheme would require only 0.7 Ha of greenfield land and would respect the scale/character of the village so as to enhance/create a special place and avoid harm to heritage and landscape assets
- The scheme would comprise sustainable development with major social, economic and environmental benefits for the local community/area in the long term.

As such, the comprehensive redevelopment of the site is needed to sustain the role of Bolton Abbey village as both a major tourist destination and a service village for the local area in the long term; the site should therefore be allocated accordingly.

INTRODUCTION

PURPOSE OF MASTERPLAN

The purpose of this masterplan is to provide for the comprehensive redevelopment of part of Bolton Abbey village in order to sustain its role as both a major tourist destination and a service village for the surrounding area.

It provides evidence in support of the proposed allocation of land for mixed use development sought by the Chatsworth Settlement Trustees (CST) to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC), and has been informed by:

- Bolton Abbey Estate Development Strategy (by CST)
- Bolton Abbey Visitor Accommodation Needs Assessment (by Frey Consulting)
- Bolton Abbey Staff Accommodation Needs Assessment (by Frey Consulting)
- Bolton Abbey Heritage Assessment (by ArcHeritage)
- Bolton Abbey Landscape Appraisal (by Gillespies).

STRUCTURE OF MASTERPLAN

This masterplan addresses the following:

- Context
- Need for redevelopment
- Site description
- Planning
- Development concept
- Benefits.

This masterplan shows that the comprehensive redevelopment of part of Bolton Abbey village is needed to sustain its role as a major tourist destination and a service village for the local area, and that CDC should therefore allocate the site accordingly.

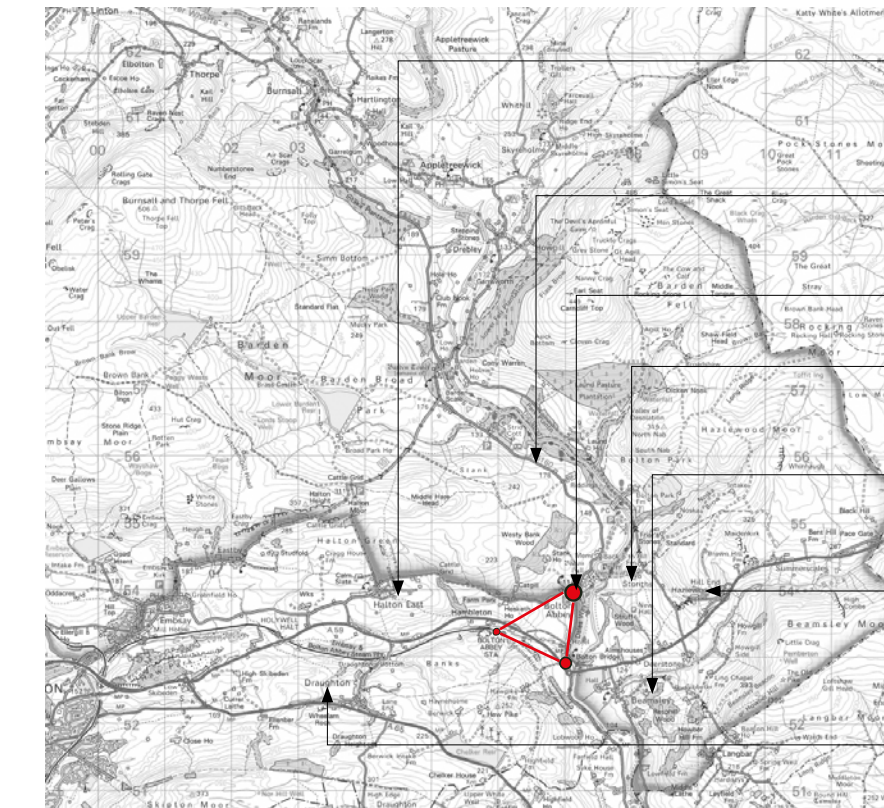


CONTEXT

LOCATION

Bolton Abbey comprises three settlements: Bolton Abbey village; Bolton Bridge; Bolton Abbey Station. It is situated on high ground east of the River Wharfe, less than a mile north of the junction of the A59 and the B6160 (see Fig.1). It therefore acts as the southern gateway to the Yorkshire Dales National Park (YDNP) and attracts 450,000 visitors per year.

Fig.1 Location plan showing Bolton Abbey and related settlements



Halton East - Has very limited services. Bolton Abbey provides the closest Post Office, public house and shop to the village.

B6160 - Significant road access between southern Wharfedales communities such as Burnsall, Appletreewick and Skyreholme. Bolton Abbey provides easy 'stop-and-shop' facilities with short stay car parking.

Bolton Abbey Service Village

Storiths - Has very limited services. Bolton Abbey provides the closest Post Office, public house and shop to the village.

Beamsley - Has very limited services. Bolton Abbey provides the closest Post Office, public house and shop to the village.

Hazlewood - Has very limited services. Bolton Abbey provides the closest Post Office, public house and shop to the village.

Draughton - Has very limited services. The nearest public house / restaurant is at Bolton Abbey and Bolton Abbey Post Office is the most accessible.

Bolton Abbey village straddles two local planning authority (LPA) areas, Craven District and the Yorkshire Dales National Park (YDNP), with most of the settlement lying in the YDNP. The draft YDNP Local Plan designates the village as a local service centre due to the range of services it provides to the area.



HISTORY

The settlement at Bolton Abbey dates back to at least the twelfth century. The Augustinian Priory was founded in 1154, and the Tithe Barn dates back to 1520. The popularity of Bolton Abbey as a visitor attraction began with the publication of an illustrated guide book entitled Fourteen Views in Lithography of Bolton Abbey by J Scarlett Davis in 1829. This led to the Strid and the Priory ruins attracting Turner, Wordsworth and other Romantics, which in turn led to the development of the Devonshire Arms Hotel and Bolton Abbey Station.

NATURAL ENVIRONMENT

The quality and importance of the area is recognised by a high number of planning designations (see Fig.2). As such, the Bolton Abbey Heritage Landscape Management Plan ensures open access for visitors and a high level of environmental management funded by CST (e.g. management of Strid Wood Site of Special Scientific Interest).

BUILT ENVIRONMENT

The built settlement is attractive, with a mixture of historic buildings and traditional stone houses surrounded by semi-improved pasture. It is therefore a popular place to live. Bolton Abbey contains 58 properties, 39 of which comprise dwelling units (seven of which are occupied by existing or former estate workers on reduced rents).

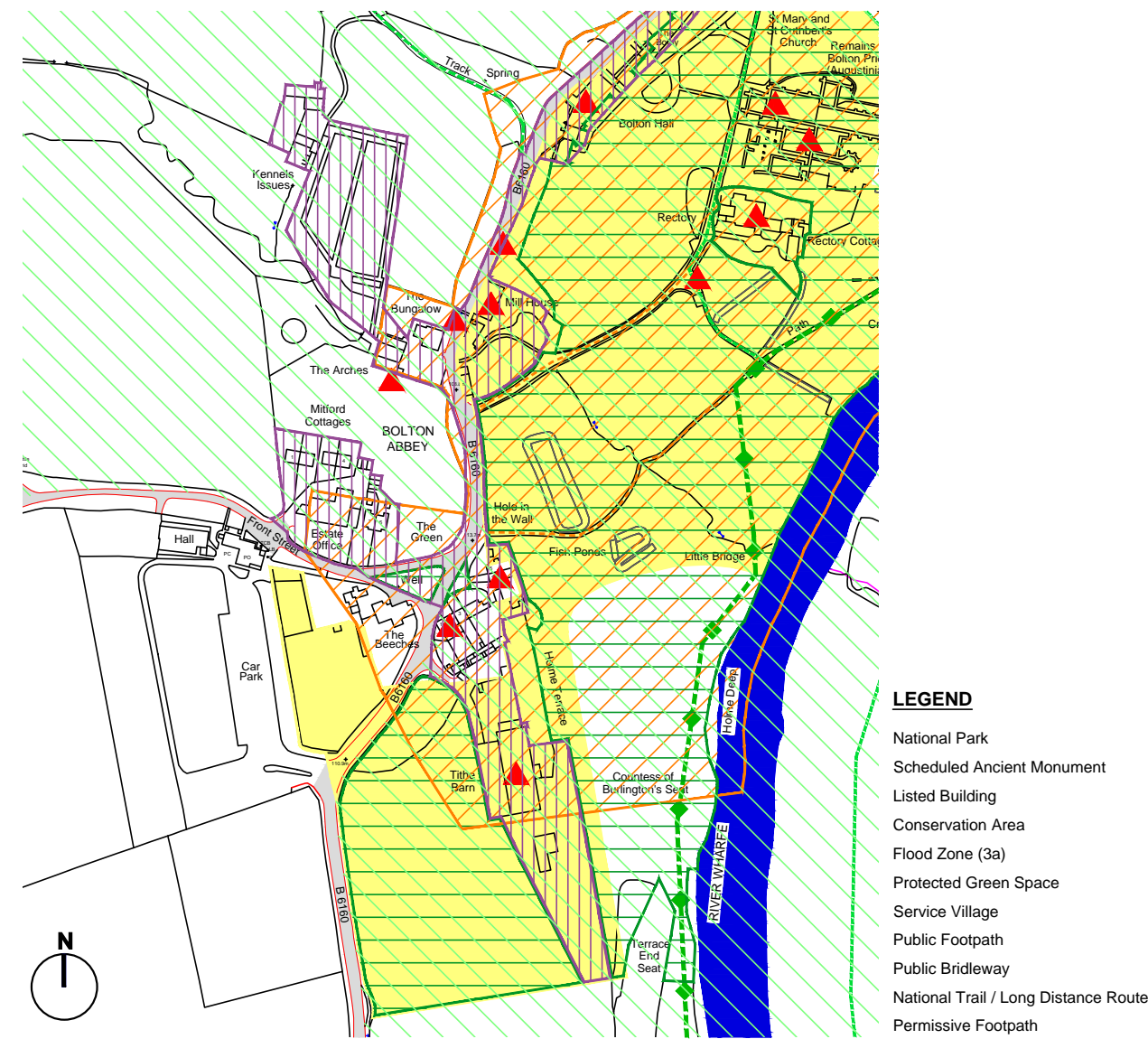
ECONOMY

Bolton Abbey makes an important economic contribution to the local area as follows:

- employment: CST has 159 full-time equivalent (FTE) staff at the Estate Office, the Devonshire Arms Hotel, the Cavendish Pavilion and the Devonshire Fell Hotel
- commercial premises: CST owns and manages farms, hotels, estate office, garage, gym/health spa, book shop, post office, souvenir shop, delicatessen, tea rooms, farm shop, café/restaurant
- visitor economy: 450,000 visitors to Bolton Abbey per year (though there is only one 4 star hotel and very few B&Bs/self-catering units nearby to accommodate them).

CONTEXT (CONTINUED)

Fig.2 Planning constraints, Bolton Abbey village



SERVICES

Bolton Abbey also provides a very high level of services for a rural area as follows:

- Bolton Abbey Village: post office; bus stop; public toilets; village hall; church; car park; coach park; book shop; tea room/café; delicatessen; café/restaurant; gift shop; tourist information; litter and recycling bins;
- Bolton Bridge: bus stop; garage; hotel; tea shop; gym/health spa; farm shop; community cricket club
- Bolton Abbey Station: community railway; café.

COMMUNITY

The village is fairly active in social terms due to: its economic contribution to the local area; the high level of services it provides for a rural area; the Estate office's role as a central 'hub' for the Estate; the high proportion of people living and working locally. Census data shows most residents tend to be advanced in years, with a decreasing number of young people living in the village.

RELATED SETTLEMENTS

Bolton Abbey acts as the main "service village" for the related area of Appletreewick, Barden, Beamsley, Draughton, Halton East, Hazlewood, Skyreholme and Storiths (see Fig.1). Since these settlements will accommodate further development over the next fifteen years, there is a need to support the role of Bolton Abbey as the service village for the area.

NEED FOR DEVELOPMENT

LANDOWNER

Chatsworth Settlement Trustees (CST) is a business that owns and manages property on behalf of the Cavendish family, which has owned the land between Bolton Bridge and Barden Bridge as well as the surrounding countryside (c.10,000 hectares) since 1753.

CST derives incomes from rents, trading (e.g. admissions), high quality food/retail outlets (e.g. the Farm Shop at Chatsworth) and other income streams. It thereby funds a range of high quality environmental management activities, and takes a responsible and pro-active view of conservation while ensuring that projects provide a commercial return so as to sustain the stewardship role of the Estate in the long term.

KEY ISSUES

CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the YDNP) which has led to its "Bolton Abbey Estate Development Strategy" (2014). This business plan identifies the main business strengths at Bolton Abbey (e.g. heritage assets, natural features and landscape quality) as well as issues for CST to address, including:

- lack of sense of arrival (and departure) for visitors
- vulnerability of tourism operation to weather and school holidays
- little or no secondary spend by visitors due to brevity of trips
- major planning constraints severely limit opportunities for growth
- high maintenance costs
- services at risk (e.g. loss-making/subsidised Post Office)
- staff cannot afford local house prices (i.e. long journeys to work)
- very limited visitor accommodation in the area in terms of supply and choice

Bolton Abbey village thereby provides a limited and low value offer to visitors at present.

FURTHER EVIDENCE

As such, CST has undertaken market research and assessed both visitor accommodation and staff accommodation needs to help identify solutions. This evidence shows that:

- there is a major shortage of visitor accommodation within 5 km of Bolton Abbey (especially since 83% of such accommodation comprises a camp-site/luxury hotel)
- demand for visitor accommodation in the area is considerable (since half those surveyed would use visitor accommodation in Bolton Abbey village if it were available)
- staffing is a problem due to the lack/price of local accommodation, especially as some staff must be close to places of work (e.g. gamekeepers) and do not have local ties (e.g. international chefs)
- many of CST's staff have long journeys to work (i.e. CST's carbon footprint is high)
- CST needs to attract grandparents (with grandchildren), and provide a more diverse visitor offer.



To address these issues, CST's Business Plan identifies the need for: "pub, farm shop, play area, play barn (i.e. wet weather facility)...staff/visitor/market accommodation, entry sign (welcome to Bolton Abbey)."

REASONABLE ALTERNATIVES

CST considered several alternatives to accommodate its business needs. These included:

1. Develop land at the Cavendish Pavilion (Sandholme). This option was rejected further to discussions with the YDNP since CST would not get planning permission for major development in the national park
2. Do-nothing. This option was rejected since it would exacerbate the key issues already experienced/identified (e.g. ageing population, loss of services, loss of business, increased carbon footprint)
3. Develop land in south-west corner of Bolton Abbey village within Craven District (the only viable option). Moreover, 3.2 ha of the (3.9 ha) site is already in use for housing, parking and retail.

APPROACH

As such, CST has liaised with CDC and undertaken a comprehensive masterplanning process informed by both a heritage assessment and a landscape appraisal of the site concerned as well as assessments of its visitor accommodation and staff accommodation needs respectively. This process has resulted in an indicative scheme for the "village green site" which seeks to:

- provide for high quality design, optimal layout and access arrangements
- respect the scale and character of the village and its sensitive setting
- fit with the existing "dispersed" built form and low density of the settlement
- create a sense of arrival
- provide for use of local stone and planting appropriate to a parkland setting
- avoid occupying most of the Bolton Priory Scheduled Ancient Monument area (i.e. the houses around the new village green will be outside the SAM area)
- enhance the Bolton Abbey Conservation Area and respect the character of the adjoining YDNP.

PRECEDENTS

In masterplanning the "village green site" at Bolton Abbey, CST has considered:

- local precedents (e.g. the village green at Arncliffe in Upper Wharfedale, estate housing at Ripley Village and Harewood, Hesketh Park Farm, the Yorkshire Dales Ice Cream Parlour at Halton East)
- local comparables (e.g. CST developments granted planning permission by CDC or YDNPA such as: the Village Shop/Post Office, the Estate Office extension, the Mitford Cottages, the Cavendish Pavilion extension, the Devonshire Spa barn)
- other comparables (e.g. CST developments granted planning permission by the Peak District National Park Authority such as: Chatsworth Farm Shop, Chatsworth Adventure Play Area, Chatsworth Renewable Energy Centre, Devonshire Arms pub at Pilsley).

SITE DESCRIPTION

SITE

The site comprises 3.9 ha of flat land in Flood Zone 1 (i.e. flooding not an issue) situated in the south-western corner of Bolton Abbey village. It contains: the visitors' main and overflow car parks; a nineteenth century stone building ("The Beeches") used as a delicatessen with an outbuilding, garden and hedge; the post office; the village hall (with dedicated car park); semi-improved grassland (c.0.7 ha). Most of the site (c.3.2 ha) is therefore already "in use" (and only a further 0.7 ha is needed for development).

ACCESS

The site contains an ingress/egress point from the main car park onto the B6160. It also contains a minor ingress/egress point from the village hall car park onto the unclassified local highway between Bolton Abbey village and Halton East, and a minor ingress/egress point from The Beeches onto the same.

BUILT FORM

The built form of the settlement is dispersed and linear. As such, it has a fairly "anonymous" feel with visitors driving through without knowing where they are (and missing The Priory altogether).

HERITAGE

Part of the site (c.0.4 ha) to the north-east is included within The Bolton Abbey Priory Scheduled Ancient Monument (SAM) area (see Fig. 2). The heritage assessment has established that there is no evidence of the presence of monastic buildings on this part of the site, which was largely used to accommodate "hinds" (agricultural workers) and formed part of the "Barnyard" (the Tithe Barn's works yard).

LANDSCAPE

The north-eastern tip of the site (c. 0.05 ha, including The Beeches) is within the Bolton Abbey Village Conservation Area; the northern and eastern sides of the site are bordered by the YDNP. Development would need to respect these constraints, and also minimise potential adverse impacts to views from the higher ground, especially to the west and the south-west.

COMMUNITY

CST's business needs and objectives for the area are longstanding and generally known by residents, many of whom are current or former employees. No negative feedback has been received to date.



Bolton Abbey Village Masterplan (April 2015)

PLANNING

Applications for planning permission must be determined in line with the development plan unless material considerations indicate otherwise. It is important therefore to establish the relevant planning policy for the site and related considerations such as planning designations.

PLANNING POLICY

The planning context for the site is unusual since most of the village lies within the YDNP but the site lies within Craven District. Although the Craven District Local Plan (CDLP) 1999 provides no designations to negate development of the site, the draft YDNP Local Plan (YDNPLP) 2014 includes Bolton Abbey as a "Service Village" (ie capable of accommodating growth) whereas the emerging draft CDLP is silent on the same point (though it does contain welcome growth-related references to Bolton Abbey).

This means the village and the communities it serves could lose important services over the plan period; it also engenders uncertainty as to whether CST can meet its business needs.

As such, Bolton Abbey should be recognised as a focus for growth and the site allocated for masterplanned growth (with related policy) in the CDLP to address these issues and also ensure consistency with:

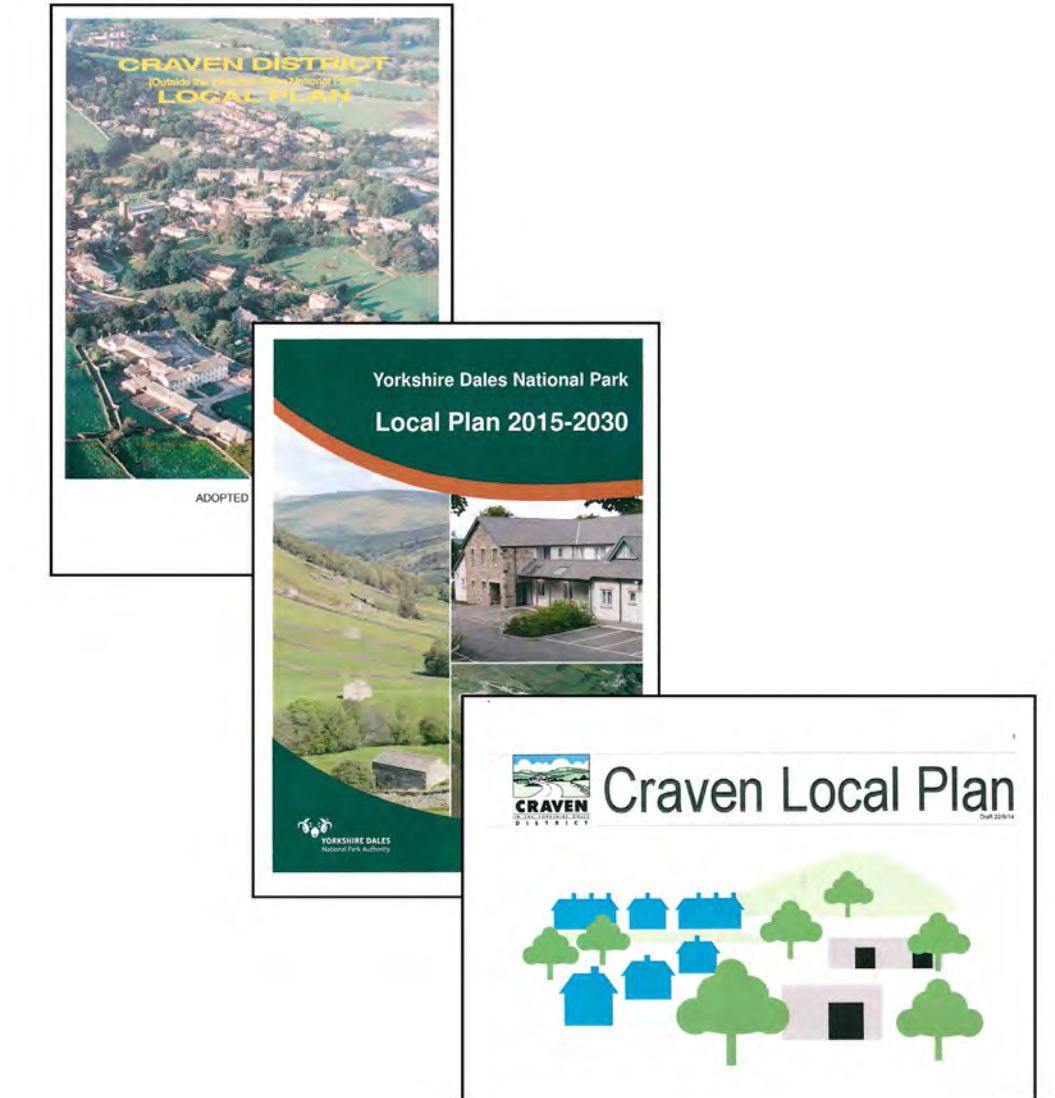
- 7 of the CDLP's 9 strategic objectives as identified in the Pre-Publication draft CDLP
- the emerging YDNPLP which recognises Bolton Abbey as a "Service Village" and includes it in its settlement hierarchy as a suitable place for new development
- the National Planning Policy Framework 2012 which states: *To promote sustainable development in rural areas, housing should be located where it will enhance or maintain the vitality of rural communities...where there are groups of smaller settlements, development in one...may support services in a village nearby (Para. 55)*
- the National Planning Practice Guidance 2014 which states: *A thriving rural community...depends...on retaining local services and community facilities...Rural housing is essential to ensure viable use of these local facilities (section entitled How should local authorities support sustainable rural communities?)*
- the Taylor Review of Rural Economy and Affordable Housing (2008) which found that restrictive planning practices had contributed to small rural villages becoming *increasingly unsustainable communities, unaffordable for those who work there, losing jobs and services*, and identified the narrow application of sustainability criteria (*focused on accessibility and sustainable travel*) had led to the planning system placing undue emphasis on the environment at the expense of otherwise beneficial housing and economic development.

PLANNING DESIGNATIONS

As mentioned earlier (see section on Site Description), part of the site lies in both the Bolton Abbey Priory SAM area and the Bolton Abbey Village Conservation Area. However, both the heritage assessment and landscape appraisal of the intended scheme have established that the site has the capacity to accommodate development in heritage and landscape terms, subject to mitigation measures. The intended development scheme has therefore been specifically designed to take into account the mitigation measures prescribed by the heritage assessment and the landscape appraisal.



Bolton Abbey Village Masterplan (April 2015)



DEVELOPMENT CONCEPT

ELEMENTS

Taking into account CST's business needs and the planning context for the settlement, the intended scheme would involve the development of only an extra 0.7 ha of land not already in use, and comprise the following new elements:

- Village Green to provide public open greenspace and act as focal point of village
- Planting to provide screening and retain parkland feel of setting
- Interpretation Panel to enhance awareness of former Barnyard within Abbey precinct
- Biomass boiler to provide district heating scheme for development
- Accommodation to provide upto 15 units for visitors/staff/others
- Pub to consolidate community and enhance sense of arrival/departure for visitors
- Farm Shop to sell local/organic/Estate produce (as with Farm Shop at Chatsworth)
- Play Barn to act as the only wet weather facility in the Dales area
- Play Area to provide learning-through-play facilities for a mix of age groups and soften the approach into the village along the B6160
- Paths to provide safer access to The Priory and Bolton Abbey Station.

The operation of these would lead to the creation of 27 Full-Time Equivalent (FTE) jobs and greatly improve the landscape aspect at Bolton Abbey village.

DESIGN

The built elements would be predominantly traditional (e.g. wood and stone) and designed to a high standard to respect the existing scale and historic/rural/vernacular character of the village. They would also be provided together so as to complement the existing built form and enhance the sense of place.

In order to design the best scheme for Bolton Abbey, CST liaised with CDC and evaluated the heritage and landscape capacity of the area. This led to CST: reducing the size of development; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from views in the YDNP.

LAYOUT

The individual elements would be provided "together" so as to complement the existing form of the settlement and have less impact on the surrounding landscape (see Figs. 3, 4 and 5). As such:

- The pub, visitor accommodation and housing (with district heating scheme) would be situated around a new village green to the west/south-west of The Beeches
- The farm shop, play barn and play area would be situated in the current overspill car park so as to facilitate disabled/other access from the main car park and also be seen by drivers on the B6160 (with the play area providing a "soft" approach to the village)
- The existing main car park would be extended westward with related buffer planting so as to accommodate the pub/housing/visitor accommodation on the west side of the new village green
- Paths would provide safer access to The Priory ruins and/or the steam trains at Bolton Abbey Station (and thereby help diversify the visitor offer there).

SCALE

The basic layout of the intended scheme is in keeping with the existing form, scale and character of the village; sympathetic planting and materials will further enhance this blend. CST has scaled back the amount of development to an acceptable level in planning terms and to provide the best 'fit' within the existing village.

ACCESS

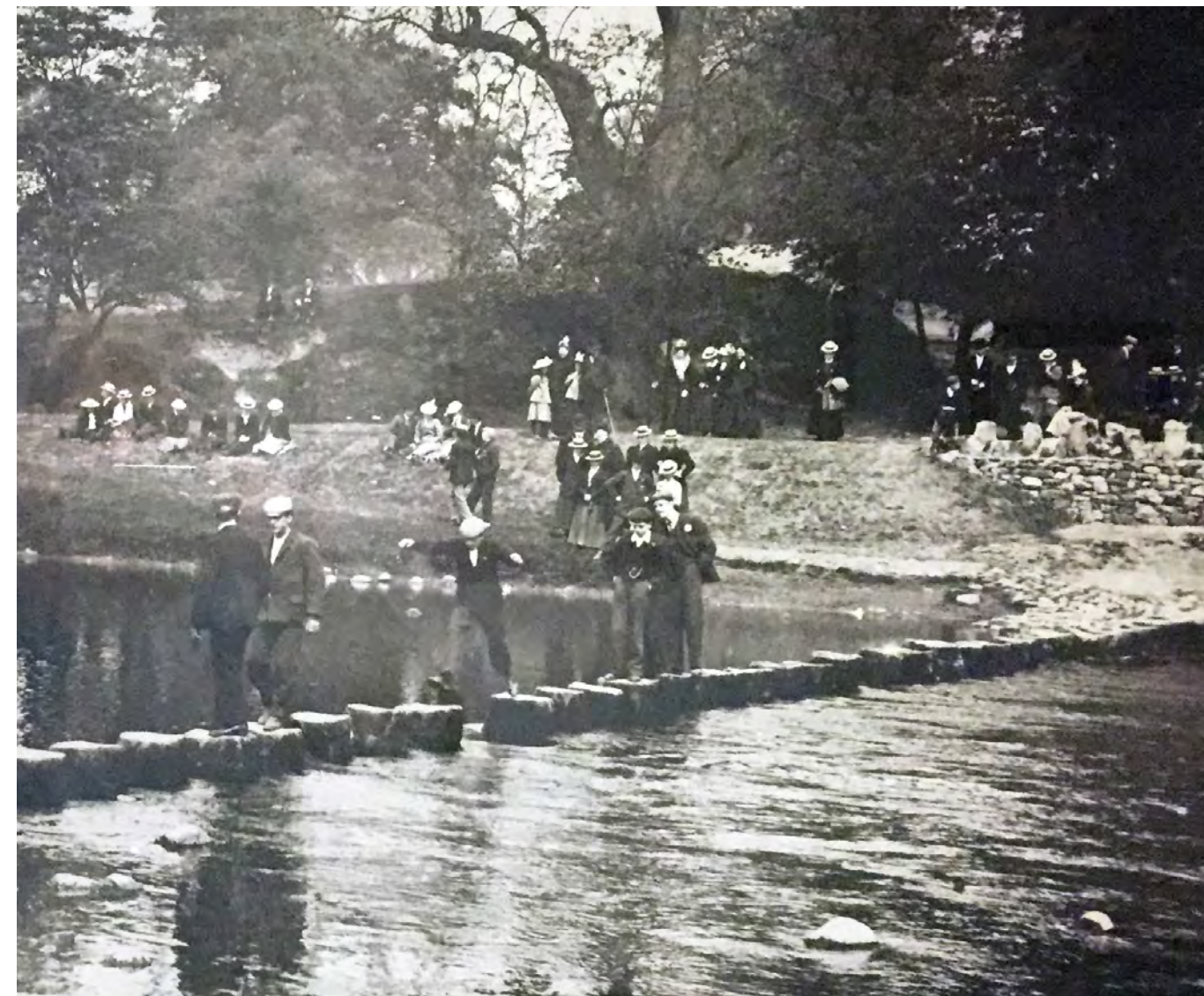
The intended scheme retains the vehicular access in the east of the site and provides another access in the north-west of the site. There is scope to realign the junction of the B6160 and Front Street by The Beeches so as to improve vehicular and pedestrian safety. The removal of the hedge on the north-east side of the site to create the new village green would also improve visibility splays for pedestrians crossing the road by The Beeches and the Hole-in-the-Wall.

PHASING

Suitable phasing would help minimise disturbance and the perception of adverse impacts. It is likely that planting and the extension of the main car park would take place (in winter) first, followed by the development of village green, play area and related buildings thereafter.

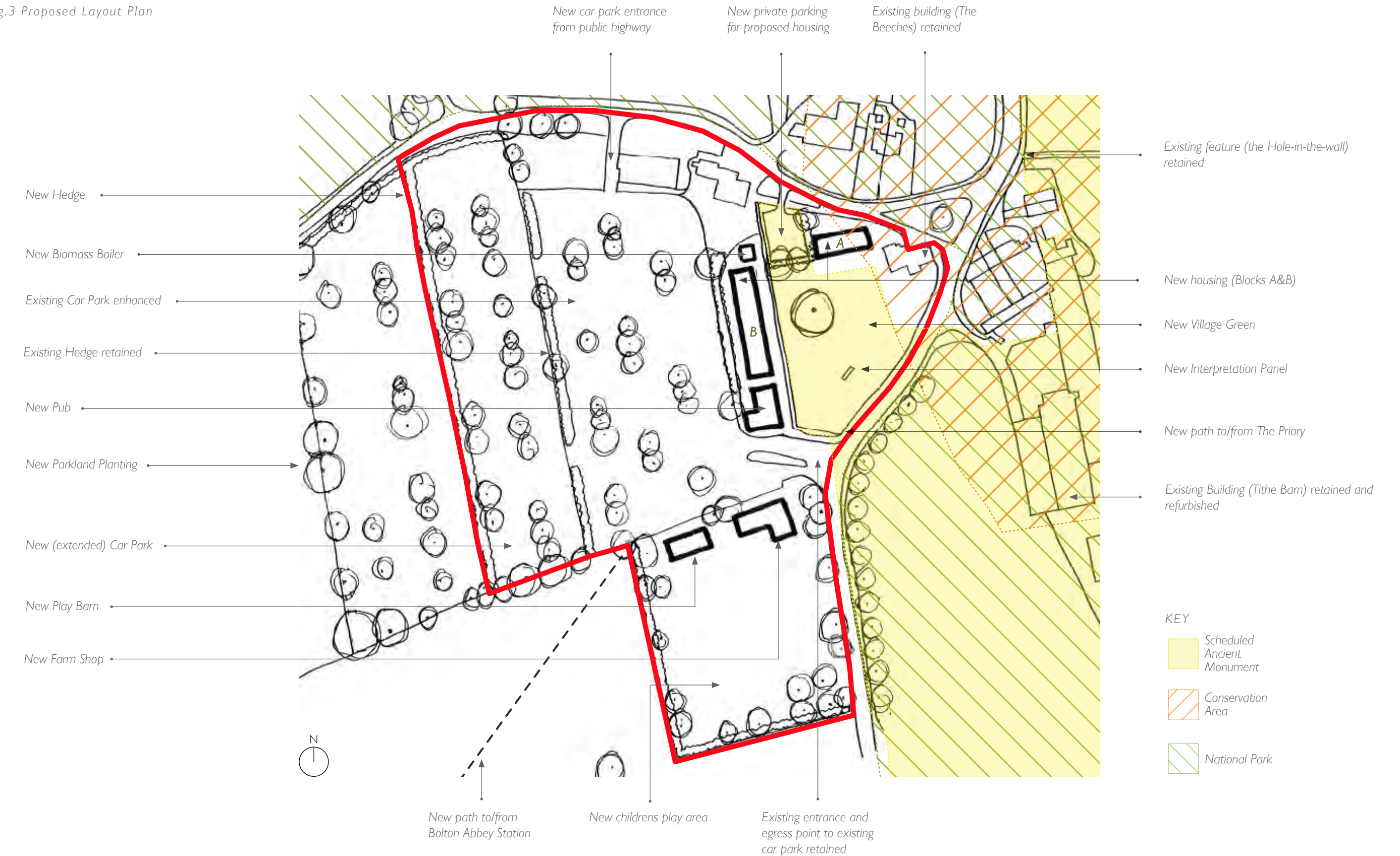
HERITAGE AND LANDSCAPE IMPACTS

Both the Heritage Assessment and the Landscape Appraisal concluded that the intended scheme would not have a significant adverse impact on the heritage and landscape resource of the village and wider area in the long term.



DEVELOPMENT CONCEPT (CONTINUED)

Fig.3 Proposed Layout Plan



BENEFITS

The main benefits of a mixed use development on the proposed allocation site at Bolton Abbey would include:

- New village green to create attractive focal point in settlement and provide public open greenspace
- New planting in existing and extended car park to improve visual amenity and integrate development with surrounding parkland and minimise impact to wider landscape
- New interpretation panel to enhance awareness of the former Barnyard (working yard for Tithe Barn) within the medieval Abbey complex
- New dwelling units to provide high quality accommodation for visitors/staff/others
- New biomass boiler to provide district heating scheme for development
- New pub to consolidate local community and enhance sense of arrival/departure for visitors
- New play area to provide learning-through-play facilities for mixed age groups of children and soften the approach into the village along the B6160
- New play barn to act as the only children's wet weather play facility in the Dales area
- New farm shop to sell local/organic/estate produce (as with the farm shop at Chatsworth)
- New path to provide scenic link village to/from Bolton Abbey Station (steam railway)
- New path by B6160 to improve pedestrian safety
- Scope for wider visibility splays to improve road safety for visitors and pedestrians by the 'Hole-in-the-Wall'
- Scope for more young people to live in the village
- Scope to retain more staff and reduce carbon footprint (of staff journeys to work)
- Scope for village to meet the social and economic needs of the local and wider community
- Scope to refurbish and enhance Tithe Barn (built c.1520)
- Scope for CST to meet its business needs
- Creation of at least 27 extra full-time-equivalent high quality/value jobs.



BENEFITS (CONTINUED)

Fig.4 Proposed Concept Plan showing benefits of intended scheme



CONCLUSION

The main conclusions of this masterplan document are:

- Bolton Abbey is a major tourist destination and a genuine service village for the local area which can and should accommodate more development as appropriate
- CST is a responsible business with a need for additional development to sustain the stewardship role of the Bolton Abbey Estate and meet the needs of the twenty-first century visitor
- The site has capacity for development but a masterplanned approach is needed to respect and complement the sensitive nature of the site and surrounding area
- The scheme would require only 0.7 Ha of greenfield land and would respect the scale/character of the village so as to enhance/create a special place and avoid harm to heritage and landscape assets
- The scheme would comprise sustainable development with major social, economic and environmental benefits for the local community/area in the long term.

As such, the comprehensive redevelopment of the site is needed to sustain the role of Bolton Abbey village as both a major tourist destination and a service village for the local area in the long term; the site should therefore be allocated accordingly.

Fig 5. Sketch of Indicative Development Scheme



**Appendix 6: Bolton Abbey village
Masterplan, letter from Historic England**



Historic England

Mr Will Kemp
Planning and Development Manager
The Estate Office
Derbyshire
DE45 1PJ

Our ref:
Your ref:

Telephone 01904601897
Fax

26 November 2015

Dear Will

Re: Re: Bolton Abbey Village Master plan

As agreed at our meeting at the end of last month, I am writing to set out Historic England's views on the proposed Bolton Abbey Village Master Plan (BAVM), the long term strategic management of the village and wider Estate in relation to its heritage assets.

Firstly, we would like to reiterate that we are very supportive in principle of the Estate's desire to secure its greater long term viability and that of the village at Bolton Abbey. We see this as a clear opportunity to increase the resilience of the Estate and to secure the future of the multiple heritage assets in your care. Furthermore, we are supportive of increasing the visitor offer and the need to secure accommodation/housing for essential Estate staff. We see this as an opportunity to look at the wider Estate centred between Bolton Bridge and Barden Tower to understand and identify all potential opportunities for growth and development.

Scope of the master Plan

One of our key concerns with the current master plan is that it does not consider the wider Estate and in particular the area between Bolton Bridge and Barden Tower. Whilst we accept that this introduces the need to consider areas within the National Park we feel it is critical to understand the capacity of this area for development in its totality. At present focusing outside the National Park (in Craven) and at Bolton Abbey village alone is driving a degree of development which will be detrimental to the special qualities, characteristics and significance of the heritage assets there. It also fails to understand and articulate the other challenges the Estate faces with its heritage assets or how other developments such as the Tithe Barn or proposals by the church relate to the current scheme.



Historic England, 37 Tanner Row, York YO1 6WP
Telephone 01904 60 1948 HistoricEngland.org.uk

Please note that Historic England operates an access to information policy.

Correspondence or information which you send us may therefore become publicly available.



We fully understand your time constraints in regard to seeking an allocation as part of Craven's Local Plan. However, we do feel it is essential to understand this wider context which will help to provide a rationale for the identification of Bolton Abbey village as a specific allocation within the Local Plan.

Background Assessment

As it stands the heritage assessment produced to accompany the BAVM is far too limited in scope taking a limited archaeological approach to the assessment. It fails to address the wider heritage of the village, the conservation area and the interrelationship between the heritage assets. There is no consideration of how the development will affect these issues beyond recommending and avoidance of the scheduled monument. We do not consider this has helped in the development of a comprehensive well informed scheme or one which protects and enhances the heritage assets. We have clearly articulated the wider significance of Bolton Abbey emanating out of its association with the Picturesque and Romantic Movements and how these directly led to the development of the a tourist destination in the Nineteenth Century and to Bolton Abbey being the popular destination it is today. This remains a very under exploited element of Bolton Abbey and a clear assessment of these elements the place's significance will unlock development opportunities and not restrict them. For example, the links to Bolton Abbey Station and the alignment of the old A59 adjacent to the Devonshire Arms Hotel.

At present the limited scope of the BAVM and Heritage Assessment does not allow for this wider context to be understood or appreciated and the full impact of the scheme to be assessed.

We would wish to see the following elements included in the accompanying heritage assessment:

- A Conservation Area assessment looking at the contribution open spaces to the significance of the heritage assets.
- An assessment of how the village developed over time and its relationship to the Priory and to Bolton Hall
- A better understanding to the interrelationship between the heritage assets and an understanding of Bolton Abbey as a place and not just discrete building/features.
- A clear understanding of how the Picturesque and Romantic Movements responded to Bolton Abbey and how they appreciated it as a place of inspiration.
- A clear understanding of how the place developed as a tourist destination through the Nineteenth and Twentieth Centuries and the opportunities to build on this moving forward.
- The Contribution setting makes to the significance the heritage assets/place and how key views into and across the place contribute our understanding and appreciation of the place. In particular how any new development may strengthen these and provide that sense of arrival/destination you are seeking.



With regard to the master plan we consider it is essential that this is widened to include consideration for the area between Bolton Bridge and Barden Tower. We accept that this may not need to be in the same detail as the current master plan at this stage, however it should identify both constraints and opportunities so that the current site can be put in a clear context.

Design/use

At present we remain unconvinced about the intensity and design of some of the uses proposed for the allocation site. In particular we are not convinced by the play barn, play area, pub and village green or their location within the scheme. We do understand and support the need for staff accommodation and dwelling units and the need to ensure there is a clear entrance into the village and indication of arrival at a destination. As we discussed on site these issues may be resolved by the wider assessment work and a better understanding of development opportunities in the wider area set out above. It also is the case that we consider a reworking of the plan to have greater emphasis on roadside dwellings at the entrance of the village may address many of our concerns. In our opinion a reworking of the scheme layout and consideration of the strengthening the sense of arrival to the village on both sides of the road from Bolton Bridge would better achieve the aims of the Estate to provide a clear gateway to the village. If this approach was taken it would allow for some of the other activities to sit better within the overall scheme and enable the Estate to consider a development plan over a much longer period.

Wider engagement

Historic England is keen to work with the Estate to secure its long term sustainable development. We fully understand the complex matrix of stakeholders and partners that the Estate needs to work with to deliver this and we would welcome any opportunities to work collectively around the development of a comprehensive master plan. As you are aware we have been asked for advice by the Parish Church on their ideas to extend their current facilities at the church. Whilst they are not directly related to the BAVM they do have similar aspirations and taken together raise further questions about the capacity of the site to accommodate the level of development proposed. A wider master plan should help to address this and we would welcome the opportunity to assist in developing this and bringing all parties together to develop a clear set of principles for helping the Estate (and others) move forward.

Tithe Barn

We are pleased to hear that the Tithe barn scheme is still progressing and we would welcome further engagement on this issue. We are happy to progress this alongside discussions on the master plan.





Historic England

Yours sincerely

Neil Redfern
Principal Inspector of Ancient Monuments, Yorkshire
E-mail: Neil.Redfern@HistoricEngland.org.uk



Historic England, 37 Tanner Row, York YO1 6WP
Telephone 01904 60 1948 HistoricEngland.org.uk

Please note that Historic England operates an access to information policy.
Correspondence or information which you send us may therefore become publicly available.



**Appendix 7: Bolton Abbey village
Masterplan, response letter to Historic
England**

4th May 2016

Our Ref: P&D/Plans/CDC/BAVM/WK

Neil Redfern
Historic England
37 Tanner Row
York YO1 6WP

Dear Neil

Bolton Abbey Village Masterplan (BAVM)

I am writing to respond to your letter about the above dated 26 November (to which we have not responded owing to the need to see what the delayed Draft Craven District Local Plan (CDLP) provided for regarding the same).

Firstly we note and welcome your high-level statement of support for the long viability of the Estate, including the future management of multiple heritage assets in our care, and the need to increase our visitor offer and provide housing. We also note you want us to look at the Core Visitor Area between Bolton Bridge and Barden Tower to identify “all” potential development opportunities (which we did by way of the Bolton Abbey Development Strategy 2012).

Secondly, we must stress that we are a business with specific needs and therefore must have certainty for long term planning and investment reasons. As such, we think the consideration of the BAVM should first and foremost take place within the context provided by paragraph 131 of the National Planning Policy Framework (NPPF) which states:

In determining planning applications, local planning authorities should take account of:

- *the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*
- *the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and*
- *the desirability of new development making a positive contribution to local character and distinctiveness.*

I will now address your specific points in turn.

Scope of the masterplan

We note your concern regarding the need for the masterplan to consider the wider Estate and in particular the area between Bolton Bridge and Barden Tower



(i.e. the “Core Visitor Area”) and its capacity for development, and accept the need for other parties (e.g. the church) to be involved.

We also note that you understand the time constraints in seeking an allocation in the Craven Local Plan and welcome your view that “it is essential to understand this wider context which will help you to provide a rational (*sic*) for the identification of Bolton Abbey as a specific allocation within the Local Plan” (though as stated your recent intervention in the Draft CDLP process has resulted in the exact opposite).

However, we do not accept that focusing development at Bolton Abbey “is driving a degree of development which will be detrimental to the special qualities, characteristics and significance of the heritage assets there” since: the special qualities, characteristics and significance of the heritage assets there is a moot point; we are seeking to develop a small area of Bolton Abbey village which has little or no character (80% of our proposed allocation site is residential or car parking space); we have had regard to related heritage assets and continue to do so (see next section on heritage assessment); above all else we would ensure the delivery of a very high quality design so as to conserve (and enhance) the character of the place as a resource that helps provide revenue since it is in our commercial interests to do so.

All things considered, we have already looked at the Core Visitor Area (mostly within the National Park) between Bolton Bridge and Barden Tower to identify “all” potential development opportunities, both over the course of the last twenty years and more recently as part of the Bolton Abbey Development Strategy 2012 (with the National Park Authority (NPA) itself), hence the need to focus development on Bolton Abbey Village.

Moreover, whilst we think the NPA could accept some of the types of development in principle, it is unlikely to find the scale of development needed acceptable, as we have found to our cost on numerous occasions in the past. Indeed the NPA confirmed this to be the case when we consulted it in relation to the Bolton Abbey Development Strategy in 2012.

We therefore feel a sense of déjà vu at the implications of some of your comments, but do accept you were not party to the original masterplanning that took place. As such, we are prepared in principle to re-run that process, with new evidence, and with more stakeholders, over a wider area (provided that this does not incur significant extra cost). That said, we remain absolutely committed to the principle of development around a village green so as to provide a sense of arrival to the village and comprise a new chapter in Bolton Abbey’s history; you should have no delusions about this from the start.

Background Assessment

We accept your comments on the limited archaeological approach of the preliminary heritage appraisal of the village, note your helpful steer on the scope of matters which a comprehensive heritage assessment should address, and agree



with your view that the consideration of the core visitor area between Barden Bridge and Barden Tower “may not need to be in the same detail as the current master plan at this stage”.

We have therefore hired FAS to undertake this piece of work in line with your implicit brief as outlined in your letter, at no small cost to ourselves, and would like to share the related draft findings with you assuming that you will review and provide impartial comments on the same accordingly.

Design/use

We welcome your understanding and support for “the need for staff accommodation and dwelling units and the need to ensure there is a clear entrance into the village and indication of arrival at destination”, and also agree that related issues “may be resolved by the wider assessment work”.

We also welcome the possibility that a “reworking of the plan to have greater emphasis on roadside dwellings at the entrance of the village may address many of our concerns” and would like to explore this possibility further, though as stressed above, we are absolutely committed to the concept of a village green to provide public open greenspace in the centre of the village and more besides.

Although you do not specifically address the issue in your letter, you also mentioned on site the possibility of considering an alternative concept (of a more multi-nodal approach to development in the core visitor area) to our (preferred) cluster of development centred around Bolton Abbey village. This is not unwelcome, since we need to arrive at the best scheme for commercial reasons.

However, we strongly disagree with your statement “we are not convinced by the play barn, play area, pub and village green or their location within the scheme” for many reasons, including:

- the play barn would: resemble a field barn, and be designed to a high standard; would consume its own noise (since the play use would take place inside an enclosed space); meet the very real need for a play barn and wet weather facility in the area/region (the lack of which currently limits the visitor offer of the area); have safe and suitable access, especially during wet weather (i.e. must be located near an existing car park); generate and provide much-needed jobs in the local community
- the play area would: be used only in summer; be located at least some 80 metres away from the Tithe Barn and further separated from the same by a busy main road; be very well-designed (made from traditional materials etc); be compatible with the high priority afforded by Government to recreational opportunities for children (and the need to tackle obesity etc); provide opportunities for learning-from-play facilities (including the appreciation of related heritage assets); be located near to a safe and suitable access (i.e. a car park, of which there are very few in the area)



- the village green would: respect and align with the scheduled monument boundary; provide public open greenspace in the centre of a settlement; enhance the setting of a listed building (opening up views of it); be compatible with other precedents for village greens in Wharfedale (e.g. Burnsall, Arncliffe); provide a sense of arrival for visitors; provide a strong focal point for visitors and facilitate the introduction to the area's heritage resource by way of a well-designed interpretation board
- the pub would: increase and improve the visitor offer (especially after hours); provide residents with a community facility; generate and provide much-needed jobs in the local community.

In short, we do not believe it is reasonable, justified or sustainable for you to seek to preserve the area concerned (which is some way off the "prime" area of heritage assets) in aspic or to object to the provision of needed facilities in the (safe and accessible) location concerned when we will take care to design those facilities to mitigate any potential harm to the heritage resource.

In particular, we fail to see how you can object to a play area in this location on any number levels, and especially since it would both be used only in summer AND located on the other side of a busy main road (busy, that is, in summer, when the play area would be used).

We also fail to see how you cannot regard the principle of development by a village green as a new chapter in Bolton Abbey's history and one that provides an identifiable hallmark of quality by the Cavendish family in much the same way that other local estates have left their mark (e.g. Ripley Castle, Harewood).

Nevertheless, we are prepared to work with you and think that your views and concerns necessitate two further pieces of work by us: a schedule of uses (with areas, operational/access requirements and any other related particulars); an options appraisal study looking at both specific sites for necessary uses AND general development options, such as:

1. development dispersed throughout the core visitor area between Bolton Abbey village and Barden Bridge
2. development clustered around Bolton Abbey village only (as per the current Bolton Abbey Village Masterplan 2015)
3. development clustered around Bolton Bridge only (as suggested by yourselves on site)
4. development clustered around both Bolton Abbey village AND Bolton Bridge
5. other.

We think such a study, informed by the heritage assessment by FAS, could provide a transparent, objective and systematic solution as to the type and location of development concerned, and thereby provide us both with the assurance we seek BUT ONLY IF we are both prepared to work together in the spirit of sustainable development and make compromises as appropriate.



Wider engagement

We note and agree with your point on the need to work with others (e.g. the church).

However, we also feel some public liaison is needed here too, to tease out what the local community want and need, and to test general concept schemes and specific uses, thereby adding some social realism to related thinking.

Tithe Barn

We note with thanks your on-going help and interest in progressing the proposed scheme, and will keep you informed as best we can.

Other

Clearly there are some strands of work here that need to be done and tied together relative to the Draft Craven Local Plan. As such, I will pull together a draft work programme and send that on to you in due course.

Yours sincerely



Will Kemp
Planning and Development Manager

will.kemp@chatsworth.org



**Appendix 8: Craven District Local Plan 2nd
Pre-Publication Draft Response**

May 31st 2016

Roy Banks
Planning Officer
Craven District Council
1 Belle Vue Square
Broughton Road
Skipton
North Yorkshire
BD23 1FJ

Dear Roy,

RE: Response on behalf of Chatsworth Settlement Trustees (Bolton Abbey Estate) to Craven District Local Plan Consultation (Second Informal 'Pre-Publication' Draft – April/May 2016)

Further to our meeting on 28th April and two years of working with yourselves to produce both a development masterplan for Bolton Abbey Village and related evidence in line with your specifications, I am writing on behalf of the Chatsworth Settlement Trustees (CST) to respond to the Craven District Local Plan Pre-Publication Draft consultation document (“the Draft CDLP”).

As you know, CST seeks the allocation of specific sites within Bolton Abbey (i.e. Bolton Abbey village and Bolton Bridge) as already submitted to yourselves for the delivery of mixed use development essential to support CST's custodial role and meet the needs of the local community.

Whilst CST therefore welcomes the overdue amendment of the spatial strategy to include Bolton Abbey within the hierarchy of designated settlements, it is very concerned that neither the current Draft CDLP nor the related Sustainability Appraisal identify or evaluate the proposed masterplan site(s) submitted for consideration. Moreover, the Draft CDLP does not indicate the type or scale of development that will be delivered in the settlement during the plan period.

The absence of provision for such development does not accord with CST's understanding that you understood our need for related plan-led certainty for investment purposes in the long term and therefore supported the need for development at Bolton Abbey in principle.

As such, CST has significant concerns that the current Draft CDLP: does not tally with the discussions between ourselves during the last few years; does not comply with the requirements of national legislation (e.g. the Environmental Assessment of Plans and Programmes Regulations 2004); is neither effective nor justified, and therefore does not comply with the provisions of the National Planning Policy Framework in terms of what can and should be reasonably considered “sound”.

In view of the foregoing, I will focus on issues relating to Bolton Abbey in this response. My comments on behalf of CST are grouped into sections as follows:

I. Bolton Abbey Village

- A. Context on Chatsworth Settlement Trustees (CST), the Bolton Abbey Estate and the need for development at Bolton Abbey in accordance with national planning policy
- B. The Proposed Allocation Site(s), the Bolton Abbey Masterplanning Process and its Alignment with the Craven District Council Local Plan (CDLP) Production Process
- C. Specific comments on the current Draft CDLP and associated Sustainability Appraisal in relation to Bolton Abbey
- D. CST's position on the current Draft CDLP in relation to Bolton Abbey (including proposed masterplan policy) and Proposed Way Forward to Ensure Legal Compliance and Soundness
- E. Summary on Draft CDLP as it relates to Bolton Abbey

I. Bolton Abbey Village

A. Context on Chatsworth Settlement Trustees (CST), the Bolton Abbey Estate and the need for development at Bolton Abbey

Chatsworth Settlement Trustees

Chatsworth Settlement Trustees (CST) is a business which owns and manages property on behalf of the Cavendish family (including the c.12,000 hectares that comprises the Bolton Abbey Estate). It has owned all the land between Bolton Bridge and Barden Bridge (its “core visitor area”, including major tourist attractions such as the Strid and Bolton Priory), as well as all of the surrounding countryside since 1753. CST is part of the Devonshire Group of companies and has a strong brand identity and commitment to quality.

CST derives incomes from rents, trading (e.g. admissions), food/retail outlets and other income streams. It thereby funds a range of high quality environmental management activities (e.g. woodland management, architectural conservation). As such, CST takes a responsible, long term and pro-active view of conservation and sustainable development, but also has to ensure that projects are viable and provide a commercial return.

Basic Geography

Bolton Abbey is a ‘service village’ consisting of two large and closely linked groups of buildings (Bolton Abbey Village and Bolton Bridge) with a linked area of development (Bolton Abbey Station). It is situated on high ground west of the River Wharfe in Lower Wharfedale, and located less than a mile north of the junction of the A64 and the B6160 (a major access point to the settlements of southern Wharfedale Dales) which runs through the village itself. Bolton Abbey therefore acts as the southern gateway to the Yorkshire Dales National Park (YDNP), and attracts 450,000 visitors each year.

Bolton Abbey contains 58 properties, 39 of which are dwelling units; 7 of these units are occupied by existing or former estate workers on reduced rents (i.e. 18% of households include at least one employee or former employee based at Bolton Abbey). Together with dwellings occupied by farmers or others working locally, this constitutes a very high percentage of people who *live and work* in the village when compared to other rural villages.

Local Economy

The Bolton Abbey Estate plays an important social role in the local area and also makes a key economic contribution to the same by way of the following:

- Employment: The Estate Office (based in Bolton Abbey Village) has 40 full-time equivalent (FTE) staff; the Devonshire Arms Hotel has 73 FTE staff; the estate also has 20 FTE staff at the Cavendish Pavilion by Strid Wood nearby and 26 FTE staff at the Devonshire Fell Hotel in nearby Burnsall.
- Commercial premises owned by CST: farms; hotel; Estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; two tea rooms; farm shop; and, café/restaurant.

- Visitor Economy: 450,000 visitors to Bolton Abbey per year (but there is only one 4 star hotel to accommodate them).

As such CST employs a total of 159 FTE staff in the area, provides premises for at least eleven different businesses in Bolton Abbey, and manages 450,000 visitors per year.

An Active Service Village

Bolton Abbey fulfils an important service village function for the Southern Dales (particularly Wharfedale and nearby settlements) as a result of the large number of services it offers. The settlement contains an unusually high level of services for a village of its size, in part due to its complimentary roles as both a visitor attraction and a service centre. These services include: post office; bus stop; village hall; shops; public toilet; church; short stay public car park; tea room; delicatessen; gym/health spa; hotel; pub/bistro; cricket club; farm shop; garage.

Significant employment in tourism and other sectors within the village and the Estate office's role as a central 'hub' for the Estate and its workers means that the village is an active one, which as outlined above provides for a relatively high proportion of people who both live and work locally. This is markedly different to some of Craven's other villages where there is little employment and the major role of the settlement is that of a commuter dormitory.

As such the village has been designated as a "service village" in the emerging Yorkshire Dales National Park Local Plan (YDNPLP). In view of this and other factors, the Draft CDLP has rightly included Bolton Abbey within its settlement hierarchy.

CST welcomes and supports the inclusion of Bolton Abbey within the settlement hierarchy contained within both the Draft CDLP and the emerging YDNPLP.

The Need for Development at Bolton Abbey

Notwithstanding the foregoing, CST's business plan identifies strengths at Bolton Abbey (e.g. heritage assets, natural features, landscape quality) as well as key issues to address (i.e. weaknesses and threats to its operations), including:

- Lack of sense of arrival (and departure) for visitors
- Vulnerability of visitor operations to weather and school holidays
- Little or no secondary spend by visitors due to brevity of trips
- Limited opportunities for growth due to major planning constraints (e.g. National Park, Strid Wood Site of Special Scientific Interest, Flood Zone 3)
- Major cost of maintaining natural and built environment to a high standard
- Services at risk (e.g. loss-making/subsidised post office)
- Inability of staff to afford local house prices (leading to long journeys to work)
- Very limited supply and choice of visitor accommodation in the area.

As such, and together with Craven DC and the YDNPA, CST has considered several development alternatives to provide a higher value offer to visitors. Its business plan therefore identifies the need to provide suitable facilities (e.g. village green, pub, farm shop, play area, play barn, visitor/staff/other accommodation) at Bolton Abbey in line with local precedents and comparables (e.g. the village greens at Arncliffe and Burnsall in Wharfedale, CST development in Craven, CST developments in both the Yorkshire Dales and Peak District National Parks).

National Policy

In considering the scope for development, CST has had regard to national planning policy and guidance, as well as working with Craven DC and the YDNPA on their Local Plans.

In particular CST notes that:

- Paragraph 28 of the National Planning Policy Framework (NPPF) states that: *“Planning policies should support economic growth in rural areas in order to create jobs and prosperity by taking a positive approach to sustainable new development.”*
- Paragraph 55 of the NPPF provides that new (housing) development may be targeted at not only maintaining vitality (local services) but also enhancing them;
- Likewise, the National Planning Practice Guidance (under the heading *“How should local authorities support sustainable rural communities?”*) states:

“A thriving rural community in a living, working countryside depends, in part, on retaining local services and community facilities such as schools, local shops, cultural venues, public houses and places of worship. Rural housing is essential to ensure viable use of these local facilities.

Assessing housing need and allocating sites should be considered at a strategic level and through the Local Plan...process. However, all settlements can play a role in delivering sustainable development in rural areas – and so blanket policies restricting housing development in some settlements and preventing other settlements from expanding should be avoided unless their use can be supported by robust evidence.”

- Paragraph 131 of the National Planning Policy Framework (NPPF) requires local planning authorities to take account of:
 - *“the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*
 - *the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and*
 - *the desirability of new development making a positive contribution to local character and distinctiveness.”*

National policy therefore provides for the conservation of heritage assets to contribute to sustainable communities, including their economic vitality, not to be simply preserved in aspic. It also clearly provides for all settlements in rural areas to contribute to housing growth, and so it is appropriate for development proposals to contain housing.

It is our contention that while the current draft Local Plan may provide support in principle of development at Bolton Abbey, it fails to provide plan-led certainty on how this may be delivered. This impacts upon the soundness of the plan as considered later in this correspondence.

B. The Proposed Allocation Site(s), the Bolton Abbey Masterplanning Process and its Alignment with the Craven District Council Local Plan (CDLP) Production Process

The Proposed Allocation Site(s)

In view of the foregoing, CST has identified a site (3.9ha of flat land) for related development in the south-west of Bolton Abbey village (as submitted to Craven DC in 2014 for consideration as part of its allocation process). Most of this site is already in use (for housing/parking/retail) and none of it is subject to flooding. CST owns all the land concerned.

As a consequence of discussions with Historic England regarding the same, CST has also identified a site (c. 1.75 ha of flat land) for related development in the south-west of Bolton Bridge (as submitted to Craven DC in 2015 for consideration as part of its allocation process). This second site is currently used for grazing. CST owns all the land concerned.

Masterplanning Process

The proposed allocation site in Bolton Abbey village has been chosen to sustain Bolton Abbey as a major visitor destination and a service village, and (as advised by Craven DC) has been informed by:

- the Bolton Abbey Visitor Accommodation Needs Assessment by Frey Consulting
- the Bolton Abbey Staff Accommodation Needs Assessment by Frey Consulting
- the preliminary Bolton Abbey Heritage Assessment by ArcHeritage
- the Bolton Abbey Landscape Appraisal by Gillespies
- the Bolton Abbey Village Masterplan (April 2015) by RSL et al.

Liaison with Craven DC has also led to CST: reducing the scale of its development aspirations; adjusting the proposed layout so as to respect medieval features; increasing the amount of planting to screen development from views in the YDNP.

The Bolton Abbey Visitor Accommodation Needs Assessment established that there is little or no visitor accommodation (other than a 4 star hotel and a budget camp-site) within a 5km radius of Bolton Abbey; the Bolton Abbey Staff Accommodation Needs Assessment established that there is a need to accommodate staff locally.

Both the initial heritage assessment and the landscape appraisal concluded that the scheme would not have a significant impact on the heritage and landscape resource of the village and wider area.

Historic England has reviewed the initial heritage assessment concerned and asked for additional work to be undertaken. It has also asked that CST consider a range of further heritage issues (e.g. the importance of the Romantic movement to Bolton Abbey becoming a popular visitor destination in the nineteenth century), and in particular that CST establishes the environmental capacity of the core visitor area from Bolton Bridge to Barden Tower to ensure that development at Bolton Abbey is justified. It has also suggested CST considers both more housing in Bolton Abbey village (to help screen views of the unsightly car park) as well as a second site (c.1.75ha) for development at Bolton Bridge (as submitted to Craven DC in 2015).

As such, CST has hired Field Archaeological Services (FAS) to undertake a detailed and comprehensive heritage assessment in line with Historic England's specification, and expects to complete its work in

early June. CST will then use FAS/RSL/Gillespies to undertake an equally robust Bolton Abbey Development Options Appraisal Study (BADOAS), involving Craven DC, YDNP and HE, to identify and evaluate the possible development options in relation to the core visitor area from Bolton Bridge to Barden Tower. CST will also conduct some related informal public liaison.

CST considers that whilst the BADOAS will confirm its own longstanding experience of the YDNPA not accommodating development of the scale that CST requires, it could also generate some concepts suggested verbally by Historic England not yet fully considered by CST (e.g. the possibility of quality housing development screening unsightly views of the car park in Bolton Abbey village, and the potential for some development at Bolton Bridge).

Nevertheless, heritage is only one factor in providing for sustainable development, so it is essential that Craven DC, as the local planning authority, exercises “balance” in relation to potentially conflicting land uses and interests.

Benefits

The main benefits of the intended scheme reflected in the Bolton Abbey Village Masterplan would include the provision of:

- public open greenspace and attractive focal point in settlement (village green)
- improved visual amenity (appropriate housing development and planting to screen car park and integrate development with parkland setting)
- increased awareness of the nature and location of the former Barnyard area (interpretation panel on village green)
- high quality accommodation for visitors/staff/others (holiday/housing units)
- district heating scheme for settlement (biomass boiler)
- consolidated local community facility (pub) with enhanced sense of arrival/departure for visitors
- heritage-themed learning-through-play facilities for mixed age groups of children
- first/only wet weather play facility in the Dales area (play barn)
- the sale of high quality local/organic/estate produce (Chatsworth-style farm shop)
- better access to /from Bolton Abbey Station (new path)
- improved road safety in Bolton Abbey village (wider visibility splays)
- homes for young people
- refurbished Tithe Barn (built c.1520)
- office or other work-space units
- employment (creation of 27 extra full-time equivalent high quality/value jobs).

Alignment of Bolton Abbey Masterplanning with the Craven District Local Plan Production Process

CST is committed to being represented at the Examination in Public of the Local Plan, hopefully to support the CDLP’s future identification of Bolton Abbey as an appropriate area for a commensurate level of development and allocation of the site(s) in question.

As stressed above, heritage is only one factor in providing for sustainable development, so it is essential that Craven DC, as the local planning authority, exercises “balance” in relation to potentially conflicting land uses and interests.

For your information, I include below CST's work programme for finalising evidence and providing related input into the CDLP preparation process. As you can see, CST aims to complete the detailed heritage assessment by early June and the development options appraisal study (including public liaison) by early August so as to meet yourselves to discuss the form of the related wording that goes into the draft CDLP for consultation in September.

Table 1: Aligning the Masterplan Production Process with the CDC Local Plan Production Process

Date (w/c)	CDLP Stage	CST Objective	CST actions
16 May			FAS to send draft HA to HE; RSL to draft policy; CST to review draft LP response
23 May			RSL to send draft LP response; CST/RSL to meet CDC; CST to draft brief for BADOAS
30 May	Pre-publication (I&Os) LP consultation	Need to include BAVM site(s) in Jun doc	RSL to respond to LP consultation; FAS to meet HE (et al) on site; Firms to meet to discuss way fwd; CST to send final BADOAS brief out
6 June			FAS to finalise HA; CST to review BADOAS tenders; CST to appoint BADOAS firms
13 June			HE to respond to draft HA; CST to write BADOAS intro/context; Firms to evaluate BADOAS capacity
20 June			CST to meet CDC re Pref'd Sites; CST to do table of uses (with areas); Firms to define BADOAS dev options
27 June	Preferred Sites consultation	Need to include BAVM site(s) for designation	RSL to respond to LP consultation; BADOAS workshop (HE etc)
4 July			Firms to appraise BADOAS options
11 July			Firms to do BADOAS public liaison
18 July			CST to send draft BADOAS report to HE
25 July			CST to revise masterplan
1 Aug			CST to send final BADOAS report to CDC
8 Aug			CST to meet CDC to press for allocation
15 Aug			
22 Aug			
29 Aug			
5 Sep	Pre-Publication (final) LP consultation	Need to include BAVM site(s) and policy	Support or object to CDLP

C. Specific comments on the current Draft CDLP and associated Sustainability Appraisal in relation to Bolton Abbey

Local Plan Approach to Bolton Abbey

Following review of Local Plan consultation documents and the associated report to Craven Spatial Planning Sub-Committee (March 30th 2016) which provides commentary on the approach to Bolton Abbey in the draft plan, we note as follows:

- Section three of the report to Craven Spatial Planning Sub-Committee (report entitled Craven Local Plan – Alternative Spatial Strategy Options and Preferred Spatial Strategy Options for Informal Consultation) qualifies the proposal to include Bolton Abbey with the plan’s settlement hierarchy. However, at paragraph 3.5 it also reports that no site allocation is proposed for the village in the plan, stating:

“In respect of Bolton Abbey, in view of the significance and sensitivity of the heritage assets in this location it is recommended that no specific land allocation within the Spatial Strategy is made. However, this is not to say no development would ever be permitted in these settlements. If sustainable development proposals were to come forward during the plan period which were of a scale appropriate for Tier 4a or 4b settlements, and accorded with the provisions of Policy H1 they could be supported.”

- There is no evidence or commentary in either the draft plan or the Sustainability Appraisal outlining why or how this decision has been taken. In particular we can find no information in the Sustainability Appraisal which provides a justified assessment of the impact on the sustainability of the settlement or surrounding area of not allocating a site for development in Bolton Abbey.
- The LPA classifies Bolton Abbey as a Village with Basic Services in Draft Policy SP4: Spatial Strategy and Housing. However the settlement is the only one of fourteen in the tier where land has been put forward for allocation and no allocation is then proposed.
NB: Long Preston has no land allocation also but the Council indicates that this is due to a very small area of land being within the plan area with no land having been put forward by landowners;
- Draft Policy SP4 states that Tier 4b settlements (including Bolton Abbey) “will receive limited growth to reflect the roles of these settlements as Local Service Centres and/or tourism hubs/gateways in/on the edge of the Yorkshire Dales National Park”;
- Draft Policy H1: New Home on Unallocated Sites would allow for development on unallocated sites consisting of “infilling, rounding off, or extension of settlements will be acceptable” (subject to various criteria);
- Draft Policy EC4: Tourism states the Council will achieve tourism growth by:

*“Supporting, in principle, proposals for tourism development and for achieving synergies of co-location, in the following key locations for tourism development identified on the policies map:
(non-relevant bullet points deleted)
Bolton Abbey/Bolton Abbey Railway Station”*

- In relation to the site identified by CST in the Bolton Abbey Village Masterplan (and two other sites put forward in the village). We note as follows:

The Sustainability Appraisal of sites includes a Summary of Issues and Recommendations for all sites. In relation to all the three Bolton Abbey sites referenced in the draft CDLP, this section states:

“Stage 1: Site is not located within the designated Spatial Strategy hierarchy of Craven.”

We understand this assessment of the Masterplan and other sites was undertaken as part of the Strategic Housing Land Availability Appraisal process before Bolton Abbey was included within the settlement hierarchy as a designated settlement for development.

As such, CST is concerned that the assessment of the proposed Masterplan site was not re-run following the decision to include Bolton Abbey within the settlement hierarchy and before the plan was issued for consultation. As noted above we can find no evidence or reasoned assessment in consultation documents as to why this site should not be allocated for development.

CST is therefore concerned with the process by which CDC has come to its view, and in particular that there seems to have been no consideration of reasonable alternatives in line with current knowledge and methods of assessment, and no identification of environmental characteristics of the area likely to be affected as required by the SEA Regulations 2004.

Specific Comments on Local Plan Approach to Bolton Abbey

CST supports the inclusion of Bolton Abbey within the settlement hierarchy. However, without an allocation (or at least a specific policy supporting development in Bolton Abbey), related development and the future growth of the settlement/community is left open to inference.

As such, it is unacceptable that development and the future growth of Bolton Abbey should be left open to interpretation by Development Management officers looking at policies SPI, HI and EC4. There is nothing to suggest that such officers would not take an overly cautious view in relation to heritage assets in the village.

The NPPF states that:

“15. Policies in Local Plans should follow the approach of the presumption in favour of sustainable development so that it is clear that development which is sustainable can be approved without delay.”

The submitted draft Bolton Abbey Village Masterplan outlines why development on the site it identifies in the village is sustainable and why CST requires that the Local Plan positively promotes development in Bolton Abbey village.

Development on the site as set out in the Masterplan has clear objectives with numerous Plan Objectives of the Local Plan. Conformity of the Masterplan with these objectives is set out in tabular form at Appendix I of this letter.

While CST supports draft policies SC4 and EC4 as they relate to the identification of the settlement as a suitable location to receive development, CST strongly objects to the failure of the Local Plan draft to provide plan led certainty on how this development will be delivered and to identify the proposed allocation site(s) for development.

D. CST's position on the current Draft CDLP in relation to Bolton Abbey (including proposed masterplan policy) and Proposed Way Forward to Ensure Legal Compliance and Soundness

At present CST considers that the draft CDLP does not provide plan-led certainty for development at Bolton Abbey. The Local Plan is considered unsound as respects Bolton Abbey on the basis that:

- The plan is not justified, on the basis that there is no evidence or reasoned justification for the plan to not identify a site for development within the village;
- The plan is not effective as it does not provide certainty that the in-principle support for development in Bolton Abbey will translate into development being delivered.

In order to provide plan-led certainty for Bolton Abbey over the plan period and ensure the soundness of the plan we request that the CDLP contains:

A1. A defined allocation of the 3.9 ha site in Bolton Abbey village, as shown on the attached site plan, predicated on the sensitive and sustainable delivery of the site by way of a comprehensive Masterplan prepared in liaison with key stakeholders; **as such Craven DC must include this site in its Preferred Development Sites document for consultation in June.**

A2. A defined allocation of the 1.75 ha site at Bolton Bridge (by the A59 roundabout), as shown on the attached site plan, predicated on the sensitive and sustainable delivery of the site by way of a comprehensive Masterplan prepared in liaison with stakeholders; **as such Craven DC must include this site in its Preferred Development Sites document for consultation in June.**

A3. Policy references to the above site(s) being brought forward through a sensitive heritage and landscape based Masterplan, including:

- A policy reference to be provided as a footnote to policy 'SP4: Spatial Strategy and Housing Growth' stating: *"Mixed use development of a commensurate scale will be brought forward on the allocated site(s) at Bolton Abbey via a sensitive heritage and landscape based Masterplan."*
- A policy reference to be provided as a footnote in policy 'EC4: Tourism indicating: *"Sensitive mixed use development will be delivered at Bolton Abbey, to include new tourism and leisure facilities on the allocated village-centre site, through a Masterplan process, which supports the village's complimentary role as a tourism destination and service village."*
- A specific policy regarding Bolton Abbey in the plan, such (see suggested draft policy and justification below).

If for any reason, it is not possible, effective or justified to provide for the CDLP to contain the foregoing, then it must at least provide for:

B1. A defined designation of the 3.9 ha site in Bolton Abbey village, as shown on the attached site plan, predicated on the sensitive and sustainable delivery of the site by way of a comprehensive Masterplan prepared in liaison with key stakeholders; as such, this site should be included in CDC's Preferred Development Sites document for consultation in June.

B2. A defined designation of the 1.75 ha site at Bolton Bridge (by the A59 roundabout), as shown on the attached site plan, predicated on the sensitive and sustainable delivery of the site by way of a

comprehensive Masterplan delivered in liaison with key stakeholders; as such, this site should be included in CDC's Preferred Development Sites document for consultation in June.

B3. A specific CDLP Policy on the site(s) being brought forward for mixed use development (see suggested draft policy and justification below).

As an absolute minimum, if CDC is not prepared to include specific and defined allocations or designations of the above sites, CST would require:

C1. A schematic plan identifying land to the south of Bolton Abbey village and land at Bolton Bridge as broad locations where development would be acceptable in principle; and,

C2. A specific CDLP Policy relating to development being brought forward for mixed use development at Bolton Abbey village and Bolton Bridge (a variant of the draft policy and justification below).

Draft Policy: Masterplan-led development at Bolton Abbey

The provision of sensitive tourism-led, mixed-use development at Bolton Abbey will be supported.

The development of the designated site for tourism-led mixed uses within the settlement should be brought forward via a detailed Masterplan process, in consultation with stakeholders, in order to deliver sensitively designed new development which is appropriate to the heritage constraints and opportunities associated with Bolton Abbey.

Draft Justification:

Bolton Abbey is a Tier 4b settlement within the Local Plan's Spatial Hierarchy. It comprises land at Bolton Abbey village and Bolton Bridge, and is a genuine service village which provides a wide range of services to its community and those of the related settlements nearby. It also play a significant role as the gateway to the Yorkshire Dales National Park.

However, there are several issues at Bolton Abbey village which diminish the visitor offer, including: lack of sense of arrival; vulnerability of visitor operations to bad weather and school holidays; little or no secondary spend by visitors; major planning constraints; high maintenance costs; increased competition; services at risk, staffing due to high house prices; and, very limited visitor accommodation choice in the area.

There is therefore a need to improve and diversify the visitor offer at Bolton Abbey, provided that such development maintains and enhances the sustainability of the settlement.

The Council is aware that the Bolton Abbey Estate has identified sites at Bolton Abbey and has engaged with Historic England, which supports in principle the provision of development of an appropriate scale, intensity and mix of uses on the sites. These designated sites are therefore identified within the Local Plan as being suitable for tourism-led, mixed use development.

Development at Bolton Abbey has the potential to boost the tourism economy of the area, in accordance with policy EC4 of the Local Plan, as well as provide significant high-value employment opportunities.

For the above reasons the provision of a policy specifically relating to tourism-led development within Bolton Abbey is necessary and appropriate, in order to deliver high quality, sensitive development on the designated sites.

It must be stressed that heritage is only one factor in providing for sustainable development, so it is essential that Craven DC, as the local planning authority, exercises “balance” in relation to potentially conflicting land uses and interests.

E. Summary on Draft CDLP as it relates to Bolton Abbey

In summary on the Draft CDLP as it relates to Bolton Abbey, it is concluded that:

- CST seeks the allocation of specific sites within Bolton Abbey (i.e. Bolton Abbey village and Bolton Bridge) as already submitted to Craven DC for the delivery of mixed use development essential to support CST’s custodial role and meet the needs of the local community
- CST is an established landowner which contributes significantly to the environmental, economic and social well-being of south-east Craven
- Bolton Abbey is a genuine service village which provides a wide range of services to its community and those of the related settlements nearby, and also serves a significant role as the gateway to the Yorkshire Dales National Park
- To support and enhance Bolton Abbey as a service village and regionally significant visitor attraction, new development is needed over the plan-period
- CST therefore welcomes and supports the inclusion of Bolton Abbey within the settlement hierarchy contained within the Draft CDLP and emerging YDNPLP
- However, CST faces several key issues at Bolton Abbey (lack of sense of arrival, vulnerability of visitor operations to bad weather and school holidays, little or no secondary spend by visitors, major planning constraints, high maintenance costs, increased competition, services at risk, staffing due to high house prices, very limited visitor accommodation choice in the area)
- As such CST has identified a key opportunity (sites) for tourism-led mixed use development (i.e. play area, play barn, pub, village green, farm shop, visitor/staff/other accommodation) in liaison with Craven DC, Historic England and the Yorkshire Dales National Park, and has therefore completed both a draft masterplan for the same and established related evidence
- Benefits of the proposal would include: public open greenspace; attractive focal point to settlement; improved visual amenity; increased awareness of the former Barnyard area; high quality accommodation for visitors/staff/others; district heating scheme; enhanced sense of arrival/departure for visitors; heritage-themed learning-through-play facilities; only wet weather play facility in the Dales area; sale of local/organic/estate produce; better access to /from Bolton Abbey Station; improved road safety; homes for young people; office or other work-space units; 27 extra full-time equivalent high quality/value jobs
- Such development would be in accordance with national policy since the NPPF provides for heritage assets to contribute to sustainable communities, including their economic vitality (para 131), and also provides for all settlements in rural areas to contribute to housing growth

- However, the draft CDLP does not provide for development at Bolton Abbey. This does not accord with CST's understanding that Craven DC understood the need for plan-led certainty at Bolton Abbey and supported the need for development at Bolton Abbey in principle
- Moreover, it seems that Craven DC's assessment of the proposed masterplan site took place as part of the SHLAA process (ie before Bolton Abbey was included in the settlement hierarchy as a designated settlement) and was not re-run prior to the publication of the draft CDLP
- As such, CST has significant concerns about the process by which Craven DC has come to its view, and also that the draft CDLP: does not tally with the discussions between ourselves during the last few years; does not comply with the requirements of national legislation (e.g. the Environmental Assessment of Plans and Programmes Regulations 2004), especially with regard to the need to consider reasonable alternatives; is neither effective nor justified, and therefore does not comply with the provisions of the National Planning Policy Framework in terms of what can and should be reasonably considered "sound"
- In order to address these concerns and provide plan-lead certainty for development at Bolton Abbey, the CDLP must (A) contain allocations for the 3.9 ha site at Bolton Abbey village and the 1.75ha site at Bolton Bridge for mixed use development, predicated on the sensitive and sustainable delivery of the site by way of a comprehensive Masterplan prepared in liaison with stakeholders (see suggested policy attached), with related policy references
- If this (A) is not possible or justified, then the CDLP must (B) contain designations for the 3.9 ha site at Bolton Abbey village and the 1.75ha site at Bolton Bridge for mixed use development, predicated on the sensitive and sustainable delivery of the site by way of a comprehensive Masterplan prepared in liaison with stakeholders (see suggested policy attached), with related policy references
- If this (B) is not possible or justified, then as an absolute minimum the CDLP must (C) contain a schematic plan identifying land to the south of Bolton Abbey village and Bolton Bridge as broad locations where mixed use development would be acceptable in principle, together with a specific policy (see suggested policy attached) and related policy references
- **As such Craven DC must at the very least include both proposed sites in its Preferred Development Sites document for consultation in June**
- In undertaking consideration of the foregoing, it must be stressed that heritage is only one factor in providing for sustainable development, and so it is essential that Craven DC, as the local planning authority, exercises "balance" in relation to potentially conflicting land uses and interests
- To help Craven DC with the foregoing, CST is committed to a programme of work over the next few months, including a further heritage assessment in line with the requirements of Historic England and a Bolton Abbey Development Options Appraisal Study, in line with Craven DC's CDLP preparation timetable
- As such, the heritage assessment will be completed in June, and the development options appraisal study by late July, thereby allowing for Craven DC to have related evidence to inform its decision making in August prior to the consultation of the next iteration of the draft CDLP in September

- Thereafter, CST is committed to being represented at the Examination in Public of the Draft CDLP, hopefully in support of Craven DC's future identification of Bolton Abbey as an appropriate area for a commensurate level of development and allocation of the sites in question.

CST and Rural Solutions therefore look forward to positively engaging with Craven District Council over the coming weeks and months on the finalisation of the Bolton Abbey Village Masterplan and the Craven District Council Local Plan.

Yours sincerely,



James Ellis, BA (Hons), MA, MRTPI

Associate Planner

james.ellis@ruralsolutions.co.uk

07910 190872

CC David Smurthwaite – Head of Planning and Economic Development, Craven District Council

Will Kemp – Planning Manager, Chatsworth Settlement Trustees

Appendix 1 - Conformity between Craven Local Plan Objectives and Identification (Allocation / Designation) of Bolton Abbey Village Masterplan Site in the Local Plan

Appendix 2 – Land at Bolton Abbey Village (proposed allocation site)

Appendix 3 – Land at Bolton Abbey Bridge (proposed allocation site)

Appendix I - Conformity between Craven Local Plan Objectives and Identification (Allocation / Designation) of Bolton Abbey Village Masterplan Site in the Local Plan

Relevant Craven Local Plan Objectives	Comments on Conformity of Site Identification with Local Plan Objectives
<p>PO1: Achieve patterns of development supported by adequate and appropriate infrastructure which:</p> <ul style="list-style-type: none"> • Make best use of available resources • Promote sustainable travel movements • Nurture high quality environments and community life • Promote health, wellbeing and equality. 	<p>A commensurate level of development at Bolton Abbey will support and enhance existing resources (services) at Bolton Abbey and will as a result enhance the sustainability of the local and surrounding communities.</p>
<p>PO2: Conserve and enhance the high quality local environment including reinforcing the distinctive character of Craven's towns, villages, green infrastructure, ecological networks and cultural heritage.</p>	<p>The Chatsworth Settlement Trustees track record in delivering high quality development and a heritage and landscape Masterplan approach to the proposed site's development will ensure conformity with this objective and the reference to 'high quality environments' in PO1.</p>
<p>PO3: Conserve and enhance the character and settings of Craven's landscapes and the special qualities of the protected landscapes of the Forest of Bowland AONB and the Yorkshire Dales National Park.</p>	<p>The Chatsworth Settlement Trustees track record in delivering high quality development in and on the edge of the Yorkshire Dales National Park ensures that this objective will be met through Masterplan led development.</p>
<p>PO4: Maintain a continuous supply of housing land to meet housing needs throughout the plan period.</p>	<p>The delivery of a relatively small amount of new housing at Bolton Abbey will make a contribution to housing supply during the plan period.</p>
<p>PO5: Improve housing choice in terms of house type, size, tenure, price and location.</p>	<p>The development of new housing at Bolton Abbey will ensure local housing need (from within Bolton Abbey and surroundings areas, both inside and outside of the National Park) is met.</p>
<p>PO6: Enhance the vitality of market towns and larger village centres and improve the provision of local community services and facilities in smaller settlements.</p>	<p>The delivery of new services and facilities as a part of a mixed use development on the identified site will enhance the vitality of Bolton Abbey village.</p>
<p>PO7: Provide sufficient and suitable employment land to enable businesses to grow and enhance their productivity and identify locations for new and diversified employment development related to a high quality local environment, the tourism economy and cultural opportunities.</p>	<p>The provision of land for tourism focused development will support the role of Chatsworth Settlement Trustees and enhance the tourism economy in this part of Craven.</p>
<p>PO10: Achieve the diversification and growth of the rural based and farming economy.</p>	<p>Chatsworth Settlement Trustees has a clear track record in diversifying and growing Craven's rural economy. The identified development site within the village will contribute to providing further diversification of the economy and the provision of employment opportunities at all levels. It will also facilitate the sale of produce from local businesses by way of the farm shop proposal.</p>

**Appendix 9: part 1 – Chatsworth
Settlement Trust-Yorkshire Dales National
Park Authority Publication Draft Local
Plan Comments Covering Letter & part 2 –
Detailed Comments on Yorkshire Dales
Local Plan 2015-2030 (Publication Draft
Plan) Consultation**

Our ref: Chatsworth Settlement Trustees/YDNPA/Publication Draft Plan Consultation

September 9th 2015

Peter Stockton
Yorkshire Dales National Park Authority
Yoredale
Bainbridge
Leyburn
North Yorkshire
DL8 3EL

Via Hard Copy and E-mail (on September 9th 2015)

Dear Peter,

RE: Yorkshire Dales National Park 2015-30 Publication Draft: Detailed Comments on Behalf of CST (Bolton Abbey Estate)

I am writing on behalf of Chatsworth Settlement Trustees (CST) (Bolton Abbey Estate) to provide comments on the above.

Further to providing comments on earlier iterations of the above draft local plan, we welcome and strongly support both the inclusion of Bolton Abbey as a Service Village in the draft plan and also the realisation of the National Park Authority's formerly over-restrictive approach to barn conversions.

However, we have concerns about the efficacy of the National Park Authority's proposed conservation levy and the rationale for the proposed Service Village development boundary in Bolton Abbey.

As such, we would welcome the opportunity for a meeting to discuss the latter in more detail, at which we would present worked examples of development appraisals of real barn conversion projects that clearly show how 50% levy would be inappropriate for a landowner (rented properties) such as CST.

We therefore look forward to hearing from you in due course, and reserve the right to attend the public examination accordingly.

Please find attached our detailed comments, which are split into the following three sections:

- Section 1: Comments on content of the Publication Draft Local Plan which has been amended to address comments made by RSL/CST at the Full Draft Plan stage.
- Section 2: Comments on content of the Publication Draft Local Plan which has not been amended to address comments made by RSL/CST at the Full Draft Plan stage.

- NB: Comments only provided on more significant areas where it is considered that a genuine need to reconsider the policy approach is required.
- Section 3: Comments on content, including further detail, of the Publication Draft Local Plan which has not been previously included in the draft Local Plan.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'J. Ellis', is positioned above the typed name.

James Ellis BA (Hons), MA, MRTPI

Associate Planner

james.ellis@ruralsolutions.co.uk

07910 190872

Attached: Detailed Comments on Yorkshire Dales National Park Local Plan 2015-2030 (Publication Draft Plan) Consultation

Detailed Comments on Yorkshire Dales National Park Local Plan 2015-2030 (Publication Draft Plan) Consultation

Please find below comments made by Rural Solutions (RSL) on behalf of Chatsworth Settlement Trustees (CST) (Bolton Abbey Estate) to the Publication Draft Plan. For ease of reference we have broken down comments into three specific sections:

Section 1: Comments on content of the Publication Draft Local Plan which has been amended to address comments made by RSL/CST at the Full Draft Plan stage.

Section 2: Comments on content of the Publication Draft Local Plan which has not been amended to address comments made by RSL/CST at the Full Draft Plan stage.

NB: Comments only provided on more significant areas where it is considered that a genuine need to reconsider the policy approach is required.

Section 3: Comments on content, including further detail, of the Publication Draft Local Plan which has not been previously included in the draft Local Plan.

Section I: Comments on content of the Publication Draft Local Plan which has been amended to address comments made by RSL/CST at the Full Draft Plan stage.

Local Plan Section / Policy	Comments
<p>Policy C8 (Accommodation for the elderly and vulnerable adults) – reworded and renumbered from C1 (Extra Care Accommodation)</p>	<p>CST recommended the rewording of the title of the policy to the current title. We also recommended that a previous policy reference which created a requirement for developments in Service Villages such as Bolton Abbey to be linked to existing developments in Local Service Centres be removed.</p> <p>The amended policy removes this requirement and would allow:</p> <p><i>“c) provision of dedicated extra or residential care facilities on:</i></p> <p><i>i) sites in or on the edge of Local Service Centres; or</i></p> <p><i>ii) <u>sites within or on the edge of a Service Village where they are commensurate to the size, function and capacity of the settlement.</u>” (our emphasis)</i></p> <p>CST strongly SUPPORTS this positive change to the policy.</p>
<p>T3 Sustainable self-catering visitor accommodation</p>	<p>CST made comments on policy T3, which was at that time titled ‘Static Caravans’, objecting to a blanket ban on any form of fixed tourism accommodation, which would be contrary to NPPF para 28.</p> <p>CST welcomes the amendment of the policy, which while preventing static caravan developments, would allow other forms of ‘sustainable self-catering as fixed but reversible short stay visitor accommodation of sympathetic design’ (para 6.17) to proceed.</p> <p>The positive amendment of the policy allows an appropriate balance between protecting the environment of the National Park, while at the same time facilitating a broader range of accommodation options. ‘The Bolton Abbey Visitor Accommodation Needs Assessment’ was produced in 2014 and demonstrates the need for more self-catering visitor accommodation in the area, which the policy would support.</p> <p>CST strongly SUPPORTS this positive change to the policy.</p>

Section 2: Comments on content of the Publication Draft Local Plan which has not been amended to address comments made by RSL/CST at the Full Draft Plan stage.

Local Plan Section / Policy	Previous Comments	Comments
<p>Policy SP3 Spatial Strategy</p>	<p>There are a number of Local Service Centres and Service Villages (including Bolton Abbey) which either straddle the National Park boundary or are in proximity to it to the effect that they are impacted upon by two different planning strategies. This is uncommon to most areas of the country and it is generally our experience that settlements straddle different plan areas only where National Park boundaries occur.</p> <p>In order for the vision, ambitions and objectives of the Local Plan to be realised for these communities there will need to be on-going cross-boundary working with adjoining authorities (in the case of Bolton Abbey, with Craven District Council).</p>	<p>This is an important issue for the Bolton Abbey Estate on the basis that the Estate straddles the boundary between Craven District Council and the Yorkshire Dales National Park. The proposed amendment (below) raised at the time of the previous application equally applies:</p> <p><i>“We would propose a new bullet point indicating that co-operating across plan boundaries is not limited to the plan production stage in order to ensure the sustainability of settlements affected stating that:</i></p> <ul style="list-style-type: none"> • <i>“The National Park Authority will work collaboratively with adjoining planning authorities to ensure that communities and settlements that straddle or are adjacent to the Park’s boundaries benefit from a positive and cohesive approach to planning”</i> <p>CST supports the inclusion of Bolton Abbey as a Service Village, but OBJECTS to the lack of stated intention to co-operate with adjoining planning authorities beyond the plan creation process.</p>
<p>BE4 Live Work Units</p> <p>The policy has been amended since the Full Draft Plan to indicate that 60% rather than 50% of live work units should be employment space.</p>	<p>Comments at time of Full Draft Plan (2014) consultation:</p> <p><i>“Rural Solutions has significant experience in the delivery of live/work units across the country. Rural Solutions’ Planning staff also have experience of producing detailed planning guidance on this issue (for example Craven District Council’s policy and Supplementary Planning Guidance on rural live/work units).</i></p>	<p>The increase in the proportion of employment space in live/work unit runs contrary to RSL’s comments and experience in this area.</p>

	<p><i>It can be extremely difficult for potential occupiers of live/work units to get an appropriate mortgage if non-residential floorspace is higher than 30% (on that basis Craven District Council's Supplementary Planning Guidance refers specifically to this figure). Reference to the Live/Work Network as a specialist organisation will confirm the great difficulty in securing mortgages on properties with a >30% non-residential floorspace. Without evidence to the contrary or a policy amendment the policy would seem to fail the effectiveness test. There is also a need for clarification in the policy relating to whether a local occupancy restriction would be applied to a live/work unit. Presumably this will not be the case as potential residents of a property with both a live/work and local occupancy restriction are highly unlikely to be able to secure a mortgage on such a property reducing its effectiveness."</i></p>	<p>The same experience applies to CST itself which has had difficulties in letting live/work units on the edge of the national park in Craven District.</p> <p>The policy does not justify this requirement. We believe that the policy should be amended based on previous comments made. At the very least the YDNPA should demonstrate that a 60% requirement is justified and will not constrain mortgage availability and delivery. As such the YDNPA should provide related evidence by way of a specialist live-work unit viability appraisal study. In the meantime CST <u>OBJECTS</u> to the current wording of policy for the reasons above.</p>
<p>L3 Conversion of traditional buildings – building treatment</p>	<p>The policy would allow conversion subject to various criteria including that: “c) the new use does not displace an existing one so that it gives rise to the need to provide new compensatory buildings;” At the time of the previous consultation (in relation to a similar criterion in policy BE2) we noted that: “There will inevitably be scenarios where the reuse of a building could, theoretically, take place but a new building is more appropriate to ensure the continued success of the operation in question. This can result in the benefits to an existing operation of providing new appropriate facilities while at the same time as providing for a beneficial conversion of an existing building.” We went onto recommend that: “Policy to be reworded to state that: “Development involving new buildings will only be permitted where it can be demonstrated that the conversion or re-use of an existing is not feasible or appropriate.” The policy should be more explicit in regard to the fact that such scenarios will exist and a pragmatic approach taken (while also ensuring that the general thrust of the policy in limiting new buildings is maintained).”</p>	<p>The comments made at the time of the previous application are equally valid and we request that further consideration is given to the amendment of the policy.</p> <p>CST strongly <u>OBJECTS</u> to the policy as current worded.</p>

<p>Bolton Abbey (South) Service Village Boundary</p>	<p>Comments at time of Full Draft Plan (2014) consultation:</p> <p><i>“It is noted that the red housing development limit boundary drawing on the Bolton Abbey (South) proposals plan excludes approximately 50% of the Red Lion Farm yard site.</i></p> <p><i>NB A relevant extract showing the housing development limit boundary to which our comments relate is shown overleaf.</i></p> <p><i>While the Chatsworth Settlement Trustees have no plans at present to redevelop this site for an alternative use, it provides one of the only potential opportunities for new development in this part of the village.</i></p> <p><i>If the site were to be promoted for development then this would be on the basis that the agricultural function would be moved to another farm holding on the estate, of which there are a number. Therefore any redevelopment would not necessitate the erection of new agricultural buildings either in the vicinity or elsewhere (as might be the case with an individual farm holding).</i></p> <p><i>We are not aware of any reasoned justification for the current line of the development boundary and having regard to the above point and the pro-development context of the Local Plan it is considered that the current line of the housing development boundary should be amended to include all of the Red Lion Farm yard area.”</i></p> <p>The following amendment was recommended:</p> <p><i>“Amendment of housing development limit boundary so that it includes all of the Red Lion Farm yard area.”</i></p>	<p>While we note the informal feedback of the planning authority on its reluctance to include the whole site within the village boundary on the basis that this would be tantamount to granting outline consent for development, CST would contend this view by the planning authority.</p> <p>CST is a long-term landowner and currently has no intention to redevelop the farmyard site. However, looking to the longer term, there are relatively few sites within the Yorkshire Dales plan-area at Bolton Abbey which could potentially accommodate future development, particularly given the multiple designations which cover Bolton Abbey.</p> <p>It is considered illogical that the village boundary runs through the middle of the farm yard.</p> <p>Whilst CST strongly supports the inclusion of Bolton Abbey as a Service Village and welcomes the related introduction of a red line development boundary, CST still has concerns about the proposed boundary as shown in figure 1.</p> <p>As such CST considers that the proposed housing development limit boundary should include all of the Red Lion Farm yard area.</p> <p>As such CST OBJECTS to the proposed red line boundary for the reasons above.</p>
--	--	--

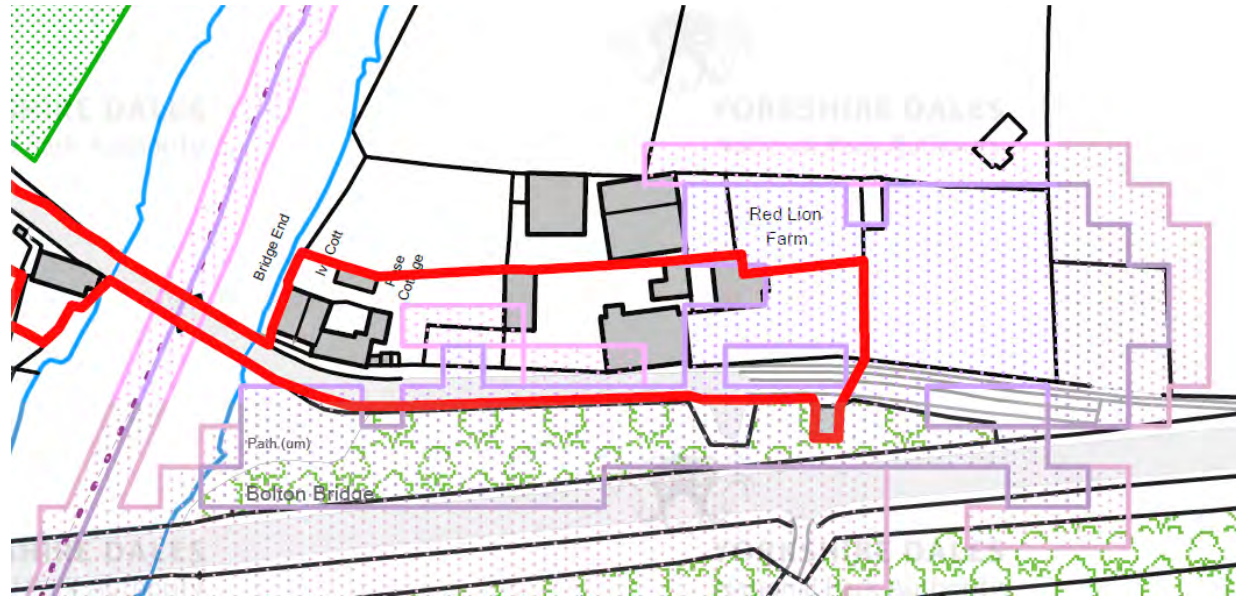


Figure 1: The line of the Service Village boundary which excludes around half of the Red Lion Farm yard area

Section 3: Comments on content, including further detail, of the Publication Draft Local Plan which has not been previously included in the draft Local Plan.

Local Plan Section / Policy	Comments
<p>BE2 Rural Land Based Enterprises</p> <p>The following criterion has been added to the policy: <i>“Development permitted under this policy will be required to be dismantled and removed from the site when no longer required for its approved purpose, and the site restored to its former condition, unless permission is given for an alternative use.”</i></p>	<p>This is an extremely onerous criterion which is not considered to be necessary or justified. Over the long term futures over which landed estates operate, there will inevitably be a need for buildings to change uses at some point. While CST would support in principle the contravention of ‘diversification’ projects which are delivered with the sole purpose of seeking some other future form of development in the short-term, this does not in itself justify the inclusion of this onerous ‘catch-all’ policy. We are not aware of any problems across the plan-area which justify this inclusion.</p> <p>The proposed policy and any related planning conditions could constrain the ability of land owners and developers to secure funding for diversification projects.</p> <p>This policy reference is not positively prepared, justified or consistent with national policy and its potential effectiveness is debatable.</p> <p>As such CST <u>OBJECTS</u> to the proposed policy as currently worded for the reasons above.</p>
<p>Appendix 5 – Local occupancy criteria (amended criteria)</p>	<p>Between March and May 2015, the YDNPA undertook a selective review of its housing development policy. This reviewed addressed, amongst other matters, concern that the Council’s Local Occupancy Criteria were overly narrow and restrictive, with the effect that mortgage finance was difficult to achieve thereby adversely impacting upon new housing delivery. The selective review proposed a widening of the terms of the occupancy criteria.</p> <p>CST recognises and welcomes the relaxation of the former occupancy criteria; whilst it feels the proposed criteria could go further, it also recognises that this is unlikely for the foreseeable future, and therefore takes a neutral position in relation to these changes.</p>
<p>Conservation Levy policy reference (in ‘L2 Conversion of Traditional Buildings – acceptable uses’ formerly in ‘L5 Conversion of Traditional Buildings – principle of use’ at Full Draft Plan stage</p>	<p>Although reference to the conservation levy was included in the full draft plan consulted upon in 2014 little detail was provided upon it. More detail on the implementation of the levy is provided at Appendix 7 following reference to the conservation levy at policy L2 of the plan (reference to the levy at the full draft plan stage was incorporated within policy L5).</p> <p>In terms of the reference in draft policy to the conversation levy CST <u>objects</u> to the removal of the allowance in policy for the levy to be spent on buildings within the same ownership.</p> <p>Policy L5 of the Full Draft Local Plan (2014) would have allowed the levy to be spent within the same ownership, since it stated:</p> <p><i>“(i) the applicant agrees to enter into a legal agreement whereby a ‘conservation levy’ will be payable to the Authority for the purpose of the conservation repair of significant building(s) either <u>in the same ownership</u> or elsewhere;” (our emphasis)</i></p> <p>Policy L2 makes no such reference, referring only to:</p>

	<p>“a conservation levy to fund the conservation of other significant buildings within the National Park” (although Appendix 7 does state that the Authority will prioritise barns for conservation that are “in the same broad geographical area”). CST is a large landowner within the National Park and as with other land-owning Estates, owns many buildings which may not viably be repaired given planning restrictions. The full draft plan policy effectively provided a powerful incentive for large land owners to bring forward buildings for conversion for residential purposes (with the social, economic and environmental benefits this brings) with the knowledge that the conservation levy arising from the conversion may be spent on other buildings within its same ownership for which a viable planning acceptable use may not exist.</p> <p>CST would recommend that the policy reference which allows the conservation levy to be spent on buildings within the same ownership be reinstated and consideration be given as to how this can be actively supported in implementation.</p> <p>As such CST <u>OBJECTS</u> to the policy as currently worded.</p>
Appendix 7 – Conservation Levy	<p>CST has the following comments on the detail of the implementation of the conservation levy that is set out at Appendix 7:</p> <ul style="list-style-type: none"> • Fundamentally, the conservation levy seems to have been formulated and viability assessed on the basis that barns are only converted for sale. It pays no reference to the fact that many larger, long-term landowners within the Yorkshire Dales such as the Bolton Abbey Estate do not typically sell property and will convert property for the rental market. <p>The levy proposes that 50% of the uplift in value (from an agricultural building to a converted dwelling) be payable as conservation levy. With the sale of a converted building the developer would then be able to pay the proposed conservation levy from their sales return (i.e. return on investment).</p> <p>However, the proposition for a landowner developing a barn to rent is very different. Such landowners do not receive any large lump sum return and their return on investment takes place over a much longer time period, through rental income. The true cost of paying a conservation levy at the point of conversion on a (theoretical) sales value is therefore far higher for a landowner developing a property for rent. The levy may discourage landowners from undertaking conversions, as borrowing money to deliver the conversion may result in them having to pay a larger amount of (cumulative) interest on their investment, which will include the conservation levy, while the return is realised. In the case of landowners who do not need to borrow the money to deliver a conversion they would nevertheless need to make an investment decision based upon the relative merits of investing in the conversion vis a vis other investment propositions on their property and may therefore be similarly disinclined to invest in conversions.</p> <p>As stated in the covering letter to this schedule of detailed comments, CST will provide worked examples of the true cost of the conservation levy policy on the conversion of barns for rental purposes. These real examples of barn conversions (rented properties) show how marginal the returns on investment are, and demonstrate that a levy at 50% is too high and is therefore unjustified.</p>

	<p>CST recognises that the proposed policy introduces a greater degree of flexibility by way of landowners EITHER accepting less restrictive occupancy criteria OR by adopting the conservation levy. This <i>should</i> provide for a greater number of viable conversions of redundant buildings, thereby improving the economic and social, as well as environmental (historic) sustainability of the park. However this will only result if the proposed conservation levy is viable and this option is widely taken up by landowners. CST proposes therefore that a lower rate of levy is formulated for landowners wishing to convert barns but retain them for rental purposes. Given the different financial models between sale and rent it is recommended that the conservation levy for rental conversions should be half of the conservation levy proposed to be applied to conversions for sale;</p> <ul style="list-style-type: none"> • The conservation levy is based on a viability assessment. It is therefore considered appropriate that the policy allows for a lower levy to be provided (in both sale and rental circumstances) where it can be proven not to be viable to meet the levy requirements. <p>It is appreciated that the inclusion of the conservation levy within policy L2 is intended to provide an alternative to the imposition of a standard local occupancy restriction on a converted property. On that basis it would be inappropriate in policy terms for a development to deliver no conservation levy <u>and</u> have no local occupancy restriction. However, there may be circumstances where for valid reasons the strong preference of the landowner is to pay a conservation levy from a conversion rather than receive a local occupancy criteria, <i>but</i> the full levy amount would make the conversion unviable. In these cases it would be appropriate for a viability case to be made for a <i>reduced</i> conservation levy to be paid. Based on the reason for the inclusion of the policy and levy it is appreciated that the YDNPA may wish to set a base minimum (of uplift per sqm) that must be payable in conservation levy for this route to remain open to the developer as an alternative to a local occupancy criteria. For example if a cogent viability case was made by a developer that only a 25%, rather than 50% (or lower in the case of a rental conversion) uplift in value could be payable as conservation levy then this would still make a meaningful contribution to the repair of other historic buildings in the park and should be accepted as such.</p> <p>As such CST strongly <u>OBJECTS</u> to the proposed policy as worded for the reasons above.</p>
--	---

Appendix 10: Consultation Feedback

BADOAS Public Exhibition 26th July 2016: Summary of Consultation Feedback

Comments	Number of Times Raised
The proposals would increase road traffic in the area which is already congested (A59 and B6160), in particular by the roundabout and on weekends/bank holidays	21
Concern for the impact on the Estate's landscape and historical character	12
The proposals would conflict with existing services and result in an over-provision of similar facilities	10
The proposed public house at Bolton Abbey Village would create evening disturbance	6
Concern regarding proposed development conflicting with the sensitive / tranquil nature of Barden Tower and Barden Bridge	5
Concern for highways safety	4
Additional staff accommodation cannot be supported	4
The proposals contain 'unnecessary' child entertainment	4
The Estate already has a 'sense of arrival and departure'	4
The proposals will not increase the Estate's profitability	3
The new car park layout at Bolton Abbey Village should try to reduce illegal parking which is perceived to be a problem for local residents	3
The proposed link between Bolton Bridge and the Village should be strengthened	3
The development at Bolton Bridge faces a high flood risk	2
The siting of the farm shop is considered to be unsafe and would not encourage people to visit the village	2

Suggestions	Number of Times Raised
The proposals should make use of existing buildings and services that are already available instead of creating new buildings and 'duplicates'	9
Public transport access should be improved: i.e. join the Bolton Abbey Railway and introduce shuttle buses	5
Instead of some of the proposed staff accommodation, there should be a balance of long-term and short-term holiday lets to maintain the sense of	5

community	
The farm shop would be better located elsewhere (The Village, Tithe Barn, Old Railway Goods Yard) – Keelhams in Skipton would be very competitive	5
Safe cycle routes should be created throughout the Estate and surrounding settlements, which could be monetized using cycle hubs with hire	5
Traffic problems should be alleviated by using the old A59 – currently a bridleway – to access car parking	4
Speed calming measures and pedestrian crossings should be created in Bolton Abbey Village	3
Access into the car park at Bolton Abbey should be open on <i>both</i> sides of the entry kiosk	3
Open Bolton Hall and grounds – (as a National Trust property)	3
The pub should be included within the existing Devonshire Arms	2
The bat box should be expanded to construct a local wildlife centre including glass bee hives, etc. to attract school visits	2
The new entrance to BACP should be past the Village Hall Park in New Field	2
A garden scheme similar to the ‘Lost Gardens of Heligan’ should be introduced	2
A new car park should be located at the Priory	1
Small units should be provided in Bolton Abbey Village that can be used for a variety of businesses and respond to changing needs/trends	1
Accommodation should be built on brownfield land next to Tithe Barn instead of on greenfield land	1
The development proposals should include a ‘luxury’ restaurant	1

Appendix 11: Bolton Abbey Heritage Capacity Assessment



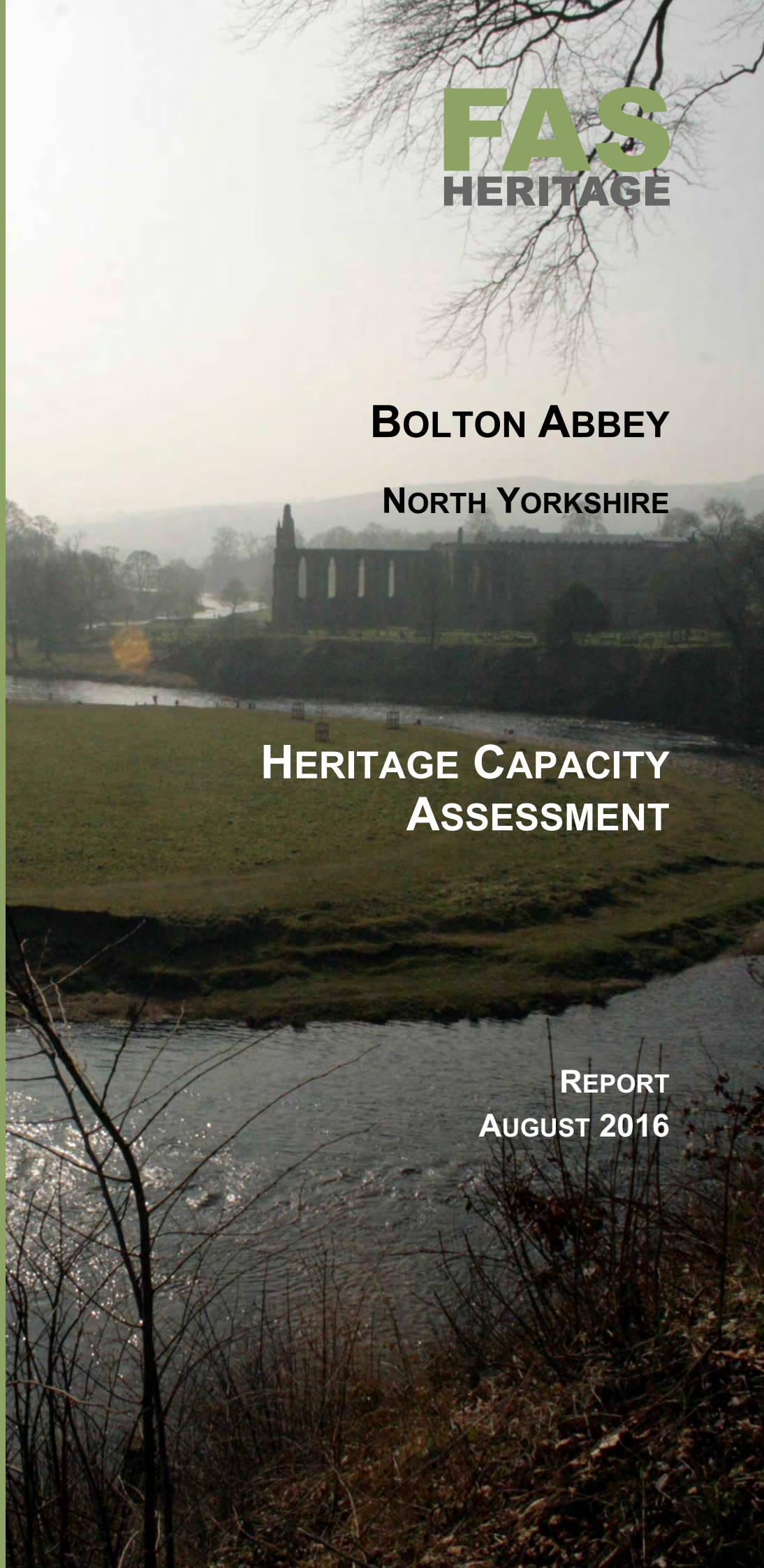
FAS
HERITAGE

BOLTON ABBEY

NORTH YORKSHIRE

**HERITAGE CAPACITY
ASSESSMENT**

**REPORT
AUGUST 2016**





HERITAGE CAPACITY ASSESSMENT
BOLTON ABBEY
NORTH YORKSHIRE

SITE CODE: BVM 16
REPORT CODE: FAS2016 649 BVM610
NGR: SE 072 539

REPORT v.2
August 2016

FAS HERITAGE

Unit 8 Fulford Business Centre
35 Hospital Fields Road
York
YO10 4DZ

Tel (01904) 652000
Fax (01904) 749014
mail@fas-heritage.co.uk
www.fas-heritage.co.uk

CLIENT CHATSWORTH SETTLEMENT TRUSTEES

PROJECT TEAM Nicola Toop BA MA PhD MCIfA
Jonathan Clark BA MA DPhil

REPORT PREPARED BY Nicola Toop BA MA PhD MCIfA

REPORT REVIEWED BY Cecily Spall BSc MA MCIfA

REPORT AUTHORISED BY Justin Garner-Lahire BA

Summary

This document presents an assessment of the heritage significance and historic character of land at Bolton Abbey (Craven District and the Yorkshire Dales National Park), undertaken to inform the development of the Bolton Abbey Development Options Appraisal and Bolton Abbey Village Masterplan. The assessment has been prepared by FAS Heritage, in consultation with Historic England (HE), on behalf of the Chatsworth Settlement Trustees (CST).

For the purposes of the HCA, a 'wider study area' has been established, including the valley of the Wharfe from Bolton Station to Barden Tower, to allow for an understanding of the whole core visitor area.

The document presents a narrative of current understanding of the development of the historic landscape, with particular focus on the medieval period and the late 18th and 19th centuries, when the area formed a focus for the Picturesque and Romantic movements. Building on this understanding of historic and current use of the landscape, a series of historic landscape character zones have been identified, described, and their significance assessed.

An assessment of the significance of the historic landscape character zones has allowed for consideration of the capacity for each to accommodate development without harm to the heritage significance of the landscape as a whole.

The assessment considers that several areas have the capacity to absorb change, which if managed and designed appropriately, will not adversely harm the overall significance of the Bolton Abbey landscape. Those areas with the greatest capacity to absorb change are at Bolton Bridge and Bolton Abbey, where carefully designed development could enhance and complement the existing settlements in these locations.

More limited opportunities for development have been identified at: Cavendish Pavilion and car Park, Strid Wood Car Park, Barden Tower.

In the remaining areas, opportunities for new development are more restricted and should focus on maintaining existing buildings which contribute to the significance of the area and in particular the farmsteads and isolated field barns which so characterise the area.

Acknowledgements

FAS would like to thank Will Kemp (CST), Roy Lingard (Bolton Abbey Estate Archives), Neil Redfern (Historic England), and Ian Smith (Historical England) for assistance during the preparation of this report.

LIST OF CONTENTS

1.0	INTRODUCTION	1
1.1	LOCATION AND LAND USE	1
1.2	AIMS AND OBJECTIVES	1
2.0	CONTEXT	5
2.1	LANDOWNER	5
2.2	BOLTON ABBEY AND RELATED AREA	5
2.3	THE NEED FOR DEVELOPMENT	7
3.0	METHODOLOGY AND CRITERIA FOR ASSESSMENT	8
3.1	PROCEDURE	8
3.1.1	Desk-Based Research	8
3.1.2	Site Visits And Historic Landscape Study	8
3.1.3	Assessment Of Significance And Capacity	9
3.2	CRITERIA FOR ASSESSMENT	9
4.0	PLANNING AND LEGAL FRAMEWORK, STATUTORY DESIGNATIONS	11
4.1	LEGAL FRAMEWORK	11
4.2	STATUTORY AND NON-STATUTORY DESIGNATIONS	11
4.2.1	Scheduled Monuments	11
4.2.2	Listed Buildings	11
4.2.3	Conservation Area	12
4.3	PLANNING POLICY AND GUIDANCE	13
5.0	HISTORICAL DEVELOPMENT	14
5.1	PREHISTORIC AND ROMAN	14
5.2	EARLY MEDIEVAL	14

5.3	MEDIEVAL ESTATES.....	14
5.3.1	Bolton Priory.....	15
5.3.2	Barden Tower.....	19
5.4	POST-MEDIEVAL PERIOD	20
5.4.1	Bolton Priory Precinct.....	21
5.4.2	The Barnyard And Hind Howse Croft.....	21
5.4.3	Barden Tower.....	22
5.4.4	Bolton Bridge.....	22
5.5	THE PICTURESQUE AND ROMANTIC AT BOLTON ABBEY	23
5.5.1	Visitors To Bolton Abbey.....	23
5.5.2	The River Wharfe	26
5.6	BOLTON ABBEY AS A 19TH- AND 20TH-CENTURY TOURIST ATTRACTION.....	29
6.0	HISTORIC LANDSCAPE ASSESSMENT	30
6.1	SURVIVAL AND LEGIBILITY OF THE MEDIEVAL PRIORY AND ESTATE	30
6.2	THE ROMANTIC AND PICTURESQUE LANDSCAPE.....	31
6.2.1	Zone 1 - Bolton Station And The Modern A59	32
6.2.2	Zone 2 - Bolton Bridge And Historic Approach Roads	32
6.2.3	Zone 3 - Low Bridge Field (Bolton Bridge To Bolton Priory)	35
6.2.4	Zone 4 - Pastoral Landscape/Former Medieval Field Systems	36
6.2.5	Zone 5 – Storiths.....	36
6.2.6	Zone 6 – Bolton Abbey.....	37
6.2.7	Zone 7 - The Stank	40
6.2.8	Zones 8, 9, 10 And 11 - The River Wharfe	40
6.2.9	Zone 13 – Bolton Park	43

6.2.10 Zone 14 - Barden	43
6.2.11 Zone 15 – Ascent To Simon’s Seat.....	45
7.0 CONSERVATION AREA ASSESSMENT	45
7.1 CHARACTER AND SIGNIFICANCE OF THE CONSERVATION AREA	45
7.2 KEY ATTRIBUTES OF THE CONSERVATION AREA.....	45
7.3 SETTLEMENT PATTERN AND GRAIN.....	46
7.4 CONTRIBUTION OF INDIVIDUAL ELEMENTS	47
7.5 CONTRIBUTION OF OPEN SPACES	47
8.0 ASSESSMENT OF SIGNIFICANCE.....	50
8.1 GENERAL STATEMENT OF SIGNIFICANCE	50
8.2 CONTRIBUTION OF HISTORIC LANDSCAPE ZONES TO SIGNIFICANCE	53
9.0 ASSESSMENT OF CONSTRAINTS AND OPPORTUNITIES	58
9.1 BOLTON ABBEY (ZONES 6A, 6B AND 6C).....	63
9.2 BOLTON BRIDGE (ZONE 2)	63
9.3 BARDEN (ZONE 3).....	64
9.4 STRID WOOD CAR PARK AND CARAVAN SITE (ZONE 13)	64
10.0 CONCLUSION	69
References.....	70

Figures

1	Location map	2
2	Study area	4
3	Designations	6
4	Medieval Bolton Priory	16
5	Bolton Abbey LiDAR data	18
6	Location of key views	24
7	Location of historic paths and seats	28
8	Historic landscape character zones	33
9	Zone 2 - Bolton Bridge	34
10	Zone 6 - Bolton Abbey and priory	38
11	Zone 14 – Barden	44
12	Bolton Abbey designations	48
13	Bolton Abbey – contribution of open spaces	49
14	Heritage capacity	62
15	Bolton Abbey – opportunities and capacity for development	65
16	Bolton Bridge – contribution of open spaces	66
17	Bolton Bridge – opportunities and capacity for development	67
18	Barden - opportunities and capacity for development	68

Plates

1	Aerial view of the study area	1
2	General view of the Priory	15
3	LiDAR data of Bolton Abbey village	17
4	Tithe Barn or Great Barn	19
5	Extract from Beckwith map, 1732, showing the village and barns	19
6	Barden Tower	19
7	Extract from Beckwith map, 1732, showing Bolton Park	20
8	Bolton Hall	21
9	Extract from Beckwith map, 1732, showing the Hind House Close	21
10	Extract from Beckwith map, 1732, showing the Bolton Bridge	23
11	View to Barden Tower from the Pembroke Seat	25
12	The Strid	25
13	The Hartington Seat	27
14	Cavendish Pavilion	29
15	Cavendish Memorial Fountain	29
16	LiDAR data showing medieval field systems	31
17	View from the Tithe Barn towards the Priory	32
18	The Devonshire Arms from the ‘stump road’	32

19	Devonshire Arms	35
20	View from Bolton Bridge	35
21	Stank Farmhouse from Bolton Abbey	36
22	Aerial view of Storiths	36
23	Beach and (submerged) stepping stones	37
24	Centre of village and the main road	37
25	Village Hall	39
26	Hole in the wall	39
27	Bolton Abbey car park	40
28	Precinct wall and road to Barden	40
29	Opened up views from the Boyle Seat	42
30	Aqueduct	42
31	Privy in the woods	42
32	View down the eastern bank from Barden Bridge	43
33	View of Barden Tower from the Pembroke Seat	43

Appendix

A	Scheduled Monument Descriptions	71
B	Listed Building descriptions	77
C	Work by Anne Tupholme	100
D	Statement of Significance	117

1.0 INTRODUCTION

This document presents an assessment of the heritage significance and historic character of land at Bolton Abbey (Craven District and the Yorkshire Dales National Park), which has been undertaken to inform the development of the Bolton Abbey Development Options Appraisal and the Bolton Abbey Village Masterplan. The assessment has been prepared by FAS Heritage, in consultation with Historic England (HE), on behalf of the Chatsworth Settlement Trustees (CST).

1.1 LOCATION AND LAND USE

This Heritage Capacity Assessment (HCA) aims to set Bolton Abbey within its wider landscape context, and therefore considers a stretch of Wharfedale that extends from Bolton Station in the south (NGR: SE 060 533) to Barden Tower in the north (NGR: SE 050 571). This incorporates at its heart the village of Bolton Abbey and encompasses a proportion of the historic townships of Bolton Abbey and Barden (Figure 1; Plate 1). Within this area are the settlements of Bolton Bridge, and Bolton



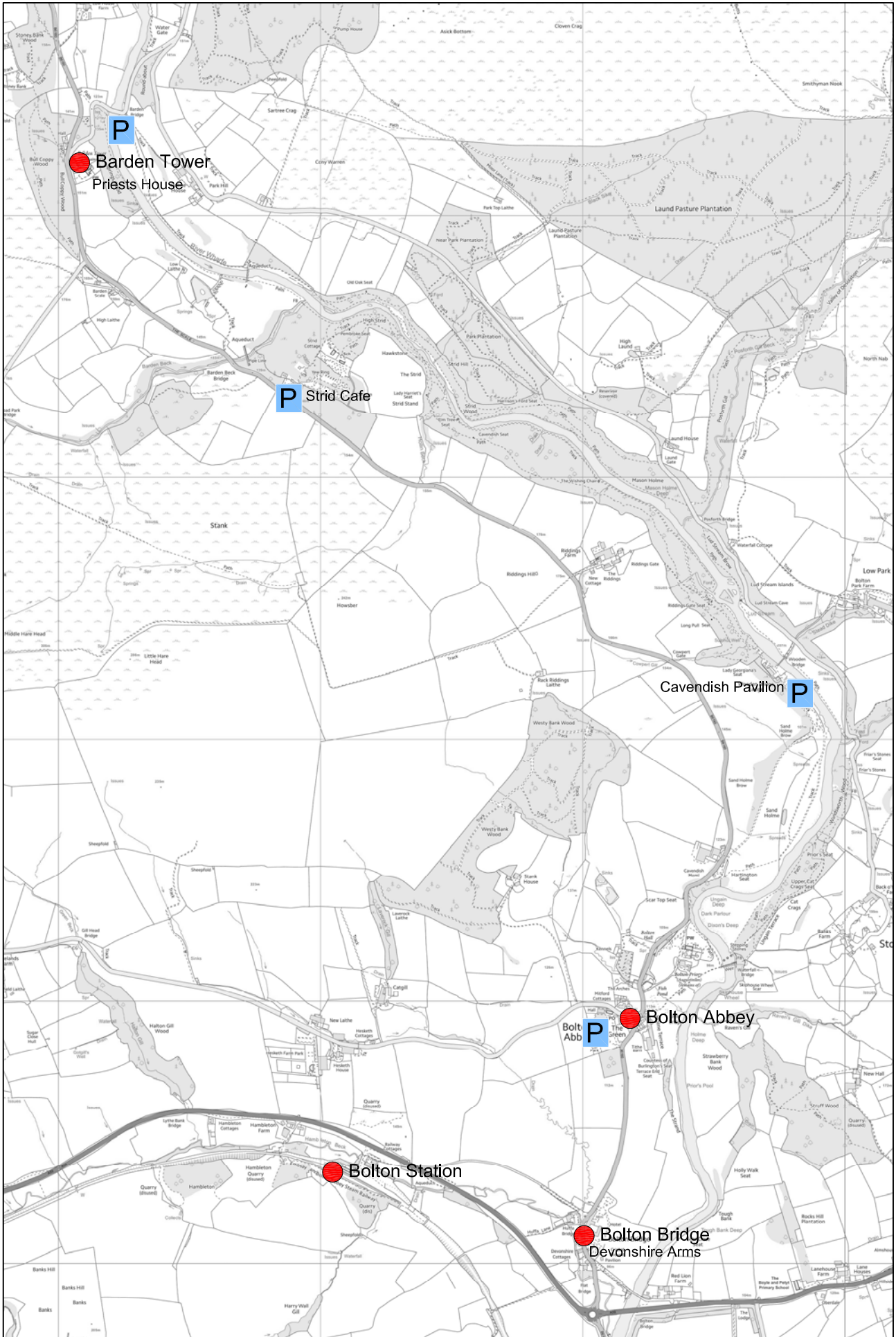
Plate 1 Aerial view of the study area © 2016

Infoterra Ltd and Bluesky

Abbey village (including the extensive remains of Bolton Priory precinct), and a group of buildings at Barden Tower. Extending along the Wharfe, within woodland and open areas, is a network of paths used by the many tourists that visit the area; tourist parking, refreshments and facilities are provided at Bolton Abbey, the Strid, and the Cavendish Pavilion, with additional parking at Barden Tower; and the Devonshire Arms at Bolton Bridge. The Heritage Assessment focuses primarily on the main area of Wharfedale between the two roads that flank the valley sides; this area cannot, however, be considered without reference to the wider landscape and its associated development such as farmsteads and field barns, and so the assessment covers wider areas as appropriate.

1.2 AIMS AND OBJECTIVES

The Chatsworth Settlement Trustees are seeking opportunities to underpin the vitality of the Bolton Abbey Estate to meet its long term aspiration to care for, manage and enhance the Bolton Abbey estate



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Ffjfr Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No AL10005190

<p>Location map</p>	<p>Scale 1:20000</p>		<p>Figure 1</p>
---------------------	----------------------	---	-----------------

This report seeks to assess the capacity of the historic landscape to absorb change, in support of development opportunities sought by the Chatsworth Settlement Trustees (CST) to underpin the sustainable management of the Bolton Abbey Estate and inform responses to the Craven District Local Plan (CDLP) being prepared by Craven District Council (CDC).

One option the CST is seeking is an allocation of land for mixed use development at Bolton Abbey village. This report comprises one element of interrelated pieces of evidence being produced in support of that proposed allocation. In addition to the following documents this study will inform an options appraisal to further inform consideration of the development opportunities identified by the CST:

- Bolton Abbey Visitor Accommodation Needs Assessment (Frey Consulting Ltd)
- Bolton Abbey Staff Accommodation Needs Assessment (Frey Consulting Ltd)
- **Bolton Abbey Heritage Assessment (FAS Heritage)**
- Bolton Abbey Landscape and Visual Appraisal (Gillespies)
- Bolton Abbey Village Masterplan (CST and Rural Solutions Ltd).

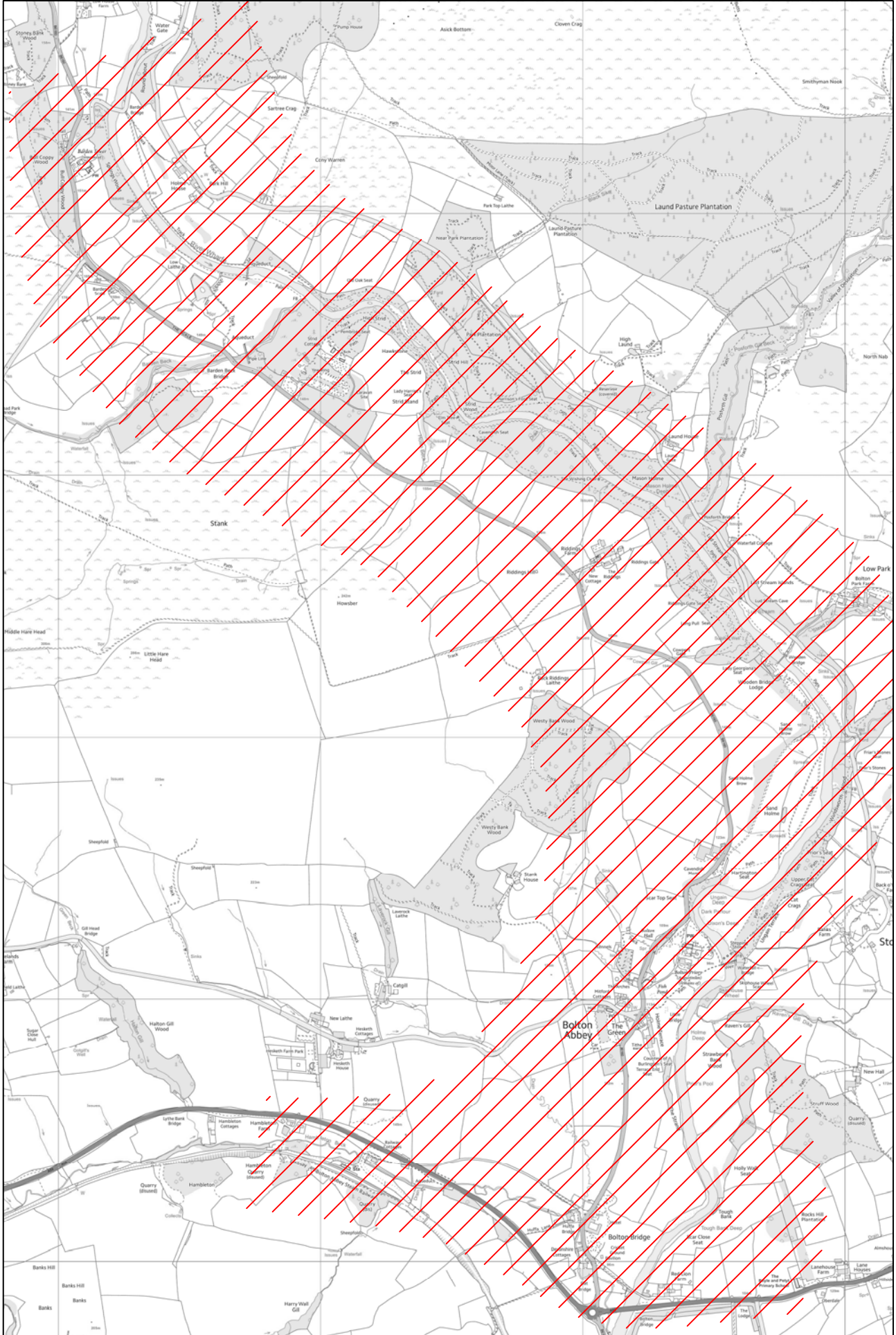
It has been recognised that the heritage significance of Bolton Abbey village cannot be understood in isolation, and that consideration of the proposed allocation must form part of a wider approach that considers the whole of the core visitor area. To this end, the HCA has both general and specific aims. In broad terms, the HCA aims to consider the heritage significance of the Bolton Abbey core visitor area, and to identify zones within that area that have the capacity to absorb change without harming the exceptional heritage significance of the landscape. In doing so, the HCA can be used as a tool to inform future master planning, to ensure minimal harm to the historic environment and to seize opportunities to enhance the significance of heritage assets. In order to achieve this, the following objectives have been set out:

- to present current understanding of the development of the historic landscape;
- to assess the survival of key elements of the historic landscape;
- to set out a series of historic character zones;
- to identify those attributes which contribute to the heritage significance of the place (set out in terms of historic landscape character zones);
- to identify ways that the significance of Bolton Abbey is vulnerable to harm, opportunities for enhancement, and the capacity of the area to accommodate change.

As the principal settlement of the Estate and focus of its business, more specific attention has been paid to the heritage significance of Bolton Abbey village. As a means of understanding in more detail the capacity of the village to accommodate change, an assessment has been made of the character of the designated Conservation Area.

1.3 STUDY AREA

For the purposes of the HCA, a 'wider study area' has been established, including the valley of the Wharfe from Bolton Station to Barden Tower (Figure 2), with a more focused study area around the village itself.



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Fife Archaeology Specialists Ltd. Unit 8 Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No AL10003700

Study area

Scale 1:20000



Figure 2

2.0 CONTEXT

2.1 LANDOWNER

Chatsworth Settlement Trustees (CST) is a business that owns and manages property on behalf of the Cavendish family, which has owned land between Bolton Bridge and Barden Bridge as well as the surrounding countryside (c.10,000 hectares) since 1753. CST is part of the Devonshire Group of companies and is committed to sustainable development.

CST derives incomes from rents, trading (eg. admissions), high quality food/retail outlets (eg. the Farm Shop at Chatsworth) and other income streams. It thereby funds a range of high quality environmental management activities (eg. woodland management, architectural conservation). As such, CST takes a responsible, long term and pro-active view of conservation whilst ensuring that projects provide a commercial return.

2.2 BOLTON ABBEY AND RELATED AREA

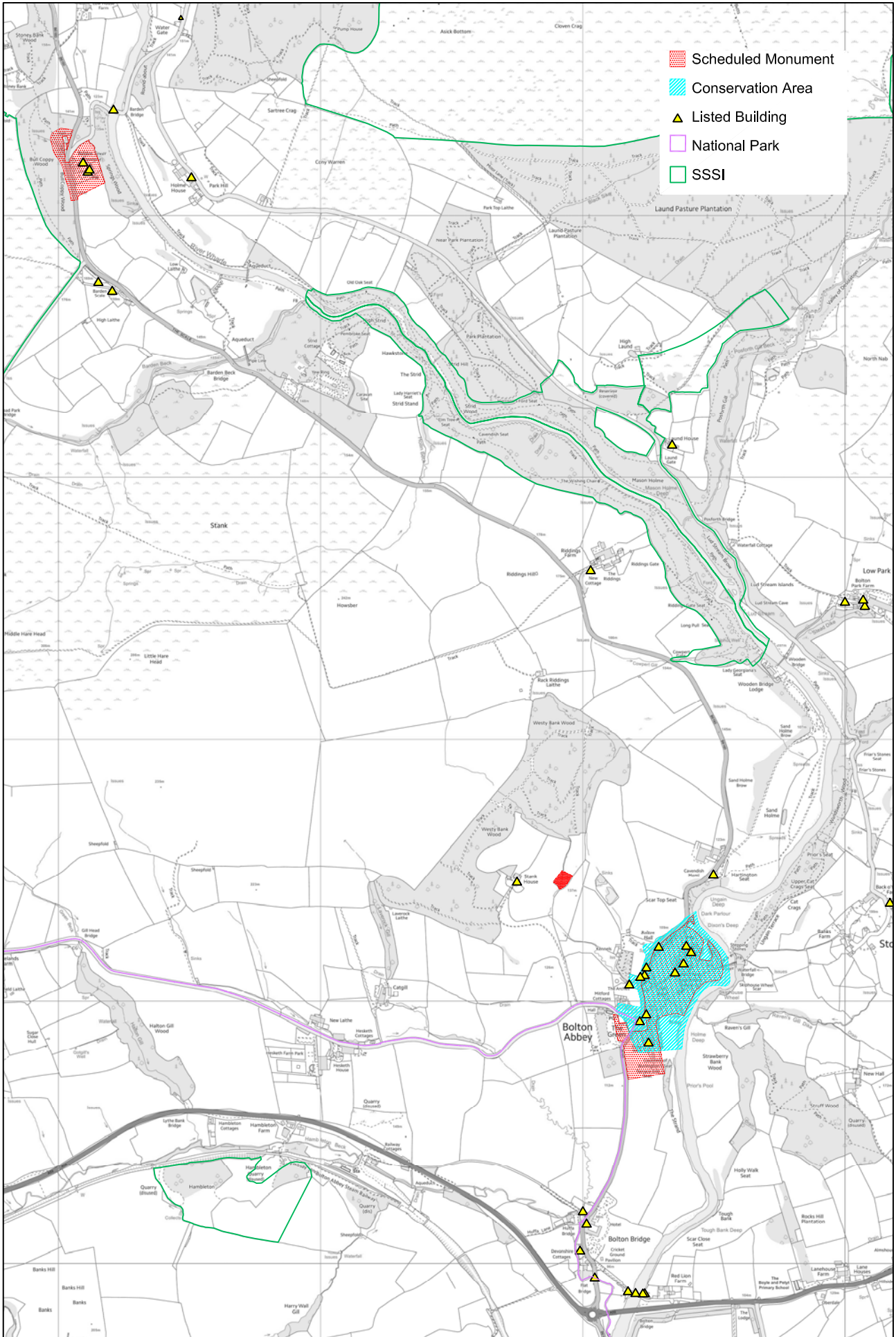
Bolton Abbey comprises three settlements: Bolton Abbey Village; Bolton Bridge; Bolton Abbey Station. Bolton Abbey village is situated on high ground east of the River Wharfe, less than a mile north of the junction of the A59 and the B6160. It therefore acts as the southern gateway to the Yorkshire Dales National Park (YDNP) and attracts 450,000 visitors per year. The quality and importance of the area is recognised by a high number of planning designations (Figure 3).

The Bolton Abbey Heritage Landscape Management Plan provides for open access for visitors, and CST funds the high level of environmental management for the related area (eg. woodland management, architectural conservation).

The built settlement is attractive, with a mixture of historic buildings and traditional stone houses surrounded by semi-improved pasture. It is therefore a popular place to live. Bolton Abbey contains 58 properties, 39 of which comprise dwelling units (seven of these are occupied by existing or former estate workers on reduced rents).

Bolton Abbey makes an important economic contribution to the local area as follows:

- employment: CST has 159 full-time equivalent (FTE) staff at the Estate Office, the Devonshire Arms Hotel, the Cavendish Pavilion and the Devonshire Fell Hotel
- commercial premises owned by CST: farms; hotel; estate office; garage; gym/health spa; book shop; post office; souvenir shop; delicatessen; tea rooms; farm shop; café/restaurant.
- visitor economy: 450,000 visitors to Bolton Abbey per year (though there is only one 4 star hotel and very few B&Bs/self-catering units nearby to accommodate them).



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Ffjfr Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hespall Fields Road, York, YO10 4DZ. Licence No AL10005190

Study area designations

Scale 1:20000



Figure 3

Bolton Abbey also provides a very high level of services for a rural area as follows:

- Bolton Abbey Village: post office; bus stop; public toilets; village hall; church; car park; coach park; book shop; tea room/café; delicatessen; café/restaurant; gift shop; tourist information; litter and recycling bins;
- Bolton Bridge: bus stop; garage; hotel; tea shop; gym/health spa; farm shop; community cricket club
- Bolton Abbey Station: community railway; café.

The village is 'active' due to: major employment within the village; the Estate office's role as a central 'hub' for the Estate; the high proportion of people living and working locally.

Bolton Abbey acts as the main 'service village' for the related area of Appletreewick, Barden, Beamsley, Draughton, Halton East, Hazlewood, Storiths and Skyreholme. These settlements will accommodate further development over the next fifteen years (*ie* there is a need to support the role of Bolton Abbey as the service village for the area).

As such, Bolton Abbey is not just a visitor attraction with some houses but a genuine service village in the Southern Dales area which CST considers can and should accommodate more development.

2.3 THE NEED FOR DEVELOPMENT

CST has recently undertaken a review of its operation at Bolton Abbey (with input from CDC and the YDNP) which has led to its 'Bolton Abbey Development Strategy' (2014). This business plan identifies the main business strengths at Bolton Abbey (*eg.* heritage assets, natural features and landscape quality), but also identifies issues for CST to address:

- a lack of sense of arrival (and departure) for visitors
- tourism is dependent on weather and school holidays
- trips tend to be brief, with little or no secondary spend
- major planning constraints severely limit opportunities for growth
- high maintenance costs
- services at risk (*eg.* loss-making Post Office)
- staff cannot afford local house prices (*ie.* long journeys to work)
- very limited visitor accommodation in the area in terms of supply and choice
- Bolton Abbey Village currently provides a limited and low value offer to visitors.

In order to address these issues, the business plan identifies the need for:

the enhancement of Bolton Abbey (within CDC) to provide a new village green, pub, farm shop, play area, play barn (i.e. wet weather facility)...staff/visitor/market accommodation, entry sign (welcome to Bolton Abbey), link to Bolton Abbey Station...and visitor centre/cycle hub.

3.0 METHODOLOGY AND CRITERIA FOR ASSESSMENT

3.1 PROCEDURE

The HCA has been prepared in accordance with the Chartered Institute for Archaeologists (CIfA)(2015) *Standard and Guidance for Historic Environment Desk-Based Assessment* and with particular reference to Historic England (2015) *Good Practice Advice in Planning: Note 3 – The Setting of Heritage Assets*.

The following research procedure was followed:

- Desk-based research
- Historic map regression
- Site visits and walkovers
- Consultation

3.1.1 Desk-based research

The HCA builds on existing studies of Bolton Priory and the wider landscape, including work by Stephen Moorhouse (2005) and more recently a desk-based assessment focussed on the proposed allocation and development site within Bolton Abbey village by ArcHeritage (Stenton, Badcock and Rimmer 2015). Information on the landscape and the Picturesque and Romantic associations of the area has been obtained from a Statement of Significance prepared by Neil Redfern (Historic England), and a study by Anne Tupholme (Yorkshire Gardens Trust).

Further sources have been consulted at the Bolton Abbey Estate Office (BAEO) and the Chatsworth Archives (CA).

A search of the North Yorkshire HER was undertaken for the village by ArcHeritage; this information has been used for the current assessment. Further information on the wider context was obtained from the Yorkshire Dales Historic Environment Record via Heritage Gateway.

Information on statutory designations was obtained from the National Heritage List for England (NHLE), consulted online at www.historic-england.org.uk. All designated heritage assets within the wider study area have been identified and mapped (see Figure 3).

3.1.2 Site visits and historic landscape study

Site visits were carried out in March to May 2016, to consider views from within the site, and the setting of heritage assets within the surrounding landscape. A series of site visits were undertaken, walking stretches of the core visitor area in order to understand the aesthetic value of the wider landscape, and how this contributes to the value of the heritage assets within it.

In order to assess the capacity of the landscape to absorb change, the core visitor area from Bolton Bridge to Barden Tower has been subdivided into character zones. An extensive site visit

was undertaken on 1st June 2016, attended by representatives of CST, Craven District Council, YDNPA, Historic England, Gillespies and FAS Heritage, with the aim of testing these zones and reaching a broad consensus on the significance of each zone and its capacity to accommodate change.

3.1.3 Assessment of significance and capacity

On completion of desk-based research and site visits, the significance of the wider landscape has been set out, and the contribution that each character zone makes to that significance has been set out. This in turn has informed an assessment of the capacity for each to absorb change, and the level of development that it can sustain.

3.2 CRITERIA FOR ASSESSMENT

An assessment of the significance of the Bolton Abbey landscape, and the known and potential heritage assets within it, has been undertaken as the first stage in establishing the impact of proposed development. This is in line with NPPF (Paragraph 128), which states that

‘In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance.’

The significance of a heritage asset is defined as:

‘The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.’ (NPPF Glossary)

A series of criteria for assessing the significance of historic monuments is laid out in Annex 1 of the Policy Statement on Scheduled Monuments (2010) and includes the following: period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity, potential.

Assessment of significance has been undertaken taking into account:

- archaeological interest
- architectural interest
- artistic interest
- historic interest
- setting

Significance has also been assessed with reference to English Heritage (2008) Conservation Principles, which assesses heritage value as **communal**, **aesthetic**, **historic** or **evidential**.

The core focus of the assessment has been the degree to which elements of setting contribute to overall significance, and so levels of significance have not been exhaustively applied to heritage assets within the landscape. Where grades of following grades of significance have been employed, the following apply:

- **Exceptional significance** - elements which can be demonstrated to have international or national significance, special relevance to British history or culture, and/or are of extraordinary or unique archaeological, architectural, artistic or historic merit. This will include World Heritage Sites, Scheduled Monuments (or those monuments which otherwise meet scheduling criteria) all Listed Buildings Grades I and II*, Registered Historic Parks and Gardens grades I and II*, and Registered Historic Battlefields;
- **Considerable significance** - resources with importance within a national or regional context, due to special archaeological, architectural, artistic or historic interest. This category will include Conservation Areas, Grade II Listed Buildings and Registered Parks and Gardens Grade II;
- **Moderate significance** - resources of local importance. This might include heritage assets with archaeological, architectural, historic or artistic interest, but which do not meet the criteria for designation.
- **Some significance** - resources of limited local importance, due to their high frequency, lack of provenance or limited survival. This might include resources of local significance that have been partially destroyed by past land use, whether by agricultural activity or previous built development
- **Unknown significance** - resources of uncertain importance based upon their type or condition
- **Neutral** - Elements which have no heritage value but which do not detract from elements of greater significance; this may include resources that are so badly damaged or altered that too little remains to justify their inclusion in a higher category
- **Intrusive** - Elements which are identified as intrusive may include those which have a degree of heritage value, but which detract from elements of greater significance.

Contribution of setting to the significance of the heritage asset

The justification for assigning each grade of significance is presented in terms of the NPPF criteria (archaeological, architectural, artistic and historic) and English Heritage values. In addition to these values, the level to which setting contributes to the significance is taken into account. Attributes of setting which contribute to the significance of each heritage asset have been identified, drawn from the check-list provided by Historic England (2015). A broad assessment has been made of the level to which each attribute of setting contributes to the significance of the heritage asset, for example whether they are:

- **Critical to** how we experience, understand and appreciate the significance of the heritage asset
- **Important to** how we experience, understand and appreciate the significance of the heritage asset
- **Contributes** to how we experience, understand and appreciate the significance of the heritage asset

- **Potential** - could be enhanced to improve how we experience, understand and appreciate the significance of the heritage asset
- **Negative** - detracts from how we experience, understand and appreciate the significance of the heritage asset

4.0 PLANNING AND LEGAL FRAMEWORK, STATUTORY DESIGNATIONS

4.1 LEGAL FRAMEWORK

The designated heritage assets considered in this assessment are afforded statutory protection under the following:

- Ancient Monuments and Archaeological Areas Act 1979
- Town and Country Planning (Listed Buildings and Conservation Areas) Act, 1990

4.2 STATUTORY AND NON-STATUTORY DESIGNATIONS

All heritage designations were identified within the wider study area (see Figure 3).

4.2.1 Scheduled Monuments

The Priory remains and part of the village are designated as Bolton Priory Scheduled Monument. The Scheduling includes a detached area which incorporates the remains of a medieval reservoir that served the priory mill (Appendix A).

Also scheduled is the area around Barden Tower, including the tower, and earthwork remains of the associated gardens (see Appendix A).

4.2.2 Listed Buildings

The wider study area contains within it 35 Listed Buildings (see Figure 3; Appendix B). The Listed Buildings cluster at the historic focal points of settlement at activity, at Bolton Priory, Bolton Abbey village, Barden Tower, with more dispersed farmhouses within the wider landscape.

Table 1 Listed Buildings within the study area

HA No	Status	NHLE	Identity	NGR
1	GII	1131744	Stables and Threshing Barn To Bolton Park Farm	SE 08074 55529
2	GII	1131758	Holme House Farmhouse	SE 05509 57142
3	GII	1131759	Barden Bridge	SE 05209 57399
4	GI	1131761	Barden Church	SE 05118 57171
5	GII	1131762	Barden Scale Cottage	SE 05152 56743

HA No	Status	NHLE	Identity	NGR
6	GII	1131763	Barden Scale Farmhouse	SE 05207 56707
7	GII	1131770	Ferry House	SE 07175 52889
8	GII	1131771	The Devonshire Arms	SE 07017 53147
9	GII*	1131772	The Great Tythe Barn	SE 07253 53838
10	GII	1131773	Aqueduct North Of The Abbey Mill	SE 07222 54089
11	GII*	1131774	Bolton Abbey Hall	SE 07292 54204
12	GI	1131775	Priory Of St Mary	SE 07417 54182
13	GII*	1131776	The Old Rectory	SE 07387 54140
14	GII	1131777	Cavendish Memorial	SE 07501 54479
15	GII	1166990	Adam Slack Cottage	SE 08176 54371
16	GII	1166607	Ivy Cottage Rose Cottage	SE 07239 52881
17	GII	1166709	Devonshire Cottages	SE 06992 53044
18	GII	1166716	Milestone Approximately 20m to W of the Devonshire Arms	SE 07003 53194
19	GII	1166722	Precinct Wall to the Priory	SE 07246 54125
20	GI	1166745	Church of St Mary	SE 07398 54203
21	GII	1166807	The Tea House	SE 07245 53946
22	GII	1301197	Riddings Cottage	SE 07035 55640
23	GII	1301245	Abbey Mill	SE 07238 54096
24	GII	1301128	Stables and Hay Barn to Bolton Park Farm	SE 08078 55503
25	GII	1317011	Laund House Farmhouse	SE 07345 56119
26	GI	1317012	Barden Tower	SE 05093 57198
27	GI	1317013	Barden Tower Farmhouse	SE 05110 57163
28	GII	1317039	1, 2, 3 And 4, The Green	SE 07220 53920
29	GII	1317054	Flat Bridge	SE 07048 52941
30	GII	1131746	Town End Farmhouse	SE 08324 54558
31	GII	1166702	Bolton Bridge	SE 07204 52882
32	GII	1317005	Bolton Park Farmhouse	SE 08003 55520
33	GII	1317015	Bridgend	SE 07232 52880
34	GII	1317019	The Arches	SE 07180 54060
35	GII	1301224	Fireplace and chimney approx 50m S of The Old Rectory	SE 07355 54106

4.2.3 Conservation Area

Bolton Priory and part of Bolton Abbey village is designated as a Conservation Area.

4.2.4 Conditional Exemption from Inheritance Tax

The Bolton Abbey Estate (The Chatsworth Settlement) was designated in 1986 with reference to Paragraph 3(3) Schedule 4 of the Inheritance Tax Act 1984 on the grounds of its 'outstanding scenic, scientific, historic and architectural importance.'

4.2.5 Yorkshire Dales National Park

The two statutory primary purposes of the National Park are:

- to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park
- to promote opportunities for the understanding and enjoyment of the special qualities of the area by the public.

In pursuing these purposes the park is also required:

- to seek to foster the economic and social well-being of local communities within the National Park

The majority of the study area including Bolton Abbey lies within the Yorkshire Dales National Park

4.3 PLANNING POLICY AND GUIDANCE

The following policy and guidance apply:

Planning policy

- National Planning Policy Framework (NPPF), 2012

Guidance

- National Planning Policy Guidance (NPPG)
- Historic England. 2015. *Historic Environment Good Practice Advice in Planning: Note 1 – The Historic Environment in Local Plans*
- Historic England. 2015. *Historic Environment Good Practice Advice in Planning: Note 3 – The Setting of Heritage Assets*
- Historic England. 2015. *Historic Environment Good Practice Advice in Planning: Note – The Historic Environment and Site Allocations in Local Plans (DRAFT)*

5.0 HISTORICAL DEVELOPMENT

5.1 PREHISTORIC AND ROMAN

In a study of the medieval estate of Bolton, Stephen Moorhouse (2005) has suggested that an ovate enclosure ('Back o'th hall Close') to the west of the priory may have prehistoric origins, appropriated during the early medieval period. No further archaeological investigation has been undertaken to explore this suggestion, but the enclosure can be seen as earthworks and is preserved in field boundaries.

The NYHER records the route of a Roman Road from Ilkley to Brough running north-south through Bolton Abbey, initially following the route of the B6160 until the latter turns sharply to the east in the village centre. This linear feature is preserved in earthworks of likely medieval date, and so may have dictated the later topography of the settlement. The date of this route requires further substantiation. No further remains of prehistoric or Roman date have been identified within the immediate area of the village.

5.2 EARLY MEDIEVAL

Before the Norman Conquest, Bolton is known to have been the centre of an extensive estate belonging to Earl Edwin of Mercia, which spanned parts of the Aire and Wharfe valleys. The place-name is Old English in origin, deriving from *boðltun*, which has been translated as meaning 'an enclosure with buildings'. Moorhouse's suggestion is that the oval enclosure above Bolton Hall (later known as Back o'th Hall Close) is the location of this enclosure. The field contains within it level areas which are overlain with medieval ploughing, and Moorhouse observes that the feature appears to be central to later field systems. Following the Norman Conquest, the manor was in the hands of the king, before passing to the Honour of Skipton.

5.3 MEDIEVAL ESTATES

Historically, the Bolton Abbey estate included the manors of Bolton and Hazlewood with Storiths, and the Forest of Barden. The estate passed with the Honour of Skipton to Robert de Romille after the Conquest.

The manor of Bolton was granted to the Augustinian Canons in 1155 by Alice de Romille, mother of the 'boy of Egremont', who reputedly lost his life jumping the Strid. Previously, the canons had established a foundation at Embsay on land granted by Alice's mother, Cecily de Romille. The community remained at Bolton until Dissolution in 1539, after which it passed to Henry Clifford (11th Lord of the Honors of Skipton), bringing the manor back into the same ownership as Barden, Hazlewood and Storiths. The estate subsequently passed by marriage to the Earls of Cork and Burlington (who held it from 1643 to 1753) and then to the Dukes of Devonshire, who still own it as part of the Chatsworth Estate.

5.3.1 Bolton Priory

Fieldwork at Bolton has established the layout of the medieval precinct, described in the Scheduling description (Appendix A), and in publications by Stephen Moorhouse (Moorhouse 2005a; 2005b). In addition to archaeological resources, earthwork remains and upstanding structures, Bolton Priory is served by a collection of account rolls which have provided detailed historical information on the economy of the site (Kershaw 1970; 1973; Hoyle 1989; Kershaw and Smith 2000).

Moorhouse (2005b, 3) describes the overall arrangement of the monastic precinct and adjacent areas. These included:

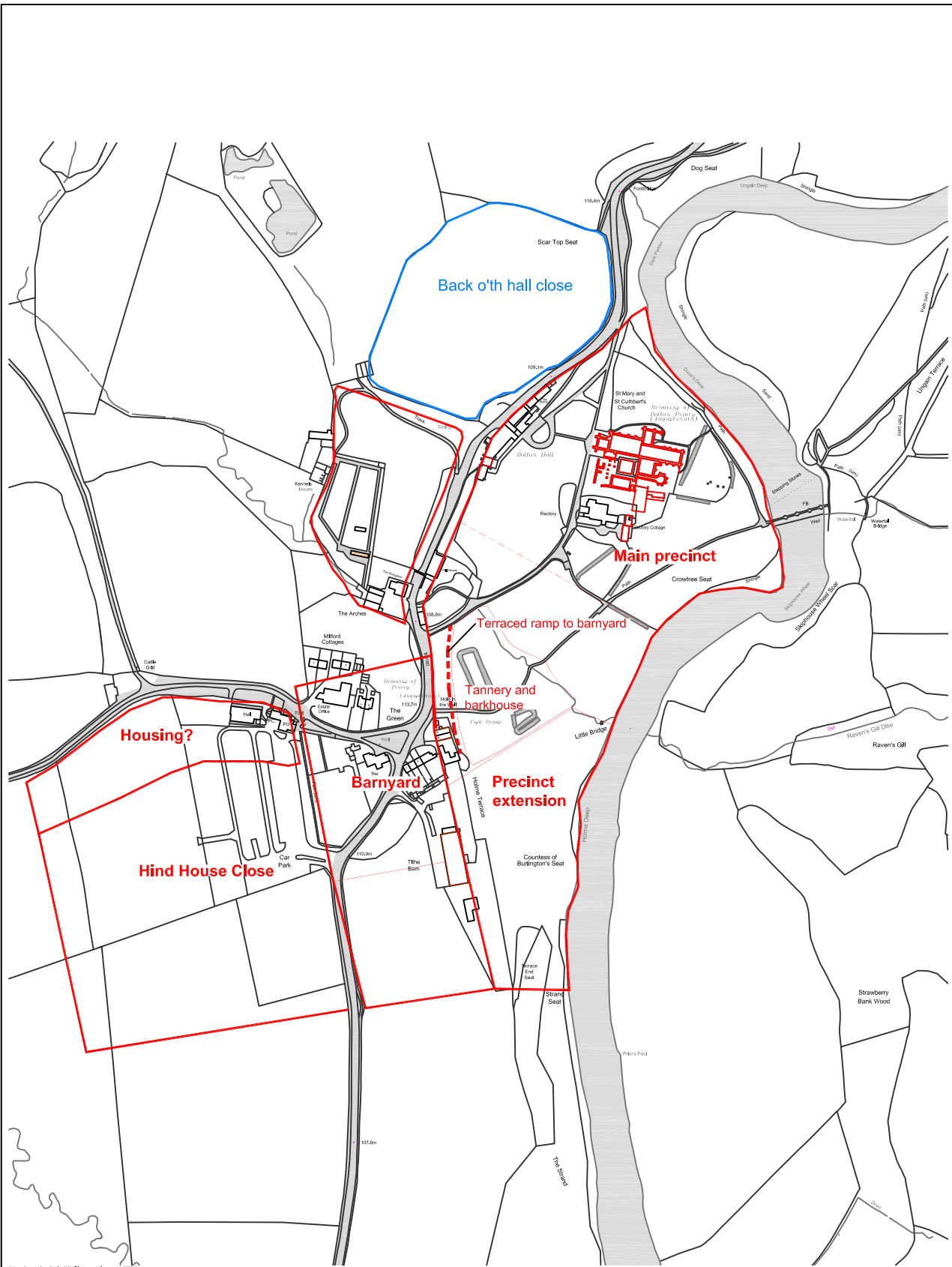
- The main precinct – focus of liturgical activity;
- The later extension to the south
- The rectangular barnyard
- Enclosure attached to west side of barnyard where hinds (agricultural farmworkers) lived

Figure 4 shows the extent of these zones as reconstructed by Moorhouse. The main precinct, occupying the river terrace and partly enclosed by a meander of the River Wharfe, was the centre of spiritual, economic and administrative activities (Plate 2). Other specialist activities included a tannery and barkhouse (building for storing bark, primarily for use in tanning), represented today by earthwork remains.



Plate 2 General view of the priory looking north

The 'barnyard' occupies land to above the river terrace. Linked to the main claustral centre by a terraced ramp (still extant as an earthwork), this area accommodated the craft and agricultural buildings of the priory. This was a practical arrangement; the topographic location of the yard provided convenient access to the farms on the home estate, and beyond. Further, the distance between the two would have protected the spiritual centre from the sights, noise and smells of the agricultural and craftworking areas. The terraced ramp leading to the barnyard has been identified with the *via* or way documented in 1324-5, when the sum of 42s was spent on cleaning and levelling the way between the gate [*?portam*] and the grange of Bolton (Kershaw and Smith 2000, 547; Moorhouse 2005b, 38). This means of access would have diverted the everyday traffic from the main entrance through the gatehouse (later adapted as Bolton Hall), which could then be reserved to make a grander impression on priory visitors. As the main route into and out of the precinct for day-to-day traffic, Moorhouse states that 'the importance of this access way within the precinct complex cannot be overstated' (Moorhouse 2005b, 26).



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Field Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL100003700.

The priory precinct (after Moorhouse 2005)

Scale 1:5000



Figure 4

The boundaries of the barnyard have been identified in later maps and in the LiDAR data (Plate 3), albeit overlain by the later route of the B6160, and the village of Bolton Abbey. The southern boundary is the best preserved, visible as an earthwork to the east of the road; the western boundary is visible in part, truncated by the entrance to the modern carpark. Observation during the excavation for services in this area in 1997 identified no structural remains, suggesting that the boundary comprised a bank and hedge (Moorhouse 2005b, 38). The northern side is visible north of the road junction; that to the east has been overlain by later barns and buildings. The rectangular area delimited by these boundaries was subdivided by a substantial east-west earthwork still visible in the fields west of the Tithe Barn, and shown on maps into the 18th century. The east-west boundary appears to persist into the early 19th century; it is shown on the first edition Ordnance Survey, but is not on the 1891 edition. Moorhouse (2005, 38) identifies earthworks in the southern part of the barnyard suggesting identification as a courtyard with buildings on four sides. These have been identified as the possible location of the late 13th to 14th-century stables of the prior and cellarer, and Moorhouse identified the earthworks of possible structures. Archaeological survival within this area requires further investigation.

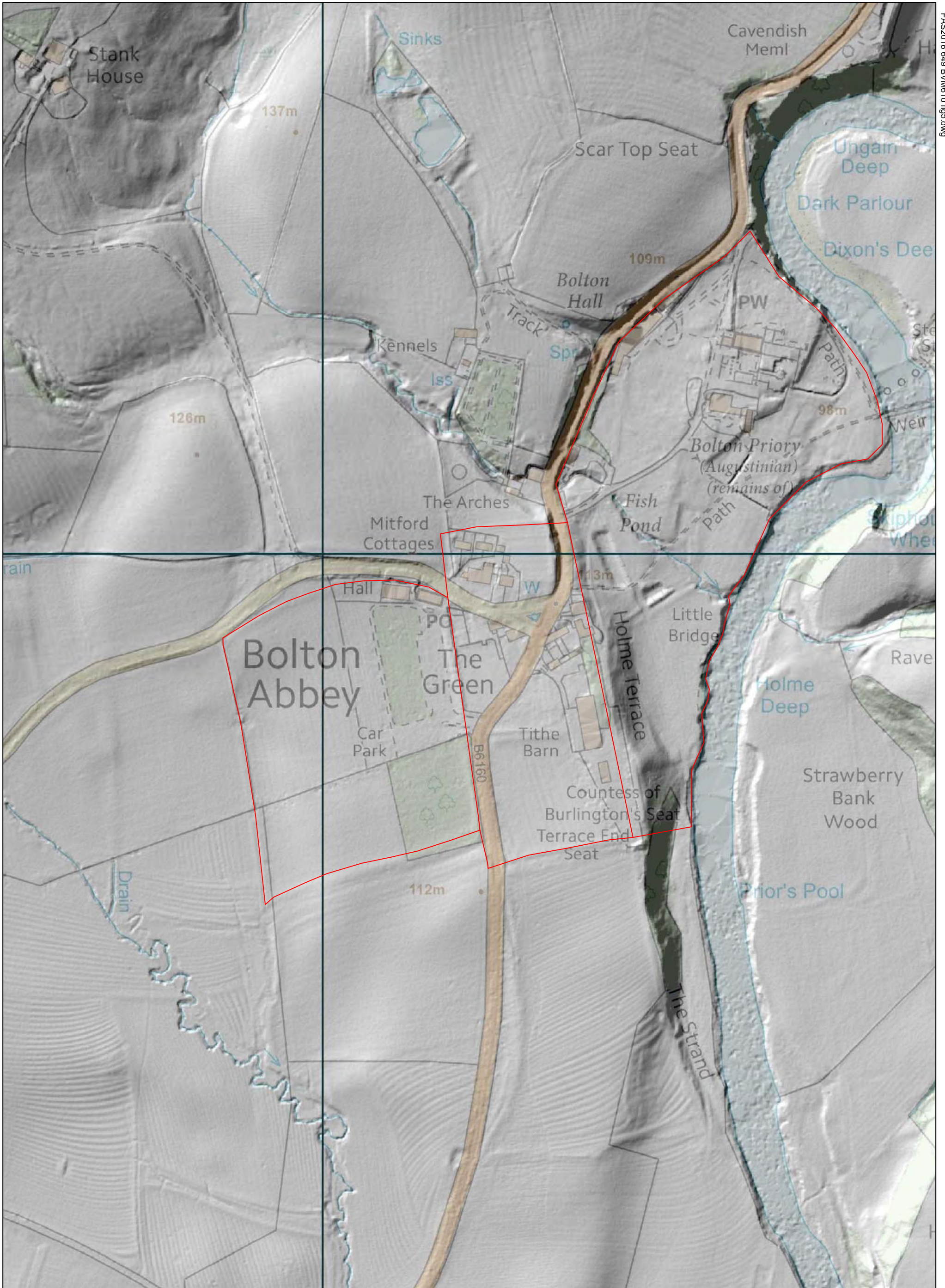


Plate 3 LiDAR data with Ordnance Survey overlay

The accounts of 1286-1325 and 1377-8 reveal a range of structures in the barnyard, identified either by direct references to the buildings, or implied by the craft occupations of people working there. The area is likely to have contained a range of sizes and uses of barn, and other structures alluded to include workshops, a limekiln, and a large smithy forge complex (Moorhouse 2005, 38-9). Craftsmen included smiths, carpenters, a malt dryer, faggot maker, and pig keeper.

The accounts of 1286-1325 and 1377-8 reveal a range of structures in the barnyard, identified either by direct references to the buildings, or implied by the craft occupations of people working there. The area is likely to have contained a range of sizes and uses of barn, and other structures alluded to include workshops, a limekiln, and a large smithy forge complex (Moorhouse 2005, 38-9). Craftsmen included smiths, carpenters, a malt dryer, faggot maker, and pig keeper.

In contrast to Cistercian houses, lay workers were not housed within the claustral ranges, but inhabited other areas in the wider precinct. Evidence from the Dissolution rental of 1539 indicates that the agricultural workers or 'hinds' at Bolton Abbey were accommodated to the west of the barnyard, in *Hind Howse Croft*, with the ploughmen and the herds. Beckwith's map of 1732 labels the close to the west of the village but shows no boundaries; the area shown on Figure 4 was identified by Moorhouse on the basis of the Dissolution rental which covered 16 acres (Moorhouse 2005b, 39). LiDAR data allows this parcel of land to be tentatively mapped in relation to earthworks at the site (Figure 5). Hind House Close was separate, but managed as one with the barnyard. During the medieval period, the enclosure appears to have been enclosed with a ditch; references were made in 1311-12 to clearing it out. Moorhouse suggests that the houses themselves would have been situated in the northern part of the enclosure where a terrace is partly visible in the topography, although no further evidence has been encountered to support this.



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

Field Archaeology Specialists Ltd, Unit 8, Fulford Business Centre, 35 Hopsall Fields Road, York, YO10 4DZ, Licence No AL0005700

Bolton Abbey LiDAR data, with Ordnance Survey overlay

Scale 1:3000



Figure 5

Some evidence for change during the medieval period is evident in this area. The Great Barn (also referred to as the Tithe Barn) overlies part of this rectilinear arrangement (Plate 4). The barn, dated by dendrochronology to 1518-19 has been identified as representing a remodelling of the barnyard. Changes in the buildings needed on the estate may have arisen with the shift towards livestock agriculture in the priory's estates, with the area of arable land on the estate reducing (Kershaw 1970 in Stenton, Badcock and Rimmer 2015, 18).



Plate 4 The Tithe Barn or Great Barn

Two barns previously stood in this area, shown on the Beckwith survey map of 1732 (Plate 5). Although Moorhouse (2005b) would place the second barn to the southeast of the extant building, historic map regression using the 1732 map and a series of later, 19th-century plans, indicates that the second barn would have been to the northwest. The vestiges of a building to the south may therefore be earlier in date. Documentary evidence indicates that the second barn was demolished in 1775 (Watkins 1989, 26). It is tempting to associate the possibly displaced medieval fabric of the Tearoom with the demolished barn. The timber-framing of the Tearoom appears typically late medieval in form (this needs to be substantiated dendrochronologically), but the building does not appear on 18th-century maps.



Plate 5 Extract from Beckwith map, 1732, showing village and barns

5.3.2 Barden Tower

Three miles north of Bolton Priory is Barden Tower, occupying a bluff overlooking a narrow stretch of the Wharfe valley (Plate 6). Initially one of six hunting lodges within the Forest of Barden, the tower was constructed in 1484/5 by Henry Clifford, when he regained the family estates. The 'Shepherd Lord' made Barden, rather than Skipton, the centre of his estate.



Plate 6 Barden Tower

The three-storey tower house is late 15th-century in date, with a stair turret in the north wall and a projecting rectangular tower on the south wall dominated by an impressive window which would have opened onto a first-floor great hall; the latter dominates the southern elevation. The tower would have been surrounded by a complex of domestic and agricultural buildings which lay to the west of the tower, extending across the area now bisected by the B6160. Further ancillary buildings and formal gardens lay west and south; a 16th-century chapel is attached to the south side. The core area is likely to have been surrounded by a wall, beyond which would have been warrens, deer parks, fishponds and barns.

5.4 POST-MEDIEVAL PERIOD

Bolton Abbey was dissolved in 1540 and was purchased from the Crown by Henry Clifford, Earl of Cumberland, in 1542, thus bringing the manor back into the same ownership as Barden (Walbran 1951, 114). From this period, the buildings of the former priory saw adaptation and expansion as a hunting seat of the Clifford family. Barden Tower, by contrast, fell into disrepair by the mid-17th century before being restored.

Gradually, the former priory estate was given over to tenanted farms; the process was completed by 1639 (Stenton, Badcock and Rimmer 2015, 18). Rentals show a continued emphasis on pasture over arable farming (Stenton, Badcock and Rimmer 2015, 18).

Within the wider landscape, Bolton Park was enclosed in the 1680s by Richard Boyle, First Earl of Burlington, and husband of Elizabeth Clifford. The wall enclosing the park is still extant, and the enclosure is shown on the 1732 map of the area (Plate 7); the area remained a deer park until 1921 (Tupholme 2006, 1). Bolton Park Farmhouse also dates to from the 17th to 19th centuries. The park was accessed from the road descending down from what is now the Cavendish Memorial, and crossing the river at the site of the Wooden Bridge.

Within the wider landscape, the 17th-18th-century Riddings Cottage has been identified as a possible hunting lodge in origin (NHLE entry).



Plate 7 Extract from Beckwith map, 1732, showing Bolton Park

5.4.1 Bolton Priory precinct

Following the Dissolution, several of the priory buildings continued in use. The nave of the church, patronised by the Cliffords from c.1310, remained in use and became the parish church of St Mary.

In c.1700, the Boyle School was constructed on the site of the priory infirmary by the first Earl of Burlington, following a bequest from his uncle, the scientist Robert Boyle. This later became the rectory; the school was merged with Hazlewood elementary school and moved to Beamsley in 1875.

The arches of the 14th-century priory gatehouse were infilled and the structure was 'fitted up as an occasional place of retirement for the Cliffords' (Walbran 1851, 115). In 1720 it was extended for use as a residence by the third Earl of Burlington, Richard Boyle (1695-1753) (Plate 8). The third Earl was an architect and patron of the arts, referred to as 'Apollo of the Arts' or 'the architect Earl', and is credited with the introduction of Palladianism to Britain and Ireland. Of him, the Oxford Companion to Gardens states;



Plate 8 Bolton Hall

'The Burlington circle, as it has become known, included artists, architects and writers concerned not only with the introduction of Palladianism into England, but of greater importance, with the concept of a new romantic pictorial landscape around it to take the place of classical formality.'

The Third Earl was a major patron of William Kent (1685-1748), and the triple-arched aqueduct that spans the B6160 to carry water to the corn mill (converted to stables in 1810) has been attributed to him (Tupholme 2006, 2).

A survey was undertaken in 1735 and made the recommendation that the woodland be taken 'in hand', but this does not seem to have been implemented at the time (Tupholme 2006, 2).

5.4.2 The Barnyard and Hind Howse Croft

The shift towards tenanted farms, and an emphasis on pastoral farming, may have led to the disuse of the hinds' housing in *Hind House Croft*, and subsequent demolition. The earliest map consulted, the 1732 map by Edward Beckwith, gives the name Hind Close Croft to a large parcel of land but does not show boundaries or buildings within it (Plate 9).

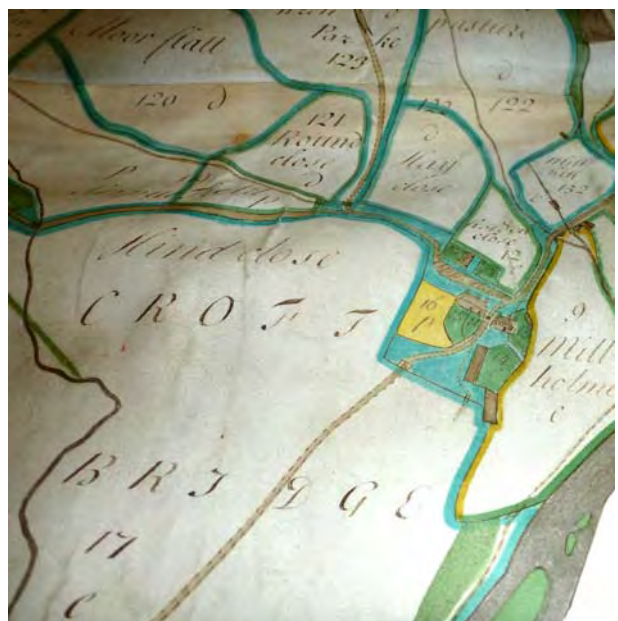


Plate 9 Extract from Beckwith map, 1732, showing Hind House Close

The rectilinear enclosure of the barnyard had fallen out of use by this date, possibly commencing with the construction of the two great barns in the early 16th century. The southern part of the barnyard does not feature on the 1732 plan, which shows the former northern part fossilised in part in the extant boundaries (still legible today).

By 1732, the main road bisected the northern part of the enclosure on a NE-SW alignment, following its current alignment. This change may have been linked to the disuse of the terraced ramp as a means of accessing the precinct, thereby providing a more direct route towards Bolton Hall and beyond. The 1732 plan does not show the current access into the precinct, suggesting that this was cut through the precinct wall at a later date. This access is depicted on the early 19th century plans of the estate (BAEO Plan 35, 36, 37), with the footpath to the 'hole in the wall'.

Bolton Abbey village had started to take its current form by 1732, with the clustering of housing around the junction of the roads. The Beeches is shown on the plan, with cottages to the north, and Nos 1 to 4 The Green to the east. All are listed on the accompanying key as cottages or houses, with gardens. The east-west road is labelled 'Upper Green', suggesting the location of a 'lower green'. The Tea Cottage is not shown on this plan, which has led to the suggestion that it represents a relocated structure. Later additions include the late 18th to 19th-century the Arches, situated close to the aqueduct that formerly served the abbey mill.

5.4.3 Barden Tower

While Bolton Priory saw continued, or increasing, investment during the post-medieval period Barden Tower had fallen into disrepair by 1589. Although the tower was in the possession of Elizabeth, daughter of the 5th Earl of Cumberland, it was rebuilt by her cousin, Lady Anne Clifford (1590-1676) in 1658-9. The extant Barden Bridge was rebuilt at the same time (NHLE entry). Lady Anne also enclosed Barden Deer Forest. The tower had, however, fallen into disuse again by the end of the 18th century.

5.4.4 Bolton Bridge

Less than 1km south of the village of Bolton Abbey is Bolton Bridge. Before the reconfiguration of the A59 in the late 20th century, Bolton Bridge was the main crossing of the Wharfe; there is known to have been an earlier ferry crossing in the same location. The Devonshire Arms lay on the main route west from Knaresborough, and would have been a significant landmark on this route, particularly for visitors heading towards Bolton Abbey. The inn itself has 17th, 18th, 19th and 20th-century fabric and although it may have been constructed as a house, is known to have been an inn since at least 1792 when Lord Torrington recorded his stay. Since at least the late 18th century, therefore, the Devonshire Arms would have provided accommodation for visitors to Bolton Abbey. A recent appraisal of the building noted that the 18th-century extension, if undertaken before 1753, may have been personally influenced by Richard Boyle, 3rd Earl of Burlington, the 'architect earl' and owner of the estate at that time.

Beckwith's map of 1732 shows the Devonshire Arms flanking the road at the main junction (Plate 10). Paths are shown leading from the bridge along the riverbank towards Bolton Abbey, and westward flanking the road.

By the mid-18th century further dwellings had been constructed on the main road, including the Devonshire Cottages, Ivy Cottage and Rose Cottage.

5.5 THE PICTURESQUE AND ROMANTIC AT BOLTON ABBEY

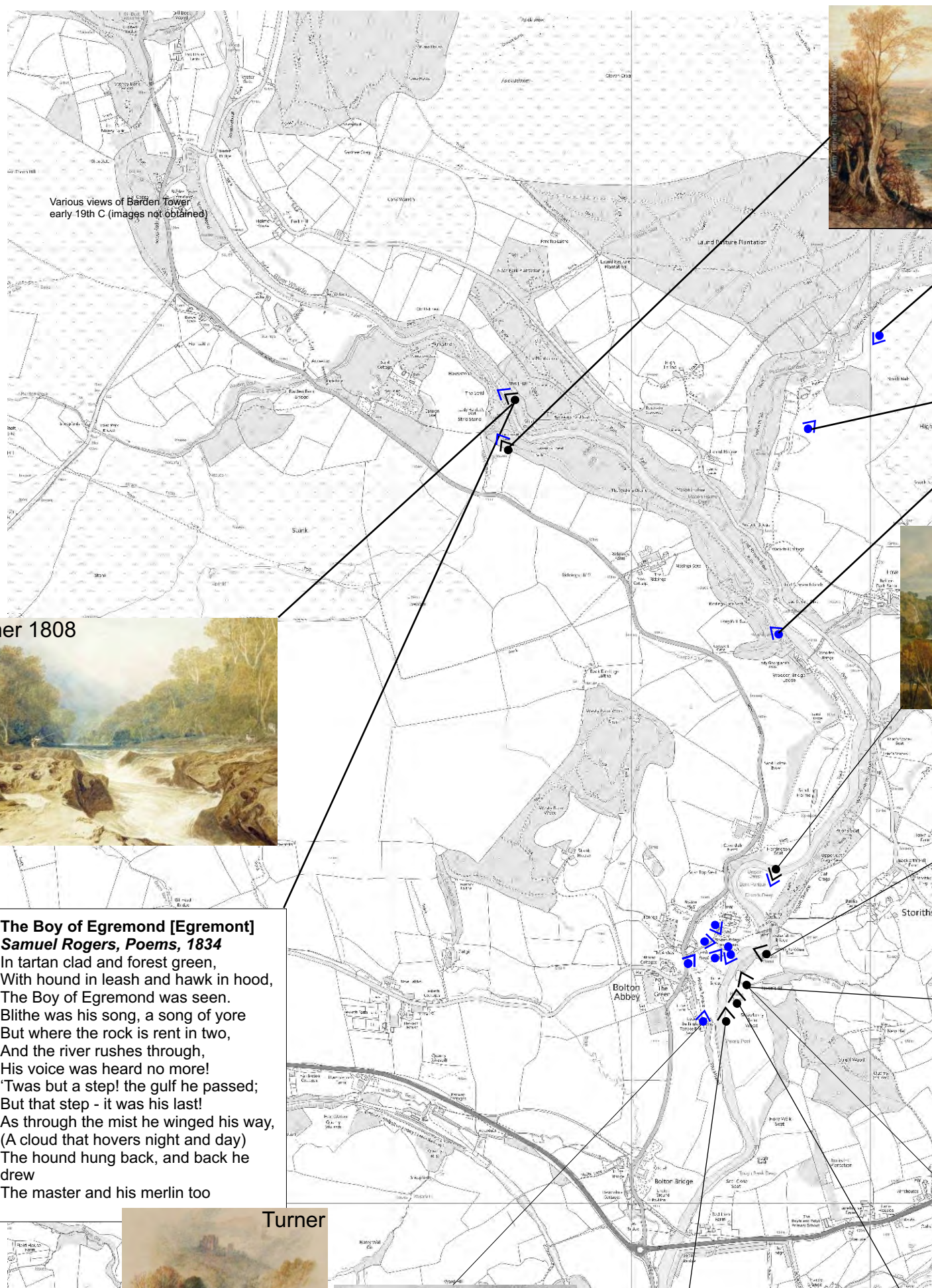
The aesthetic value of Bolton Abbey and its landscape setting may have been appreciated and enhanced by earlier incumbents, but from the late 18th century Bolton Abbey gained in significance through the appeal that it held for the Picturesque and subsequently Romantic movements. The Picturesque movement of the late 18th to 19th century placed a great value on the pictorial synergy of architecture and nature in combination. As such great value would have been placed on both the ruined priory and Barden Tower in their dramatic landscape contexts. The Romantic movement valued the past and nature, but placed more emphasis on emotion and individualism, and so the appeal of Bolton Abbey would have been the aesthetic experience of moving through diverse landscape. The desire for the sublime would have been met by the narrow gorge of the Strid (with its associations with the Boy of Egremont), the wild mountain power of the upland moors and (after 1826) the stripped out Valley of Desolation. Colour and texture was provided by the woods, and the landscape offers a rich contrast of pastoral landscape, upland fells and moorland. The work of Turner, Girtin and Cotman drew the Bolton Abbey landscape into the Romantic tradition, epitomised later in writings by Ruskin (Figure 6).

5.5.1 Visitors to Bolton Abbey

From the late 1790s, Bolton Abbey is known to have been visited by artists and writers who drew inspiration from the aesthetic value of the place, and whose visits may in turn have influenced the development of the landscape at the hands of the 6th Duke of Devonshire and the Reverend. William Carr, incumbent at Bolton Abbey (1789-1843) and Receiver/agent for some of the Duke's estates. Anne Tupholme (Yorkshire Gardens Trust) has drawn together the information on this subject in an unpublished document (2006, Bolton Abbey Estate Archives); a statement of significance by Neil Redfern (Historic England) also emphasises the significance of this period of history (Appendix C and D). Many visitors may well have stayed at the Devonshire Arms, known to have been an inn from at least 1792.

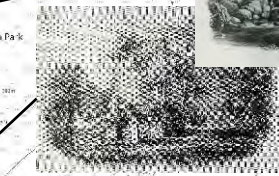


Plate 10 Extract from Beckwith map, 1732, showing Bolton Bridge



Various views of Barden Tower early 19th C (images not obtained)

Turner 1808



Turner 1799



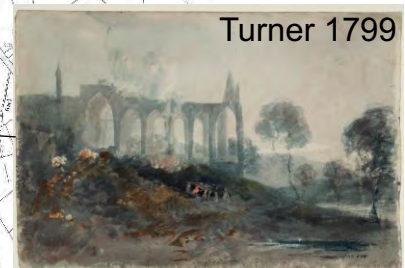
Turner 1808



Turner 1798



Turner 1799

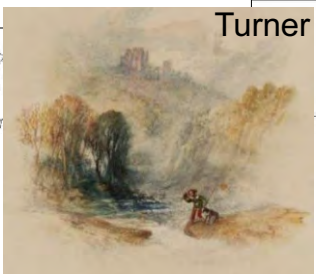


Bromley after Girtin



The Boy of Egremont [Egremont]
Samuel Rogers, Poems, 1834
 In tartan clad and forest green,
 With hound in leash and hawk in hood,
 The Boy of Egremont was seen.
 Blithe was his song, a song of yore
 But where the rock is rent in two,
 And the river rushes through,
 His voice was heard no more!
 'Twas but a step! the gulf he passed;
 But that step - it was his last!
 As through the mist he winged his way,
 (A cloud that hovers night and day)
 The hound hung back, and back he drew
 The master and his merlin too

Turner



1829



Turner 1809



Turner 1825



After Turner 1835



Fourteen Views in Lithography of Bolton Abbey, 1829

The aesthetics of the priory appealed to the Picturesque mentality, but the wildness of the surrounding landscape, when compared to sites such as Fountains in their more formal setting, held attraction for the Romantic sensibilities of Wordsworth, Ruskin and Landseer.



Thomas Girtin visited Bolton Abbey to paint in 1796, returning at least three more times before his death in 1802.

Cotman visited in 1803. J M W Turner is known to have been at Bolton

Plate 11 View to Barden Tower from the Pembroke Seat

Abbey in 1797, 1808 and 1815, and the resulting works included views of the priory against its immediate setting (Bolton Abbey, Yorkshire, c.1809 is now in the British Museum), and also wider views towards Barden Tower (Plate 11). Turner painted the sublime landscape of the Strid (Plate 12), and views of the priory from the north and south. The view of the priory from the Hartington Seat looking south shows the priory set against the varied moorland and pastoral landscape; Turner also depicts Bolton Bridge in this piece, which is not currently visible within this view. Further artistic licence is taken with the view from the south looking north, which shows an exaggerated topography, demonstrating an appreciation of the ruggedness of the landscape.



Plate 12 The Strid

Turner's views of the priory included livestock in the fields, and people visiting the ruins, epitomising the Romantic ideal of escaping urban industrialisation to enjoy the rural landscape. William and Dorothy Wordsworth visited in 1807; Wordsworth was inspired

by the visit to write *The White Doe of Rylstone*; the cemetery adjacent to the priory church was used as the setting of the poem, which was based on local legend of the Boy of Egremont. In 1856, John Ruskin wrote of Bolton Abbey in his book, *Modern Painters*:

'Noble moorlands extend above, purple with heath, and broken into scars and glens; and around every soft tuft of wood, and gentle extent of meadow, throughout the dale, there floats a feeling of this mountain power, and an instinctive apprehension of the strength and greatness of the wild northern land. It is to the association of this power and border sternness that the sweet peace and tender decay of Bolton Priory, that the scene owes its distinctive charm.' (in Pevsner, quoted by Redfern 2015)

Following the opening of the Strid to the public in 1810, several guidebooks were published, including *Fourteen views of Bolton Abbey* by the artist J Scarlett Davis (1829)(see Figure 6). The selection of views provides an insight into those aspects of the landscape which played a significant role in the experience of a visitor seeking the picturesque. The lithographs included a view of the Abbey from the Hartington Seat, and a view of Barden Tower from the Pembroke Seat, both also painted by Turner. In addition to views of the priory buildings, Scarlett Davis includes views of the Lower Fall on Posforth Gill, and the Vale of Desolation, indicate that this valley, flanking the western side of Bolton Park, was an important visitor attraction, appreciation of which was facilitated by the winding path crossing stepping stones at frequent locations. The Vale (or Valley) of Desolation was so called following a deluge in 1826 which left 'weird skeleton arms of old oaks, and old stunted thorns nearer its base'. Scarlett Davis's evocative account describes the events that led to the 'wild desolation' of the valley:

'a most violent thunderstorm...the trees, banks and rocks, were dashed down in promiscuous fury; so that the grinding of the large crags, in the rugged bed of this brook, was more loud and powerful than the awful claps of thunder which then resounded around the valley' (Scarlett Davis 1829, 5)

Artist Richard Ansell visited in 1842 and, according to Speight, was constantly stopping to admire the different points of view (Tupholme 2006, 3). In 1904, Edmund Bogg describes the glen was described as 'perhaps the most beautiful and romantic in Wharfedale' (Bogg 1904).

5.5.2 The River Wharfe

The natural beauty of the area would have been at the foundation of the appeal of the place, but from the early 19th-century the area between Bolton Bridge and Barden Bridge was carefully enhanced at the hands of the sixth Duke of Devonshire and the Reverend William Carr.

At the end of the 18th century, the 'picturesque' style of gardening was in its finest or most extreme phase, summarised by Anne Tupholme:

'A typical picturesque landscape would include a diverse set of scenes using natural materials, viewed from fixed points, often linked by a single path. The views were usually beautiful, and there was an emphasis on the sublime'

William Carr

The Reverend William Carr was incumbent at Bolton Abbey from 1789 until his death in 1843. In addition to serving as a curate, he farmed 146 acres of estate and was Receiver for some of the Duke's estates; records refer to him as agent from at least 1806. He dwelt at the former Boyle School, and is said to have made tasteful changes – including four beautiful gothic chimneys. Most significantly, he was in charge of the laying out some of the paths and seats to open up the landscape to visitors. Speight (1900) in his book on *Upper Wharfedale* writes that

'it is not generally known that the Duke of Devonshire, who was very partial to walking exercise, and had a special fondness for his Bolton Abbey demesnes, took no small share in

formulating the designs for opening out these beautiful woods, and some of the walks and vistas he himself suggested. But there is no doubt that to Mr Carr belongs the credit of superintending these works and planning himself some twenty-eight miles of road and walks and opening out many of the exquisite views' (Speight 1900)

Wordsworth said of William Carr that he 'had worked with an invisible hand in the very spirit of nature'. Carr was a scholar, and so would have known the works of William Kent at Londesborough, the gardens at Hackfall, and the vista walk at Studley Royal (Tupholme 2006). He may also have been influenced by accompanying the earlier artists and writers that visited the site; it is known that Edwin Landseer actually stayed with Carr, and shortly afterwards painted *Bolton Abbey in the Old Times*. Tupholme suggests that visits in the company of early visitors may have influenced later designs.

Between 1806 and 1808 the woodland was taken in hand, and the estate took control of areas of former wood-pasture; Tupholme states that descriptions in early books indicate that there was planting and thinning of the woods to improve the vistas before 1811. The woodland along the valley was laced with a network of paths and carefully positioned 'seats', to allow appreciation of the spectacular views across and within this landscape. Many seats are shown on the 1850s Ordnance Survey, and notes by Henry Pickop (detailed in Tupholme 2006), indicate that several

had been constructed some years before, including Scar and Ivy seats (near the Strid) by 1815, Hartington and Ford by 1817, and Waterfall near Bolton Bridge by 1827. The seats appear to have been described as 'rustic huts' or thatched; today, they may have been replaced with more modern structures but the intended vistas are still plain to see. That at Hartington (Plate 13) for example, was formerly described as a 'rustic hut' but now comprises a drystone seat that

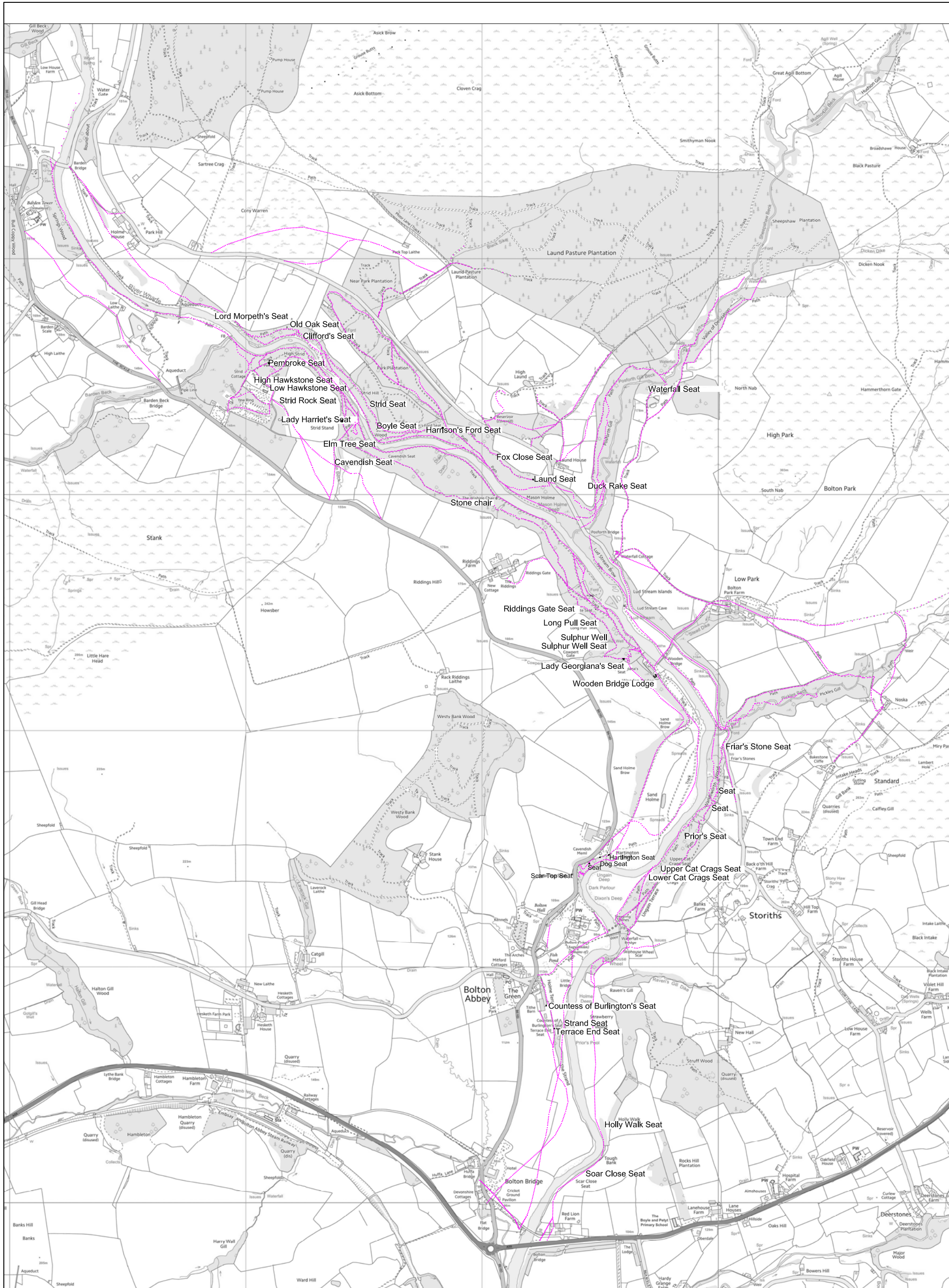


affords the same view over the abbey as described in Scarlett Davis (1829):

'This view ... embraces almost every object that can constitute a landscape, and has, at different times, employed the pencil of the first living artists. This view is generally allowed by all strangers, who visit this "loveliest place in all the land" to be the most perfect...'

The guidebooks of the time recommend various itineraries designed to take in the various seats and views along the valley (Figure 7).

Documents record tree planting by Reverend Carr, which served to enhance the woodland, examples include three Cedars of Lebanon that were purchased in 1815; further information on planting is provided in Tupholme's document (2006).



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

Field Archaeology Specialists Ltd, Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ, London No AL00059700

Location of historic paths and seats

Scale 1:15000



Figure 7

Following his death in 1843, William Carr was succeeded as Agent of Bolton by Joseph Paxton, who had been appointed head gardener at Chatsworth in 1826. Two years later Paxton designed extensions for Bolton Hall to provide additional accommodation for the Duke's guests during the shooting season.

5.6 BOLTON ABBEY AS A 19TH- AND 20TH-CENTURY TOURIST ATTRACTION

Through the 19th- and 20th-century, the popularity of Bolton Abbey as a tourist destination increased significantly. By 1827, the Guidebook to *Bolton Abbey and its adjoining scenery* was in its 5th edition and through the 19th century visitor numbers increased.

The railway linking Ilkley and Skipton was laid down in the late 19th century, and in 1888 Bolton Abbey station was opened mid-way between the two (Tomlinson 1968). There was a general rise in the popularity of outdoor pursuits at this time, and the accessibility of Bolton Abbey to the industrial populations of the West Riding meant large visitor numbers. Mechanics Institutes were in their prime, and the natural history and scientific societies were being established, all of which led to a rise in people seeking to spend time in the countryside. On an August Bank Holiday in the 1890s, the railway brought thousands of visitors to Bolton Abbey. Numbers continued to rise after World War I.

Visitor facilities increased, in the village and along the river. The now iconic stepping stones are shown on early Ordnance Survey editions, followed by the footbridge constructed before 1909. By 1898, a pavilion had been constructed alongside the Wooden Bridge Lodge to provide refreshments for visitors, a facility still offered at the site by the Cavendish Pavilion (Plate 14).



Plate 14 Cavendish Pavilion

The site remains a popular destination for tourists, creating a strong communal value expressed in the continuing appreciation by the public for this place, which one of the most visited sites in Yorkshire.

Continued elaboration of the landscape occurred into the 19th century, albeit on a more grandiose scale. The Cavendish Memorial Fountain was erected in 1886 at one of the most prominent positions on the route between Bolton Bridge and Barden Tower (Plate 15). The memorial commemorates Lord Frederick Charles Cavendish, who went out as Chief Secretary to Ireland but was assassinated within twelve hours of arrival in Dublin. The fountain was erected by Electors of the West Riding as a tribute to his memory.



Plate 15 Cavendish Memorial Fountain

Further work within the priory precinct included the restoration of the Church of St Mary by G.E. Street in 1875-60.

6.0 HISTORIC LANDSCAPE ASSESSMENT

An assessment of the historic landscape has focussed on the two key periods that have shaped the character of Bolton Abbey, being the medieval period, and the period of the Picturesque and Romantic movements.

6.1 SURVIVAL AND LEGIBILITY OF THE MEDIEVAL PRIORY AND ESTATE

On first impressions, the medieval priory appears well-preserved. The structures of the claustral ranges are visible and their layout is legible, and associated earthworks allow industrial features to be discerned in the wider landscape. The extant precinct appears to give a sense of completeness. However, as Moorhouse states, this is far from the case, and the wider arrangement of the outer zones of the precinct are not legible or well understood (Moorhouse 2005).

The outer precinct areas, referred to as the barnyard and hind house close, are no longer readily visible within the village (see Figure 4 and 5). Following the Dissolution, or possibly late in the history of the priory, these areas fell out of intensive use and were gradually eroded by the changing route of the road through the area, and loss of structures. The former barnyard area remained a focal point for dwellings and agricultural buildings through subsequent periods, but was fragmented by the changing route of the B6160.

The rectilinear barnyard can still be detected from extant earthworks, historic maps and aerial photographs, overlain by the later, post-medieval form of the village centre. The curve of the B6160 effectively bisects the earlier enclosure, which is represented by land east and west of the road. The 18th-century labelling of 'Upper Green' along the road to the north suggests perception of this as an open space, and suggests the presence of a 'lower' green. The Great Barn, or Tithe Barn is a notable survivor of the later period in the history of the priory, but is anonymous in its current context, which belies its historic origins within what would have been a much denser area of agricultural and craftworking activity. The housing of the hinds or agricultural workers, postulated by Moorhouse to have been located in the area of the modern Village Hall, is not securely located or understood. This zone of the monastic layout would have been critical to the economy of the monastery and has all but vanished.

Within the wider landscape aerial photographs and LiDAR data allow for detailed mapping of the medieval field systems within the monastic manor (Plate 16). Water management features are also discernible, in particular the extant remains of the medieval reservoir (part of the Scheduled area).

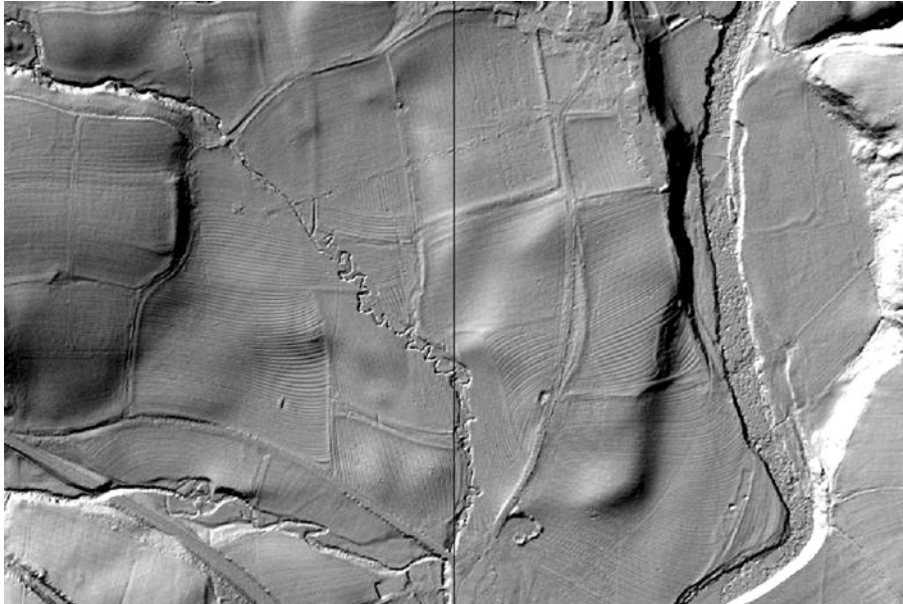


Plate 16 LiDAR data showing medieval field systems

6.2 THE ROMANTIC AND PICTURESQUE LANDSCAPE

The significance of the later phases of the history of Bolton Abbey is not fully set out in the statutory designation descriptions, but has been explored more fully in a recent Statement of Significance (Redfern 2015). The unique relationship between the priory ruin and its landscape setting have created a landscape that attracted the attention of some of the most notable artists and writers of the 18th and 19th centuries.

Key to the aesthetic value and appeal of this landscape are the contrasts between the verdant pastoral landscape, the wilder uplands, the woodlands, waterfalls and rock formations, often visible within the same vistas, against which were framed the ruins of Bolton Priory, on its river terrace, and Barden Tower, on its elevated bluff. Despite the increased traffic, busier roads, and modern tourist facilities, all of these elements remain, and the views which drew followers of the Picturesque and Romantic can still be enjoyed today.

Within the wooded valley, and along the Wharfe, the character of the landscape that had such appeal for the Romantic and Picturesque movements is still easily appreciable and largely unspoilt. Several of the 'seats' have been rebuilt sympathetically as drystone structures, others marked by simple benches only, but the sequence of vistas along a path is both appreciable and appreciated. The network of paths reflects that which was set out by the 6th Duke and William Carr. The key loss is the connection between the upper terrace on which the Great Barn sits, and this network. Terrace End Seat and the Countess of Burlington's seats would have afforded views from the south, but are no longer extant and no longer connected to the wider path network in any discernible form. The drama of these views can be glimpsed through the somewhat intrusive yew and laurel hedge to the rear of the barn (Plate 17).

The highly varied landscape of Bolton Abbey core visitor area is experienced kinetically, and the historic landscape lends itself to characterisation as a series of zones, delimited in part by the way

that people move around the landscape. These zones are set out in Figure 8 and described below, with specific reference to how they have been changed or survived since the 19th century.

Although the area has been subject to Historic Landscape Characterisation (available at maps.northyorks.gov.uk), the zones below differ in that they have been refined to consider not only former land uses and boundaries, but views to and from them, topography, and significance to historic artistic movements and tourism.



Plate 17 View from the Tithe Barn area

6.2.1 Zone 1 - Bolton Station and the modern A59

From 1888 onwards, Bolton Station, provided a main arrival point for tourists escaping industrial urban areas to enjoy the countryside around Bolton Abbey. Formerly the station would have been linked directly to Bolton Bridge; this route was severed by the modern A59 but can still be followed on foot. The A59 has significantly altered the character of this zone, diminishing the sense of arrival and providing a sense that the station is separate from the core visitor area.

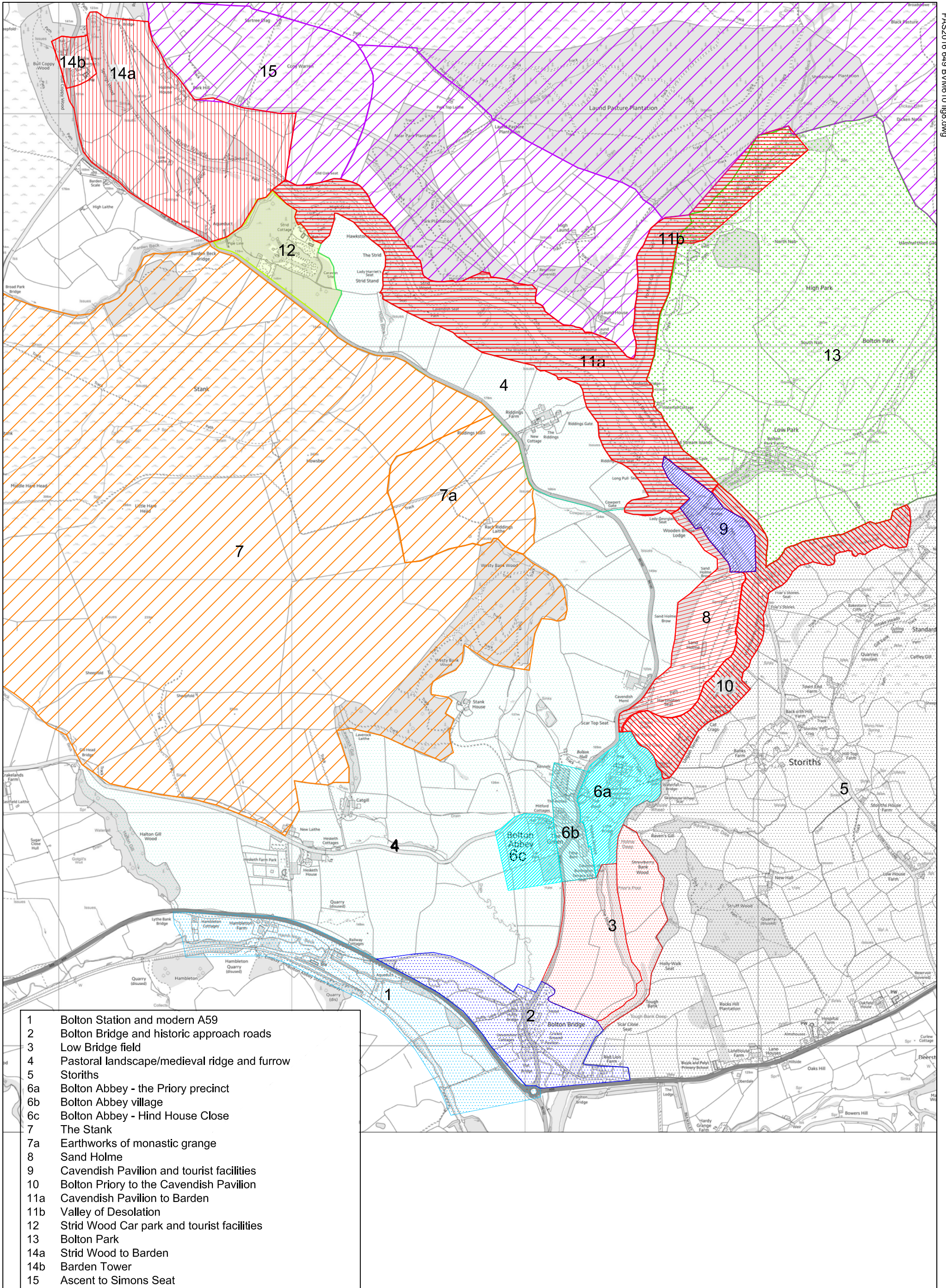
6.2.2 Zone 2 - Bolton Bridge and historic approach roads

Bolton Bridge (Figure 9) continues to serve as the gateway into the core visitor area, although the sense of arrival has been diminished by the modern reconfiguration of the A59, which has bypassed the historic bridge. Formerly, the concentration of buildings at the historic bridge, including the Red Lion Inn to the east (now demolished) and Devonshire Arms to the west, would have represented a more notable landmark on the main east-west route, and a



Plate 18 The Devonshire Arms from the 'stump road'

marked entrance to the route to Bolton Abbey village. The former approaches survive as access roads (to the east) and footpaths (to the west), and include vestiges of the former road surface that would formerly have provided the direct approach to the Devonshire Arms. Views along the latter show the prominent position that the inn would have had when approached from the west (Plate 18), an impression which is now restricted to pedestrians only.



- 1 Bolton Station and modern A59
- 2 Bolton Bridge and historic approach roads
- 3 Low Bridge field
- 4 Pastoral landscape/medieval ridge and furrow
- 5 Storiths
- 6a Bolton Abbey - the Priory precinct
- 6b Bolton Abbey village
- 6c Bolton Abbey - Hind House Close
- 7 The Stank
- 7a Earthworks of monastic grange
- 8 Sand Holme
- 9 Cavendish Pavilion and tourist facilities
- 10 Bolton Priory to the Cavendish Pavilion
- 11a Cavendish Pavilion to Barden
- 11b Valley of Desolation
- 12 Strid Wood Car park and tourist facilities
- 13 Bolton Park
- 14a Strid Wood to Barden
- 14b Barden Tower
- 15 Ascent to Simons Seat

Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

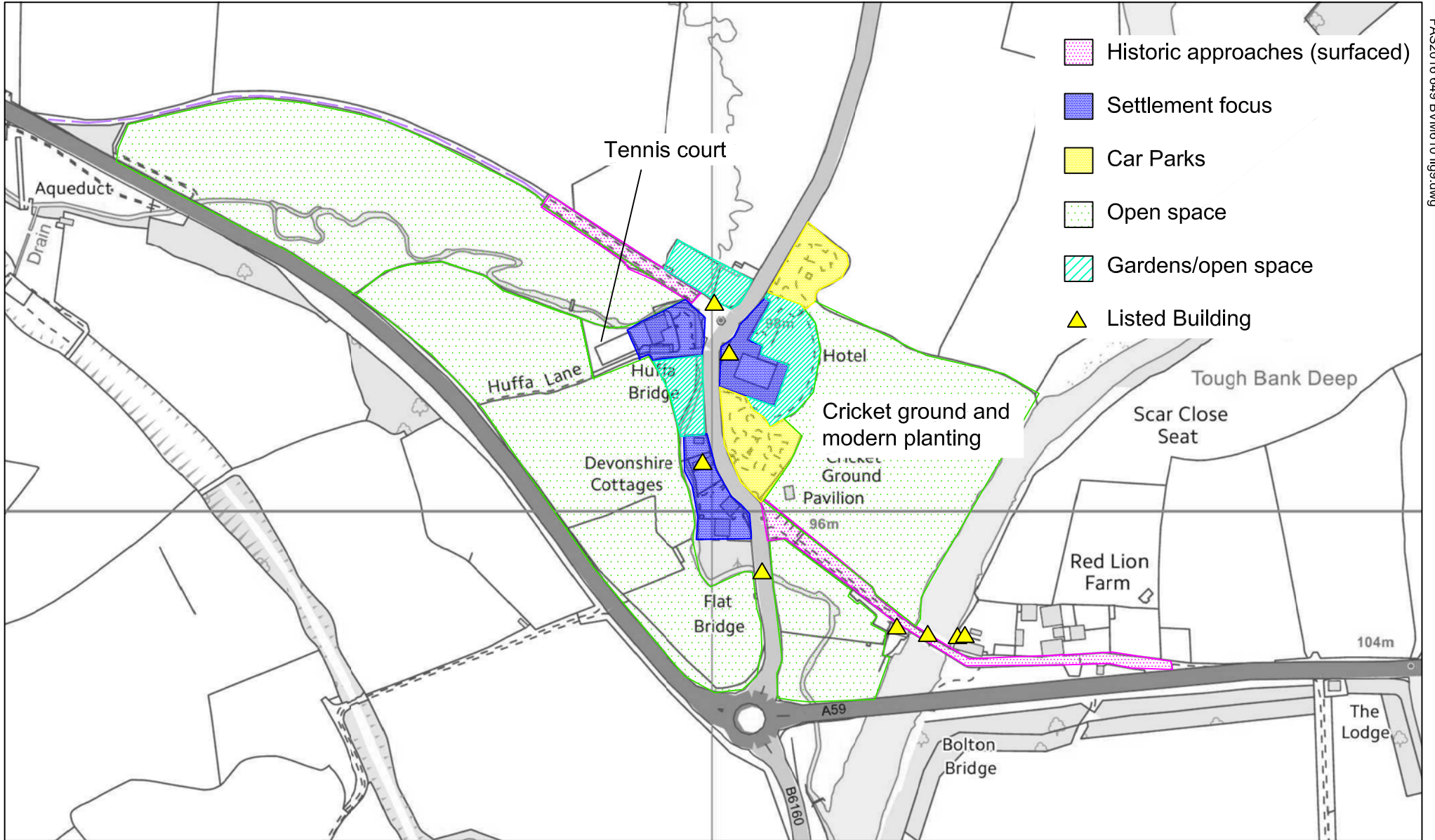
Field Archaeology Specialists Ltd Unit 8 Fulford Business Centre 35 Hospital Fields Road York YO10 4EJ. Licence No AL0005700

Historic landscape character zones

Scale 1:15000



Figure 8



- Historic approaches (surfaced)
- Settlement focus
- Car Parks
- Open space
- Gardens/open space
- Listed Building

Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright.

FAS Archaeology Specialists Ltd Unit 8 Fulford Business Centre 35 Hospital Fields Road York YO10 4DZ Licence No AL10006790

Zone 2 - Bolton Bridge

Scale 1:5000



Figure 9

Despite this, the Devonshire Arms has a prominent roadside location and with the historic character of its frontage, still represents a significant landmark, marking the entry into the valley (Plate 19).

The expansion of the inn and the creation of recreational areas and car parking has altered the character to some extent. Formal planting to the east of the Devonshire Arms is at odds with the more natural parkland planting elsewhere (Plate 20). Other buildings in this area; the garage, tea room, and spa, are all constructed in similar materials and palette, which enhances the character of the area.



Plate 19 The Devonshire Arms

6.2.3 Zone 3 - Low Bridge Field (Bolton Bridge to Bolton Priory)

The land stretching from Bolton Bridge to Bolton Abbey (known as Low Bridge Field) represents the main approach to the priory and with the eastern riverbank forms the lower approaches to the Priory. Carriages (and later cars) would have travelled along the route of the B6160, while walkers would travel across the river terrace via footpaths on the east or west banks. This remains the case; the priory and village can be reached either on foot along the river paths, or along the main road. Both the road and footpath routes still pass through open fields as they would have done



Plate 20 View from Bolton Bridge

in the 18th century and earlier. Mature trees, and newly planted replacements, form an avenue along the road; these are shown on 19th-century maps. The approach along the western river bank is now part of the long distance Dales Way, which provides access directly to the priory ruins. From the 19th century there would have been a route connecting these paths with the Tithe Barn and seats on the upper slopes of the river terrace; this link no longer exists.

The eastern riverbank is shown from the historic Ordnance Survey maps to have incorporated Holly Walk Seat, and Scar Top Seat, allowing visitors the opportunity to enjoy panoramic views up and down the river (see Figure 7). Historic itineraries directed walkers to follow this path south

following an ascent of the Valley of Desolation, before crossing Bolton Bridge to the Devonshire Arms (in Tupholme 2006).

This low-lying area contrasts with the higher ground to the east, where the ancient field systems around Storiths occupy rising ground (Zone 5).

6.2.4 Zone 4 - Pastoral landscape/former medieval field systems

On approaching Bolton Abbey village by road, land to the west is characterised by open, agricultural fields; beyond the village, this landscape extends to the east of the road. This forms the wider, agricultural estate of the medieval period; aerial photographs and LiDAR data show the extent of survival of medieval ridge and furrow across the landscape (see Plate 16). The 'gentle' meadow, and pasture provided a contrast with the wilder uplands, and provide a green open space today as they would have done in the 18th and 19th-centuries. These fields continue along the gentler slopes of the valley, characterised by stone walls, and dispersed, stone barns and farmsteads, characteristic of the Yorkshire Dales. Notable farms viewed across this zone include Stank Farmhouse, as seen from Bolton Abbey village (Plate 21), and the Riddings, which appears on the approach towards Barden.



Plate 21 Stank Farmhouse from Bolton Abbey



Plate 22 Aerial view of Storiths

6.2.5 Zone 5 – Storiths

This landscape zone has been assigned to the large area of ancient field systems which lie east of the core visitor area, occupying the rising ground around Storiths. Characterised as 'piecemeal enclosure', the landscape here is characterised by a patchwork of small fields bounded by stone walls around the settlement of Storiths (Plate 22).

6.2.6 Zone 6 – Bolton Abbey

Zone 6 has been assigned to the core of Bolton Abbey, comprising the current village and the former priory precinct. This area naturally falls into two zones, divided by topographic location and the hard boundary provided by the extant medieval precinct wall, and has been the subject of a higher resolution study (see Section 7, below; Figure 10). To the west lies the former area of Hind House Close.

Zone 6a – the Priory Precinct

The ruins within the priory precinct were the key element which drew the attention of the Picturesque and the Romantic movements; medieval ruins set against the natural beauty of the landscape are quintessentially picturesque. These survive, largely unspoilt and the views that were painted by Turner and others from the late 18th century onwards can still be identified and appreciated today.

The zone highlighted around the priory precinct includes the stepping stones and sandy riverbank on the opposing bank. This zone is an area where people tend to linger longer, to appreciate the ruins, to picnic and relax (Plate 23). The aesthetic value of the priory is, and was, appreciated from within the ruins, but also from seats to the north, south and east (see Figure 7).



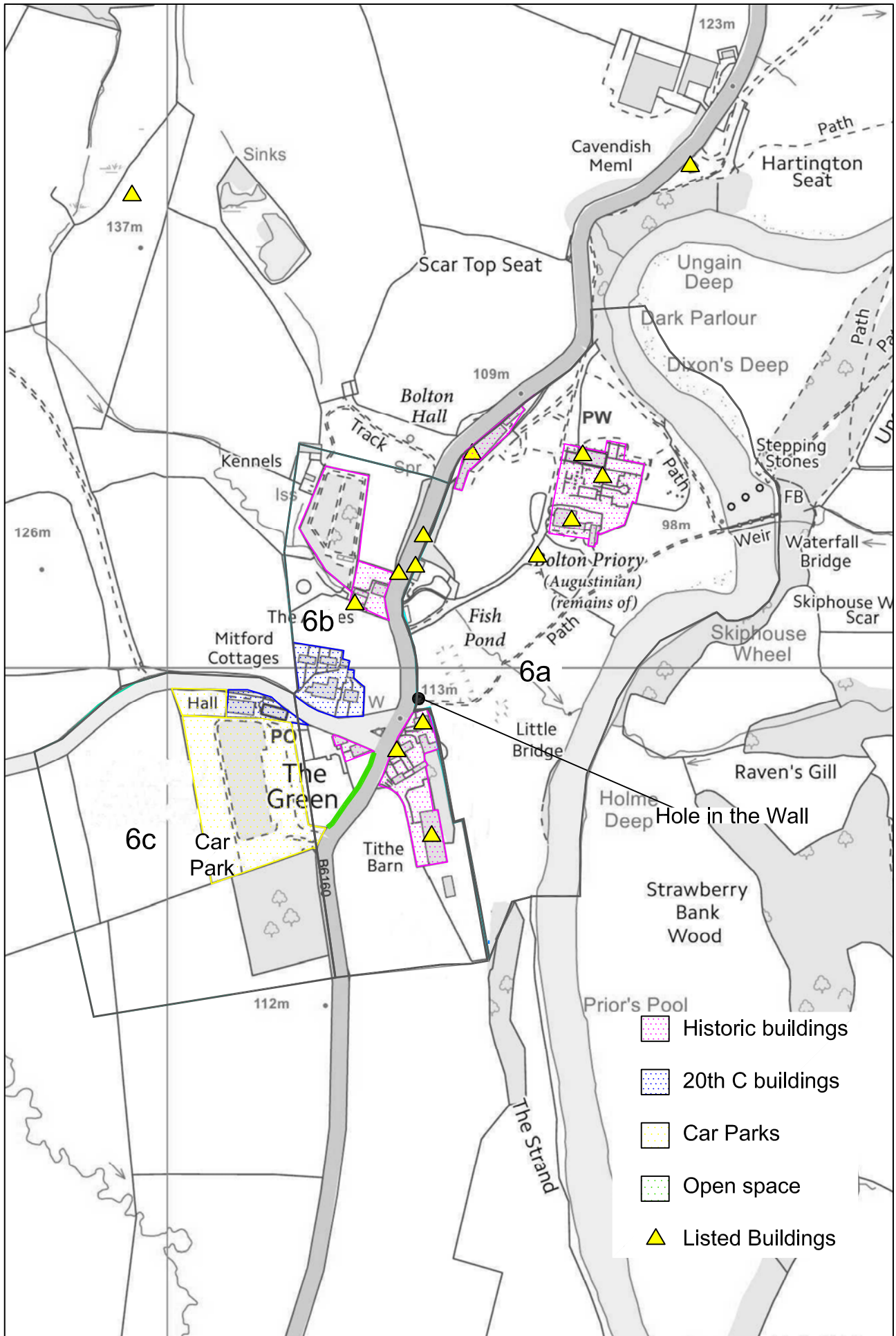
Plate 23 Beach and (submerged) stepping stones

Zone 6b – Bolton Abbey village

The village of Bolton Abbey retains, in plan form, its 18th-century character. Buildings cluster in a somewhat *ad hoc* arrangement around the junction of the road formerly known as the 'Upper Green' and the diverted route of the B6160. The medieval grain of the village, around the now-fragmented rectilinear barnyard and adjacent close is not easily appreciable.



Plate 24 Centre of village and main road



Reproduced from Ordnance Survey with the permission of The Controller of HM Stationery Office. © Crown copyright

Fife Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL100003700

Zone 6 - Bolton Abbey

Scale 1:5000



Figure 10

The first feature encountered on arrival from Bolton Bridge is the large, level area of the modern car park (see Zone 6c). On the approach, the Tithe barn can be glimpsed across the field to the east but is screened in part by vegetation, and dense hedges to the east mask all but the upper storeys of the Beeches. Passing through the village, the historic buildings occupy such a small area that they are passed quickly on the busy road, and the core of the village is not easily appreciable (Plate 24). In the 18th century and beyond the settlement was a small hamlet of cottages and gardens, possibly tenants and workers of the much-reduced estate. With the onset of tourism in the later 19th century, these buildings have been given over to commercial use as tea rooms and shops.

Although only a small stretch of road, the route that departs from the centre of Bolton Abbey and passes by the precinct and Bolton Hall has a distinct, enclosed character, enhanced by the narrow archway of the viaduct that carried water to the post-medieval mill in the precinct grounds, and the close location of the house known as the Arches (Plate 25).



Plate 25 Village Hall

The precinct is separated from the village by topography and by the hard boundary represented by the precinct wall. The 'hole in the wall' represents the connection between the two, and is an iconic point within the village (Plate 26). The feature in itself has Picturesque and Romantic connotations; the opening frames a view of the priory, and provides a 'surprise view' of the valley.

Zone 6c - Hind House Close

A third element of this zone is what is known of the outer medieval precinct area or service area/farm, which extended beyond the current core of the village. Now legible only from careful study of earthworks and from the air, this reflects the historic grain of the settlement which does survive in part today but which has been subsumed into Zone 4.



Plate 26 Hole in the Wall

The zone also includes the modern car park, the formal layout of which is somewhat at odds with the historic character of the village and the nature of the surrounding landscape (Plate 27). Also within this area are the village shop and post-office, which are modern additions to the village, constructed to serve the needs of visitors and residents (Plate 28).



Plate 27 Bolton Abbey car park

6.2.7 Zone 7 - The Stank

Above the former medieval field systems (now pasture), is the rougher grassland historically known as The Stank. This distinct, wilder area, forms part of the variety of the landscape that so attracted the authors and painters of the 18th and 19th centuries.

Zone 7a has been allocated to an area that is not clearly discernible on the ground, but appears from aerial views and LiDAR data as an area of distinct earthworks that may have been associated with a monastic grange centred at Rack Riddings Laithe.



Plate 28 Precinct wall and road to Barden

6.2.8 Zones 8, 9, 10 and 11 - The River Wharfe

Extending north from the priory precinct the River Wharfe lies at the centre of an area of dramatic natural beauty that has been enhanced for visitors by the installation of paths and seats. This area naturally falls into distinct zones, distinguished by differences in topography, vegetation and infrastructure.

Zone 8 – Sand Holme

Sand Holme now provides one of the key vehicular access points for visitors, and seems to have done so in the 19th century, when itineraries suggest that visitors 'rejoin carriages at Sand Holme and proceed to the entrance to Strid Wood' after viewing the ruins. The area is marked by a steep descent from the elevated ground, where views from the Cavendish Fountain and Hartington Seat can be achieved, down to the valley floor, where visitor facilities have been provided since the late 19th century (Zone 9). The wooden bridge provides a convenient turning point for circular valley

walks from the north and south, and so a natural stopping point. In its current form, the Cavendish Pavilion is a modern feature, surrounded by car parking, but this represents a continuing focus of activity in this space.

The lower river terrace provides a key approach to the priory ruins from the north and the view culminating in the 'most perfect' view from the Hartington Seat, provide the visitor with access to views of the ruins that so appealed to the Picturesque mentality and subsequently to the Romantic movement. These views are largely unchanged, and make a major contribution to understanding of the factors which drew the 18th- and 19th-century painters and authors to the area, and the subsequent influx of visitors that followed.

Zone 9 – the Cavendish Pavilion and tourist facilities

Zone 9 has been allocated to the hub of tourist facilities focused at the Wooden Bridge/Cavendish Pavilion, extending across the Wharfe to include an open area that currently serves as an informal recreation area. The zone is restricted in size, but forms a distinct element within the landscape, screened from other areas by virtue of woodland and its topographic location. It is not prominent in terms of visibility or contribution to the aesthetics of the landscape, but the current Pavilion and car parking, although modern, represent a continuity of infrastructure and refreshment provision that has its origins in the 19th century. As such, the zone provides a connection to the historic experience of the earlier tourists in the area, contributing to understanding of the wider uses and experiences of the landscape. The zone is an active and busy area, and forms a point of departure or arrival for walkers and for visitors arriving by car to explore the area.

Zone 10 - Bolton Priory to the Cavendish Pavilion

The network of paths that lead from the stepping stones to the Wooden Bridge and the Cavendish Pavilion appears little altered from the 19th century. The sequence of intended views along the valley, through opened areas in the woodland, or up the valley, continue to be marked by seats; some are simple benches, others drystone structures. This zone is lower, and less dramatic than that to the north; this is a woodland walk, which provides a close experience of the river and its natural setting.

Historic maps (Ordnance Survey 1891) indicate that Pickles Gill would once have formed part of the network of paths that allows the landscape to be appreciated and explored; a snaking route with stepping stones would presumably have offered a comparable walk to the Valley of Desolation. This path is no longer shown on the maps of 1909, suggesting that this was disused by the early 20th century.

Zone 11 - Cavendish Pavilion to Barden – Strid Wood

From the Cavendish Pavilion extending to the north is the central area which was laid out with path networks and seats in the 19th century, a large number of which are still surviving or legible today. The area falls into two natural zones, being the route up to the Valley of Desolation (Zone 11a) and the narrow valley and rock formations that characterise the area known as The Strid (Zone 11b). Here the valley is more dramatic in its nature, and the paintings and etchings demonstrate the appreciation of this area of those artists seeking the sublime. The appeal of the Strid was enhanced by the legendary association with the Boy of Egremont. The numerous seats and

opened up views provide access to perfectly framed views that existed in the 18th and 19th centuries, and allow a directly link to be made between surviving artwork and the landscape that inspired them (Plate 29). Within this zone, key views including that towards Barden Tower from the Pembroke Seat, which depicts the tower set against the gentler countryside of Zone 14, and the more immediate views of the Strid (see Figure 7).

Although a later feature, the aqueduct now provides an attractive feature within the valley, and convenient crossing point (part of the long distance Dales Way) and the end of the more intricate network of paths and woodland, and so forms a frequent turning point for walkers (Plate 30). Although a functional structure, the aqueduct was constructed in a sympathetic style, so as to represent an attractive feature within the landscape, rather than an intrusion.



Plate 29 Opened up views from the Boyle Seat

Zone 12 – Strid Wood car park and caravan site

Strid Wood, with the café, car park and other visitor facilities represent another hub within this core visitor area. As noted above, the entrance to Strid Wood is mentioned in itineraries as a destination for carriages, again demonstrating that the current visitor experience today has been shaped by that of the earlier tourists. The Strid provides an easy point of access to the woodland network, and a short walk to the Pembroke Seat. The woodland is a distinct element in the landscape within which a school and caravan park remain largely unnoticed within the wider landscape. The walks down to the Wharf are enclosed by the oak woodland, with vestiges of historic buildings survive within the woodland, including an extant privy (Plate 31).



Plate 30 Aqueduct



Plate 31 Privy

6.2.9 Zone 13 – Bolton Park

Zone 13 has been allocated to Bolton Park, enclosed in the 17th century, and forming a distinct landscape element that is still legible today; the walls enclosing the park are visible from the woodland walks. This is a reminder that this landscape was, and is, part of a wider estate, and the key function of Barden Tower and Bolton Hall as hunting lodges. The northern boundary of the park overlaps with the Valley of Desolation. Historic structures at Bolton Park farm provide aesthetic and architectural interest within this Zone.

6.2.10 Zone 14 - Barden

Zone 14a – Strid Wood to Barden Tower

The zone has landscape character distinct to that to the south. Here, the river runs more smoothly and the valley widens into ‘softer’ pasture. This frames the views to and from Barden Tower (Zone 14b); the theme of varying landscape character recurs again.



This Zone includes a range of areas east of the bridge, over the historic crossing of Barden Bridge. Barden Bridge affords a narrow crossing over the river. To the east is a low-lying green space (used for car parking) that affords views down the eastern bank. The area of the tower is screened from the river and bridge by a strip of woodland.

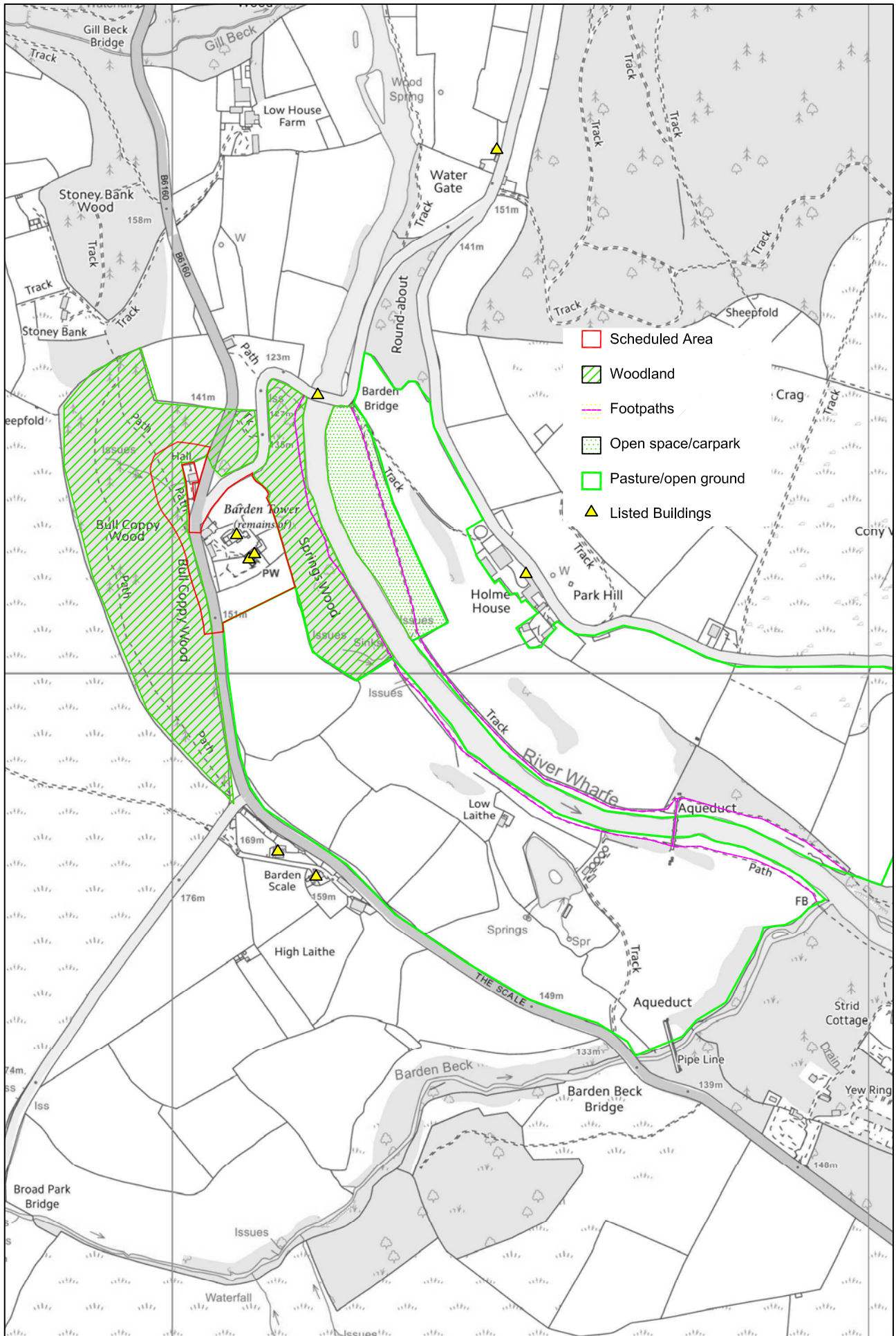
Plate 32 View down the eastern bank from Barden Bridge

Zone 14b - Barden Tower

Where Bolton Priory sits at the core of the visitor area, Barden Tower occupies a prominent location higher up the valley (Figure 11). Barden Tower occupies an elevated bluff, overlooking the moorland and valley below (Zone 14a and beyond), reflecting both its dominance as a medieval symbol of power, and also resulting in the aesthetic value that would have appealed to later visitors.



Plate 33 Barden Tower from the Pembroke Seat



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. FAS Archaeology Specialists Ltd. Unit 8 Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No AL10003700

<p>Zone 14 - Barden Bridge</p>	<p>Scale 1:7500</p>		<p>Figure 11</p>
--------------------------------	---------------------	---	------------------

Topographic position affords views down the Wharfe, taking in the range of landscape character areas and reflecting dominance over the landscape (Plate 32). Aesthetically, this prominent location can be appreciated from the area of the Strid to the south, and the view of Barden Tower from the woodland was captured by Turner and later artists. The south elevation of the tower, with its empty windows, is a recognizable feature in the landscape and one which is still visible today from the Pembroke Seat (Plate 33).

6.2.11 Zone 15 – Ascent to Simon’s Seat

Continuing on from the Valley of Desolation, the rising moorland can be ascended to Simon’s Seat. These are Ruskin’s ‘noble moorlands’, providing a sense of ‘mountain power’, and formed the backdrop to many of the landscape views of the 18th and 19th century (see Plate 32).

7.0 CONSERVATION AREA ASSESSMENT

The Bolton Abbey Conservation Area encompasses the medieval precinct and historic buildings which lie to the immediate west. The eastern extent is bounded by the River Wharfe, while the western boundary appears more arbitrary, designed to encompass the historic buildings only.

7.1 CHARACTER AND SIGNIFICANCE OF THE CONSERVATION AREA

The key element of the Conservation Area as it is designated today is the survival of the medieval priory precinct, and the later, 16th to 18th-century buildings that have subsequently been added to the site. The lack of appreciation of the full extent of the ‘barnyard’ and hinds’ accommodation to the west is demonstrated by their exclusion from the designated area.

7.2 KEY ATTRIBUTES OF THE CONSERVATION AREA

Attributes that contribute to the significance of the Conservation Area as it is currently designated include:

- The survival and legibility of the core precinct of the Augustinian Priory;
- The surviving evidence for the adaptation of the ecclesiastical precinct as an 18th- and 19th-century residence;
- The survival of the intact early 16th-century Great Barn/Tithe Barn;
- The survival of the historic, 18th- and 19th-century buildings at the core of Bolton Abbey village;
- The lack of intrusive development and settlement sprawl, and the sympathetic construction of modern buildings;
- Association with the Picturesque and Romantic movements, and the survival of views towards and from the Conservation Area;
- Wider landscape setting, including survival of medieval ridge and furrow systems, survival of a rural, agricultural landscape, and survival of the designed landscape of the early 19th century.

7.3 SETTLEMENT PATTERN AND GRAIN

Bolton Abbey village had acquired its current grain by the 18th century, with modern additions (including the Village Hall and Post Office) extending the village west along what was formerly Hind House Close (and so reflecting in part the possible medieval extent of settlement along the road). The village configuration is not a typical form, arising as it has from the unique trajectory from medieval monastic agricultural zone, with a wide range of buildings, noise and uses, to a small group of buildings at the edge of the precinct serving Bolton Hall, to a service village serving a thriving tourist industry.

The main priory precinct is set apart largely by its topographic location on the river terrace and forms a discrete landscape entity, albeit historically and physically linked to the 'upper' village. The form is dictated by the layout of the cloister and church, appropriated, rather than altered, in its conversion to a secular hall.

Bolton Abbey village itself, on the higher ground above the priory, has at its foundation the rectilinear enclosures of the service and agricultural zone of the monastic settlement. The layout of the 'barnyard' is represented now only by part of the route of the B6160, and the western boundary of the Beeches, and earthworks which are not clearly legible on the ground. Rerouting of the B6160 before the 18th century effectively bisected the northern part of the compound and created the fragmented green as it survives today.

The precinct wall and structures flanking the western edge of the precinct, with the adjacent topography, serve to create an enclosed feeling when travelling north from the village, emphasised by the aqueduct over the road. With the exception of the Arches, settlement in the village itself has focussed at the road junction (latterly marked by the triangular green). The result is a somewhat *ad hoc* nucleated settlement, fronting onto 'Upper Green' and representing isolated elements of the former agricultural zone, now incorporated into the estate yard, and later cottages which have been converted to house staff and others.

Although of varying date, there is a uniformity to the buildings of the village which enhances the aesthetic value and coherence; this would seem to suggest deliberate design on the part of the estate. All buildings are coursed rubblestone, with stone tiled roofs and stone mullioned windows, and diagonally set chimney shafts.

7.4 CONTRIBUTION OF INDIVIDUAL ELEMENTS

Figure 12 shows the conservation area and details the buildings, structures and features which contribute to the character of the village. These include the Listed Buildings of the Priory, the precinct wall, the Great Barn, the Tea Room, 1-4 The Green. The non-designated Beeches is early in origin (18th-century), with later additions and alteration, and fits with the character of the village.

The modern buildings within the village – the shop and village hall – are constructed in the same palette and are sympathetic additions to the village; as the historic narrative has demonstrated, alignment along the east-west road have medieval precedents in the hinds' housing.

The current car park is one feature which, although serving a practical purpose, makes a negative contribution to the overall character of the village. It is the first element that is encountered on arriving from the south, and the very formal, regular layout does not sit comfortably with the more irregular, organic layout of the surrounding area.

7.5 CONTRIBUTION OF OPEN SPACES

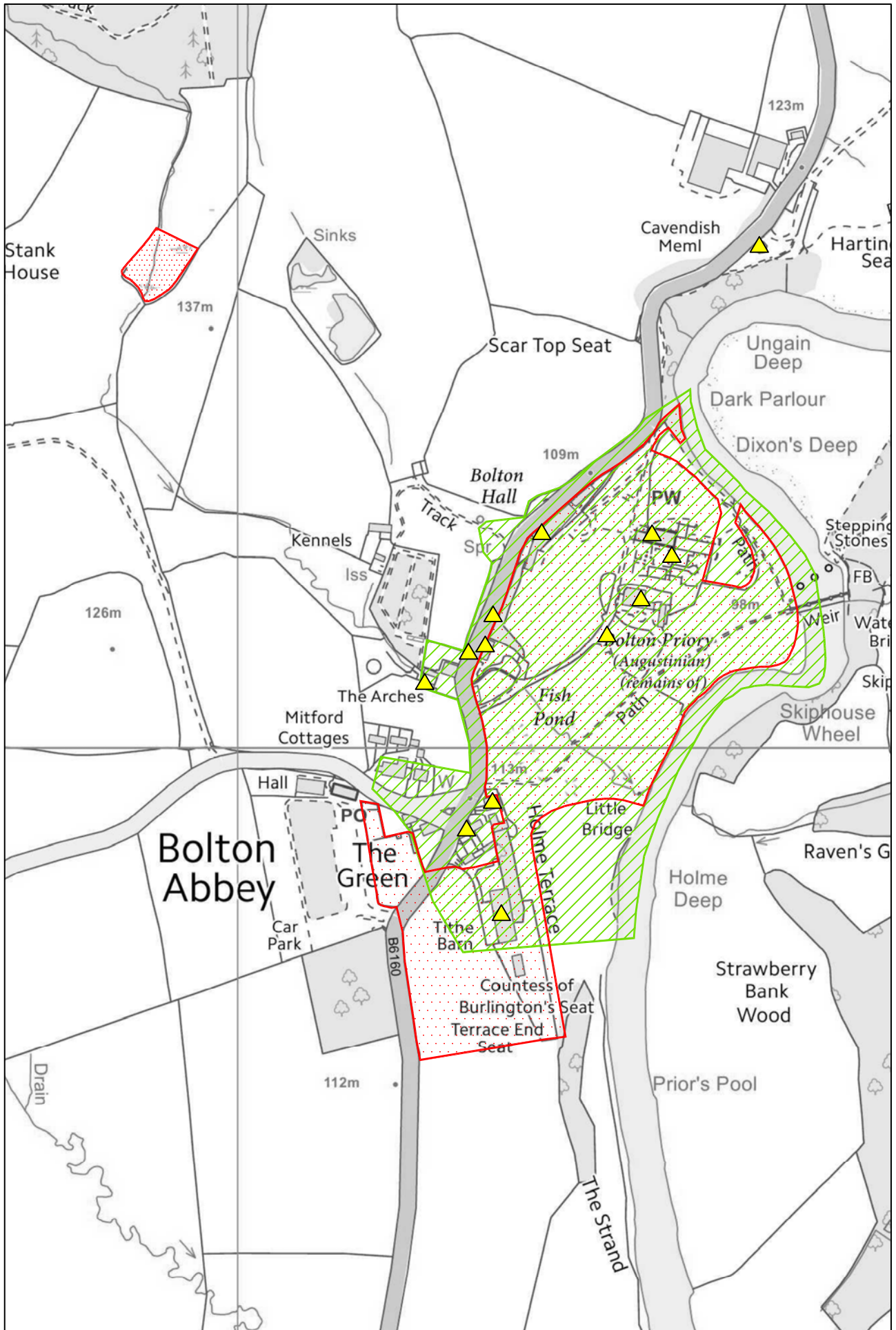
The open space and wider landscape of the village contribute to its significance and legibility, and allow (or have the potential to allow) the former layout and grain of the settlement to be appreciated and understood (Figure 13).

Critical to understanding the significance of the village is the core priory precinct itself, and also the areas which preserve within them the remains of the agricultural and service enclosures which served the priory (the barnyard and hind house close). Although not immediately apparent, the rectangular area identified as the barnyard is preserved by field boundaries and earthworks, and is critical to understanding the former layout of the precinct and associated enclosures.

The area to the west, formerly part of Hind House Close, has been subsumed into the wider pastoral landscape and is now no longer legible, but forms the wider agricultural setting of the village that is important to appreciating its rural character, and links to the wider estate.

Views within the village are significant in allowing the aesthetic and architectural value of the structures to be appreciated. Those views within the village considered to contribute to setting, including those which are screened but which could be opened out further, include:

- View towards the Tithe Barn. While the car park is the most noticeable feature on arriving in the village, the Great Barn on the opposite side of the road actually represents one of the most significant structures in the village, and a rare survival of the agricultural zone of the medieval priory. The open fields east of the road allow views towards the barn, albeit screened by trees. This view could be opened out, to draw attention towards the barn, and allowing the barnyard area to be appreciated as a space



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

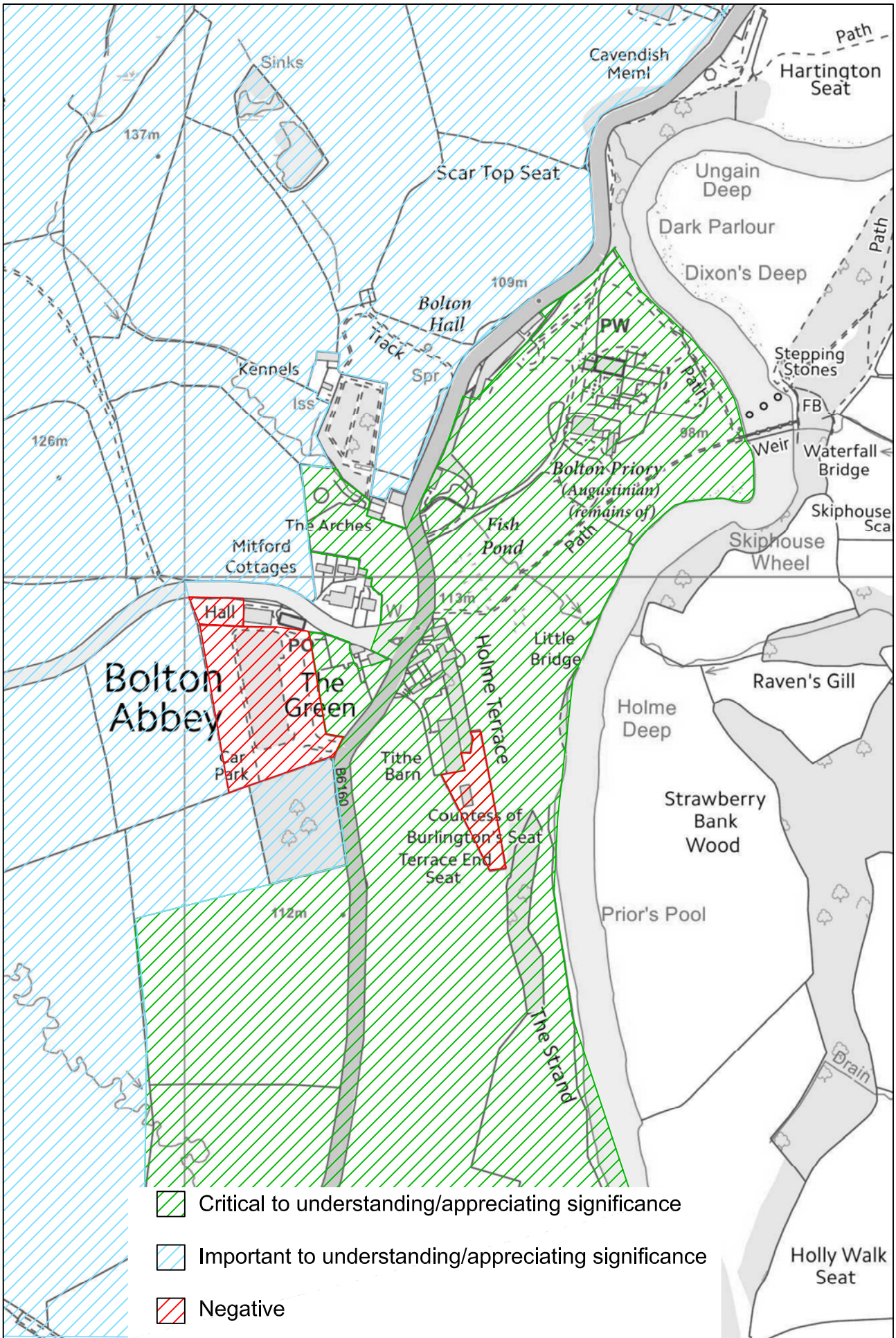
FAS Archaeology Specialists Ltd. Unit 8 Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL100003700




Bolton Abbey village and priory - designations

Scale 1:5000



Figure 12



-  Critical to understanding/appreciating significance
-  Important to understanding/appreciating significance
-  Negative

Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Field Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL10003700

- Immediate views within the village; open space at the junction. The views from the road junction, allow the clustering of buildings in this location to be appreciated, sitting outside, but immediately adjacent to the priory precinct.
- The green space to the rear of the Beeches, now enclosed by hedges does not strictly represent an 'open' space. The dense hedges screen the view of The Beeches on the approach into the village, and also the last vestiges of the former medieval layout of this area.
- The views looking north along the B6160 are enclosed by the precinct wall and the topography/The Arches, but provide a strong sense of the western limit of the precinct, and also the historic water management represented by the aqueduct.
- Views northwest, behind the estate offices, provide a link between the village and the pastoral landscape within which it sits; the views of Stank Farmhouse against Westy Bank Wood reflect the dispersed farmsteads typical of the estate and the Dales in general.
- Views into the precinct through the Hole in the Wall, the entrance and the route to the Church, allow the aesthetic and architectural value of the precinct to be appreciated.

Elements of open space which have been lost or eroded:

- Views from the rear of the Tithe Barn: formerly the path network connected this area to the lower river terrace, and at least two seats were located in this area. Neither paths nor seats survive.
- Loss of physical path link via Tithe barn to the precinct.
- Loss of definition to the Barn Yard.
- Loss of definition to the Hind.

Areas of open space which have a negative impact

- The current car park, while serving a practical purpose, reduces the legibility and therefore understanding of the historic layout of the village, and does not enhance the aesthetic value or historic character of the village;
- The timber yard south of the Tithe barn.

8.0 ASSESSMENT OF SIGNIFICANCE

8.1 GENERAL STATEMENT OF SIGNIFICANCE

The significance of the Bolton Abbey Core Visitor Area as a whole has been emphasised in recent consultations with Historic England. The number and variety of heritage designations that are attached to the landscape and the individual elements within it are a reflection of the deep and multi-layered levels of significance attached to this landscape. While a list could be compiled which details the relative significance of the individual historic structures and heritage assets within the landscape, the exceptional significance of the Bolton Abbey landscape is greater than the sum

of its parts, deriving from the fortuitous survival of medieval ruins set against a backdrop of natural landscape beauty that attracted protagonists of the Picturesque, and subsequently the Romantic movements. The work of notable painters and artists, and the creation of guide books for the area, in turn led to the rise of Bolton Abbey as a visitor destination. Facilitated by the arrival of the railway, tourism has continued and shaped the character of the area into the modern day. The following details the evidential, historical, aesthetic and communal value of the landscape as a whole, with reference to the zones identified in Section 6.2 above.

The association of Bolton Abbey with the Picturesque and Romantic movements of the 18th and 19th centuries is critical to the exceptional significance of the place, and gives the landscape relevance on an international stage. This would not have arisen without the underlying medieval landscape, the remnants of which provided the focal points which so appealed to the artistic movements. In this way historical and aesthetic value are inextricably linked to evidential value (archaeological and architectural interest). The exceptional evidential value of the core visitor area is reflected in the designation of Bolton Priory and Barden Tower as Scheduled Monuments, reflecting important survival of centres of ecclesiastical and secular power. The archaeological value of the priory ruins (including the Grade I Listed church) is well documented, preserving earthwork, buried and upstanding remains relating to the 12th-century and later Augustinian foundation. The church itself retains fine architectural detail, notably the historic tracery of the windows. The service areas of the Priory (and later Bolton Hall) were situated in the area of Bolton Abbey village (Zone 6b). Archaeological evidence within the village itself is not well understood, but has the potential to enhance significance if further investigation is undertaken. Further up the valley, Barden Tower represents a centre of secular medieval power within its former landscape context; the area surrounding the tower also has considerable archaeological potential, albeit bisected by the modern road and less legible than the priory precinct (Zone 14a and 14b). The wider landscape contains evidence for medieval agriculture (ridge and furrow; Zone 4) and later land organisation (deer parks – Zone 12), which allow these centres to be understood within their wider landscape context. Numerous buildings and farmsteads of architectural interest survive, which add to understanding of the development of the estate, their significance recognised in their Listed status. The priory has illustrative historical value as a well-preserved example of an Augustinian foundation, supported by wealth of documentary sources, and the whole landscape provides evidence for the development and survival of a single estate from the post-medieval period to the modern day. In many ways, the retention of the land in single ownership has safeguarded its character and heritage significance, in protecting against the piecemeal development and erosion that has affected other historic estates.

The Priory also retains evidential value relating to the development from an ecclesiastical centre to a grand hunting seat, in the development of Bolton Hall and the associated paths, seats and viewing points. The landscape has associative historical value as part of the wider estates of the Clifford family, the Earls of Burlington, and from the 18th century as part of the estates of the Dukes of Devonshire. The architectural value of the buildings, including the Boyle Room and Bolton Hall, are reflected in their Listed status; again these have associative historical value through links to the individuals including ‘architect earl’ Robert Boyle, the Dukes of Devonshire and later William Carr. There is a suggestion that the impact of these individuals may extend beyond

the core visitor area, with other buildings across the estate having been constructed at the hands of the Robert Boyle (Neil Redfern pers comm).

The acknowledged evidential and historical value of these elements, add to the aesthetic value of the upstanding remains of the two medieval centres – the priory in particular – that have contributed to the remarkable heritage significance now attached to this landscape. The juxtaposition of the priory ruins against the backdrop of rising moorland, soft pasture, and changing river valley present a quintessentially Picturesque composition, and, with the numerous and varied views offered by this landscape, attracted painters and writers who sought the perfectly framed views and wild tranquillity of the place. The Romantics sought to populate the landscape, and the rise in visitors to the site - visiting the ruins, walking through the woodland walks and sitting by the river - embody this ideal and are included in a number of paintings of the period. Most significant are the views of the priory ruins themselves from the north and the south, and also the longer views, from the Pembroke Seat to Barden Tower, capturing the landscape zones between and beyond. The historic association with the protagonists of these movements (Turner, Wordsworth, Girton, Cotman, Ruskin) has been given material form in the extant artwork, sketches and writings that point us towards those views that were most appreciated at the time. The ruins themselves fall within Zone 6b, but views towards the remains are afforded from the immediate valley (Zones 3), with that 'most perfect' view still visible from the Hartington Seat to the north (Zone 8). Turner's inclusion of Bolton Bridge (Zone 2) in the composition from the Hartington Seat demonstrates a perception that the bridge was an important feature within this same landscape. Views north from the Pembroke Seat (in Zone 11a), include the valley above the Strid, and the softer valley rising to Barden Tower (Zone 14a and b), with the rising ground to the west and east.

The aesthetic value of the place largely derives from the medieval ruins and the natural landscape, but overlying this is an element of planning and design, in the network of paths and seats that survive today (Zones 3, 6a, 8, 9, 10, 11a and b). These are particularly evident in the core zones along the River Wharfe, extending all the way from Bolton Bridge to Barden. The paths allowed the landscape to be experienced in motion, as a sequence of changing views; this is reflected in the itineraries provided by the guidebooks, and the positioning of numerous seats that survive or are being reconstructed in the landscape. This experience is still enjoyed by large numbers of visitors today, and it is this element of continuity that draws together the aesthetic, historical and communal values of the place.

The historic visitor experience included moving between nodal points in the landscape – at Bolton Bridge (Zone 2), Bolton Abbey (Zone 6a,b,c), and the Strid wood area (Zone 12), and these have continued as the main focal points where visitor facilities have developed, and car parking is now provided. The settlement at Bolton Bridge would traditionally have marked arrival within the valley; the Devonshire Arms served as an inn from at least the late 18th century. This area has both historic and aesthetic significance in allowing this sense of arrival to be appreciated and experienced (Zone 2). The approach to Bolton Abbey village by carriage (Zone 4) would have followed the same route as today. The significance of the village itself (Zone 6b) is set out in part in the Conservation Area Appraisal above, lying primarily in its role as an element within visitor routes and itineraries; key elements of historic interest are 'hole in the wall' and the aesthetic value of the group of historic buildings – including the Tithe Barn, Tea Cottage and Nos 1-4 the Green.

The car park and associated planting currently detract from the aesthetic significance of the place, and the issues of lack of a sense of arrival, lack of legibility of the medieval and post-medieval village both detract from the value of the place, and also present opportunities for enhancement.

The core visitor area has strong communal value for a number of reasons. The high visitor numbers already alluded to demonstrate the strong value of the place as a centre for recreation, and – whether knowingly or not – visitors will experience and enjoy the same views that inspired the likes of Turner and Wordsworth in the past. The natural landscape, and visitor centres – the beach, the cafes and ruins – all enhance the visitor experience, and iconic and memorable points like the stepping stones are embodied in communal memories of the place. The church, as a functioning parish centre and burial ground also has a strong spiritual value.

8.2 CONTRIBUTION OF HISTORIC LANDSCAPE ZONES TO SIGNIFICANCE

Each of the landscape zones described in Section 6.2 makes a different contribution to the significance of the Bolton Abbey core visitor area. Table 2 summarises the key attributes of setting of each of the historic landscape zones, and the contribution that they make to the overall significance of the place. Also noted are the issues that have affected the contribution that each area makes to overall significance.

Zone	Contribution	Issues
1 – Bolton Station and modern A59	<p>Contributes to significance -</p> <ul style="list-style-type: none"> • Key point of arrival for 19th century tourists • Historic interest of railway buildings and routes • Link to Bolton Abbey now survives as a footpath 	<ul style="list-style-type: none"> • Severed from the core landscape by the A59 (exception of the underpass) • No longer a means of travelling to Bolton Bridge/ Bolton Abbey
2 – Bolton Bridge and historic approach roads	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Important element of the historic visitor experience and one the main points on the approach to Bolton Abbey (also a likely accommodation for some visitors) • Devonshire Arms has architectural and historic interest, and also marks a key landmark on the approach to Bolton Abbey • Bolton Bridge (Grade II) – former main crossing point on the approach, affords key views up the valley 	<ul style="list-style-type: none"> • Modern planting to rear of Devonshire Arms does not sit comfortably within this landscape • Sense of arrival diminished by modern configuration of roads • Appreciation of the former approach and initial impression of the elevation of Devonshire Arms from the west diminished by current condition and lack of function of the ‘stump road’
3 – Low Bridge Field	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Views afforded from the seats to the east of the river, and looking north towards the ruins (Turner) <p>Contributes to significance –</p>	<ul style="list-style-type: none"> • Footpath links formerly entered the upper part of Bolton Abbey village itself, links now lost

Zone	Contribution	Issues
	<ul style="list-style-type: none"> • Main approach to the Priory ruins on foot • Views from Bolton Bridge up the valley • Also contributes to the setting of Bolton Bridge and the Devonshire Arms 	
4 – Pastoral landscape/medieval ridge and furrow	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Rural character of the approach roads between Bolton Bridge, Bolton Abbey and Barden • Encompasses area of Scheduled medieval water management • Retains evidence of medieval field systems which provide historic context for estates • Contains historic farmsteads (value recognised in Listings) which contribute to landscape character of valley and Yorkshire Dales • Views from Bolton Abbey village across the fields connects village to rural landscape 	
5 - Storiths	<p>Contributes to significance-</p> <ul style="list-style-type: none"> • Value of relict landscape survival, historic farmsteads and settlements (more detailed study outwith the scope of this assessment) • Topography and landscape character contribute to the diverse views along and from the valley 	
6a – Bolton Abbey – the Priory precinct	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Contains upstanding and below-ground remains of national significance • Upstanding ruins have aesthetic and architectural value that attracted Picturesque and later Romantic movements • Communal value – main visitor point, contains bench, stepping stones • Spiritual value – parish church, functioning burial ground 	<ul style="list-style-type: none"> • Historic connection with Tithe Barn and barnyard area no longer legible • Maintenance costs • Viability of buildings • Aspirations of the Parish Church • Pressure of visitor numbers • Churchyard at capacity for interments
6b – Bolton Abbey Village	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Hole in the wall and green – historic arrival point for visitors to the priory ruins • Contains evidence for former service 	<ul style="list-style-type: none"> • Car park detracts from arrival and sense of historic village • Medieval layout and connection to priory ruins no longer legible • Problems with traffic and sense

Zone	Contribution	Issues
	<p>area – Barnyard and Hind Howse Close</p> <ul style="list-style-type: none"> • Intrinsic evidential value of Listed buildings, in particular the Tithe Barn, and also non-Listed Beeches • Provides visitor facilities and car parking representing continuity of tourism <p>Potential –</p> <ul style="list-style-type: none"> • Potential to enhance legibility of former layout, improve sense of arrival 	<ul style="list-style-type: none"> • of arrival
6c – Bolton Abbey – Hind House Croft	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Contains evidence for former service area –Hind Howse Close 	<ul style="list-style-type: none"> • Survival and character of remains of these areas is not known • Layout no longer legible
7 – The Stank	<p>Contributes to/Part of significance</p> <ul style="list-style-type: none"> • Historic land parcel, legibility of former land management • Part of wilder, rising moorland that provides the historic setting to the approach roads between Bolton Bridge and Barden • Contains earthworks which may relative to medieval grange (7a) 	
8 – Sand Holme	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Views from Sand Holme to ruins, particularly view from Hartington Seat • Movement between Zones 10 and 9, 8 and 6 – kinetic experience <p>Contributes to significance –</p> <ul style="list-style-type: none"> • Landmark Cavendish Memorial fountain at the head of the drive (Grade II Listed) • Important historic approach route, continuity of use and sense of approach, descent into valley 	
9 – Cavendish Pavilion and tourist facilities	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Continuity of provision of refreshments, embarkation point for visitors since the 19th century • Strid Wood entrance Lodge – formal presentation of Strid • Bridge itself is a key crossing point in itineraries and modern walk <p>Part of significance -</p> <ul style="list-style-type: none"> • Communal value – parking facilities, although modern, facilitate visitor experience and access. Area of direct 	<ul style="list-style-type: none"> • Additional recreational uses – sports field

Zone	Contribution	Issues
	<p>interaction with the River</p> <p>Negative – car park</p>	
10 – Bolton Priory to the Cavendish Pavilion	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Contains part of the 19th-century network of seats and footpaths that allowed the landscape to be appreciated – still extant • Ford across Pickles Gill is a notable feature • Glimpsed view of Bolton Abbey and landscape beyond add to the kinetic experience – highlighted when walking over cliff walk prior to descending to stepping stones 	<ul style="list-style-type: none"> • Footpaths up Pickles Gill no longer extant (?) – early 20th century loss
11a - Cavendish Pavilion to Barden – The Strid	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Contains part of the 19th-century network of seats and footpaths that allowed the landscape to be appreciated – still extant • Views towards Barden Tower from the Pembroke Seat (Turner et al) • Sublime landscape – The Strid • Legendary associations with the Boy of Egremont 	<ul style="list-style-type: none"> • SSSI • Sensitive woodland
11b – Valley of Desolation	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Contains part of the 19th-century network of seats and footpaths that allowed the landscape to be appreciated – still extant • Sublime, dramatic landscape • Historic etchings, paintings (eg Scarlett Davies) • Key element of historic itineraries 	
12 – Strid Wood Car Park and caravan site	<p>Contributes to significance –</p> <ul style="list-style-type: none"> • Part of historic itineraries, as an access point to the valley and walks • Historic ‘facilities’ possibly represented by a privy en route to Pembroke Seat • Communal value – now a significant point for tourists and provides visitor facilities <p>Neutral</p> <ul style="list-style-type: none"> • Elements that would potentially be intrusive in this landscape – caravan park, school, are well screened by tree 	<ul style="list-style-type: none"> • Ruins/historic structures in the woodland • Use of the car park

Zone	Contribution	Issues
	cover and topography	
13 – Bolton Park	<p>Contributes to significance -</p> <ul style="list-style-type: none"> • Contribute to understanding of landscape management and development in the 17th C and onwards, and links to the development of the hunting lodge at Bolton Abbey/ reconfiguration of Barden Tower. • Park wall forms part of the walks along the valley, adding to legibility and aesthetic value • Intrinsic value of buildings at Bolton Park Farm (Grade II Listed) • Historical links with Bolton Hall and Richard Boyle 	<ul style="list-style-type: none"> • No longer functioning as a deer park • Loss of legibility of deer park and historic woodland cover/veteran trees, bracken growth
14a – Strid Wood to Barden	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Aesthetic value of Barden Tower, overlooking and set against the landscape beyond, as viewed from the Pembroke Seat <p>Contributes to significance</p> <ul style="list-style-type: none"> • Architectural value of Barden Bridge (Grade II Listed), associated with Lady Anne Clifford <p>Part of significance –</p> <ul style="list-style-type: none"> • Modern parking facilities, restaurant, wedding venue, bunkbarn 	<ul style="list-style-type: none"> • Parking adjacent to the bridge occupies a green space which forms an important part of the setting of the bridge and views down the valley
14b – Barden Tower	<p>Critical to significance –</p> <ul style="list-style-type: none"> • Aesthetic value of Barden Tower, set against the landscape beyond, as viewed from the Pembroke Seat • Evidential value of the tower and its associated Scheduled Area • Views from Barden Tower allow the landscape diversity to be appreciated <p>Part of significance –</p> <ul style="list-style-type: none"> • Modern parking facilities, restaurant, wedding venue, bunkbarn 	<ul style="list-style-type: none"> • Tower is not easily accessible – limited parking immediately adjacent and lack of clear indications that it is open to the public • Inaccessibility of the ruins themselves due to H&S, high cost of maintenance
15 – Ascent to Simons Seat	<p>Part of significance –</p> <ul style="list-style-type: none"> • Detailed consideration of significance beyond the scope of the study; this rising ground forms an important element of the wider landscape setting of the valley 	

9.0 ASSESSMENT OF CONSTRAINTS AND OPPORTUNITIES

Table 2 above sets out the relative significance of each of the landscape zones, and provides the starting point for assessing the capacity of each zone to accommodate future development without harming the heritage significance of the place.

Table 3 builds on this, and sets out the issues and vulnerabilities of each Zone, their constraints and summary capacity to accommodate change (Figure 14). As the function of the study is to consider capacity for development, the areas beyond the core area – The Stank (Zone 7), Storiths (Zone 5) and the Ascent to Simon’s Seat (Zone 15) are not considered further.

NB the following includes consideration of heritage significance and issues only. Capacity for change does not consider other significances (nature conservation) or practicalities (cost, infrastructure etc). All areas have high heritage value and the design of any development would have to be carefully located, and be sympathetic to the attributes which contribute to the historic significance of the zones and the heritage assets of the area.

Table 3 Issues and vulnerabilities, capacity for change
Key

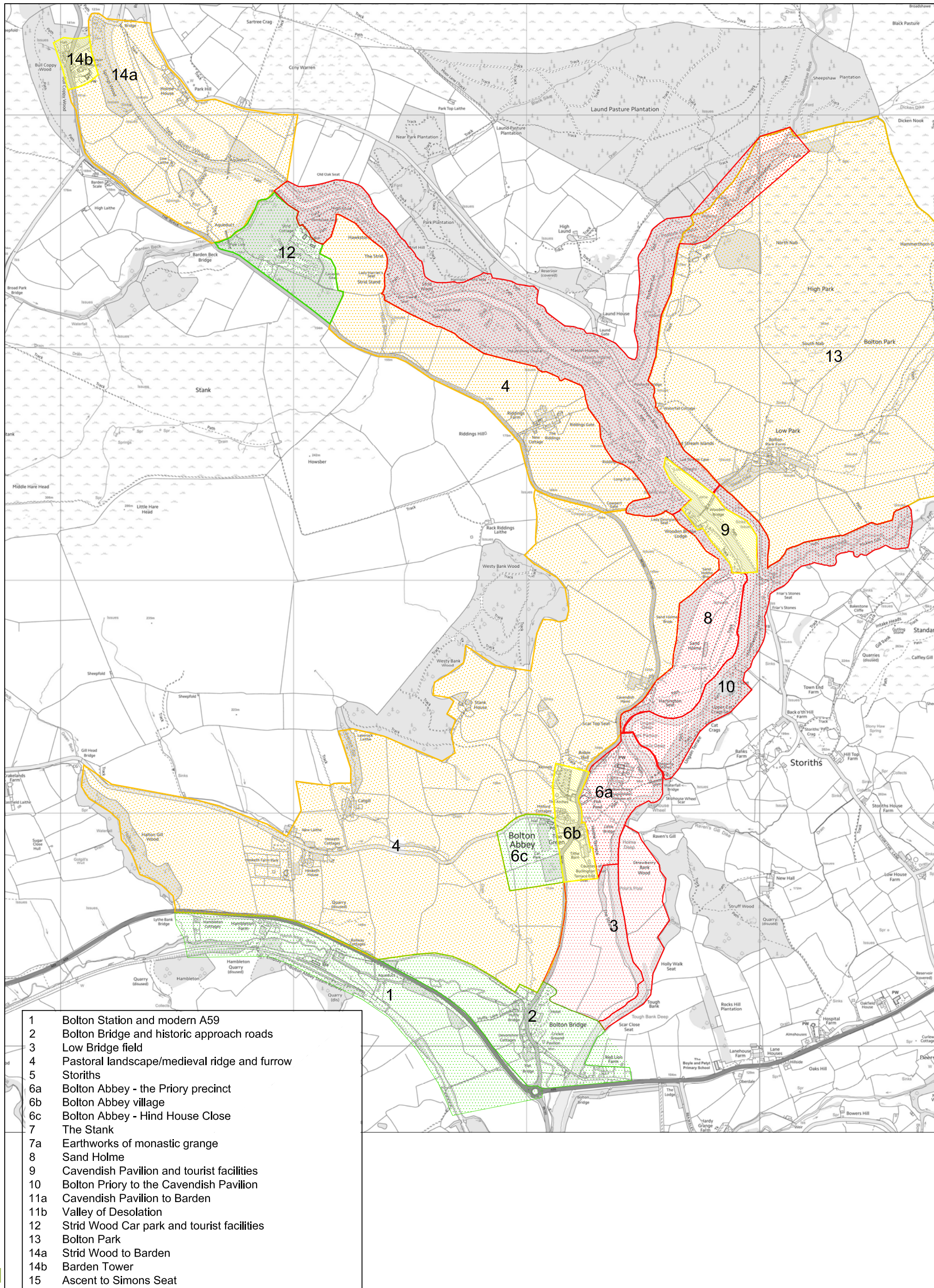
	<i>Capacity/opportunities for new development</i>
	<i>Capacity/opportunities for new development, subject to detailed design taking into account heritage assets</i>
	<i>Capacity/opportunity for development, restricted to existing settlement/farmsteads</i>
	<i>Little capacity for development, beyond enhancement of existing structure and heritage assets</i>

Zone	Vulnerabilities and constraints	Capacity/opportunities for change
1 – Bolton Station and modern A59	<ul style="list-style-type: none"> Lack of connection with the remaining area other than footpath/underpass Divided by the modern A59 	<ul style="list-style-type: none"> Has the capacity to absorb development, but the modern A59 will remain a significant obstacle Link with Bolton Bridge could be enhanced Possible link of railway to Skipton – gateway site
2 – Bolton Bridge and historic approach roads	<ul style="list-style-type: none"> Inappropriate development has potential to harm views from the river (Zone 3) and setting of historic Devonshire Arms Settlement form is focussed around the former junction – future development should not be allowed to ‘sprawl’ to N 	<ul style="list-style-type: none"> Has the capacity to absorb development, if carefully located and designed. Area of the stump road detracts from current character and represents a key opportunity for improvement Land south of the former main road could accommodate change without harming key areas of heritage significance Opportunities to improve setting of the bridge/Devonshire arms and views through thinning/planting Opportunities to better mark the start of the Bolton Abbey/Devonshire offer though development and signage

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
	3 – Low Bridge Field	<ul style="list-style-type: none"> Open landscape and footpaths characterises the zone, and so vulnerable to inappropriate development 	<ul style="list-style-type: none"> Little or no capacity for new development Better tree planting and management to reflect softer landscape Strengthen footpath links to Bolton Abbey
	4 – Pastoral landscape/ medieval ridge and furrow	<ul style="list-style-type: none"> Zone characterised by rural character, which would be harmed by inappropriate and intrusive development 	<ul style="list-style-type: none"> Development opportunities offered by, and restricted to, existing farmsteads, barns Opportunity to enhance legibility and understanding of medieval water management NW of the village
	6a – Bolton Abbey - Priory precinct	<ul style="list-style-type: none"> Views of and from the ruins key to significance, so vulnerable to unsympathetic or inappropriate change Cost of maintaining the monastic ruins Conflict of uses between Church, Hall and public recreation High archaeological potential Need to find suitable uses for existing buildings and to accommodate extra space requirements for the church 	<ul style="list-style-type: none"> Little or no capacity to absorb change without affecting aesthetic value Future development would need very careful consideration and justification
	6b – Bolton Abbey Village (see Figure 10)	<ul style="list-style-type: none"> Setting and views of historic buildings vulnerable to inappropriate change Archaeological potential of the area Vitality of the Post Office and other villages services Car Parking – too much/too little – better screening Gateway marker to the Village and rest of the attraction 	<ul style="list-style-type: none"> The village has the capacity to absorb some development without harming the heritage significance of the core visitor area Opportunity to enhance the legibility of medieval layout, improve visitor experience Area W of road/modern car park provides opportunity for new development, to improve approach and provide a sense of arrival Setting of Tithe Barn could be enhanced Enhanced links to the monastic ruins and river Enhanced crossing of the road from the car park
	6c – Bolton Abbey - Hind House Close	<ul style="list-style-type: none"> Historic land parcels no longer legible, and not well understood strong contribution to the setting of the village as part of its legibility however this has been seriously eroded by the current car park and formal tree planting/management Archaeological potential 	<ul style="list-style-type: none"> Former service area provide precedent for extent of activity in the area; This area can accommodate development, if carefully designed and located Open space can be defined better to reinforce legibility of the historic land parcels/form and function Opportunities to enhance understanding

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
			<p>through archaeological investigation</p> <ul style="list-style-type: none"> • Opportunities to create a better gateway to the village • Better balance to the village • Opportunities to highlight the tithe barn
	8 – Sand Holme	<ul style="list-style-type: none"> • Historic approach, with views over open ground towards priory ruins, vulnerable to intrusive development 	<ul style="list-style-type: none"> • Little or no capacity for development which would intrude on these views
	9 – Cavendish Pavilion and tourist facilities	<ul style="list-style-type: none"> • Significance as a continuity of visitor provision, sympathetically built and not visually intrusive • Capacity limited by space afforded within this area 	<ul style="list-style-type: none"> • Some limited capacity to enhance visitor facilities if undertaken to the same standard as existing • Informal recreation – football/games area
	10 – Bolton Priory to the Cavendish Pavilion	<ul style="list-style-type: none"> • Vulnerable to intrusive development within Zone, and in areas visible from it 	<ul style="list-style-type: none"> • Little or no capacity to accommodate development, beyond enhancing path networks and interpretation
	11a – Cavendish Pavilion to Barden – Strid Wood	<ul style="list-style-type: none"> • Vulnerable to intrusive development within Zone, and in areas visible from it 	<ul style="list-style-type: none"> • Little or no capacity to accommodate development, beyond enhancing path networks and interpretation
	11b – Valley of Desolation	<ul style="list-style-type: none"> • Vulnerable to intrusive development within Zone, and in areas visible from it 	<ul style="list-style-type: none"> • Little or no capacity to accommodate development, beyond enhancing path networks and interpretation
	12 – Strid Wood Car Park and tourist facilities	<ul style="list-style-type: none"> • Significance is as a continuity of visitor provision, sympathetically built and visually unintrusive. 	<ul style="list-style-type: none"> • Woodland affords opportunity for development that is screened from key views • Capacity limited in scale by proximity to nature conservation designations, topography • Maximize use of car park – links to wedding functions at Barden • Integrated car parking plan – parking for Barden Tower events • Capacity for additional play facilities
	13 – Bolton Park	<ul style="list-style-type: none"> • No longer functioning as a deer park and so vulnerable to decreasing legibility due to vegetation growth 	<ul style="list-style-type: none"> • Development opportunities offered by, and restricted to, existing farmsteads, barns • Opportunity to maintain and enhance legibility of the deer park

	Zone	Vulnerabilities and constraints	Capacity/opportunities for change
	14a – Strid Wood to Barden	<ul style="list-style-type: none"> • Views of the tower from the S vulnerable to intrusive development • Archaeological potential • Movement between main car parking area and Tower restricted by narrow road/bridge • E of river (car parking area) is an important green space • No parking facilities at the tower 	<ul style="list-style-type: none"> • Area E of the river could absorb limited change to parking provision and visitor facilities; car parking W of river is problematic • Enhanced links to Strid car park
	14b – Barden Tower	<ul style="list-style-type: none"> • Barden Tower is currently without a sustainable use, and is largely inaccessible • Views of the tower from the S vulnerable to intrusive development • Archaeological potential • Movement between main car parking area and Tower restricted by narrow road/bridge • No parking facilities at the tower 	<ul style="list-style-type: none"> • Barden Tower offers a challenging opportunity – a new use would afford greater accessibility to the remains • Capacity to accommodate change but within, and dictated by, the historic buildings • Opportunities to enhance understanding and interpretation of the whole Scheduled Area • New wedding facilities in Barden Chapel – additional offer and spend



- 1 Bolton Station and modern A59
- 2 Bolton Bridge and historic approach roads
- 3 Low Bridge field
- 4 Pastoral landscape/medieval ridge and furrow
- 5 Storiths
- 6a Bolton Abbey - the Priory precinct
- 6b Bolton Abbey village
- 6c Bolton Abbey - Hind House Close
- 7 The Stank
- 7a Earthworks of monastic grange
- 8 Sand Holme
- 9 Cavendish Pavilion and tourist facilities
- 10 Bolton Priory to the Cavendish Pavilion
- 11a Cavendish Pavilion to Barden
- 11b Valley of Desolation
- 12 Strid Wood Car park and tourist facilities
- 13 Bolton Park
- 14a Strid Wood to Barden
- 14b Barden Tower
- 15 Ascent to Simons Seat

Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

Field Archaeology Specialists Ltd, Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4EJ, Licence No AL0005970



9.1 BOLTON ABBEY (ZONES 6A, 6B AND 6C)

The Conservation Area Appraisal (Section 7, above) sets out those features which contribute to the character of the village, and the contribution that open spaces make to the significance of the village and to the core visitor area as a whole is set out in Section 7.5 and Figure 13.

Figure 15 provides a general indication of the capacity for new development within Bolton Abbey, and the nature of the opportunities presented. The area with the greatest capacity for development is the area to the west of the village, within the former 'Hind House Close' (Zone 6c). With the exception of the modern shop/village hall and car park, this area has been largely subsumed into the pastoral landscape and does currently contribute to the rural setting of the village. Development within this area would allow the legibility of historic land parcels and their form and function to be enhanced, and would provide an opportunity to improve on the currently intrusive character of the car parking. Any development will have to be carefully designed to sit harmoniously within the historic settlement.

Within Zone 6b, there are opportunities to enhance legibility of the historic barnyard through carefully designed development, which could reflect the layout of the former enclosure as open space within the village.

Reinforcement of the legibility of the barnyard could in turn enhance the setting of the Tithe Barn. The timber yard adjacent to the latter also has the capacity for absorbing change; the current use makes a negative contribution to historic character. There is the opportunity in this area reinstate former connections with the priory and elements of the 19th-century path and seat networks.

Although not within the historic settlement, the road to the north of the village hall has been identified as area with the potential to accommodate carefully designed development, as this could be undertaken without unduly harming the heritage significance of the village or the core visitor area as a whole.

9.2 BOLTON BRIDGE (ZONE 2)

Bolton Bridge would have been a significant point of departure for visitors travelling by foot along the riverside paths (Zone 3) or along the road to the north (Zone 4), much as it is today (Figure 16). As such, the open spaces to the east and north are critical to understanding the way that Bolton Bridge was experienced in the past, reinforcing its character as a point of departure or a gateway into the valley. The open space within the settlement enhances aesthetic value and represents quiet amenity space. Open space west and south contribute less to the way that Bolton Bridge is experienced, but still provide a rural setting that reflects historic character. The modern car parking areas, and the current condition of the stump road, do not make a positive contribution to the way that Bolton Bridge can be appreciated.

Figure 17 identifies those areas within Bolton Bridge that have the capacity for further development. The stump road presents an opportunity for enhancing the setting of the Devonshire Arms; the

frontage of the inn is directly aligned with the former road, and would have provided travellers approaching from the west with a strong sense of arrival.

The modern A59 diverted traffic from the historic road and crossing, and has diminished the sense of arrival at Bolton Bridge. Development of land north of the A59 would result in loss of open space, but would provide an opportunity to create a new gateway to the Bolton Abbey core visitor area on what is now the main route east-west. Any development would have to be carefully designed to be harmonious with the character of Bolton Bridge and the wider area.

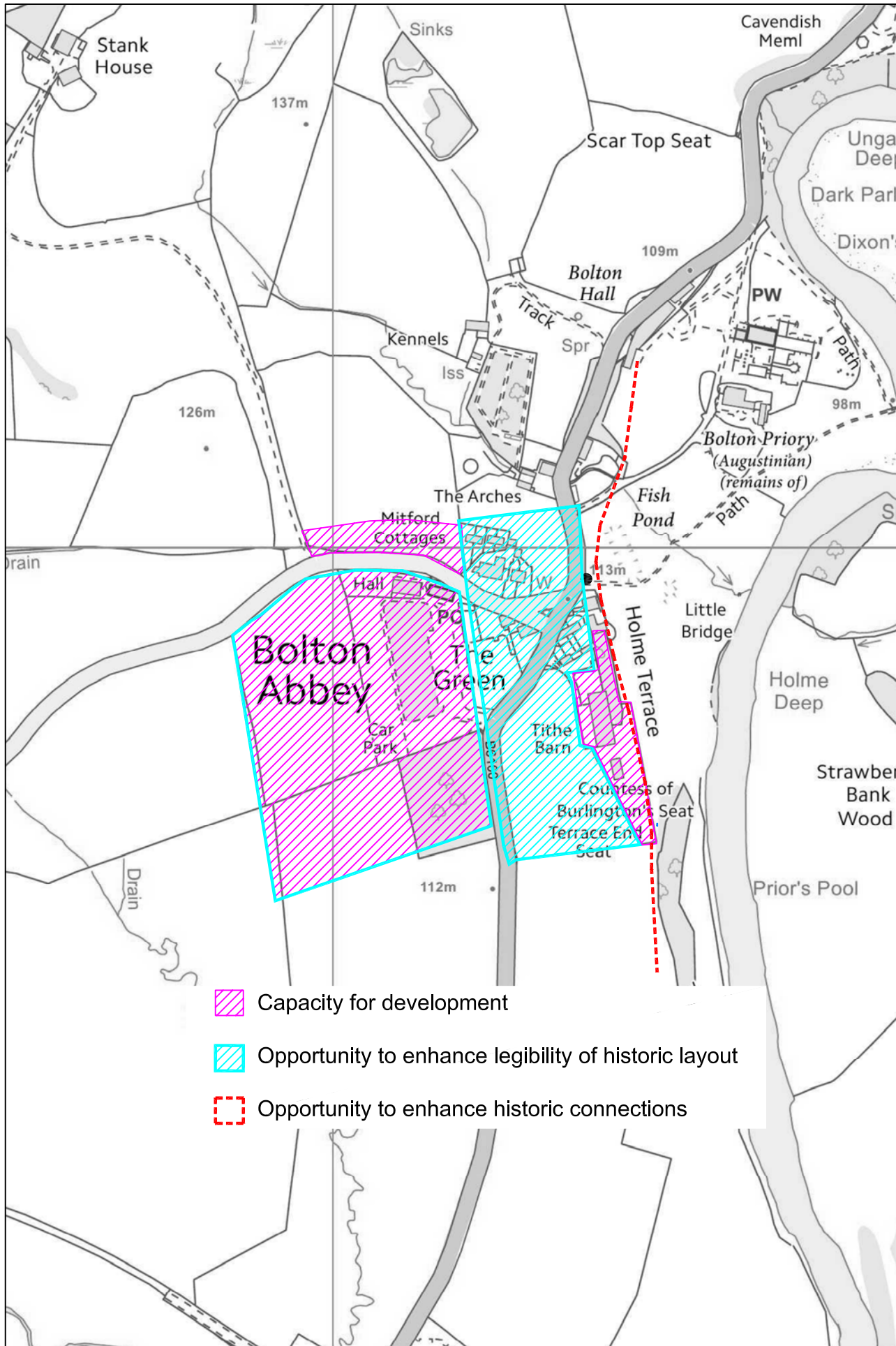
9.3 BARDEN (ZONE 14a and b)

Barden (Zone 14a) has less capacity for development. Much of the surrounding landscape is critical to the way that the heritage assets, and the historic landscape, are appreciated and understood. These form part of key views that were important to the Picturesque and Romantic movements, and as such development within these areas could not be accommodated.

Barden Tower itself (Zone 14b), and the immediate complex, does, have the capacity to absorb development which would afford the tower a sustainable future. Any development would have to be carefully designed to respect the existing heritage assets and archaeological potential of the area (Figure 18)

9.4 STRID WOOD CAR PARK AND CARAVAN SITE (ZONE 12)

Strid Wood car park and caravan site area has been identified as a further area with the capacity to accommodate change without harm to heritage significance, largely due to the screening afforded by the woodland. The scale of development will necessarily be constrained by the woodland, and by nearby nature conservation designations.



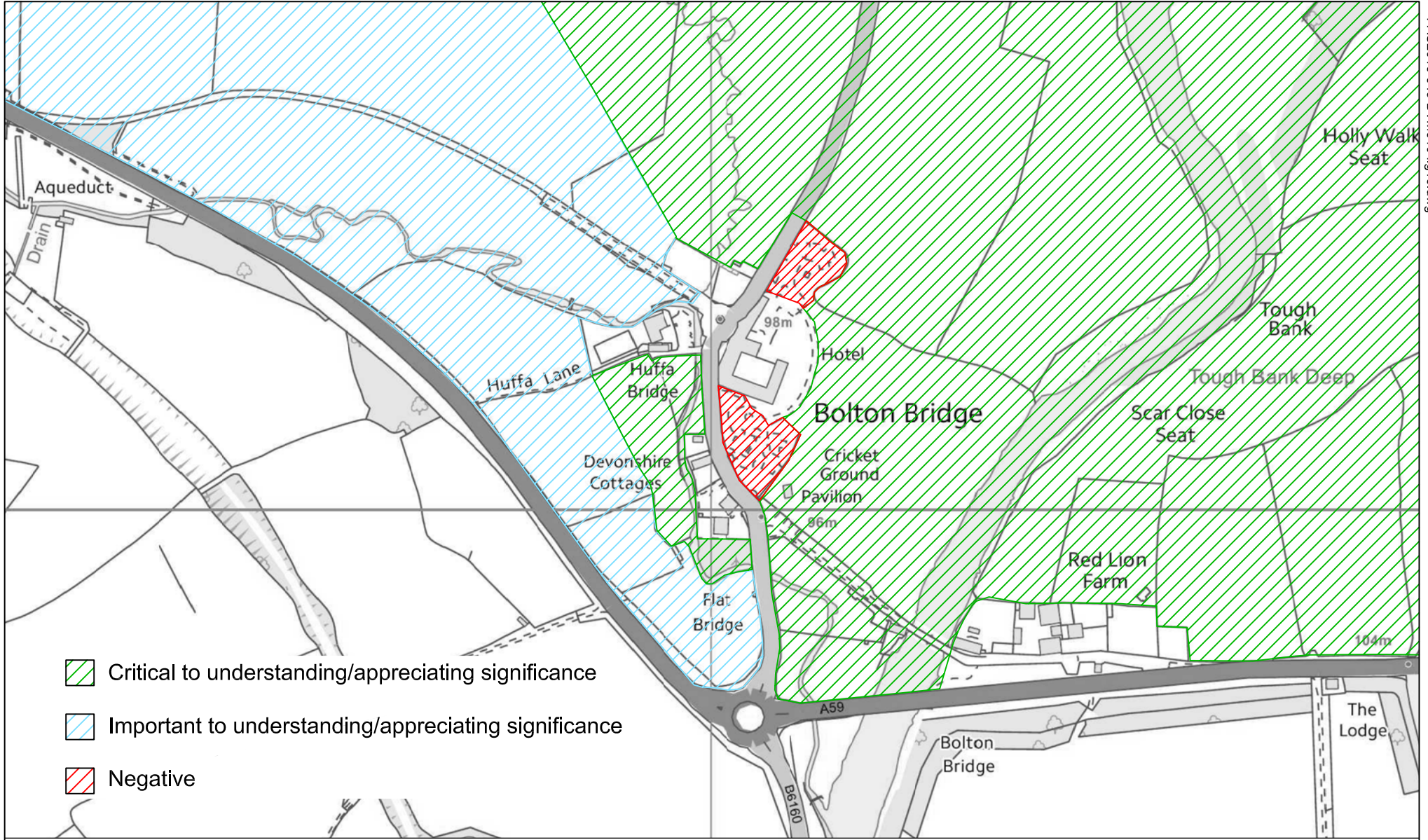
Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright




Field Archaeology Specialists Ltd. Unit 8 Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL100003700

Bolton Abbey - opportunities and capacity for new development Scale 1:5000



Figure 15



-  Critical to understanding/appreciating significance
-  Important to understanding/appreciating significance
-  Negative

Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright.

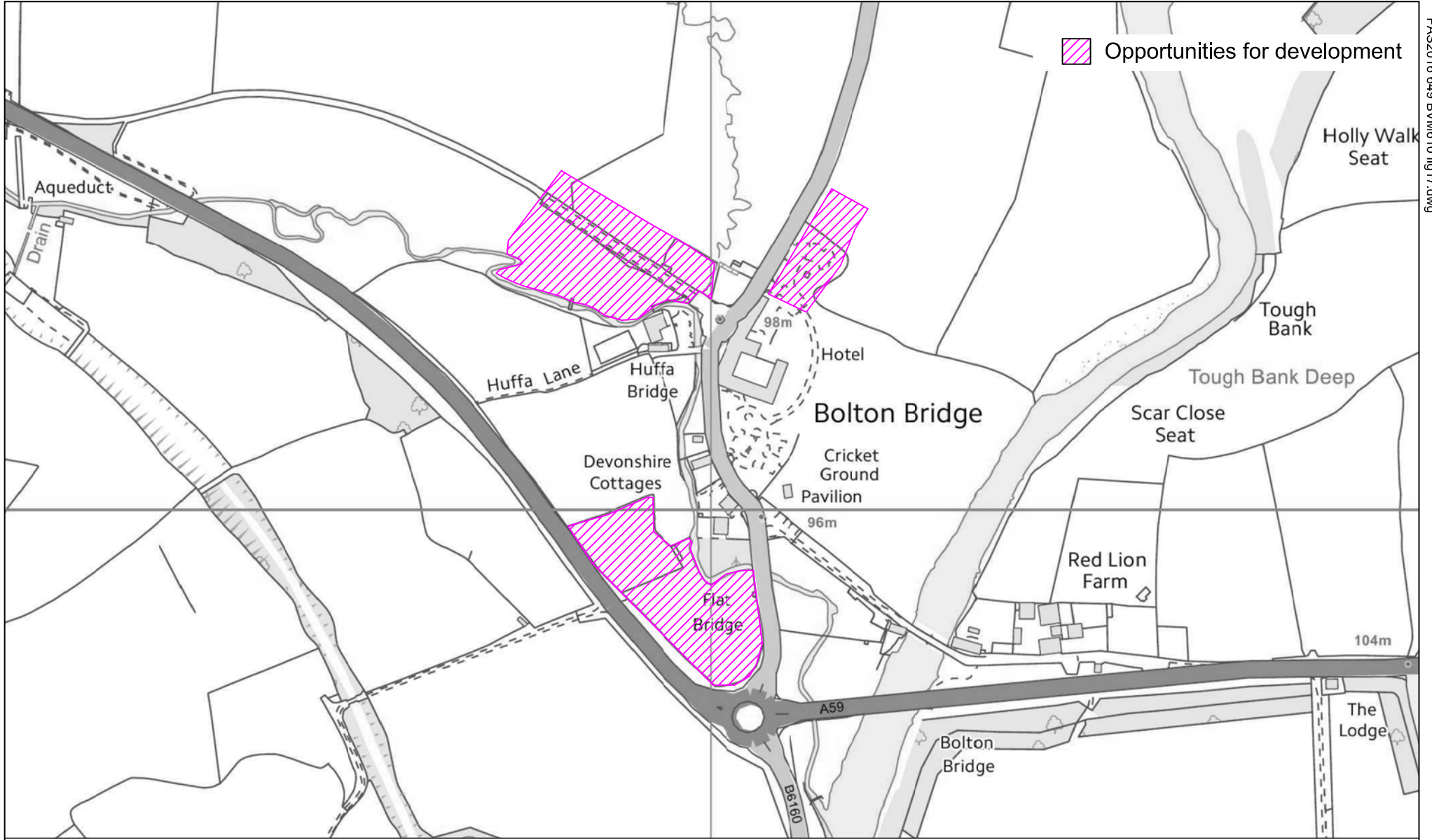
FAS Archaeology Specialists Ltd Unit 8 Fulford Business Centre 35 Hospital Fields Road York YO10 4DZ License No AL10000670

Zone 2 - Bolton Bridge - contribution of open space

Scale 1:5000



Figure 16



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright

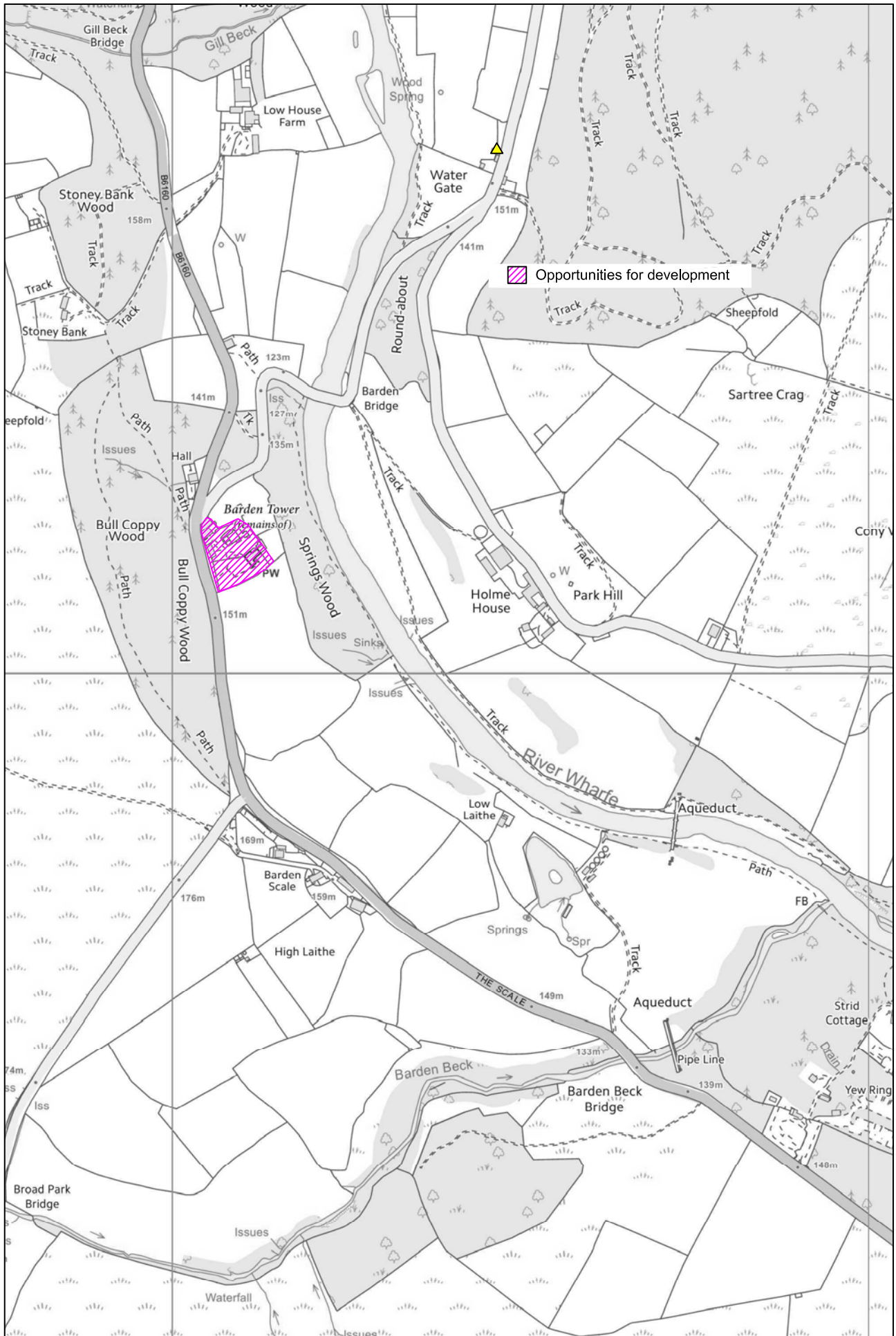
FAS Archaeology Specialists Ltd Unit 8 Fulford Business Centre 35 Hospital Fields Road York YO10 4DZ Licence No AL10006790

Bolton Bridge - opportunities and capacity for development

Scale 1:5000



Figure 17



Reproduced from Ordnance Survey with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright. Field Archaeology Specialists Ltd. Unit 8, Fulford Business Centre, 35 Hospital Fields Road, York, YO10 4DZ. Licence No. AL10000390

Barden Bridge - opportunities and capacity for development

Scale 1:7500



Figure 18

10.0 CONCLUSION

The assessment considers that several areas have the capacity to absorb change, which if managed and designed appropriately, will not adversely harm the overall significance of the Bolton Abbey landscape. The areas with the greatest capacity to absorb change are at Bolton Bridge (Zone 2) and Bolton Abbey village – Hind House Close (Zone 6c), where development, if carefully designed, could enhance and complement the existing settlements in these locations.

Potential development capacity has been identified at:

- Bolton Abbey Village (Zone 6b)
- Cavendish Pavilion and car Park (Zone 9)
- Strid Wood Car Park and Caravan site (Zone 12)
- Barden Tower (Zone 14b)
- Dispersed farmsteads within Zone 4, Zone 13 and 14a

In the remaining areas, opportunities for new development are more restricted and should focus on maintaining existing buildings which contribute to the significance of the area and in particular the farmsteads and isolated field barns which so characterise the area.

A Bolton Abbey Development Options Appraisal Study is to be prepared which will explore the character and scale of development that would be most appropriate within these areas, while meeting the current needs of the estate, so as to inform a related masterplan and the Draft CDLP.

References

- Hoyle, R. 1989. 'Monastic leasing before the Dissolution: the evidence of Bolton Priory and Fountains Abbey', *Yorkshire Archaeological Journal* 61: 111-137
- Kershaw, I. 1970. *Bolton Priory rentals and the Ministers accounts, 1473-1539* Yorkshire Archaeological Society Record Series 132
- Kershaw, I. 1973. *Bolton Priory: The economy of a northern monastery 1286-1325*
- Kershaw, I. and Smith, D.M. 2000. *The Bolton Priory Compotus 1286-1325, together with a Priory Account Roll for 1377-78*, Yorkshire Archaeological Society Record Series 144
- Moorhouse, S. 2005a. 'Sources of timber for the Great Barn, Bolton Priory: A Note', *Medieval Yorkshire* 34: 23-28
- Moorhouse, S. 2005b. 'The Great Barn and its setting within the precinct complex of Bolton Priory', *Medieval Yorkshire* 34: 29-49
- Pacey, A. 2005. 'The Great Barn of Bolton Priory', *Medieval Yorkshire* 34: 15-22
- Trustees of Chatsworth Settlement. 1999. *Bolton Abbey: The Yorkshire Estate of the Duke and Duchess of Devonshire: A guide to the estate with 5 easy walks* (Bolton Abbey)
- Watkins, P. 1989. *Bolton Priory and its Church* (Bolton Abbey)

APPENDIX A SCHEDULED MONUMENT DESCRIPTION**BARDEN TOWER MEDIEVAL FORTIFIED HOUSE AND MEDIEVAL GARDEN EARTHWORKS**

List entry Number: 1015417
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: Not applicable to this List entry.
 Date first scheduled: 05-Dec-1928
 Date of most recent amendment: 14-Feb-1997

Reasons for Designation

Fortified houses were residences belonging to some of the richest and most powerful members of society. Their design reflects a combination of domestic and military elements. In some instances, the fortifications may be cosmetic additions to an otherwise conventional high status dwelling, giving a military aspect while remaining practically indefensible. They are associated with individuals or families of high status and their ostentatious architecture often reflects a high level of expenditure. The nature of the fortification varies, but can include moats, curtain walls, a gatehouse and other towers, gunports and crenellated parapets. Their buildings normally included a hall used as communal space for domestic and administrative purposes, kitchens, service and storage areas. In later houses the owners had separate private living apartments, these often receiving particular architectural emphasis. In common with castles, some fortified houses had outer courts beyond the main defences in which stables, brew houses, granaries and barns were located. Fortified houses were constructed in the medieval period, primarily between the 15th and 16th centuries, although evidence from earlier periods, such as the increase in the number of licences to crenellate in the reigns of Edward I and Edward II, indicates that the origins of the class can be traced further back. They are found primarily in several areas of lowland England: in upland areas they are outnumbered by structures such as bastles and tower houses which fulfilled many of the same functions. As a rare monument type, with fewer than 200 identified examples, all examples exhibiting significant surviving archaeological remains are considered of national importance.

In common with other medieval complexes, fortified houses would also frequently have a range of gardens by or near the house often falling within the curtain wall. Gardens were both functional and decorative. There would be a kitchen garden for producing food and a herb garden which had a medicinal as well as culinary use. In the formal and decorative garden there may be terraces and walled enclosures which contained raised beds and pedestals for plant holders and statues, linked by pathways and, in larger gardens, rides. Other gardens adopted a romantic and pastoral style which could include a camomile lawn and arbours. Some gardens would have a water garden which included ponds, cascades and fountains as well as providing irrigation. Orchards and herb gardens served a dual role as both providers of produce for the household and as a pleasant and aromatic location. Within the pleasure gardens of the wealthy a wide range of ornamental but functional buildings would exist depending on the size and style of the garden. In early medieval gardens these were limited to galleries and elaborate entrances but by the 16th century the buildings included, pavilions, summerhouses, stands, grottoes, belvederes, grandstands, kennels, gazebos, banqueting houses and prospect mounds. Gardens at high status secular buildings were positioned so that they were overlooked by private chambers and rooms of relaxation within the building and in some cases the house and garden were planned as a single design. As with the size and architecture of their houses the

gardens of the wealthy were created for prestige and thus reflected the status of their owner. The standing structure at Barden Tower survives well and important information about the architectural details and internal arrangements are preserved within the fabric. Remains of the wider complex survive as earthworks and further remains will be preserved below the ground. Unusually the original quarries from which the stone to build the tower, and the construction camp have been identified and still survive as earthworks. This offers important scope for understanding both the technical and social aspects of large scale construction projects; a hitherto little understood aspect of the medieval period. The importance of the monument is enhanced by being at the centre of an identifiable medieval lordly landscape. The remains at Barden Tower and its relationship with the wider landscape offer important scope for the study of high status dwellings and their impact on the economy and environment in the medieval period.

History

The monument is located on a bluff in the narrow valley of the River Wharfe, and is bisected by the B6160 road, which is post-medieval in origin. Barden Tower was a fortified high status house located at the centre of a planned landscape which extended over a large area across the whole valley and surrounding land. The house lay within a complex of domestic and agricultural buildings and was probably surrounded by a curtain wall beyond which was an outer park containing deer parks, fishponds, warrens and barn complexes. A major structure within this complex was the chapel and connected priest's house. These buildings which survive today are substantial stone built, roofed structures, which still display many original architectural details. They are built on a terrace partly cut into the slope. The chapel and priest's house are both Grade I Listed Buildings and are excluded from the scheduling although the ground beneath them is included. The monument includes the remains of the fortified house and ancillary buildings, some of the quarry areas which provided stone for construction, and the earthwork remains of gardens. Barden Tower which is Listed Grade I is a ruined building consisting of hollow shell surviving to roof height. The core of the building is a three storey rectangular tower dating to the late 15th century with a stair turret on the north wall and a projecting rectangular tower on the south wall dominated by an impressive window which opened onto a first floor great hall. In the 17th century the building was extended to the west and a further 'L' shaped tower was added to the south east angle. A further tower was added to the north west which has subsequently collapsed and is identifiable only by foundation walls and earthworks. An internal wall inserted in the 17th century which divided off the eastern third of the building still stands to roof height. Throughout the building there are architectural details including windows, fireplaces, doorways and floor and ceiling supports which illustrate the development of internal arrangements during its use. A range of ancillary buildings including kitchens, guest and senior staff lodgings lay to the west of the tower and extended as far as the valley side. The remains of these buildings are preserved below ground and are identified by a broad low mound leading westward across the road to a wide platform cut into the valley side. A further range of domestic buildings extended southwards at the edge of the valley, the remains of which are preserved as a series of low platforms on a wide terrace. To the north and east of the tower and the south of the chapel are a number of earthworks representing the remains of further ancillary buildings and gardens. The exact extent and nature of the medieval gardens is not yet fully understood but it is known from sites elsewhere that medieval gardens included functional areas such as a kitchen garden, orchards and herb gardens, as well as ornamental or formal gardens. Formal gardens included raised beds laid out on terraces often within small enclosures and linked by pathways. Within formal gardens a range of structures including galleries, walls and summer houses or pavilions, and plinths and pedestals for plant holders could be found. To the north of the tower there is a ruined rectangular building with a large arch at the north gable end which is post-medieval in date but sits on the foundations of an earlier building. In the woods at the west and north west of the monument are the earthwork remains of the quarries from which the stone to build the tower was taken. There was a considerable workforce employed over many years and the remains of their camp and quarters have been identified in this area as platforms, terraces and hollow ways. The site was originally the location of one of six lodges of the Forest of Barden. The tower was built by Sir Henry Clifford after he regained his

family estates in 1484. He made Barden rather than Skipton the centre of his lordly estate and established the wider formal landscape with Barden at its heart. Further remodelling occurred under Lady Anne Clifford in the 16th century. The chapel and priest's house, the bunk barn, the stone barn, the surface of the road and trackway, fences, gates, stiles and all modern walls are excluded from the scheduling although the ground beneath all these features is included.

MAP EXTRACT The site of the monument is shown on the attached map extract. It includes a 2 metre boundary around the archaeological features, considered to be essential for the monument's support and preservation.

Selected Sources

Books and journals

Moorhouse, S, Barden quarries, (1995)

Moorhouse, S , The Forest of Barden, (1992)

Brown, A E, 'CBA Research Report' in Garden Archaeology, , Vol. No 78, (1991)

Moorhouse, S , 'CBA Forum' in An Archaeological Survey of Barden Tower, (1991)

Moorhouse, S , 'CBA Forum' in An Archaeological Survey of Barden Tower, (1991)

Other

Dr S Moorhouse, (1995)

Moorhouse, S, (1996)

National Grid Reference: SE 05072 57064

BOLTON PRIORY

Name: Bolton Priory
 List entry Number: 1015684
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: Not applicable to this List entry.
 Date first scheduled: 20-May-1965
 Date of most recent amendment: 03-Jul-1997

Reasons for Designation

From the time of St Augustine's mission to re-establish Christianity in AD 597 to the reign of Henry VIII, monasticism formed an important facet of both religious and secular life in the British Isles. Settlements of religious communities, including monasteries, were built to house communities of monks, canons (priests), and sometimes lay-brothers, living a common life of religious observance under some form of systematic discipline. It is estimated from documentary evidence that over 700 monasteries were founded in England. These ranged in size from major communities with several hundred members to tiny establishments with a handful of brethren. They belonged to a wide variety of different religious orders, each with its own philosophy. As a result, they vary considerably in the detail of their appearance and layout, although all possess the basic elements of church, domestic accommodation for the community, and work buildings. Monasteries were inextricably woven into the fabric of medieval society, acting not only as centres of worship, learning, and charity, but also, because of the vast landholdings of some orders, as centres of immense wealth and political influence. They were established in all parts of England, some in towns and others in the remotest of areas. Many monasteries acted as the foci of wide networks including parish churches, almshouses, hospitals, farming estates and tenant villages. Some 225 of these religious houses belonged to the order of St Augustine. The Augustinians were not monks in the strict sense, but rather communities of canons - or priests - living under the rule of St Augustine. In England they came to be known as 'black canons' because of their dark coloured robes and to distinguish them from the Cistercians who wore light clothing. From the 12th century onwards, they undertook much valuable work in the parishes, running almshouses, schools and hospitals as well as maintaining and preaching in parish churches. It was from the churches that they derived much of their revenue. The Augustinians made a major contribution to many facets of medieval life and all of their monasteries which exhibit significant surviving archaeological remains are worthy of protection.

The ruins of Bolton Priory survive well and important evidence of the original architectural detail is preserved. The precinct has remained largely undisturbed and important remains of the wider monument are preserved there as earthworks and buried archaeological remains. The barn and remains of the barnyard demonstrate an unusual level of survival and offer important scope for the study of monastic agricultural practices. The Great Barn with its timber frame, is one of the best preserved medieval timber barns in northern England. Taken together the monument is important for understanding the wider workings of a monastic house as both a spiritual centre and an important element of the medieval landscape.

History

Bolton Priory is situated on low ground in a bend of the River Wharfe. The monument is divided into two separate areas; one which includes the standing ruins of the priory, which are Listed Grade I, the precinct wall (part of which is Listed Grade II) and associated features, the medieval tithe barn and part of the

medieval barnyard and the other area which includes the remains of a medieval reservoir on the hillside to the west of the priory. The standing remains of the priory demonstrate the usual layout of a monastic house, with an east to west orientated church forming the north range of a four sided complex known as the cloister, the remaining sides containing accommodation for lay and monastic brethren, and domestic and administrative functions. The east end of the church and the two transepts still stand to roof height. The nave, or main body of the church, stands to full height and is still roofed. The east end of the nave was blocked off at the Dissolution and is now used as the parish church, which is Listed Grade I. As it is in ecclesiastical use, it is excluded from the scheduling, although the ground beneath is included. The cloister ranges have been demolished but the plan of the buildings can still be identified from the footings of the walls which still survive. The east cloister range included, on its ground floor, a passage leading to a polygonal chapter house and a sub-vault extending beneath the monks' dormitory and abbot's lodgings which occupied the first floor. The south range of cloister included the monks' refectory with a kitchen attached to the south western side and the west range was occupied by the cellarium or stores with the lay brothers accommodation on the floor above.

The priory infirmary was located to the south of the abbot's lodgings. The infirmary building was partly rebuilt in 1700 as a charitable school known as the Boyle School. It later became the Rectory and is now a dwelling. The building is Listed Grade II* and is excluded from the scheduling, although the ground beneath is included. The priory guest house was located to the south west of the cloister but only a fireplace and chimney stack remain as standing ruins. They are Listed Grade II.

In addition to the core monastic buildings the monastic precinct contained a range of structures essential for the economic and social functions of the house. The precinct was defined by the river to the east and to the west by a wall. The course of the precinct wall extends south from a bend in the river and follows the east side of the road to the green then extends eastward from the rear of the post office to the river. Adjacent to the road, the medieval precinct wall is preserved to full height for a length of 50m and elsewhere sections have been rebuilt or are incorporated into later structures along the roadside. The outer gatehouse is incorporated into Bolton Hall. This building, which is occupied, is Listed Grade II* and is excluded from the scheduling, although the ground beneath is included. Further buildings, including Abbey Mill, which is Listed Grade II, lie on the east side of the course of the precinct wall and are in residential use, and are excluded from the scheduling although the ground beneath them is included.

Within the southern part of the precinct are the earthwork remains of two large tanks with associated leats and channels. These are the remains of tanning tanks which are known from documentary sources to have existed at the priory. A corn mill is known to have stood within the precinct and elsewhere within the precinct there are earthworks representing the remains of further monastic buildings and structures.

Immediately to the south west of the precinct lies the site of the monastic barnyard. Only the southern part of the barnyard complex is included in the scheduling as the remainder has been disturbed by the development of the village of Bolton Abbey in the post-medieval period. The southern edge of the barnyard is defined by an earthen bank extending west across the field from the end of the woodyard to the road. Another bank also crosses the field further to the north. The barnyard was the focus for the agricultural activities of the priory and contained a wide range of buildings including two large barns one of which survives complete. The surviving barn is stone built with an impressive timber superstructure to support the roof. Known as the Great Barn it is Listed Grade II*. It is thought to be 16th century in date with later 19th and 20th century openings. Further remains of the buildings and structures of the barnyard will be preserved below ground in the fields to the west and north west of the barn.

A complex of ponds, leats and tanks on the hillside to the west of the monastic precinct fed into a stream running through the southern part of the precinct. Of these features a dam and side walls for a reservoir survive as earthworks and are included in the scheduling. The dam is an earth and stone bank 2.2m high and 20m long which crosses part of a small natural valley. It has a stone facing on the down stream side and has been breached in the past so the stream now flows uninterrupted. The sides of the reservoir are formed by a stone faced bank to the west and a steep slope cut into the natural slope to the east. Water from here was fed to the priory along a stream bed which was partly stone revetted and canalised. However much of the stonework has been removed and the line of the stream has been modified in post-medieval times, and it is therefore not included in the scheduling.

Bolton Priory was founded in 1155 by a community of Augustinian canons. In the early 14th century the priory fell on hard times but recovered and in the later years of the century a programme of rebuilding of the church and some domestic buildings took place. It was suppressed in 1539 during the Dissolution of the Monasteries. Following the Dissolution, the bulk of the priory estate was bought by the Clifford family, formerly patrons of the church since 1310. The priory was not immediately demolished. The nave of the church continued in use, the corn mill within the precinct operated until the end of the 18th century and some of the cloister buildings were used as dwellings. The gatehouse was eventually incorporated into the 18th century Bolton Hall.

The Church of St Mary, the Old Rectory and Boyle Room, Abbey Mill, the building to the south adjacent to the main entrance to the Abbey, all modern structures within the woodyard and all modern fences, tree guards, walls, gates, signs, the fuel tank and heating apparatus for the church and the footbridge crossing the river are excluded from the scheduling, although the ground beneath all these features is included.

The modern cemetery, which remains in use, the grassed area north of the old cemetery and the fenced area outside the east end of the church used for inhuming cremations are not included in the scheduling.

MAP EXTRACT The site of the monument is shown on the attached map extract. It includes a 2 metre boundary around the archaeological features, considered to be essential for the monument's support and preservation.

Selected Sources

Books and journals

Moorhouse, S, Bolton Priory's Monastic Estate, (1992)

Moorhouse, S, Bolton Priory's Monastic Estate, (1992)

Watkins, P, Bolton Priory and its Church, (1989)

Watkins, P, Bolton Priory and its Church, (1989)

Other

Listed building entry,

Moorhouse, S, Bolton Priory, (1996)

National Grid Reference: SE 06925 54464, SE 07327 54095

APPENDIX B LISTED BUILDING DESCRIPTIONS**STABLES AND THRESHING BARN TO BOLTON PARK FARM**

List entry Number: 1131744
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Hazlewood with Storiths
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

HAZLEWOOD WITH STORITHS SE 05 NE

6/104 Stables and threshing barn to Bolton Park Farm

GV II

Stables, threshing barn. Late C18. Coursed rubblestone, graduated stone slate roof. 2 storeys, 4 bays with lower two bay wing at right angles to right-hand side. Stables below, 2 board doors, 3 openings with C20 casements. To right, external staircase to threshing barn. To right lower wing, central board door and openings to either side with C20 casements. Pigeon openings to gable. At top of stair is a board door. Just below eaves 4 cross-shaped ventilation holes. Rear return: barn built into hill, hence large board door on first floor. Included for group value only.

Listing NGR: SE0807455529

HOLME HOUSE FARMHOUSE

List entry Number: 1131758
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

NORTH YORKSHIRE CRAVEN 5336

SE 05 NE BARDEN

6/27 Holme House Farmhouse

- II

Farmhouse. Early C19. Ashlar, coursed squared stone, graduated stone slate roof. 2 storeys, 3 bays. Central half-glazed, 6-panel door in plain stone surround, all windows are 16-pane sashes in plain stone surrounds with sills, plain modillions. End stacks.

Listing NGR: SE0550957142

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 05509 57142

BARDEN BRIDGE

List entry Number: 1131759
 Location: BARDEN BRIDGE, APPLETREEWICK ROAD
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BARDEN APPLETREEWICK ROAD SE 05 NE
 6/29 Barden Bridge
 10.9.54 II

Bridge. 1659 (Pevsner). Ashlar. 3 large segmental arches with voussoirs and hoodmoulds. Triangular-section cutwaters rise into pedestrian retreats. Parapet inscription on the north parapet at the east end, "this bridge was repayed at the charge of the the whole West riding 167b". Also a scheduled ancient monument (Yorkshire West Riding) No 71.

Listing NGR: SE0521857404

BARDEN CHURCH

List entry Number: 1131761
 Location: BARDEN CHURCH, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: I
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BARDEN B 6100 SE 05 NE (east side)
6/32 Barden Church
10.9.54

GV I

Chapel attached to south side of Barden Tower Farmhouse. C16. Ashlar, coursed squared stone, graduated stone slate roof. 1 storey, 2 bays. Offset angle stepped buttress to right-hand side, to left of this a small four-centred arched doorway set back in a deep plain reveal. To left a large 6-light moulded chamfered mullioned window with elliptical headed lights, central major mullion and a hoodmould. Left-hand bay has 3-light moulded chamfered mullioned window with elliptical-headed lights and a hoodmould. Band, plain parapet, with moulded coping. Interior: restored C19, now gutted.

Listing NGR: SE0512057175

BARDEN SCALE COTTAGE

Name: BARDEN SCALE COTTAGE
List entry Number: 1131762
Location: BARDEN SCALE COTTAGE, B 6160
County: North Yorkshire
District: Craven
District Type: District Authority
Parish: Barden
National Park: YORKSHIRE DALES
Grade: II
Date first listed: 10-Sep-1954
Date of most recent amendment: Not applicable to this List entry.

Details

BARDEN B 6160 SE 05 NE (west side)
6/35 Barden Scale Cottage
10.9.54 II –

Cottage. C17. Ashlar, rubblestone, graduated stone slate roof. 2 storeys, 3 bays. Quoins. Central board door in chamfered surround, with triangular arch under a square head. Left-hand bay has double-chamfered 4-light window, hoodmould. Right-hand bay has chamfered 3-light window with hoodmould, it continues to left, suggesting there was a fourth light. First floor: to left and centre a double-chamfered 3-light window. That to right is similar of 2 lights. External gable stack to left, end stack to right, both have diagonally set shafts.

Listing NGR: SE0515256743

BARDEN SCALE FARMHOUSE

Name: BARDEN SCALE FARMHOUSE
 List entry Number: 1131763
 Location: BARDEN SCALE FARMHOUSE, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

SE 05 NE BARDEN B 6160 (west side)
 6/36 Barden Scale Farmhouse
 10.9.54

- II
 Farmhouse. C17. Ashlar, rubblestone, graduated stone slate roof. 2 storeys, 3 bays. Quoins. Off-centre half-glazed door in chamfered surround, basket-arched lintel. To left and central bay a double-chamfered 4-light window; to right similar window of 2 lights. Continuous hoodmould over all these openings. First floor: to left and central bay a double- chamfered 3-light window, that to right similar of 2 lights. End stacks and one ridge stack.

Listing NGR: SE0520756707

FERRY HOUSE

List entry Number: 1131770
 Location: FERRY HOUSE, A 59.
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY A 59 SE 05 SE (south side)
 8/59 Ferry House
 10.9.54

- II
 House. C16, C17. Ashlar, rubblestone, graduated stone slate roof. 2 storeys, 2 bays with 1-storey, 1-bay block adjoining to the right. Main house: C17, central half-glazed door in chamfered surround. Windows are 3-light with chamfered mullions. Shaped kneelers, moulded stone coping, end stacks with moulded cornices.

Adjoining block: C16, to left is a board door in chamfered surround, four-centred arched lintel with a square head. To right is a double-chamfered 3-light window. End stack. Interior: a beam is inscribed in red letters 'Thou that passes by yis way, One Ave Maria here yew say'.

Listing NGR: SE0717552889

THE DEVONSHIRE ARMS

List entry Number: 1131771
 Location: THE DEVONSHIRE ARMS, A 59
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY A 59 SE 05 SE (north side)
 8/61 The Devonshire Arms

-

II

House, now hotel. C17, C18 and C19. Ashlar, rubblestone, part rendered, graduated stone slate roof. Central block: C17, 2 storeys plus attics, 4 bays. Left-hand block: C19 of 2 storeys, 6 bays. To left of this an C18 stable block of 2 storeys and 3 bays. To right of central block a 7-bay early C19 block, to right return set back at right angles a 2-storey, 4-bay block. Central block: rendered, bay 3 has a moulded four-centred arched doorway, blocked-in with a C20 casement window. Continuous hoodmould. All windows are 4-light with chamfered mullions. First floor: bays 1 and 3 have 2-light windows, bays 2 and 4 are of 3 lights, all have chamfered mullions. Left-hand bay is slightly set back with a gable, in gable a 1-light chamfered window. To bay 3 a gabled dormer with a thin chamfered 1-light window. Shaped kneelers, stone coping. End stacks and one to ridge. Left-hand block: not of special interest. C18 stable block: long central bay of one storey has C20 casements and to either side C20 garage doors. End bays: 2 storeys. Pilasters up to first-floor band. Blind semicircular-headed arches. Plank door in plain surround to left, bay window to right. First floor: Diocletian windows, side lights blocked. All windows are C20 casements. Plain pedimented gables. Right-hand block: to left-hand side a 1-storey, 5-bay C19 addition with a gabled porch. First-floor band. Sashes with glazing bars. 2 right-hand bays lower with similar sashes. Roofs hipped to right. Block set back at right angles similar, with glazing bar sashes in plain stone surrounds, roof hipped to left. Rear: modern C20 extensions. Interior: completely gutted in the C20.

Listing NGR: SE0701753147

THE GREAT TYTHE BARN

List entry Number: 1131772
 Location THE GREAT TYTHE BARN, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II*
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off) 8/63 The Great Tythe Barn
 10.9.54

GV

II*

Barn. Probably C16. Ashlar, rubblestone, graduated stone slate roof. Single storey, 10 bays. 2 double board doors with segmental arches in half- dormers. Other C19 and C20 openings to south side. Large gabled roof. Aisled interior with 9 king-post frames. Braces from king posts to ridge pieces. Braces from arcade posts to tie-beams and purlins, small intermediate trusses between bays. Posts raised on padstones. Threshing floor across fifth bay. The tithe barn to Bolton Priory. A very unusual survival in the north of England.

National Grid Reference: SE 07253 53838

AQUEDUCT NORTH OF THE ABBEY MILL

List entry Number: 1131773
 Location AQUEDUCT NORTH OF THE ABBEY MILL, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE
 8/65 Aqueduct north of the Abbey mill
 10.9.54

GV

II

Aqueduct. C18. Coursed, squared stone. 3 rusticated segmental-headed arches cross the Bolton to Barden road, the central one being larger and approximately 3 metres in height.

Listing NGR: SE0722254089

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 07222 54089

BOLTON ABBEY HALL

List entry Number: 1131774
 Location: BOLTON ABBEY HALL, B6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II*
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off)
 8/67 Bolton Abbey Hall

10.9.54

II*

GV

House, formerly the abbey gatehouse. C14, mid C19 additions by Sir Joseph Paxton. Ashlar, graduated stone slate roof. South range: 2 storeys, 3 bays. Gatehouse block: 3 storeys, 1 bay. North range: 2 storeys, 4 bays with a 3-storey bay to extreme right. South range: mid C19, offset diagonal buttress to left-hand side with embattled turrets to top, board door in four-centred arch with flat hoodmould to right-hand side, two 4-light chamfered mullioned windows with cusped lights and flat hoodmoulds to left. First floor: two 3-light and one 2-light windows similar to those below. Band, embattled parapet. Gatehouse block: C14 with C19 alterations. Offset diagonal buttresses. Great gateway has a pointed arch with hoodmould, infilled with a central 2-light pointed arched window, flanked by smaller 5-centred arched windows. First floor: a 4-light double-chamfered mullioned window, hoodmould and a buttress to each side, offset rising to top of second floor window: 2-light chamfered mullioned window with cusped lights and flat hoodmould; flanked by chamfered slit opening. Band, embattled parapet with embattled turrets to buttress. North range: 5 left-hand bays have 3-light chamfered mullioned windows, apart from bays 1 and 4 which are of 2-lights, those to ground floor have hoodmoulds. Band, embattled parapet. Right-hand bay: offset diagonal buttress rising up to second storey. Large 3-light chamfered mullioned windows with transoms, spanning 2 storeys, flanked below bottom transom by an extra light on either side, hoodmould. Third storey: 2-light chamfered mullioned window with hoodmould. Embattled gabled parapet, at apex is an embattled 2-shaft stack, to each side an embattled turret. End stacks and ridge stacks. Interior: the gatehouse is divided into 2 parts by a cross-wall with a separate small passage. A spiral staircase to the upper floors. The roof of pointed tunnel-vaults with ridge ribs, additional longitudinal rills, and closely set transverse arches. The west entrance is blocked by a

large C16 fireplace, in the east entrance a reused doorway of c1370, possibly from the abbey chapter house. Converted into house by the Devonshire family.

Listing NGR: SE0729254207

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 07292 54204

PRIORY OF ST MARY

List entry Number: 1131775
 Location: PRIORY OF ST MARY, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: I
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off)

8/69 Priory of St Mary

10.9.54

GV

I

Remains of the Priory of St Mary. C12, C13, C14. Ashlar and rubblestone. Transepts and chancel, remains of other priory buildings only at foundation level. Nave now the parish church of St Mary. South transept: C13, 2 bays, only west wall survives, offset angle buttress with pinnacle, Decorated style pointed arched windows with no tracery. North transept: C13, 2 bays, offset angle buttresses, east side retains 2 bay arcade with triple- chamfered pointed arches on octagonal pier and above 3-light cusped reticulated traceried windows with four-centred arches, continuous hoodmould. Remains of an east chapel. West side has C13 doorcase and large Decorated window without tracery. Chancel: C12, C13, C14. 5 bays, bays defined by offset buttresses, east end has offset angle buttresses, that to south has a pinnacle. Bay 3 has a four-centred arched doorway with a pointed arched opening to its right. Windows are large pointed arched of the Decorated period; one to west of south side retains tracery of 3 lights. Large east window of same period, has no tracery, above a small pointed arched niche. Interior: in the west of the chancel is intersecting late C12 blank arcading with round-headed arches on scalloped and waterleaf capitals. The crossing piers have scalloped capitals and double- or triple- chamfered pointed arches. Tomb recess in the north wall, remains of the sedilia in the south wall. Priory was a house of Augustinian canons, suppressed in 1539. Also a scheduled ancient monument (Yorkshire, West Riding) No 610.

Listing NGR: SE0741654188

THE OLD RECTORY

List entry Number: 1131776
 Location: THE OLD RECTORY, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II*
 Date first listed: 10-Sep-1954

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off)
 8/70 The old Rectory

10.9.54

II*

GV

House. C15 and late C17. Ashlar, coursed squared stone, graduated stone slate roof. 2 storeys, 7 bays, with a 1-storey, 2-bay block at right angle to main house connected by a wall. Main house: full-height gabled porch. Raised quoins. Half-glazed door, rusticated surround and voussoirs, semicircular drip mould. Above a 4-light double-chamfered mullioned window with central major mullion and carved tablet over, below triangular headed hood mould. Bay 1 has two 4-pane sashes in moulded surrounds, bay 2 has an adjoining pair of 4-pane sashes in similar surrounds with central mullion. To right a drip mould over blocked doorway. Bay 3 has a 2-light chamfered mullion and transom window. Bay 5 has a similar 4-light window with central major mullion. Bays 6 and 7 have full-height 8-pane sashes in moulded surrounds with central mullions. First floor: all bays have 4-light double-chamfered mullion windows apart from that to left of porch which has 2-lights. Shaped kneelers, stone coping. Gable crosses to porch and right-hand gable. Ridge stacks and one large external gable stack to left-hand side. Rear: C15 six-light window, with round head and cusped lights. Block to right of house: quoins, board door with four-centred arch lintel. To right 2 large 36-pane sashes in plain stone surrounds. Right return: 2 offset buttresses. Left return: C15 mullioned window. History: originally the Priory infirmary, then it became Boyle School as commemorated on the plaque above the porch first-floor window.

Listing NGR: SE0738054144

CAVENDISH MEMORIAL

List entry Number: 1131777
 Location: CAVENDISH MEMORIAL, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE (east side)
8/72 Cavendish Memorial

II

Memorial with a fountain. Dated 1886. Ashlar. Hexagonal in plan. 4 steps to plinth, at each corner offset gabled buttresses rising above the parapets. Frieze below eaves bearing inscription 'This fountain was erected by electors of the West Riding as a tribute to his memory, Frederick Charles Cavendish Born November XXX. MDCCCXXXVI. Died May VI. MDCCCLXXXII'. Below between buttresses pointed arches on banded half-shafts with ogee headed hoodmoulds. In the centre of base a fountain. At frieze level there is a gargoyle to each buttress. Above frieze an embattled parapet with blank cusped pointed-arched arcading. Central coat of arms to each side. Above an open ogee lantern, with a crocketed pinnacle on open gabled arches above the lantern.

Listing NGR: SE0750354484

ADAM SLACK COTTAGE

List entry Number: 1166990
Location ADAM SLACK COTTAGE
County: North Yorkshire
District: Craven
District Type: District Authority
Parish: Hazlewood with Storiths
National Park: YORKSHIRE DALES
Grade: II
Date first listed: 08-Apr-1987
Date of most recent amendment: Not applicable to this List entry.

Details

HAZLEWOOD WITH STORITHS STORITHS SE 05 SE
8/108 Adam Slack Cottage

-

II

Cottage. Mid C18. Rubblestone, graduated stone slate roof. 2 storeys, 2 bays. Quoins. To left of left-hand bay a board door with a triangular slate hood. Two 3-light flat-face mullion windows. First floor: 2-light flat-face mullion windows. Central ridge stack.

Listing NGR: SE0817654371

IVY COTTAGE ROSE COTTAGE

List entry Number: 1166607
 Location IVY COTTAGE, A 59
 ROSE COTTAGE, A 59
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Beamsley
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987

Details

BEAMSLEY A 59 SE 05 SE (north side)
 8/43 Rose Cottage and Ivy Cottage

GV

II

2 cottages. C18. Ashlar, rubblestone with graduated stone slate roofs. 2 storeys, 3 bays. Board door to left of left-hand bay and a board door to right of central bay. To right of this a blocked doorway. Left-hand bay: 2-light recessed flat-faced mullion window, central bay similar of 3 lights. Right-hand bay has modern casement in plain surround. First-floor: right-hand bay has 2-light recessed flat-faced mullion window, central bay has similar of 3 lights, left-hand bay has 12-pane side-sliding sash in plain surround. End stack to right and one to ridge.

Listing NGR: SE0723952881

DEVONSHIRE COTTAGES

List entry Number: 1166709
 Location DEVONSHIRE COTTAGES, A 59
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY A 59 SE 05 SE (south side)
 8/60 Devonshire Cottages

-

II

2 cottages. Mid C18. Ashlar, coursed, squared stone with graduated stone slate roof. 2 storeys, 4 bays. Quoins. To right of left-hand bay and to bay 3 are board doors in plain stone surrounds. Bays 1 and 3 have 2-light flat-faced mullion windows, one sash to each window with glazing bars. Bays 2 and 4 have 3-light flat-

faced mullion windows, central sash to each window with glazing bars. End stack to right and 2 stacks to ridge.

Listing NGR: SE0699253044

MILESTONE APPROXIMATELY 20 METRES TO WEST OF THE DEVONSHIRE ARMS

List entry Number: 1166716
 Location MILESTONE APPROXIMATELY 20 METRES TO WEST OF THE DEVONSHIRE ARMS, A 63
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: Not applicable to this List entry.
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY A 63 SE 05 SE (north side)
 8/62 Milestone approximately 20 metres to west of the Devonshire Arms
 GV II

Milestone. Mid C19. Stone. Triangular section pillar, inscribed on left face 'SKIPTON', to right face 'BOLTON ABBEY'.

Listing NGR: SE0700353194

PRECINCT WALL TO THE PRIORY

List entry Number: 1166722
 Location PRECINCT WALL TO THE PRIORY, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

BOLTON ABBEY B 6160 SE 05 SE (east side)
 8/64 Precinct wall to the Priory

10.9.54

GV

II

Wall. Medieval. Coursed squared stone. Approximately 4 metres in height. Chamfered band below high triangular sectioned rubble coping.

Listing NGR: SE0724454126

CHURCH OF ST MARY

List entry Number: 1166745
 Location: CHURCH OF ST MARY, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: I
 Date first listed: 10-Sep-1954
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off)
 8/68 Church of St Mary

10.9.54

GV

I

Church, originally the nave of the Priory. Late C12, C13, C14 and C16. Restored 1875-60 by G E Street. Ashlar, coursed squared stone, lead roof. C12 - C13 nave and north aisle. C16 uncompleted tower hides the C13 west front. Nave: south side has pointed arched blank arcading, above 6 tall adjoining narrowly-set 2-light pointed arched plate-traceried windows with quatrefoils, transomed with continuous hoodmoulds. Corbels, embattled parapet. North side: aisle has a board door under a pointed arch with a cusped crocketed niche above. Three 3-light C14 Decorated pointed arched windows with sill band, hoodmoulds and buttresses between. The clerestory has 4 lancet windows, continuous hoodmould. West front: double board door in deeply splayed portal with 3 orders of colonnettes. The arch has dogtooth mouldings. It is flanked by similar smaller arches with blind twin sub-arches within, quatrefoils in the spandrels between the sub-arches. Trefoils in spandrels between main door arch and side arches. Above blind cusped arcading. Above the door central blind elliptical opening flanked by pointed arches, all with dogtooth moulding, below continuous hoodmould. Above again 3 tall pointed arched lancet windows, set in moulded arches on colonnettes. West front of tower: gabled offset angle buttresses, decorated plinth, pointed arched door in moulded surround, flat hoodmould, in spandrels shields set in quatrefoils. Above door trieze, Perpendicular in style with alternating shields and shoulder-headed niches. Door and frieze flanked by blank arcading. Above a large 5-light transomed Perpendicular window, with crocketed ogee-headed hoodmould. Interior: arcade of 4 bays, octagonal piers with circular one between. Triple- chamfered arches. Shafts on small corbels rise from level of the stops of the hoodmoulds to the ceiling. Wall built at east of nave after Dissolution.

Listing NGR: SE0740154204

THE TEA HOUSE

List entry Number: 1166807
 Location THE TEA HOUSE, THE GREEN
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY THE GREEN SE 05 SE (east side)
 8/75 The Tea House

GV

II

Barn, now cottage. Possibly C16 with C19 alterations. Coursed squared stone, graduated stone slate roof. Gabled porch to right return. Central 1-light window. Long roof gabled to left-hand side. Two 2-light C19 gabled dormer windows. End stack to right-hand side with 3 diagonally set shafts. Interior has large king-post frame. Braces from king post to ridge and from arcade posts to tie and purlins. Possibly half of a tithe barn belonging to Bolton Abbey.

Listing NGR: SE0724553946

RIDDINGS COTTAGE

List entry Number: 1301197
 Location RIDDINGS COTTAGE, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 11-Apr-1986
 Date of most recent amendment: Not applicable to this List entry.

Details

BOLTON ABBEY B 6160 SE 05 NE (east side, off)
 6/73 Riddings Cottage

11.4.86

GV

II

Cottage. Probably C17 and C18. Ashlar, coursed squared stone, graduated stone slate roofs. 2 storeys, 2 bays. Left-hand bay circular in plan. Right-hand bay rectangular in plan. Lobby entry plan, probably C16 and partially rebuilt in C18. Right-hand bay: quoins, board door to left-hand side in plain stone surround. To right of door a wide 2-light recessed flat-faced mullion window with C20 casements, window similar on first floor. To right a blocked-in chamfered doorway, above remains of a blocked-in chamfered window. Shaped kneelers, stone coping and end stack to right. Left-hand bay: small 24-pane sash in chamfered stone surround. First floor: sash. End stack to left. Rear: left-hand bay, pointed arched opening with moulded and chamfered surround. First floor: blocked-in single-light chamfered window. Interior: to right-hand bay a large inglenook fireplace, segmental arch with voussoirs, blocked fire window to lobby. In left-hand bay a blocked-in chamfered doorway. History: possibly a hunting lodge, connected with the Bolton Abbey estate.

Listing NGR: SE0703555640

ABBHEY MILL

List entry Number: 1301245
 Location: ABBEY MILL, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954

Details

BOLTON ABBEY B 61b0 SE 05 SE (east side)
 8/66 Abbey Mill

10.9.54

GV

II

Mill, now storage space. C16 origins and C17 with alterations. Coursed squared stone, graduated stone slate roof. 2 storeys, 4 bays with a single-storey outshut to the right return. Right-hand bay has a board door with overlight. To left 2 board garage doors. Set of doors to left has quoins. First floor: 2-light chamfered mullioned windows. End stack to right, one to ridge, 2 half-way down roof.

Listing NGR: SE0723854096

STABLES AND HAY BARN TO BOLTON PARK FARM

List entry Number: 1301128
 Location STABLES AND HAY BARN TO BOLTON PARK FARM
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Hazlewood with Storiths
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987

Details

HAZLEWOOD WITH STORITHS SE 05 NE
 6/103 Stables and hay barn to Bolton Park Farm

II

Stables and hay barn. Mid to late C18. Rubblestone and ashlar, graduated stone slate roof. 5 bays, 3 stables to ground floor of 3 right-hand bays. 3 board doors with casement windows to right-hand side of each. 4 giant round piers up to eaves, 2 to right, short above the stables, each made of approximately 4 pieces of stone. Similar piers to rear with wall across to base.

Listing NGR: SE0807855503

LAUND HOUSE FARMHOUSE

List entry Number: 1317011
 Location LAUND HOUSE FARMHOUSE
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987

Details

BARDEN SE 05 NE
 6/28 Laund House Farmhouse

II

Farmhouse and adjoining barn. Late C18/early C19. Ashlar, coursed squared stone, graduated stone slate roof. Farmhouse: 2 storeys, 3 bays. Barn: 2 storeys, 3 bays. Farmhouse: half-glazed door with C20 (tipped roof porch to left of right-hand bay. Board door to left of left-hand bay. Right-hand bay has 3-light flat-faced mullioned window. Central bay similar but of 2 lights. Bay to left has 16-pane sash. Similar windows in same arrangement above. Adjoining barn to left: L-shaped, left-hand bay gabled. To centre of right-hand bays a

board wagon door below elliptical arch with voussoirs. To left a board stable door with C20 casement to right. Bays have ashlar cross-shaped breather.

Listing NGR: SE0734556119

BARDEN TOWER

List entry Number: 1317012
 Location: BARDEN TOWER, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: I
 Date first listed: 10-Sep-1954

Details

BARDEN B (6160 SE 05 NE (east side) 6/31 Barden Tower
 10.9.54

GV

1

Fortified house, now ruinous. Mid C16, restored in 1658-9. Ashlar and rubblestone. Rectangular in plan, an L-shaped addition to the south-east corner. Main house: 3 storeys, 4 bays. Small chamfered four-centred arched doorway to left of bay 2 with tablet above bearing inscription "This Barden Tower was repayed by the Ladie Anne Clifford Countesse Dowager of Pembroke, Dorsett and Montgomery Baronesse Clifford Westmorland and Vescie. Lady of the Honor of Skipton in Craven and High Sherriffesse by inheritance of Countie of Westmorland in the years 1658 and 1659 after it had layne ruinous ever since about 1589 when her mother then lay in itt and was greate with child with her till nowe that itt was repayed by the said Lady. Isa Chap 58 Ver 12 'Gods Home be praised.". Left-hand bay has a lancet. Bays 2 and 4 have chamfered openings of large 3-light windows with hoodmoulds and relieving arches. The bay between is flanked by remains of walls and has a large double-chamfered, four-centred arched opening. First floor: left bay has a chamfered 2-light mullioned window with four-centred arched heads to lights, hoodmould. Bays 2 and 4 have similar large 3-light windows. To bay 3 a large plain four-centred arched opening. Second floor: openings are ruinous and open at the top, except that to bay 3 which is of one light. Left return: external stack to right of chamfered 4-centred arched door. To left a squared chamfered opening, to right of stack a chamfered opening. Above 2 chamfered lancets above a 2-light chamfered mullioned window with four-centred arched lights, hoodmould. Similar window above of 3 lights. Right return: similar. Rear: ruinous with small rectangular openings. L-shaped addition: 3 storeys, bays. Left-hand bay set back, chamfered doorway, chamfered 2-light windows above, one over the other. Right-hand bay: blind. Band, parapet. Rear: large external stack. A late medieval tower house of Lord Clifford, 'the shepherd Lord'; of interest as a small fortification with domestic amenities. Also a scheduled ancient monument (Yorkshire, West Riding) No 123.

Listing NGR: SE0504857203

BARDEN TOWER FARMHOUSE

List entry Number: 1317013
 Location BARDEN TOWER FARMHOUSE, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Barden
 National Park: YORKSHIRE DALES
 Grade: I
 Date first listed: 10-Sep-1954

Details

BARDEN B 6160 SE 05 NE (east side)
 6/33 Barden Tower Farmhouse
 10.9.54

GV

I

House, formerly a retainer's cottage of Barden Tower. C16. Ashlar, coursed squared stone, graduated stone slate roof. 3 storeys, 3 bays. Left-hand bay: chamfered 1-light window, above a 2-light chamfered mullioned window with hoodmould, that above similar. Band, parapetted gable. Central bay: 2 storeys, chamfered 1-light window with blocked-in doorway to right. Above a 3-light chamfered mullioned window with hoodmould, lights have elliptical heads. To right a small projection. Band, parapetted gable. Right-hand bay: 3-stage tower. To left is a corbelled projection. Second stage: a chamfered 1-light window, above a 3-light window similar to that in central bay. Band, plain parapet. Crocketed pinnacles to each corner. Right return: offset angle stepped buttress to right. Wide chamfered elliptical-headed doorway to left. Above 2 single-light chamfered windows. Top stage similar window to that at front. Rear: has blocked doorway at second stage with a right-angled outside stair with plain parapet and chamfered coping. Ridge stacks.

National Grid Reference: SE 05110 57163

1, 2, 3 AND 4, THE GREEN

List entry Number: 1317039
 Location 1, 2, 3 AND 4, THE GREEN
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987

Details

BOLTON ABBEY THE GREEN SE 05 SE (south-east side)
 8/76 Nos 1, 2, 3 and 4

GV

II

4 cottages. C18 and C19. Rubblestone and ashlar, graduated stone slate roof. 2 storeys, 8 bays. 3 left-hand bays C18, other bays C19. Board doors: to right of bay 1, one to bay 2, one to left of bay 4, one to bay 7. Bay 1 has 3-light casements, bay 2 has a 2-light casement, bay 3 has 4-light casements. Bay 4 has a 24-pane side-sliding sash to ground floor and a 16-pane side-sliding sash to the first floor. Bay 5 has a 5-light flat-faced mullion to the ground floor, to the first floor a similar window of 3 lights. 3 right-hand bays have 2-light flat-faced mullioned windows. Bay 5 is gabled. End stack to left with 2 diagonally set shafts, ridge stack similar. 2 other ridge stacks with 4 diagonally set shafts. Included for group value only.

Listing NGR: SE0729653954

FLAT BRIDGE

List entry Number: 1317054
 Location: FLAT BRIDGE, BOLTON ROAD
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Draughton
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 02-Nov-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

SE 05 SE DRAUGHTON BOLTON ROAD
 9/1 Flat Bridge

-

II

Road bridge, c1800, widened downstream mid C19. Snecked rubble, ashlar dressings. Segmental arch of ashlar voussoirs. Raked parapet and coping of mid - late C19.

Listing NGR: SE0704852941

TOWN END FARMHOUSE

List entry Number: 1131746
 Location: TOWN END FARMHOUSE
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Hazlewood with Storiths
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987

Details

HAZLEWOOD WITH STORITHS STORITHS SE 05 SE

8/109 Town End Farmhouse

-

II

Farmhouse. C17, altered C19. Ashlar, rubblestone, graduated stone slate roof. 2 storeys, 3 bays. Quoins. Half-glazed door in chamfered surround to left-hand side. Board door to left of central bay in chamfered surround. Left-hand bay has C17 3-light double-chamfered mullion window. Central and right-hand bays have C19 chamfered mullioned windows, central one of 4 lights, that to right of 2 lights. First floor. Left-hand bay has 2-light C19 chamfered mullioned window. The other bays have C17 3-light chamfered mullioned windows. Stacks are diagonally set, that to left end of one shaft, that to right end and ridge of 2 shafts.

National Grid Reference: SE 08324 54558

BOLTON BRIDGE

List entry Number: 1166702
 Location BOLTON BRIDGE, A 59
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Beamsley
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954

Details

BOLTON ABBEY A 59 SE 05 SE

8/58 Bolton Bridge

10.9.54 II –

Bridge. C18. Ashlar. 2 segmental arches with voussoirs and hoodmoulds. A central triangular-section cutwater, with pilaster above, to right of right arch also a pilaster. Band, parapet. Half the bridge is in the parish of Beamsley.

National Grid Reference: SE 07204 52882

BOLTON PARK FARMHOUSE

List entry Number: 1317005
 Location BOLTON PARK FARMHOUSE
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Hazlewood with Storiths
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 08-Apr-1987
 Date of most recent amendment: Not applicable to this List entry.

Details

NORTH YORKSHIRE CRAVEN 5336
 SE 05 NE HAZLEWOOD WITH STORITHS

6/102 Bolton Park Farmhouse

GV

II

Farmhouse. C17, C18 and C19. Stone, rendered, graduated stone slate roof. 2 storeys, 3 bays. Central gabled bay breaks forward. Ground floor to either side breaks forward. Front refaced in C19. Central half-glazed door set in chamfered surround with four-centred arch under flat hoodmould. 2 windows to either side on ground floor. Modillions above. All windows are 2-light with chamfered mullions and hoodmoulds. Shaped kneelers and moulded stone coping, gable cross to central gable, end stacks with double octagonal shafts. Large left-hand external gable stack with enlarged fire windows. Interior: good C18 panelled doors, inglenook fireplace to left- hand room. Bedroom has 2 good fitted C18 linen presses, mid to late C18 turned balusters to dogleg staircase.

National Grid Reference: SE 08003 55520

BRIDGEND

List entry Number: 1317015
 Location BRIDGEND, A 59
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Beamsley
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954

Details

BEAMSLEY A 59 SE 05 SE (north side)
 8/42 Bridgend

10.9.54

GV

II

Cottage. C17. Ashlar, rubblestone with graduated stone slate roof. 2 storeys, 3 bays. Half-glazed door set in chamfered surround with hoodmould to central bay, to right of right-hand bay another half-glazed door set in chamfered surround. Windows to ground-floor are set in double-chamfered surrounds. Window to left of 2-lights, that to left of central bay of 1-light and that to right-hand bay of 3-lights. First floor: central chamfered 1-light window, to left 3-light chamfered mullion window, to right a similar 4-light window. Shaped kneelers, stone coping, end stacks, that to left corniced.

National Grid Reference: SE 07232 52880

THE ARCHES

List entry Number: 1317019
 Location: THE ARCHES, B 6160
 County: North Yorkshire
 District: Craven
 District Type: District Authority
 Parish: Bolton Abbey
 National Park: YORKSHIRE DALES
 Grade: II
 Date first listed: 10-Sep-1954

Details

BOLTON ABBEY B 6160 SE 05 SE (west side)
 8/74 The Arches

10.9.54

GV

II

House. Late C18 - early C19. Ashlar, coursed squared stone; graduated stone slate roof. 2 storeys, 3 bays. Quoins. Central half-glazed door in plain stone architrave. Outer bays have 24-pane sashes, central bay has a sash with glazing bars to first floor, all have plain stone architraves. Above the door, between outer bays some carved medieval stonework, from Bolton Priory. Shaped kneelers, stone coping, end stacks.

National Grid Reference: SE 07180 54060

FIREPLACE AND CHIMNEY APPROXIMATELY 50 METRES TO SOUTH OF THE OLD RECTORY

List entry Number: 1301224
 Location: FIREPLACE AND CHIMNEY APPROXIMATELY 50 METRES TO SOUTH OF THE OLD RECTORY, B 6160
 County: North Yorkshire
 District: Craven

District Type: District Authority
Parish: Bolton Abbey
National Park: YORKSHIRE DALES
Grade: II
Date first listed: 10-Sep-1954

Details

BOLTON ABBEY B 6160 SE 05 SE (east side, off)

8/71 Fireplace and chimney approximately 50 metres 10.9.54 to south of the Old Rectory

GV

II

Fireplace and chimney. C15. Coursed squared stone. Chimney offset up to small square stack with cornice. A fragment of the abbey guest-house.

National Grid Reference: SE 07355 54106

APPENDIX C BOLTON ABBEY – ANNE TUPHOLME, YORKSHIRE GARDENS TRUST

From an unpublished document held at the Bolton Abbey Estate Office Archives

Bolton Abbey

Parish	Bolton Abbey
District	Craven
Site No.	
Grid Reference	SE 075545
Type	
Area	
Designations	
Current use/Ownership	Duchy of Devonshire

Alice de Romilly, the mother of the Boy of Egremont, who is said to have lost his life jumping the Strid, gave the manor of Bolton for the building of a new Augustinian Priory with building starting in 1154/5. This replaced the Priory at nearby Embsay on land given by her mother, Cecily. By 1325 the landscape at Bolton, which included the Home Farm and its satellite granges, was to undergo significant changes with the switch from arable to livestock farming. The estate was broken up after the second phase of the Dissolution of the monasteries in 1539, the majority being purchased by Henry Clifford, First Earl of Cumberland. The estate then passed through his descendants to the Earls of Burlington, followed by the Dukes of Devonshire with the twelfth Duke being the present owner.

The nave of the priory church, built c.1240, became the Parish Church in 1539, and still remains so to this day.

The other building saved from becoming a ruin after the Dissolution was the Gatehouse, which had been rebuilt in the fourteenth century.

Three miles north of Bolton Priory is Barden Tower, built on the site of the principal hunting lodge for Skipton Castle in 1485 by Henry Clifford, The Shepherd Lord, where he spent much of his adult life. The building had become a ruin, when in 1657 it was rebuilt by Lady Anne Clifford, even though it belonged to her cousin, Elizabeth, daughter of the Fifth Earl of Cumberland. Lady Anne also enclosed Barden Deer Forest. By the end of the eighteenth century Barden Tower had again fallen into disuse.

A wall was constructed in the 1680s for Richard Boyle, First Earl of Burlington and husband of Elizabeth Clifford, to enclose Bolton Park for the protection of its deer from poachers. (It was to remain a deer park until 1921 when the last fallow deer were slaughtered.)

The Old Rectory, as it is known today, was built as The Boyle School in 1700, possibly a modification of an older building. This was through a bequest from the First Earl's uncle, the famous scientist Robert Boyle. The current chaplain of the priory church was always chosen as its headmaster. (In 1874 it was sold to the Duke of Devonshire. The school merged with Hazlewood elementary school, moving to a new building at Beamsley in 1875).

The Third Earl of Burlington (1695-1753) was himself an architect of considerable merit and patron of the arts. "The Burlington circle, as it has become known, included artists, architects, and writers concerned not only with the introduction of Palladianism into England, but of greater importance, with the concept of a new

romantic pictorial landscape around it to take the place of classical formality...he commissioned William Kent and Charles Bridgeman to design the gardens of his Palladian villa at Chiswick House in a style transitional between classical and romantic." (Oxford Companion to Gardens 1987). Burlington became Kent's principal patron in 1719 following Burlington's second grand tour - Kent worked in his own right from 1730. At the age of only 9, in 1704, Burlington had inherited vast estates, including Londesborough on the edge of the Yorkshire Wolds near Market Weighton. Though the Third Earl mainly visited Londesborough each autumn for the rural pursuits of hunting and fishing he replaced the modest formal gardens near the house with the most important eighteenth century landscaped pleasure garden in the Rococo style in the East Riding. Thomas Knowlton, an exceptionally skilled gardener and plantsman, played a considerable part in this transformation. At Bolton, also used as a spoiling estate, the Third Earl converted and enlarged the fourteenth century gatehouse for his use as a residence in 1720. He also built the three arched aqueduct to carry water to a corn

mill near the gatehouse, but it has been suggested its design might be attributed to William Kent. (Its height was increased in the twentieth century) (The corn mill was converted into stables in 1810.) A recommendation for taking the woodland 'in hand', i.e. be managed by the estate instead of by tenants, was made following a survey of the Bolton Estate undertaken for the Third Earl in 1735. However it appears to have not been implemented at this time.

At the end of the eighteenth century the 'picturesque' style of gardening was in its finest or most extreme phase. A typical picturesque landscape would include a diverse set of scenes using natural materials, viewed from fixed points, often linked by a single path. The views were usually beautiful, and increasingly there was an emphasis on the sublime. Hackfall, an earlier landscape garden, created between 1749 and the 1770s, was well-known at that time as one of "the most picturesque scenes in the north". Though the emphasis at Hackfall is said to have been towards the sublime, it still contained elements of the earlier picturesque style with, for example, a specially constructed ruined banqueting hall. Though natural materials were preferred for the components of the scenes at the end of the century, genuine ruins were considered acceptable.

Thus the ruined priory at Bolton and the ruined tower at Barden would be acceptable to visitors seeking the picturesque at the end of the eighteenth century, particularly as the abbey is situated by the curve of the River Wharfe. Moreover the desire for the sublime would surely have been satisfied by the narrow gorge, known as the Strid, two miles upstream from the Abbey, and its association with the legend of the Boy of Egremont. In addition the upper part of Posforth Gill, which became known as the Valley of Desolation after a raging storm in 1826, was to become an integral part of Bolton's sublime picturesque landscape with its "weird skeleton arms of blasted oak trees, and old stunted thorns nearer its base." Colour and texture, light and shade from natural materials would be found in the broad-leaved Ancient Woodland of Strid Wood, now a SSSI. The exquisite pastoral landscape near the Abbey, contrasting high moorland and the high fell, Simon's Seat, were all to contribute to the picturesque landscape that visitors sought at Bolton at the end of the eighteenth century.

Girton visited Bolton in 1796 and returned at least three more times to paint it before his early death at age 27 in 1802, William and Dorothy Wordsworth in 1807, Turner in 1797, 1808 and 1815 whilst Cotman visited it for the first time in 1803. During these years William Carr was the curate of the Priory church. He held this post from 1789 until his death in 1843, at the age of 80 He made "tasteful additions" to his residence decorating the Boyle School with "four beautiful gothic chimneys." His grandfather, father and brother had been the curates before him. William was a Fellow of Magdalen College, Oxford, also rector of Aston and Tubney (Berkshire). Besides farming 146 acres of the estate land, he was a Receiver for some of the Duke's estates. But most important of all in terms of the designed landscape at Bolton Abbey, as the Duke's Agent, he was in charge of the estate's Pleasure Grounds, certainly from the time of the 6th Duke in 1811, though

letters in the estate archives refer to him as agent from as early as 1806. Between 1806 and 1808 the recommendation for taking the woods 'in hand', made in 1735, was implemented, with 240 acres becoming managed by the estate. Thus many acres of previous wood-pasture were to become plantations, but Carr could have more control of the land forming the picturesque landscape. Descriptions in early books imply that there was planting and thinning of the woods to improve the vistas before 1811 as was customary in earlier picturesque landscapes.

It is said that William Carr was granted permission by the 5th Duke's son to create a network of paths in Strid Woods and to open them to the general public in 1810. Certainly by 1827 the guidebook to Bolton Abbey and its Adjoining Scenery was in its fifth edition. It recommends that tourists hire a guide and suggests two different day tours to see Bolton's picturesque landscape. In the book *Upper Wharfedale*, first published in 1900, the author, Harry Speight, writes "It is not generally known that the Duke of Devonshire, who was very partial to walking exercise, and had a special fondness for his Bolton Abbey demesnes, took no small share in formulating the designs for opening out these beautiful woods, and some of the walks and vistas he himself suggested. But there is no doubt that to Mr. Carr belongs the credit of superintending these works and planning himself some of the twenty-eight miles of road and walks and opening out many of the exquisite views." The artist Richard Ansell visited Bolton Abbey in 1842. According to Speight he was "constantly stopping to admire the different points of view". Thus it is not surprising that many viewpoints were created together with their specially built seats. Carr appears to have been a man of many talents. He was a scholar and thus must surely have known of Hackfall, the vista walk at Studley Royal, the gardens at Chatsworth and of course Londesborough and the work of William Kent. It is most likely that he had been in the company of the earlier visitors such as Girton and perhaps had been influenced by them. Certainly in 1834 Edwin Landseer actually stayed with him, the famous painting of Bolton Abbey in the *Olden Tunes* was completed soon afterwards. Whatever influenced Carr to create the vistas at Bolton Abbey, Wordsworth is said to have commented that Carr "has most skillfully opened out its features and in whatever he has added has done justice to the place, by working with an invisible hand of art in the very spirit of nature".

The 1:2500 1909 OS map, clearly shows a path following the beck between the Lower and Upper Waterfalls in the Valley of Desolation crossing it three times by way of Stepping Stones, so maximizing the picturesque experience. Unfortunately access to a clear first edition map has not to date been possible to confirm an earlier date for these stepping stones. Speight (1900) records "a moss-hut standing upon an elevation just below the (lower) waterfall, which the surging waters completely demolished and carried away in a hundred fragments. The iron thongs which bound it to the rock were snapped in twain, and the monster stone itself was dislodged and rolled into the stream, where it remains to this day, with portions of the iron fastenings still upon it". (Indeed Speight tells us that the Gill itself formed one of "the important boundaries of the old Forest of Barden".)

The Lower Fall was chosen as the subject for one of the Fourteen Views in *Lithography of Bolton Abbey from Drawings of this Beautiful Ruin and the Adjoining Scenery taken on the spot, by J. Scarlett Davis c.1826*. In the accompanying text the section of Posforth Gill below the Fall is described as unsuitable for people afraid of "abrupt precipices". However the intrepid would hear a "murmuring brook" and see "deep hanging woods". "Though the perpendicular fall may not exceed fifty feet, it is very wild and broken, and its horrid accompaniments, the large stunted oaks, the chaotic appearance of the brook, and the beetling rocks on the summit of the upper park, and groups of superb red-deer, of which there is a herd of nearly one hundred, form an association of scenery seldom equalled."

The Vale of Desolation was also chosen as one of the fourteen views depicted. A poignant reminder of the "promiscuous fury" of the trees, banks and rocks following a violent thunderstorm three years previously that the "grinding of the large crags, in the rugged bed of this brook, was more loud and powerful,

than the awful claps of thunder which then resounded in the valley...A large number of uprooted trees, amid the accumulated rocks, and a few scathed stag-headed oaks, which still retain a lingering existence, powerfully evince the wild desolation of this scene." The Upper Fall in this valley is approximately thirty feet high.

Thus Posforth Gill and the Valley of Desolation seem to have played a significant role in the experience of a visitor seeking the picturesque at Bolton Abbey. This glen was described by Edmund Bogg, writing in 1904, "as perhaps the most beautiful and romantic in Wharfedale".

Visitors at Bolton seeking the picturesque in natural materials would also be looking for design, such as the lion's face on an excrescence of the trunk of a weather-worn elm near the Devonshire Arms. J. Brown wrote, in 1878, of waggonettes pulling up for visitors to inspect it.

The suggested itinerary given in the guide book for the first day was:

Start at the opening in the Abbey Wall and proceed to Holme Terrace
 Examine the church and priory ruin
 Rejoin carriages at Sand Holme and proceed to the entrance to Strid Wood
 Proceed on foot under Hawkstone by the river to **Pembroke Seat**
 Then on foot or horse-back to Barden Bridge and Tower
 Then beyond to **Gill Beck Waterfall**
 Retrace steps to Pembroke Seat
 Then to **Lady Harriet's Seat** and the **Cavendish Seat**
 Follow the high walk to **Lady Georgiana's Seat**
 Pass through the small gate to the right and proceed to **Hartington Seat**
 Finally by the river to the inn

The suggested itinerary for the second day was:

Start at Bolton Bridge
 Walk over the Bridge Field
 Cross the wooden Bridge to the view at the Park gate at Lud-stream, usually best in the morning,
 Through Laund Holme by the Strid, under the rocks to Clifford's Seat
 Return on the high walk to the Boyle, Strid and Ford Seats to the Laund gate
 Ascend Posforth Gill to Buck-rake and the Devonshire Seats
 To the waterfall in the Park and then through the Valley of Desolation to the upper fall
 Return across the Park by the keeper's Lodge to the gate opposite the wooden bridge
 Follow the road on the left to Burlington Seat at the Firth bottom
 Down Wandsworth to Prior's Seat
 Thence along the Ungain terrace to the bridge over the waterfall
 Down the Scar, along the banks of the river,
 Over Bolton Bridge to the Devonshire Arms
 Frederic Montagu also recommended itineraries in his book *Gleanings in Craven* published in 1838

Additional Seats mentioned by him include:

Park Gate
 Lud Stream
 Boyle Ford

Lawn (up Posforth Beck)
 Buck Rake
 Skiphouse Wheel
 Cat-Crag
 Simon's (from which the fell of that name may be seen)
 Saint Bridget's

By the time of the first edition map there were many more seats. (See appendix) Some of these are omitted from the second edition.

Notes made by Henry Pickop, under-agent, show that seats constructed by

- 1815 included Scar, Ivy, near the Stride
- 1817 Hartington, Ford
- 1827 Waterfall, near Bolton Bridge

These seats were thatched with ling, probably in the style of The Pembroke Seat, depicted on an old postcard, probably using an early photograph. Also a stone thatched-roof "Summer House near Simon Seat" is shown in the book *Upper Wharfedale*, by Harry Speight. The Hartington Seat is described as a moss hut in the guidebook to Bolton Abbey and Woods by Rev. A.P. Howes in 1889 or earlier. However it is described by Benson Bailey, in his book *Ilkley, Bolton Abbey & the Pearls of Craven* of 1852 as a "small rustic hut".

Montagu mentions in his book of 1838 one blemish in the woods at Bolton namely "The erection of a set of stalls for horses, an erection which has been perpetrated against good taste and neighbourly feeling, for the exclusive emoluments of the guides, who obtain, already, by virtue of their appointment (letting alone those derivable from a car) considerable and increasing pecuniary benefit. These stables were, I believe, erected by order of Mr. Carr, the clergyman, who generally looks after the woods; but though corn bins were made, I believe that gentleman never intended the guides (who were appointed by him) to sell corn, to the detriment of the innkeepers."

The gates into the woods were kept locked and visitors not using a guide had to obtain a key from the guide's house, a quarter of a mile from the Devonshire Arms. All gates were kept locked on Sundays, men earning a small sum to watch them.

Extensive planting took place at Gamsworth, Laund, Upper Park, Near Park between 1809 and 1819. At Gamsworth 60500 Beeches and Scotch Firs were planted together with 35000 more Larch and 91200 Sundry trees after at least 109500 Larches had been planted between 1814-16. Carr had received advice from a Mr Banks who in a letter of 1807 wrote "I would plant with Larch and Scotch Fir in proportion of six to one and not as some recommend entirely Larch and screens of Scotch Fir at certain distances on the North and West sides for I am fully convinced by dispersing the Scotch Firs throughout the plantation will be equally powerful a shelter and in point of beauty will greatly excel". Carr appears to have followed this advice, but had gone further by including deciduous trees such as Beech in Gamsworth. In fact Carr planted a wide range of trees between 1815 and 1820 purchased from Dickson's Brothers (Edinburgh), Telfords (York), Messrs Backhouse (York) and Thomas Rigg & Son (York). These included Birch Spruce, Serv.ce, Silver Fir, Elm, Oak and Spanish Chestnut. In 1815 Carr also bought 3 Cedars of Lebanon.

At Bolton Abbey a Miscellaneous hook kept by Henry Pickop implies that a new walled kitchen garden was constructed over three years, from 1814-17. An Ice house was constructed in according to the former Duchess of Devonshire in her book. The Garden at Chatsworth, the 5th Duke preferred London, "was a profoundly idle man who did not bother to make changes". In contrast the 6th Duke began to redress his

father's neglect of the grounds at Chatsworth and develop an interest in gardening which led to the appointment of Joseph Paxton as head-gardener at Chatsworth in 1826 at the age of 23. Paxton also became the Agent at Bolton after the death of William Carr in 1843. Two years later he designed the extensions to Bolton Hall to provide additional accommodation for the Duke's guests during the shooting season.

Today the public have free access to the public footpaths near the River Wharfe between the Priory and Barden Tower. Some of the original Seats are marked on modern large scale OS maps, but the present seats at these viewpoints are of a more modern design. Views change as trees mature and over the years replanting could have made changes to the Carr design. However great care is taken in the preparation for any replanting to try to maintain this outstanding historic landscape.

In the mid 1990s funding was obtained to begin a project to recreate the landscapes of the arctic tundra of 12000 years ago, the boreal period of 10000 years ago, and the Atlantic phase of 8000 years ago. This has been developed in the Valley of Desolation where over 7500 trees have been planted.

APPENDIX

Seats shown on the First Edition OS Maps

Named Seats near the Wharfe

Map
151

Gill Beck

Barden Bridge

Alder

Lord Morpeth's

Old Oak

Clifford's

Pembroke

High Hawkstone

Low Hawkstone

Stridd Rock

Stridd

Lady Harriet's

Pool

Boyle

Elm Tree

Cavendish

Harrison's Ford

Fox Close

Stone Chair

Laund

Hill End

Queen Adelaide's

Posforth Beck

Riddings Gate End

Long Pull

Sulphur Well

Lady Georgiana's

- 152 ? Well
?
Friar's stones
Holly
Prior's
Upper Cat Crag
Lower Cat Crag
- 151 Hartington
Dog
Scar Top
Dark Parlour
- 168 Crowtree (1909)
Wheel
Little Br
Countess of Burlington's
Terrace End
Strand
Holly Walk
Scar Close
- Bolton Bridge*
- Named Seats in Posforth Gill and beyond to Simon's Seat*
- 151 Duck Rake
Nab
Devonshire
- 152 Waterfall (1909)
Agill Head
Rustic (Others could exist but I have not got all the maps to cover this area)

Besides the named seats on the maps there were others just marked as seats.

Anne Tupholme January 2006

Miscellaneous book kept by Henry Pickop

1815-31

catalogue no. BAS/3/6

Walled garden

				£	s	d
p246	1814	Thomas Petty				
		Stones leading from Storiths for lining the Garden Wall		23	3	3
		at Bolton Abbey 654yards at 8½ pr. yd.				
p?	1815	John <i>Sumvesr</i>				
		Feb 27 8 Lds of Lime to Garden Wall by I. Carr ½		-	9	4
		Octr 25 7 Lds of Lime to Garden Wall by 1. Carr		-	8	2
p49?	1815	Thomas Thompson (Barden)				
		70yds of Coping getting for the New Garden				
		at Bolton at 4/- pr. Rood		2	-	-
p190	1815	John Hustwick Junr.				
		12 Roods of Coping getting for the Garden Wall				
		at Bolton at 4s pr. Rood		2	8	-
p152	1816	Edward Moorhouse (Storith)				
		654 yards of linings getting for the New Garden Wall at 4d pr. yd.		10	18	-
		900 throughs getting for the Bottom Wall				
		& within the Ground work - at 9d pr. Score		1	13	9
p47	1817	William Preston (Draughton)				
		195 yards of Coping getting, dressing & putting on the Garden wall at 1/6 pr. yd		14	12	6
p229	1817	Mrs Walsh (Catgill)				
		Man with 3 horses leading Flags to the Garden wall 12½ days 10/6		6	11	3
p60	1815	John Smith (Hazlewood)				
		Garden house window 12ft 1/6		-	18	-
		Sundry Squares in Hand Glazes and Hot Bed Frames		2	14	2
	1818	Glazier's work at Hall & Garden		4	12	5
	1819	Glazier's work at Hall & Garden		2	7	-
p61	1820	Mary Smith, widow of John				
		Glazier's work at the Garden		1	11	2
p179		William Fawcett (Addingham)				
	1815	Feb 4 3 spades		-	16	6
		Feb 18 2 spades		-	11	-
		June 20 6 rakes for garden		-	11	4
		Hammer for gardener		-	2	6
		June 26 Scythe for gardener		-	7	-
		July 15 6 Hoes and a key for gardens 1/6		-	10	6
		Augt 26 Garden shears repairing		-	1	4
		July 22 a 3 pronged fork for the garden		-	4	3
	1816	Janry 30 two new spades		-	11	-
		Febry 12 1 "		-	5	6
		May 3 1 "		-	5	6
	1817	Augt 25 Two hoes for garden		-	3	4
p47		Messrs Clark (Keighley)				
	1815	Apr 10 900 Asparagus plants 2/6		1	2	6
	1816	Mar 6 6 Ribston Pippin Apples		-	6	-
p232		John Clark (Silsden)				

	1816	Mar 2	11 Apple trees		-	16	6
			2 " and two Plums for Mrs Crofts		-	4	8
		Mar 18	450 Crabs		-	4	2
p6			Messrs I & G Telford (York)				
	1815	Feby 15	Sundry Garden Seeds		4	15	8
	1816	Feby 14	Sundry Garden Seeds		3	8	-
p6			Messrs Backhouse (York)				
	1816	Febry 4	Sundry Garden Seeds		3	3	4½
	1818	Feby 4	Sundry Garden Seeds		3	4	2
		Mar 3	1 pint running Kidney Beans		-	1	6
		June 10	2 Qts Peas 2/-	1oz Lettuce Seed 1/6			
			½ oz Cabbage 2/3	& ½ oz Coliflower 1/6	-	7	3
	1819	Mar 3	Sundry Seeds for the Garden		2	9	6
	1820	Feby 12	Sundry Seeds for the Garden		3	2	6½
	1821	Feby 7	Garden Seeds pr. Bill		2	4	4½
p126			John Dixon (Bolton)				
	1814	Thomas Dixon	24 Days labour in the Garden -	1/6	1	16	-
	1815	Self	2 days	" "	2/-	-	4 -
		Son Thos	72½ days	" "	1/6	5	8 9
			8 days	" "	1/6	-	12 -
		From 15th Octr	Son - attending Hot Beds in the Garden				
		to 4 Jany 1817	43 Sundays at 3d pr		-	10	9
	1818	Son Thomas -	attending the Hot Beds				
		to June 28	in the Garden 20 Sundays at 3d each		-	5	-
p115	1824	John Summersgill (Bolton)					
			24 days Labour in the Garden at 2/6 pr. 3		3	-	-
			Potatoes for Garden 1 peck		-	1	-
p185			John Malham				
	1817	Peeling oaks	about ½ a day		-	1	-
	1819	20½ days	peeling oaks		2	11	3
p139	1819	John Carr (Bolton)					
			Man with two horses fetching Oak Bark from Nessfield		-	8	-
p190	1824	John Hustwick Junr.					
			9 ton and 29 stone of Oak Bark chopping at 11 s pr. ton		5	1	0

Above suggests that a New Walled Garden was built between 1814 and 1817. Walls were lined and topped with dressed coping. There were Hot Bed Frames and a Garden house. Crops grown included peas, running kidney beans, cabbage, cauliflower, lettuce and asparagus. Possibly oak bark was used in some of the hot beds. If so then flags would have been used to pave them to prevent earth mixing with the bark, besides probably being used for the garden paths.

Some fruit trees included Ribston Pippin apples and Crabs might also have been grown in the garden.

New Dog Kennels**£ s d**

	1815	William Sugden (Skipton)			
		Mar 18 1 Ton of Slates to dog Kennels	-	17	-
		May 20 1 ditto ditto	-	17	-
		June 14 1 ditto ditto	-	17	-
p95?	1815	James Emmott (Carpenter)			
		To Self 3 days work at the New Dog Kennels etc at 3/-	-	9	-
		Ambrose Emmott 6 days	-	18	-
		Joseph Emmott 12	1	16	-
		William Guyer 3	-	9	-
		William Emmott 3	-	8	6
		JohnHustwick 2	-	5	8
		William Robinson 3	-	8	6

Appear to be constructed in 1815.

Ice House

p93?	1822	? (Skipton)			
		9800 Bricks at various times to the Ice House & Cellar at 45/-pr.m	22	1	-
p119	1822	Allen Moorhouse (Storiths)			
		Jany 1,2,3 & 4 To Son with 1 horse leading Stones to the Ice House & Cellar 3/4 days at 4/6	-	16	10½
		Mar 25 & 27 To Son with 1 horse leading stones to the Ice House 2 day	-	9	-

Correspondence in the Archives refers to plans of 1821. The above suggests that it was still being constructed in 1822.

Alterations at Bolton Abbey and "Alterations"

p139	1814/15	John Carr (Bolton)			
		Man with 2 horses leading Stones, Lime, Sand etc at the Alterations at Bolton Abbey 26½ days at 8/- pr	10	12	-
		Ditto with 1 horse 1 day	-	4	6
p108	1815	George Hudson			
		To Self 23 days at the Alterations 2176 To Self 4½ days at the Alterations 2/6	-	11	3
p109		George Hudson			
	1818	To Self 18 days labour at the Alterations	2	5	-
	1819	To Self 77% days labour at the Alterations at 2/6	9	15	-
	1820	17 days Labour at the Park and the Alterations at 2/6	2	2	6

References to 1814 and 1815 could relate to the Walled Garden. Do those of 1818 1819 and 1820 refer to the Hall?

p60	1818	John Smith (Hazlewood)			
		78 Stone & 10lb of Lead Spouts for the Hall ...	19	10	-
		26lb Solder at 14dpr. lb	1	10	4
		4 Days Labour putting Spouts	-	12	-

These could be just minor alterations.

Pleasure Grounds

Certainly existed by 1825 when John Summersgill (Bolton) earned 5/- for 2 days labour (p115).

In February and March of 1827 Thomas Petyt's son, Christopher, did 12½ days labour (p246).

Matthew Hudson (p130) did 12½ days labour in 1826,
22 in 1827
24 in 1828/9.

His son also did 26 days in 1827
6½ 1828/9
and

William Croft Junr 2½ days in 1828/99.

Matthew Hudson was also paid for a Man leading a Horse & Cart for 13 Vz days in the Pleasure grounds in 1828/9. Were changes being made?

Extensions, designed by Joseph Paxton, were made to the Hall in 1845. It is possible that he also made changes to the pleasure grounds then.

J. Brown in his book "Tourist Rambles in Yorkshire, Lincolnshire, Durham, Northumberland" of 1878 mentions "The sward is lovely, and the well-trimmed gardens of Bolton Hall are bright with flowers, and redolent of perfume."

Barden Park Lodge

p139	1814/15	John Carr (Bolton)			
		Man with 3 horses leading Wood and Stones to Barden Park Lodge six days at 10/6 pr	3	3	-
		Ditto with 2 horses ditto & Lime etc 25 days at 8/- pr	10	-	-
p150	1815	John Whitaker (Barden)			
		Stones leading for Barden Park Lodge 100 Roods at 3/3 pr Rd	16	5	-
p108	1816	George Hudson			
		Novr 4 Stones getting for Barden Park Lodge 99 Roods & 3yds at 3/- pr. Rd	14	18	3
p178	1818	Francis Atkinson (Barden)			
		Aug. Two pair of Gate Posts getting & leading to Barden Park Lodge	1	-	-

Possibly alterations to the Lodge itself were made between 1814 and 1816.

Broad Park Lodge

P49?	1815	Thomas Thompson			
	Apr 26	Foundation & Cellar digging for the Broad Park Lodge			
		50yds at 4d	-	16	8
		Drain cutting to bring the water to ditto	21½ Roods at 1/-	1	1 6
		Watercourse cutting near to ditto – 15 Roods & 2yds at 3/6 pr.		2	13 6
	Augt 25	37 Roods of drain cutting in the Broad Park in order to lay the Road dry to the lodge at 8d pr. Rood		1	4 8

Building of Broad Park Lodge appears to have been begun in 1815.

Gamekeeper's Lodge in Barden Park

£ s d

p30	1815	William Sugden			
	June 20	19 packs of Slates Gamekeeper's Lodge			
	June 23	21 ditto ditto		3	8 -
	July 1	68 1/3 yards of Flags to ditto	1/8	5	13 10
	4 & 22	Harth Flag 15 feet to ditto	3d	-	3 9
		2 ditto 24ft at 3d- 6/- & 18 yds & 7 ft at 1/7		1	15 9
	Novr4	2 Ton of Slate to ditto	17s	1	14 -
p60	1815	John Smith (Hazlewood)			
	June 12	102 Stone & 41b of Lead casting for the Gamekeeper's Lodge in Barden Park at 7d pr. Stone			
	July 6	42 Stone & 1th of Lead casting for ditto		4	4 2
		27 Sashes glazing for the Gamekeeper's Lodge in Barden Park 124 ft at 2/2		13	8 8
		6 ft. of windows in the Staircases		-	9 -
p78	1815	Matthew Hudson (Storiths)			
	Augt. 25	Walling at the Gamekeeper's Lodge in Barden Park			
		64 Roods & 2 yards at 12/6 pr. Rood		40	3 7
	Octr. 30	118½ threave of Ling laying upon the Gamekeeper's Lodge in Barden Park 8d		3	19 -

Gamekeeper's Lodge was being constructed in 1815, with the roof thatched with ling.

Stable and Cowhouse near Stride Cottage

p109	1821	George Hudson			
	Mar 24	Stable and Cow House building near the Stride Cottage			
		24 Roods and 2 yards at 6s pr. Rood		7	5 8
p115	1821	Robert Benson (Riddings)			
	Feb 5	Man with two horses at the Stride Stable half a day		-	4 -
	July 31	Ditto		-	4 -

Possibly Stride Stable and Cowhouse were constructed in 1821.

Seats

p 178	1815	Francis Atkinson (Barden)			
		4 Threave of Ling pulling for Seat in Scar		-	4 -
		Leading Sods to Barn & Ling leading to the Seat in the Scar		-	7 -
		Seat in the Scar thatching		-	1 8

		Ivy Seat thatching	-	6	-
		(Watch Tower ditto)	-	5	-)
p150		John Whitaker (Barden)			
	1815	Ling and Sods leading to the Seat near the Stride	-	8	-
	1817	11 threave of Ling pulling for the Seat near the Stride	-	11	-
		Leading ditto to ditto	-	11	-
		Thatching ditto at 8d pr. Threave	-	7	4
		Sods getting and leading to ditto	-	1	6
		Ling putting and leading to Hartington Seat & Labour	-	3	-
		10 threave of Ling pulling, leading & thatching at Ford Seat	1	6	8
		Sods getting & leading to ditto	-	1	6
p79	1821	Matthew Hudson			
		Self 5 days Labour at the Seats in the Stride Wood - at 2/6	-	12	6
		W.Croft Junr. 4 days at the Seats	-	10	-
		13 threave of Ling pulling for ditto	-	13	-
p97		Matthew Hudson (Hayshaw)			
	1824	43 threave of Ling putting for Seats in the Woods at 1s	2	3	-
p 130		Matthew Hudson			
	1827	7 threave of ling for Seat at Waterfall	-	7	-
	2	" " near P Bridge	-	2	-
By 1815 seats constructed included		Scar			
		Ivy			
		near the Stride			
By 1817		Hartington			
		Ford			
By 1827		Waterfall			
		Near P Bridge			

There was also a thatched Watch Tower

Water Course Turning

			£	s	d
p193		Abel Ideson			
	1818	Water course turning in the Upper Park Plantation	-	10	-
		(Possibly 4 days labour)			

Could this be for an improvement to the waterfall walk in the Valley of Desolation or merely turning water off a new wall as on p108?

Boards

			£	d	s
p116		Richard Cragg (Skipton)			
	1817	Sepr 3 Board & lettering for the Woods Gate-	-	5	2
	1821	July Man painting two Gates	-	17	2
		& Board for Barden Bridge	-	7	4½
		Ditto 3 Ditto lettering for Carlton Plantations	1	3	-

Implies locked Gates at Barden and Woods Entrance (near the present site of the Cavendish Pavilion?) and at Carlton Plantation (where is it)?

Gamsworth Fell Plantation

			£	s	d
p42	Charles Ideson				
1815	76 Roods of Wall making at Gamsworth Fell Plantation and also the Peat Road to the Moor at 11/6 pr. Rood 56 Roods & 2 yards of wall making at ditto at 14/9 pr. Rd. Three pair of Posts leading for Gates Stones setting in the Peat Road to protect the Plantn. Wall		43	14	-
			41	10	-
			-	10	-
			-	6	-
1816	65 Roods and 1 yard of wall Fence making at the High Plantation on Gamsworth Fell near Howgill Peat Road at 13/3 pr. Rood 6 Roods & two yards of walk making above Howgill (being a joint piece with A Ideson) at 5d pr Rd		43	3	1½
			-	2	7
1817	57½ Roods of Wall making at Gamsworth Plantation at 11/- prRd 2 Stiles making in ditto 44 Roods & 3 yards of Wall making at the above Plantation (3rd Lot)		31	12	6
			-	2	-
			14	8	9
p108	George Hudson				
1815	20 Roods and 3 yds offence walling on Gamsworth Fell at 4/3 56 Roods of Wall making at ditto - Stone getting, leading & walling 16/6 16 Roods of wall making at ditto at 2/- 52 Roods and 2 yds of ditto - 14/6 An allowance for Stone leading and part of the Foundation digging in the piece which was altered 3 pair of Gate Posts getting for Gamsworth Plantation at 4/-		4	6	9½
			46	4	-
			16	16	-
			37	18	1½
			-	17	-
			-	12	-
1816	Five Lots of wall fence making at Gamsworth Fell Plantation 308 Roods and 2 yards at 17s pr. Rd. 2 pair Gate Post getting at 4/- 1 day labour turning water off the Wall		262	-	10
			-	8	1
			-	2	6
1817	37 Roods 6yards of fence wallg at Gamsworth Plantation 4/3 56 Roods & ½ yard of Wall fence making at the above Plantation at 6/11½ pr. Rd Deduct 2/10 per Rood for 37 roods and 6 yds of Walling being allowed by Metcalf Inman ditto for 2½ days		8	-	10½
			19	10	2
			5	13	7
p184	John Holmes				
1816	48 Roods & 5 yds of walk making at Gamsworth Plantation (11Lot let 18th April 1816) at 3½ per Rood		-	14	2½
1817	4 Roods of Wall Fence making at Gamsworth Plantation (being part of John Pickersgill Lot) at 14/5 pr. Rd.		2	17	8
p193	1818 Abel Ideson 24 Roods of Walk making in Gamsworth Plantation near Howgill at 5d pr.		-	10	2½
p 146	Thomas Lancaster & Sons (Storiths)				
1814	From 14th Oct. 73500 Larches carrying to				

to		Gamsworth Plantation		
1816	4th Febv	at 4d Pr 1000	1	4 6
1816	Apr 1st to 29th Decr	Carriage of 36000 Larches to Gamsworth Fell at 3 Ad pr.1000	-	10 6
1817	Apr. 21	60500 Seedling Beeches & Scotch Firs leading to Gamsworth Fell at 1 d pr 35000 Larches leading to ditto at 3½ d 91200 Sundry trees ditto to ditto at 4d	- - 1	5 -½ 10 2 10 5

Number of Roods of walling in Gamsworth Plantation is probably at least

76+56+20+56+16+52+1=277	in 1815
65+308+48+1	=422 1816
57½ +44+37+56+4+1	=199 1817
	898 in 1815-17

If 1 Rood ~1/3 chains then ~ 300chains of walling~30 furlongs~3¾ miles of walling

1814-16	at least 109500 Larches planted
1817	60500 Beeches and Scotch Firs planted together with 35000 more Larch and 91200 Sundry trees

References to planting at

Upper Park plantation in 1813 (p150)	
Near Park	1817 (p152)
Laund 1816, 1817, 1819 & 1820 (p37, 152, 246, 79)	
Thos Inman's Wood 1819 (p193)	Where is it?

Reference to Walk Making at

Lodge Wood in Barden 1818 (p 193)	Where is it?
-----------------------------------	--------------

Trees purchased

from Dicksons Brothers (Edinburgh) (p25?)

1815	150000	1 year Larch	33	15	-
	1000	Black Italian Poplars	2	-	-
	20000	1 year Beech	9	-	-
	10000	2 yrs Spruce	2	10	-
	5000	1 yrs Pine <i>Astir</i>	3	15	-
	5000	1yr weeping Birch	2	-	-
	5000	1 yrs service	3	-	-
	1000	2 yr White American Spruce	-	15	-
	1000	2yr Balm ofGilead firs	-	14	-
	2000	2 yr Silver Firs	1	10	-
	1000	2 yr Weymouth Pine	-	15	-
		Cedars of Lebanon	-	10	6
	2	Evergreen Oaks	-	5	-
	1	Cork Tree	-	5	-
1816	150000	1 year Larch	26	5	-
	30000	1 year Birch	7	10	-
	20000	2yr Spruce	6	-	-

	50000	1 yr Scotch Firs	2	10	-
1817	150000	two year Larch	26	5	-
	10000	" Spruce fir	2	-	-
	2000	" Silver fir	1	4	-
	1000	" Balm Gelead firs	-	12	-
	1000	one year Stone pine	-	15	-
	20000	one year weeping Birch	6	10	-
1818	50000	1 year Larch	8	15	-
	20000	1 year weeping Birch	6	10	-
	50000	2 yr Scotch Fir	3	15	-
	5000	2 yr white American Spruce	3	15	-
29 Dec	20000	1 yr Larch	5	-	-
	40000	1 yr Scotch Fir	3	-	-
1820	60000	1 yr Larch	3	10	-
	5000	3 yr Spruce	1	5	-
	5000	1 yr weeping Birch	1	10	-
1816	from Telfords (York) (p6)				
	50000	Seedling Larch	12	10	-
	30000	2 yr Scotch Firs	5	5	-
	30000	2yr Elms	10	10	-
	10000	Spruce Firs transpd.	7	10	-
from Messrs Backhouse (York) (p6)					
1816	50000	1 year Larch	7	10	-
	5000	2 yr Spanish Chestnut	5	-	-
1820	30000	2 year Scotch Fir	6	-	-
	20000	1 yr Beech	6	-	-
	15000	1 yr Oak	3	-	-
	1000	1 yr Spanish Chestnuts	-	10	6
	1000	2 yr Norway Spruce	-	5	-
from Thomas Rigg & Son (York) (pi2)					
1817	20000	2yr Wych Elms	6	-	-
	40000	2 yr Scotch Firs	5	-	-
	10000	1 yr Oaks	3	-	-
	100000	1 yr Scotch Firs	5	-	-

Cranberries

References to the collecting of Cranberries by:

Wife of John Dixon for 1½ days in 1815 before Sepr. 17 (p126)

Margt " "

Daughter of Charles Holgate for 1½ days in Sepr 1816 (p120?)

Mary Oldfield for 1½ days by Sepr 7 1816

for 2½ days in 1817 and 1818.

By the late date of picking these are possibly references to the growing of the American Cranberry, *Vaccinium macrocarpa*.

Hawthorn hedges

46½ Roods of trenching for the Quicksets in the Bridge Field by Deer 81919

64 Roods “ “ the High Bridge Field by Apr 15 1820 completed by Francis Read. (p232)

5000 Quick Sets were purchased from Messrs Clark (Keighley) by Mar 18 1820 and 6000 Quicksets were purchased from John Clark (Silsden) also by Mar 18 1820. (p47 and 232)

Holly

800 Hollies were purchased from Messrs Clark (Keighley) in 1818 (p47). Would this have been for hedging?

Berries were also collected, 10 Pecks got by Joseph Mawson in 1816 (p199), 16 Pecks by Mary Oldfield in 1819/20 (p124). For what purpose?

Nurseries

References to Thomas Lancaster labouring at the Nurseries for 13½ days between Octr 1814 and Feby 1816, his son James for 23½ days labour and 13¾ days planting and Son Thomas for 13 days planting and 23½ days labour, both in 1816 (p146).

Edward Moorhouse (Storith) also laboured at the Nurseries in 1815/16 (p 152).

Joseph Mawson did 108 days labour at the Nurseries between Deer 1814 and Mar 1816; also 50¾ days in 1816 or Jan 1817 with his son doing 82½ days in the same period.(p199).

Were these tree nurseries at Strid Cottage?

Fish pond

John Phillip was paid for 66 days at the Fish Pond in 1828 (p29) and Matthew Hudson for 31½ days labour in 1828/9 (p130). John Summersgill had done 90½ days at the large Sough near the House (what and where was this? JS had done 51 days there in 1825) and the Fish Pond in 1826 (p113). Would this be just regular maintenance or were alterations being made?

Sand Holme Wreck

Matthew Hudson laboured for 11 days at Sand Holme wreck in 1826. (p 130)

A. Tupholme February 2006

APPENDIX D STATEMENT OF SIGNIFICANCE

Neil Redfern, Historic England

Bolton Abbey, Yorkshire

Statement of Significance

Bolton Abbey is a place of multiple significances. Bolton Priory has historical value as an Augustinian foundation of 1151, built and altered over time and has the potential to yield evidence about past human activity (evidential value). It also has high aesthetic value as a piece of architectural design. The ruined east end is of exceptional quality and a rare example in Yorkshire of late C14 architecture at its most refined. However, it is the wider relationship of the Priory with its landscape setting that gives this place its greatest significance. Together they form a famous landscape, an icon of the Picturesque and Romantic Movements of the latter part of the 18th and into the 19th centuries, which valued the Priory in its landscape setting for its fortuitous aesthetic effect. These values remain alive today in the continuing appreciation by the public for this much loved and visited place, which is indeed one of the most visited sites in North Yorkshire.

Turner visited Bolton Abbey in 1797, 1808 and 1815. He painted the Priory in its landscape setting several times, one of which is a watercolour now in the British Museum, entitled 'Bolton Abbey, Yorkshire' of circa 1809. Wordsworth's poem, '*The White Doe of Rylstone*' was inspired by a visit to Bolton Abbey in 1807 and he used the cemetery that adjoins the north and east sides of the Abbey as the setting for the poem, which was based on a local legend. Edwin Landseer also painted this well-loved place.

In 1810 the Rev. William Carr and the 6th Duke of Devonshire opened Strid Wood to the public, laying out a network of walks and carefully positioned resting spots to take in the spectacular views. Various guidebooks followed, describing the numerous viewpoints which had been created for visitors. One example was 'Fourteen Views of Bolton Abbey' by the artist J Scarlett Davis, 1829.

The 19th century art and architecture critic, author and artist John Ruskin, was another famous visitor to Bolton Abbey. Nikolaus Pevsner quotes from Ruskin's book, *Modern Painters* of 1856. Ruskin's words encapsulate the response of the Picturesque tradition and the ensuing Romantic Movement to this landscape and describe what remains today a major aspect of the significance of this place, as follows: -

'Noble moorlands extend above, purple with heath, and broken into scars and glens; and around every soft tuft of wood, and gentle extent of meadow, throughout the dale, there floats a feeling of this mountain power, and an instinctive apprehension of the strength and greatness of the wild northern land. It is to the association of this power and border sternness with the sweet peace and tender decay of Bolton Priory, that the scene owes its distinctive charm.'

In the wider context, there appears to be no exactly comparable site to Bolton Abbey in England. Fountains Abbey and Rievaulx Abbey are likewise ruined monastic sites, which came to be valued in the 18th century as ornaments in landscape settings. They have likewise become popular for visits by the public. They too have high aesthetic value in addition to historical and evidential value. However, Bolton Abbey differs (certainly from Fountains) due to its wilder moorland (rather than garden) setting. Therefore as well as appealing to the 18th century Picturesque mentality, it also appealed to the Romantic sensibilities of Wordsworth, Ruskin and Landseer and accorded with the 19th century reverence for the Lake District and the Highlands. One of the nearest parallels as a medieval ruined abbey within a wider landscape setting which appealed to the Picturesque and Romantic tastes may be Tintern Abbey in Wales, likewise painted by Turner and its environs inspiring poetry by Wordsworth.

The relationship of the Priory ruins and Church of St Mary with the surrounding landscape evolves as you move through it and the ability to experience this is one of the key significances of the place. Turner's circa 1809 watercolour of Bolton Abbey illustrates a key viewpoint of the Priory in its setting. A lithograph of this viewpoint entitled 'Bolton Abbey from Hartington Seat' was later published in *Fourteen Views of Bolton Abbey* by J Scarlett Davis, and the accompanying commentary included the following words:

'This view is taken from a small rustic hut a few hundred yards to the north of the Abbey; and amongst the innumerable scenes in this charming valley, embraces almost every object that can constitute a landscape, and has, at different times, employed the pencil of the first living artists.'

The author continues,

'This view is generally allowed by all strangers, who visit this "loveliest place in all the land" to be the most perfect.'

and:

'This scene, Dr. Whitaker, the accomplished historian of Craven remarks, verifies in every feature the poet Mason's idea of a perfect English Landscape:-

*"Ah! Then most happy, if thy vale below
Wash with the crystal coolness of rills,
Some mouldering Abbey's ivy-infested wall" '*

Finally concluding with,

'To the south all is soft and luxuriant; the eye reposes on a few rich pastures, the beautiful woods of Lobwith, crowned by the verdant summit of Haw-pike...'

Today a footpath passes the approximate location of the Hartington Seat and viewing point has been made over the Abbey ruins.

The association of Bolton Abbey with the Romantic Movement and the area's later accessibility to major populations in the industrial centres of the West Riding led to the development of the site as a tourist destination. The railway arrived in 1888. On an August Bank Holiday in the 1890's the railway brought over 40,000 people to Bolton Abbey. The site became and remains a popular destination for tourists, generating a strong communal value expressed in the continuing appreciation by the public for this place, which is one of the most visited sites in Yorkshire.

Neil Redfern

Principal Inspector of Ancient Monuments, Yorkshire

August 2015

Appendix 12: Bolton Abbey Landscape Capacity Assessment

GILLESPIES
July 2016

LANDSCAPE CAPACITY ASSESSMENT

BOLTON ABBEY CORE VISITOR AREA

REV	DATE	BY	CHKD	APPROVED	STATUS	REASONS FOR REVISION/COMMENTS
00	30.06.16	LR	TW	TW	DRAFT	Issue
01	06.07.16	LR	TW	TW	FINAL	Project Team Comments
02	12.07.16	LR	TW	TW	FINAL	Formatting/ Text amendments Section 4

Contents

1 Introduction.....	3
2 Study Area	3
3 Potential Development.....	4
4 Methodology	5
5 Assessment of Landscape to Accommodate Development	13
1a Modern A59.....	14
1b Bolton Station.....	17
2 Bolton Bridge and Historic Approach Roads	20
3 Low Bridge Field	25
4 Pastoral landscape.....	28
6a Bolton Priory.....	32
6b Bolton Abbey Village/ Hind House Close.....	36
8 Sand Holme.....	41
9 Cavendish Pavilion and Tourist Facilities.....	45
10 Bolton Priory to the Cavendish Pavilion	48
11 Cavendish Pavilion to Barden/ Valley of Desolation	51
12 Strid Wood Car Park and Camping Site	55
14a Barden.....	59
14a Barden Tower	62
6 Conclusion	65

Figures

Figure 1: Landscape Related Designations

Figure 2: Landscape Capacity to Accommodate Development

Tables

Table 1: Criteria for Assessing Landscape Capacity for Development

Table 2: Definition of Capacity of Landscape to Accommodate Development

Table 3: Definition of Overall Capacity Assessment

1 Introduction

1.1 Nathaniel Litchfield & Partners (NLP) is preparing the Bolton Abbey Development Options Appraisal Study (BADAOS) on behalf of the Chatsworth Settlement Trustees (CST) in order to evaluate options for the development of Bolton Abbey so as to sustain its role as a major visitor destination and service village for the area. The purpose of this study is therefore to review the landscape contained within Bolton Abbey's Core Visitor Area (CVA) for the purposes of identifying landscape capacity for potential development in order to inform the BADAOS.

The BADAOS contains detail in relation to the need for development and the planning policy context. These issues will not therefore be repeated here.

2 Study Area

2.1 Reference is made to the report *Heritage Assessment Bolton Abbey Village Masterplan* (June 2016) prepared by FAS Heritage as part of the BADAOS with particular reference to *Figure 7 Landscape Zones*. That assessment breaks the landscape of the CVA into 19 distinct Landscape Zones. Those zones, whilst prepared having regard for their historical significance and character, also form the basis of logical Landscape Character Areas (LCAs) for the purposes of this study. The relationship between landscape and historic matters is close and the two disciplines are complimentary. The history of the landscape, its landscape character, how people have changed it over time and the surviving features and their settings are relevant to landscape character and capacity as well as to the Heritage and particularly so in this study area.

2.2 This study has therefore broadly taken the Heritage Assessment Landscape Zones and these have become the basis of the Landscape Character Areas for the purposes of this study. A number of the Landscape Zones have however been omitted from this assessment of landscape capacity as it is considered that those areas are either impractical or unsustainable to develop because of their disconnection with the CVA or because they are environmentally or historically too sensitive to accommodate development. Those areas are:

- 5 Storiths
- 7 The Stank
- 7a Earthworks of Monastic Grange
- 15 Ascent to Simons Seat

2.3 Of the remaining Landscape Zones contained within the *Heritage Assessment*, some amendments have been made to boundaries to reflect issues which are relative to Landscape. These are described below with the final LCAs being illustrated within *Figure 2: Landscape Capacity to Accommodate Development*:

- *Area 1 Bolton Station and Modern A59* have been separated into two separate landscape character areas in order to reflect the fact that this zone contains two distinct landscape character types. The area immediately north of the A59 roundabout at Bolton Bridge has therefore been identified as *1a Modern A59* and the area which surrounds Bolton Station has been identified as *1b Bolton Station*.
- *Areas 6b Bolton Abbey Village* and *6c Bolton Abbey – Hind House Close* have been merged for the purposes of this study as this division is a historic one. Bolton Abbey Village reads as one character area in landscape terms and the area to the west of the village (the historic boundary of the outer medieval precinct or service area/ farm) forms its landscape setting. It is therefore logical to merge these two areas which have become *6b Bolton Abbey Village/ Hind House Close*.
- *Area 10 Bolton Priory to the Cavendish Pavilion* as shown within the Heritage Assessment includes an area of relatively flat pasture located within a meander of the river Wharfe. In landscape terms this area is very distinct from the heavily wooded character of the rest of that Landscape Zone. Therefore, for the purposes of this study, that area has been removed from area 10 and instead has

been incorporated within area *6a Bolton Abbey* as it is considered to form part of the setting of the Priory and to share common landscape characteristics.

- *Areas 11a Cavendish Pavilion to Barden* and *11b Valley of Desolation* as referred to in the Heritage Assessment have been merged to form one character area; *11 Cavendish Pavilion to Barden Bridge/ Valley of Desolation*. This is due to the fact that these areas are unified by their heavily wooded nature and perceptual qualities.
- *Area 14 Barden*, has been split into two areas; *Areas 14a Barden* and *Area 14b Barden Tower*. In landscape terms, these two areas are found to be very distinct in terms of their scale, sense of enclosure, character and perceptual qualities. It is therefore considered appropriate to separate them for the purposes of this landscape capacity study.

2.4 The amended Landscape Zones have formed the Landscape Character Areas which have been used to assess the landscape's capacity for development for the purposes of this study, the process for which is described within the methodology.

3 Potential Development

3.1 The Bolton Abbey Village Development Options Study (BADAOS) is considering a number of different development options and these are set out within that report. The development options range in scale and impact. For the purposes of this study the following types of development have been considered when assessing the landscape's capacity to accommodate them:

- Paths
- Interpretation panels
- Village green (specifically at Bolton Abbey Village)
- Play barn
- Pub
- Farm shop
- Cycle Hub
- Cafe
- Visitor, staff and market accommodation
- Cycleway
- Car parking
- Outdoor play areas of a range of scales and for different ages
- Offices
- Biomass Boiler
- Hotel Extension

3.2 Clearly some development types are more easily accommodated within the landscape than others. However, for the purposes of this report, each landscape character area (LCA) has been assessed in terms of its capacity to accommodate development with the **highest relative impact, in this case built development**. It should be noted however that whilst a LCA may have a low capacity to accommodate this type of development in general, it may have specific (and less sensitive) areas within it which can accommodate some built development and which may affect its overall assessment. It may also be able to accommodate lower impact development types such as interpretation panels and path improvements. Therefore the overall capacity of the landscape illustrated in *Figure 2: Landscape Capacity to Accommodate Development* should be considered in conjunction with the Overall Capacity section included at the end of each LCA section which summarises capacity for development in more detail.

4 Methodology

4.1 The methodology developed for this assessment is based upon that used by Gillespies within *The Isle of Anglesey, Gwynedd and Snowdonia National Park Landscape Sensitivity and Capacity Assessment* (March 2014). That study was awarded ‘winner’ in the category of Strategic Landscape Planning in the Landscape Institute Awards 2015. The approach has been refined to reflect the smaller scale and scope of this assessment.







4.2 A number of landscape criteria have been identified which are more likely to be affected by the proposed types of development as it is these characteristics which ultimately define how much development could potentially be accommodated or not in a particular area. As has been stated previously, for the purposes of this assessment, **it is the development types with the highest potential impact (built development)** which have been assessed.




4.3 These criteria are defined within Table 1 below. They include aspects relating to landscape character and visual amenity as well as other aesthetic, perceptual and experiential aspects, for example scenic quality, remoteness and tranquillity. They also include criteria relating to the value of the landscape¹, as defined by the presence of any national landscape designations such as including land within the National Park, Open Access Land or inclusion of a National Trail. It is important to emphasise that a landscape which is highly valued by society may still be able to accommodate some types of development in the right location - if it fits with the characteristics of the landscape and doesn't compromise the reason why value is attached to the landscape and in the case of designated landscapes, does not compromise the purpose for designation. Conversely a landscape that isn't designated may be highly sensitive to particular development types if it has particular characteristics which are very sensitive to those types of development. Capacity would therefore be considered low.

Table 1: Criteria for Assessing Landscape Capacity for development


Landscape Criteria	
Landscape Pattern, scale and Enclosure	<p>Where settlement already forms part of the pattern of the landscape, capacity to accommodate more is increased.</p> <p>Large areas of dense woodland creates a distinct pattern in the landscape. Developing within such areas can fragment or sever that pattern which makes them sensitive to development.</p> <p>Landscapes with more regular large scale field patterns are likely to be more sensitive to development as development envisaged by this study would go against that larger scale of pattern in the landscape. Conversely, small scale intimate landscapes with more complex, smaller and irregular field patterns are considered less highly sensitive to this kind of development as the scale of development under consideration here is also of a small scale. Care has to be taken to ensure that the apparent scale of the landscape is not diminished by the extents of the development.</p>

¹ Although not strictly a sensitivity criterion, designated landscapes are typically highly vulnerable to change associated with developments, therefore they were included in the assessment of landscape capacity.

	<p>Landscapes which are characterised by high / overgrown hedgerows/field boundaries are considered less susceptible to development; whereas landscapes with fields bounded by low managed hedgerows, walls and fences are considered more susceptible. This is because mitigation measures accompanying such developments often include allowing hedgerows to provide screening or a complimentary setting and/or planting of high hedgerows to screen developments.</p>			
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <p>Landscape Character Area descriptions / OS data / Aerial Imagery (Google Earth) / Site Visits</p>			
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • small scale fields • Mosaic of complex/ rugged/irregular field patterns • Intimate landscapes • A large proportion of unmanaged / high hedgerows/field boundaries </td> <td style="width: 10%; text-align: center; vertical-align: middle;">  </td> <td style="width: 40%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • large scale fields • Simple / regular / uniform field pattern • Ancient field patterns • Field boundaries characterised by a large proportion of well managed low hedgerows, fences and/or walls. • Large areas of dense, uninterrupted woodland. </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • small scale fields • Mosaic of complex/ rugged/irregular field patterns • Intimate landscapes • A large proportion of unmanaged / high hedgerows/field boundaries 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • large scale fields • Simple / regular / uniform field pattern • Ancient field patterns • Field boundaries characterised by a large proportion of well managed low hedgerows, fences and/or walls. • Large areas of dense, uninterrupted woodland.
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • small scale fields • Mosaic of complex/ rugged/irregular field patterns • Intimate landscapes • A large proportion of unmanaged / high hedgerows/field boundaries 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • large scale fields • Simple / regular / uniform field pattern • Ancient field patterns • Field boundaries characterised by a large proportion of well managed low hedgerows, fences and/or walls. • Large areas of dense, uninterrupted woodland. 		
<p>Landform</p>	<ul style="list-style-type: none"> • It is considered that prominent and rolling landforms or landforms with steeper slopes are more sensitive to development because they are strong landscape features which tend to be obscured by development and require more extensive modification in the course of the construction. Flatter, simpler landscapes or those with gently undulating slopes are considered to be less sensitive to development. 			
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <ul style="list-style-type: none"> • Character Area descriptions / OS data / Topographic Data / Site Visits 			
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Simple featureless landform ▪ Flatter and more uniform landform </td> <td style="width: 10%; text-align: center; vertical-align: middle;">  </td> <td style="width: 40%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Rugged hills ▪ Irregular or complex landform ▪ Narrow valleys and ridges </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Simple featureless landform ▪ Flatter and more uniform landform 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Rugged hills ▪ Irregular or complex landform ▪ Narrow valleys and ridges
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Simple featureless landform ▪ Flatter and more uniform landform 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Rugged hills ▪ Irregular or complex landform ▪ Narrow valleys and ridges 		




	<ul style="list-style-type: none"> ▪ Distinctive landform features 			
<p>Landcover</p>	<ul style="list-style-type: none"> • This criterion is concerned with both the material sensitivity of the type of landcover and also the impression of landcover pattern and how development can impact on it. • Rural lowland landscapes with medium to large scale field pattern are less likely to be sensitive to developments. Settled areas such as villages and areas of intensive farming may also indicate lower sensitivity. • Complex, smaller scale and more intimate landscapes comprising a variety or mosaic of characteristic or sensitive landscape features such as veteran trees and ancient woodlands (which are not re-creatable in the short term), irregular field patterns and hedgerows are typically more vulnerable to change arising from development. • Tree and woodland cover offers the potential to screen developments in certain situations (particularly in combination with undulating landform) although care must be taken not to allow development to detract from or dominate locally distinctive features such as tree knolls, ancient specimen trees or avenue trees. • Landcover such as open upland moorland and unenclosed upland grazing and waterbodies such as rivers, streams or ponds can also be highly sensitive and valuable features particularly vulnerable to development. <p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <ul style="list-style-type: none"> • Landscape Character Area descriptions / OS data / Aerial Imagery (Google Earth) / Site Visits <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; border-right: 1px solid black;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Medium scale field pattern of rural landcover ▪ Developed land, ▪ Commercial forestry ▪ Lowland farmland </td> <td style="width: 10%; text-align: center; vertical-align: middle;">  </td> <td style="width: 40%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Small/intimate scale field pattern/mosaic ▪ Complex/irregular/diverse landscapes ▪ Strong pattern / texture ▪ Intact landscape ▪ Ancient woodland ▪ Upland moorland ▪ Upland grazing ▪ Barren/rocky upland ▪ Water </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Medium scale field pattern of rural landcover ▪ Developed land, ▪ Commercial forestry ▪ Lowland farmland 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Small/intimate scale field pattern/mosaic ▪ Complex/irregular/diverse landscapes ▪ Strong pattern / texture ▪ Intact landscape ▪ Ancient woodland ▪ Upland moorland ▪ Upland grazing ▪ Barren/rocky upland ▪ Water
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Medium scale field pattern of rural landcover ▪ Developed land, ▪ Commercial forestry ▪ Lowland farmland 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Small/intimate scale field pattern/mosaic ▪ Complex/irregular/diverse landscapes ▪ Strong pattern / texture ▪ Intact landscape ▪ Ancient woodland ▪ Upland moorland ▪ Upland grazing ▪ Barren/rocky upland ▪ Water 		
<p>Non Designated Built Development and Infrastructure</p>	<ul style="list-style-type: none"> • This criterion is concerned with the presence of modern built development and infrastructure. Ordinarily, landscapes which contain built development and infrastructure are less sensitive to further development of this type as it is already a characteristic of the landscape. However, a differentiation has been made here between non designated development and designated built form as the latter features are more sensitive to development. An example in this study is Bolton Priory. Whilst this is built 			

	<p>development in the strictest sense, its historic and sensitive nature is incompatible with further built form within its setting. A differentiation has therefore been made here with a specific reference to non designated built development. Other examples are landscapes that contain signs of human activity such as infrastructure as these may reduce landscape sensitivity to development and therefore increase capacity to accommodate more. On the contrary, areas which are more sparsely settled and relatively free from built form and disturbance are considered more sensitive to development, due to their <i>perceived</i> naturalness.</p>			
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <ul style="list-style-type: none"> • Landscape Character Area descriptions / OS data / Aerial Imagery (Google Earth) / Site Visits 			
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Non designated built form evident ▪ Infrastructure evident </td> <td style="width: 10%; text-align: center; vertical-align: middle;"> <p>↔</p> </td> <td style="width: 40%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Designated built form evident ▪ No built form ▪ No obvious infrastructure </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Non designated built form evident ▪ Infrastructure evident 	<p>↔</p>	<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Designated built form evident ▪ No built form ▪ No obvious infrastructure
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> ▪ Non designated built form evident ▪ Infrastructure evident 	<p>↔</p>	<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> ▪ Designated built form evident ▪ No built form ▪ No obvious infrastructure 		
<p>Visual Criteria</p>				
<p>Skylines and Settings</p>	<p>Landscapes with distinctive ridges or skylines are likely to be more sensitive to development where it interferes with that skyline. The presence of distinctive or historic landscape features such as continuous woodland, hilltop monuments, church spires or historic villages' increases sensitivity and reduces capacity.</p>			
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <p>Landscape Character Area descriptions / OS data / Aerial Imagery (Google Earth) / Site Visits</p>			
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • Less prominent skylines • Existing built development </td> <td style="width: 10%; text-align: center; vertical-align: middle;"> <p>↔</p> </td> <td style="width: 40%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • Prominent skylines • Distinctive skylines / backdrops • Uninterrupted/undeveloped skylines • Continuous wooded skylines • Presence of distinctive/sensitive landscape features such as historic landmarks </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • Less prominent skylines • Existing built development 	<p>↔</p>	<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • Prominent skylines • Distinctive skylines / backdrops • Uninterrupted/undeveloped skylines • Continuous wooded skylines • Presence of distinctive/sensitive landscape features such as historic landmarks
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> • Less prominent skylines • Existing built development 	<p>↔</p>	<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> • Prominent skylines • Distinctive skylines / backdrops • Uninterrupted/undeveloped skylines • Continuous wooded skylines • Presence of distinctive/sensitive landscape features such as historic landmarks 		
<p>Visibility, Key Views, Vistas and Typical</p>	<ul style="list-style-type: none"> • The probability of development being highly visible in a particular landscape is a function of the landform and the presence of potentially screening landcover, especially trees and woodlands. It is also a function of 			

<p>Receptors (both within and outside of each Landscape Character Area)</p>	<p>the number of people of different types who are likely to perceive the landscape and any change within it (e.g. residents, workers, visitors).</p> <ul style="list-style-type: none"> • Landscapes that have limited inward and outward views may be less sensitive to development than areas with less contained views. • Topography and/or vegetation can provide a sense of enclosure, which may help reduce the visibility of the development and hence indicate higher capacity. ² Open landscapes are potentially more visible and therefore more susceptible to development; particularly when they are overlooked. • Key views are those views from publicly accessible places (which are used regularly or to enjoy scenic quality) towards features of interest including historic and cultural assets. These views can include highly sensitive and promoted views such as those which appear in paintings, guide books, interpretation panels or on tourist maps and development which impacts upon the provision for their enjoyment such as at parking areas. Generally, these are sensitive to change and development. Extensive close or middle range views from scenic routes, well-known vistas or tourist viewpoints may also increase a landscape’s sensitivity to development. 	
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <ul style="list-style-type: none"> • Landscape Character Area descriptions / OS data / Aerial Imagery (Google Earth) / Site Visits 	
	<p>Some Indicators of Lower Sensitivity  Some Indicators of Higher Sensitivity</p>	
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ul style="list-style-type: none"> ▪ Landscape with a strong sense of enclosure ▪ Landscapes which are contained and strongly visually filtered. ▪ Very little or no intervisibility from designated viewpoints in protected landscapes ▪ No prominent landmarks or topographic features. </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ul style="list-style-type: none"> ▪ Very open, exposed landscapes. ▪ Landscapes with extensive intervisibility and little screening or filtering of views ▪ Landscapes which are visible from designated viewpoints in protected landscapes. ▪ Prominent visual landmarks and/or topographic features such as distinct elevated ridge lines. </td> </tr> </table>	<ul style="list-style-type: none"> ▪ Landscape with a strong sense of enclosure ▪ Landscapes which are contained and strongly visually filtered. ▪ Very little or no intervisibility from designated viewpoints in protected landscapes ▪ No prominent landmarks or topographic features.
<ul style="list-style-type: none"> ▪ Landscape with a strong sense of enclosure ▪ Landscapes which are contained and strongly visually filtered. ▪ Very little or no intervisibility from designated viewpoints in protected landscapes ▪ No prominent landmarks or topographic features. 	<ul style="list-style-type: none"> ▪ Very open, exposed landscapes. ▪ Landscapes with extensive intervisibility and little screening or filtering of views ▪ Landscapes which are visible from designated viewpoints in protected landscapes. ▪ Prominent visual landmarks and/or topographic features such as distinct elevated ridge lines. 	

² Woodlands and forestry should be a long term feature if their screening effects are to be relied upon.

Aesthetic, Perceptual and Experiential Criteria						
Scenic Quality and Character	<p>Areas of attractive scenery, character, quality, integrity, strong sense of place and local distinctiveness will typically be more sensitive to development than less scenic areas. This includes landscapes designated for their natural beauty (such as a designated National Park) but also areas of undesignated landscape, including areas which are locally distinctive or have strong character whose special scenic qualities are likely to be affected by this type of development.</p>					
	<p>Key Sources of Data Relevant to the Capacity Criterion</p> <p>Site Visits</p>					
	<table style="width: 100%; border: none;"> <tr> <td style="width: 45%; border: none;">Some Indicators of Lower Sensitivity</td> <td style="width: 10%; border: none; text-align: center;">↔</td> <td style="width: 45%; border: none;">Some Indicators of Higher Sensitivity</td> </tr> <tr> <td style="border: none;"> <ul style="list-style-type: none"> ▪ Low scenic quality (ie. industrial areas) ▪ Weak sense of place </td> <td style="border: none;"></td> <td style="border: none;"> <ul style="list-style-type: none"> ▪ High scenic quality (ie. National Park) ▪ Strong sense of place </td> </tr> </table>	Some Indicators of Lower Sensitivity	↔	Some Indicators of Higher Sensitivity	<ul style="list-style-type: none"> ▪ Low scenic quality (ie. industrial areas) ▪ Weak sense of place 	
Some Indicators of Lower Sensitivity	↔	Some Indicators of Higher Sensitivity				
<ul style="list-style-type: none"> ▪ Low scenic quality (ie. industrial areas) ▪ Weak sense of place 		<ul style="list-style-type: none"> ▪ High scenic quality (ie. National Park) ▪ Strong sense of place 				
Remoteness/Tranquillity	<ul style="list-style-type: none"> • Areas which are relatively remote and have a wild and/or tranquil character and lack built development increase the sensitivity of the landscape and reduce capacity for development. Development adjacent to such areas can undermine the special qualities and setting of such areas. 					
	<p>Key Sources of Data Relevant to the capacity Criterion</p> <ul style="list-style-type: none"> • Site Visits 					
	<table style="width: 100%; border: none;"> <tr> <td style="width: 45%; border: none;">Some Indicators of Lower Sensitivity</td> <td style="width: 10%; border: none; text-align: center;">↔</td> <td style="width: 45%; border: none;">Some Indicators of Higher Sensitivity</td> </tr> <tr> <td style="border: none;"> <ul style="list-style-type: none"> ▪ Threatening; unattractive; noisy; settled ▪ Extensive visual and auditory intrusions ▪ Notable presence of modern/large scale development and infrastructure (industrial areas, large modern urban settlements etc) </td> <td style="border: none;"></td> <td style="border: none;"> <ul style="list-style-type: none"> ▪ Remote; tranquil; wild; spiritual; attractive; peaceful ▪ Few obvious man-made features. </td> </tr> </table>	Some Indicators of Lower Sensitivity	↔	Some Indicators of Higher Sensitivity	<ul style="list-style-type: none"> ▪ Threatening; unattractive; noisy; settled ▪ Extensive visual and auditory intrusions ▪ Notable presence of modern/large scale development and infrastructure (industrial areas, large modern urban settlements etc) 	
Some Indicators of Lower Sensitivity	↔	Some Indicators of Higher Sensitivity				
<ul style="list-style-type: none"> ▪ Threatening; unattractive; noisy; settled ▪ Extensive visual and auditory intrusions ▪ Notable presence of modern/large scale development and infrastructure (industrial areas, large modern urban settlements etc) 		<ul style="list-style-type: none"> ▪ Remote; tranquil; wild; spiritual; attractive; peaceful ▪ Few obvious man-made features. 				

Value Criteria			
<p>Landscape Value (Landscape Related Designations)</p>	<ul style="list-style-type: none"> Landscapes that are formally designated for their scenic, designed or recreational value are likely to be more sensitive to this type of development than undesignated areas. The degree of sensitivity depends on the nature of the proposal and the landscape qualities which are valued by the designation. The hierarchy of the designation has a bearing on sensitivity of a landscape. Internationally and nationally designated landscapes such as National Parks, World Heritage Sites and AONBs are considered to be very sensitive, closely followed by regional and local designations such as SLAs. Landscape value is formally recognised by designation, but value can also be informed by published documentation such as tourist leaflets; art and literature. Areas designated for their historic or cultural heritage value such as, in the case of this study area, Scheduled Monuments, Listed Buildings or Conservation Areas are likely to be more sensitive to development, especially if the character or perception of the landscape in which they are located is likely to be significantly altered. Areas which display notable time depth are judged more sensitive than those which show limited past development. 		
	<p>Key Sources of Data Relevant to the Sensitivity Criterion</p> <ul style="list-style-type: none"> Environmental Designations Mapping Data (<i>Figure 1: Landscape Related Designations</i>) 		
	<table style="width: 100%; border: none;"> <tr> <td style="width: 45%; vertical-align: top;"> <p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> No designated sites No designated sites or features </td> <td style="width: 10%; text-align: center; vertical-align: middle;">  </td> <td style="width: 45%; vertical-align: top;"> <p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> National Park, AONB, Heritage Coast, AOB, SLA World Heritage Site, Registered Historic Landscape, Registered Park and Garden, visually prominent Scheduled Ancient Monuments such as hillforts and castles frequently visited by tourists </td> </tr> </table>	<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> No designated sites No designated sites or features 	
<p>Some Indicators of Lower Sensitivity</p> <ul style="list-style-type: none"> No designated sites No designated sites or features 		<p>Some Indicators of Higher Sensitivity</p> <ul style="list-style-type: none"> National Park, AONB, Heritage Coast, AOB, SLA World Heritage Site, Registered Historic Landscape, Registered Park and Garden, visually prominent Scheduled Ancient Monuments such as hillforts and castles frequently visited by tourists 	

4.4 Having identified the capacity criteria, the assessment took the form of a two stage process:

Stage 1:

4.5 The capacity of each LCA to accommodate development was systematically assessed against each of the capacity criteria which are detailed in Table 1. The LCA was then graded using a transitional three point sensitivity scale, **higher**, **medium** or **lower** as described in Table 2:

Table 2: Definition of Capacity of Landscape to Accommodate Development

Landscape Capacity	Definition
Low	Areas where the key landscape characteristics are vulnerable and likely to be adversely affected by particular types of development being considered. The landscape would not be able to accommodate development without significant effects on its character.
Medium	Areas where a particular type of development may cause some adverse effects on key landscape characteristics. Although the landscape may be able to absorb some development if sensitively sited and designed, it may introduce new inappropriate characteristics or result in a change in character.
High	Landscapes which taking into account their character and general visibility are not very vulnerable to change and could accommodate a particular type of development without significant adverse effects.

Stage 2:

4.6 These assessments against the capacity criteria were then used to give an overall assessment of capacity to accommodate development for each LCA. This overall capacity was graded using a more detailed six point capacity scale, **low**, **low-medium**, **medium**, **medium-high**, **high** and **very high capacity to accommodate development**. This final assessment for each LCA is presented at the end of each LCA section which follows and it is this overall assessment which is presented within *Figure 2: Landscape Capacity to Accommodate Development*.

Table 2: Definition of Overall Capacity Assessment

Landscape Capacity	Definition
Very Low	The key characteristics and qualities of the landscape are very highly sensitive to change from the type and scale of development being assessed.
Low	The key characteristics and qualities of the landscape are highly sensitive to change from the type and scale of development being assessed.
Low-Medium	The key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
Medium	Some of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
Medium-High	Few of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of development being assessed.
High	Key characteristics and qualities of the landscape are robust and less likely to be adversely affected by the type and scale of development being assessed.

4.7 This process required a balanced approach, considering all the assessed criteria and focussing particularly on the susceptibility of the key landscape characteristics of each LCA to particular types of development. The overall evaluations of capacity are not based on any mathematical formula (for example – assigning scores and adding up the lower, moderate and higher scores and averaging them out). **It should also be emphasised** that capacity does vary locally within the LCAs and that the overall evaluation represents the general capacity across the LCA to reflect the strategic nature of this study. Local variations are however discussed to some extent within the Overall Capacity section for each LCA.

5 Assessment of Landscape to Accommodate Development

5.1 The sections which follow assess each of the LCAs in terms of their capacity to accommodate development as defined by the capacity criteria set out in Table 1. The overall results are illustrated on *Figure 2: Landscape Capacity to Accommodate Development*.

1a Modern A59

Location and Extent

5.2 This LCA comprises a linear area of landscape which accompanies the A59 from the round-about at Bolton Bridge north westwards to the western boundary of Bolton Abbey train station. The LCA is completely within Craven District Council administrative boundary.

Key Characteristics

5.3

- Medium scale, linear agricultural landscape enclosed by A59 to north east and treed boundary to south west
- Dominated by presence of busy A59

Evaluation

5.4 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	This LCA is comprised of pastoral and agricultural fields of medium scale, enclosed by dry stone walls and woodland. Sense of enclosure provided by trees and landform to the south west but landscape open to the north east.	
	Landform	Landform is relatively flat, gently rising to the south west.	
	Landcover	Landcover is typified by rural lowland pastoral/ agricultural landscape. Belts of woodland accompanying the disused railway sidings to the west offer opportunities for screening.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	There is no built development but the A59 is a significant man made feature which forms the boundary of the landscape to the east.	
Visual	Skylines and Settings	This LCA is a more open landscape to the north and east with the accompanying large skyline. To the south and west, the woodland located on rising ground and alongside the disused railway sidings creates a distinctive skyline which would be sensitive to disruption although would provide a useful backdrop to accommodate development if left undisturbed.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>Views are typically open and the LCA is very visually prominent, particularly from the A59 (although these views are transient) reducing capacity for development</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Bolton Station ▪ Local attractions including Bolton Bridge, Bolton Abbey and the Yorkshire Dales National Park ▪ Local public rights of way ▪ The A59 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	The prominence of the A59 detracts from the scenic quality of this pastoral landscape, increasing capacity for development.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Remoteness/ Tranquillity	The sense of remoteness and tranquillity is much reduced by the presence of the busy A59	
Value	Landscape Value (Landscape related designations)	No landscape designations within this LCA.	

Overall Landscape Capacity Assessment

5.5 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

1a Modern A59: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium	<p>The medium scale of this landscape with its relatively flat agricultural landcover increases the capacity of this LCA to accommodate development. This is increased by the lack of landscape related designations and the effect of the proximity of the A59 as existing infrastructure and which reduces tranquillity and scenic qualities.</p> <p>These qualities are however tempered by the following qualities which serve to give it a medium capacity to accommodate development:</p> <ul style="list-style-type: none"> ▪ Openness of the LCA to the north east and its prominence from the A59 which increases visibility. ▪ The busy A59 disconnects this landscape from the core visitor area and in particular Bolton Bridge. ▪ Any built development would lie clearly outside of the settlement boundary of Bolton Bridge and would therefore be physically and visually disconnected from it. ▪ High number of receptors on A59. <p>Any development within this area would be visually and physically disconnected from Bolton Bridge as a result of the A59. It would therefore be better located to the north of the LCA where it has the potential to connect to the adjoining LCA <i>1b Bolton Station</i> if the associated landscape treatment could assimilate it into the character of that LCA.</p>

1b Bolton Station

Location and Extent

5.6 This LCA comprises the area of landscape surrounding Bolton train station. The LCA is completely within Craven District Council administrative boundaries.

Key Characteristics

5.7

- Small scale, enclosed landscape characterised by the heritage train station and associated development of the Embsay and Bolton Abbey Steam Railway.
- Presence of busy A59 a significant characteristic.

Evaluation

5.8 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	The landscape is relatively enclosed and of a smaller scale. Belts of trees enclose small scale fields and areas of train yard.	
	Landform	Landform is relatively flat.	
	Landcover	Landcover is typified by a mix of built development associated with the heritage rail station and its infrastructure, small pastoral fields and belts of woodland which accompany both the railway sidings and a small stream but west portion is more open.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	<p>In addition to the A59, there are several buildings associated with the train station and yard along with a café and some period cottages to the very north which, with sensitive siting, increases capacity for potential development.</p> <p>This existing built development and infrastructure increases capacity for further development.</p>	
	Skylines and Settings	The well treed and enclosed nature of this LCA create narrow skylines where built development is already a characteristic. The well treed setting would also provide a useful backdrop to accommodate development and help assimilate it into the landscape.	
Visual	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>Views are more enclosed by trees and the built form of the railway station and there is therefore little intervisibility, increasing capacity for development, despite the high number of receptors.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Properties ▪ Local Businesses ▪ Bolton station ▪ Route 59 Cafe ▪ Local attractions including Bolton Bridge, Bolton Abbey and the Yorkshire Dales National Park ▪ Local public rights of way ▪ The A59 	
	Scenic Quality and Character	The existence of the heritage railway and historical infrastructure gives a distinctive sense of place. Development would therefore need to be sensitive to this.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Remoteness/ Tranquillity	The sense of remoteness and tranquillity is reduced as a result of the presence of built development and the proximity of the busy A59	
Value	Landscape Value (Landscape related designations)	Small strip of SSSI woodland included within the LCA which is located on the southern side of the rail tracks at Bolton Station. Very unlikely that development would be sought in this area and is not therefore judged to affect capacity for development.	

Overall Landscape Capacity Assessment

5.9 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

1b BOLTON STATION: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium-High	<p>Small scale, enclosed landscape characterised by the built development and infrastructure associated with Bolton Station in addition to the proximity of the busy A59. It is considered to have medium-high capacity to accommodate development because:</p> <ul style="list-style-type: none"> ▪ Belts of woodland offer opportunities for screening. ▪ Existing development offers opportunity to incorporate new development in keeping with the character of that which is already present (which includes housing, business, retail and a heritage rail station). ▪ Whilst there are a high number of potential receptors, its enclosed qualities decreases visibility. ▪ Lack of landscape related designation likely to be affected by any development (SSSI located on very edge). <p>The LCA therefore offers opportunity for development. Its proximity to Bolton Priory, Bolton Abbey Village and Bolton Bridge means that it would be desirable to improve the pedestrian links from the heritage railway to these areas.</p>

2 Bolton Bridge and Historic Approach Roads

Location and Extent

5.10 This LCA comprises the settlement of Bolton Bridge and its immediate setting.

Key Characteristics

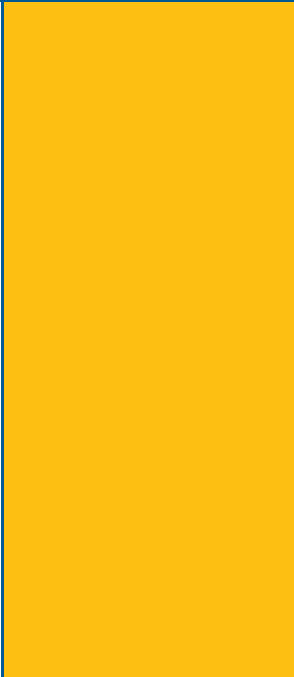
5.11

- Defined by the settlement and character of the historic village of Bolton Bridge and its surrounding, largely pastoral landscape.
- Presence of busy A59 a characteristic to the south and west.

Evaluation

5.12 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	---	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	<p>The core of this LCA is made up of the settlement of Bolton Bridge. The village is essentially linear in form, accompanying the route of the B6160 aside from the remains of the old approach road which crosses the river Wharfe to the east. It is well treed which, in conjunction with the built form of the village, gives the LCA an enclosed feel, opening out to the north, east and west.</p> <p>The pastoral fields which provide the setting of the village are small to medium in scale and irregular, being influenced by the existence of two meandering river Wharfe tributaries which run through them. The cricket pitch and grounds to the east of the Devonshire Arms hotel feel over manicured in comparison. Field boundaries are made up of dry stone walls with some post and hedge boundaries closer to the settlement. The embankment forming the edge of the A59 forms the western edge of the</p>	

Capacity Criteria	Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	<p>LCA and a fairly dense tree belt lines the boundary with the A59 to the south. The LCA therefore is generally enclosed, particularly within the village, opening up to the north and north west.</p> <p>Capacity within the village and its immediate surrounds is therefore found to be medium, capacity decreasing further out from the village aside for low impact development such as improved pedestrian/ cycle links in keeping with the current pattern of the landscape.</p>	
Landform	<p>Landform is relatively flat and is therefore considered to have higher capacity for development.</p>	
Landcover	<p>Landcover is generally typified by the built form of the village and the well managed land use which is associated with it such as a cricket ground and well-tended gardens. Further away from the village, particularly to the west, pastoral fields predominate.</p> <p>The entire LCA is well treed, particularly within the village and along field boundaries with small blocks of woodland being present.</p> <p>Capacity for development is therefore found to be higher, particularly away from the open pastoral fields.</p>	
Non Designated Built Development and infrastructure	<p>This LCA is characterised by the settlement of Bolton Bridge which, on the basis that further development is in keeping with local scale, quality, pattern and style, increases the capacity for further well designed built development.</p> <p>The A59 is a significant man made feature which directly adjoins the landscape along its south western and southern boundaries. This again increases capacity for development.</p> <p>The remnant section of the old A59 which can be found to the north west of the village is currently at odds with the current form and function of the</p>	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		village, consisting of a short section of road which terminates abruptly.	
Visual	Skylines and Settings	The historic village and its trees form a distinctive skyline. This skyline could assimilate further development within or directly abutting the existing settlement boundary and would not interfere with its distinctiveness on the basis that the new development is of a similar quality, style and scale.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>To the south west of the LCA, where tree cover permits, views can be more open and parts of the LCA have intermittent visual prominence from the A59. However, these views are intermittent and transient.</p> <p>Within the village, long range views are restricted by the built form of the village and the trees in and around it. Visibility is therefore relatively contained. Development located on the periphery of the village, whilst visible, could be assimilated with the existing settlement boundary of the village.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Properties ▪ Local businesses ▪ Local attractions including Bolton Bridge, Bolton Abbey and the Yorkshire Dales National Park ▪ Local public rights of way ▪ The A59 and B6160 ▪ The Dales Way National Trail 	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	The historic character and high quality of the village give this LCA a strong sense of place. Capacity for development is therefore dependant on it being in keeping with the quality and character of the village.	
	Remoteness/ Tranquillity	Whilst parts of the village have a sense of tranquillity, as a settlement in close proximity to the A59 and located on the B6160, the overall sense of remoteness and tranquillity is relatively low, thereby increasing capacity for development.	
Value	Landscape Value (including landscape related features)	The LCA contains the following landscape related designations: <ul style="list-style-type: none"> ▪ The eastern section of the LCA is located within the Yorkshire Dales National Park ▪ The Dales Way National Trail ▪ Listed buildings/ structures 	

Overall Landscape Capacity Assessment

5.13 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

2 BOLTON BRIDGE & HISTORIC APPROACH ROADS: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium-High	Whilst this LCA includes a number of important landscape related designations, it is considered to have medium-high capacity to accommodate development because: <ul style="list-style-type: none"> ▪ Appropriately sited and well designed built development would be in keeping with the existing settled qualities of the LCA which include its existing built development, landcover, scale and pattern of Bolton Bridge. ▪ The remnant section of the A59 to the north west of the settlement offers an opportunity to accommodate built development whilst simultaneously resolving this section of unused infrastructure.

- Views are relatively enclosed within the settlement and, if located on the village edge, development would be visually assimilated with the existing settlement of Bolton Bridge.
- Existing tree cover offers opportunities for screening.

On the basis that built development is appropriate in scale, quality and style, there is potential for development to be sited within or directly adjoining the existing settlement edge in order that it could be visually assimilated, particularly if the development is well screened from the A59. There is less capacity within the pastoral fields which form the setting of Bolton Bridge aside for low impact development such as improved cycle/ pedestrian links on the basis that they are in keeping with the pattern of the landscape.

The well-manicured grounds to the east of the Devonshire Arms hotel feel more associated to the village rather than to the pastoral fields which provide the overall setting. This man made influence has the potential to increase capacity.

Attention would need to be given to flooding issues which may restrict capacity generally.

3 Low Bridge Field

Location and Extent

5.14 This LCA is comprised of the area between Bolton Bridge and Bolton Abbey Village and Bolton Priory.

Key Characteristics

5.15

- Prominent lowland pasture providing setting to River Wharfe.
- Important landscape which provides both a link (via B6160 and footpaths) and a sense of separation between the historic settlements of Bolton Abbey Village and Bolton Bridge.

Evaluation

5.16 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Medium to large scale landscape with relatively regular field pattern. Tree lined B6160 with well maintained hedge and post and wire fences. Otherwise there is a lack of field boundaries with their associated screening potential. Tree belts along the river and avenue of trees along the B6160 provide some degree of enclosure but generally the landscape is open.	
	Landform	Landform is relatively flat and is therefore considered to have higher capacity for development.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Landcover	<p>Open pastoral fields with small linear belts of woodland accompanying the river Wharfe. Avenue style trees line the B6160.</p> <p>Well maintained pastoral fields, the presence of the river Wharfe and the distinctive tree lined avenue of the B6160 gives a distinctive parkland feel and reduces capacity.</p>	
	Non Designated Built Development and Infrastructure	<p>The busy B6160 forms the western boundary of this LCA. It is a feature of the landscape but its location on its periphery reduces its impact and therefore does not increase capacity significantly.</p>	
Visual	Skylines and Settings	<p>The surrounding well treed, open valley landscape forms the skyline for the majority of this LCA and the setting is distinctly rural, even taking account of the B6160. Capacity is therefore low.</p>	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>This is a prominent open lowland valley landscape with Bolton Abbey Village located to the north and Bolton Bridge located to the south and with the B6160 being located to the west and the Dales Way national trail running along its length. Visibility is therefore high, reducing capacity.</p> <p>It also has a high number of potential receptors which further reduces capacity.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Properties ▪ Local businesses ▪ Local attractions including Bolton Bridge, Bolton Abbey and the Yorkshire Dales National Park ▪ Local public rights of way ▪ The B6160 ▪ The Dales Way National Trail 	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	This is an attractive and scenic landscape. The river Wharfe gives it a distinct sense of place.	
	Remoteness/ Tranquillity	Away from the busy B6160, the sense of tranquillity is high, increased by the sensual qualities of the river Wharfe and also by fact that to the north it provides the setting for Bolton Priory.	
Value	Landscape Value (Landscape related designations)	The LCA contains the following landscape related designations: <ul style="list-style-type: none"> The entire LCA is located within the Yorkshire Dales National Park. The Dales Way National Trail 	

Overall Landscape Capacity Assessment

5.17 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

3 LOW BRIDGE FIELD: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Low-medium	<p>The relatively flat nature of this LCA and the proximity of the B6160 increase capacity to accommodate development. However, overall it is considered to have low capacity to accommodate development because:</p> <ul style="list-style-type: none"> Provides a setting for Bolton Priory to the north. Parkland feel, and presence of Priory and river Wharfe give it a distinct sense of place. High scenic quality and sense of remoteness away from the B6160 Open character with high visibility. <p>It is not therefore considered to have capacity to accommodate development aside from low impact development such as cycle/ pedestrian improvements and this is on the basis that it does not interfere with existing landscape pattern.</p>

4 Pastoral landscape

Location and Extent

5.18 This LCA is comprised of the large area of pasture located on the rising valley sides to the west of the Core Visitor Area. It represents the intermediate landscape between the high uplands to the west and the lowland valley associated with the river Wharfe.

Key Characteristics

5.19

- Defined by rising agricultural fields located to the foot of the uplands, consisting predominantly of pasture.
- Occasional farmsteads and presence of B6160 increase the sense of human influence.

Evaluation

5.20 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	An open, medium to large scale landscape with a relatively regular field pattern bounded predominantly by well maintained dry stone walls with intermittent mature boundary trees.	
	Landform	Landform rises, sometimes steeply, to the uplands located to the north and west. The landform becomes more undulating to the north of the LCA, providing some localised screening. However, in general this is a prominent landscape, reducing capacity for development.	
	Landcover	Open pastoral/ agricultural fields with mature trees located intermittently along field boundaries.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		Whilst the agricultural landcover is relatively less sensitive to development, here it gives a distinct rural quality and pattern which would be disrupted by development, decreasing capacity.	
	Non Designated Built Development and infrastructure	Occasional farmsteads and outbuildings scattered across the LCA. Narrow lanes connect these farmsteads with the busier B6160 which runs through the LCA.	
Visual	Skylines and Settings	This is an open valley landscape with wide, often well wooded or high moorland skylines. Well dispersed farmsteads and small settlements are also a feature of the landscape. The setting is therefore of a rural but settled landscape.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>This is a prominent valley side landscape. Its location on the valley side allows long views up and down the valley both to the LCA and from out of it. Whilst there is some filtering of views provided by local topography and tree cover, overall visibility is relatively high, reducing capacity.</p> <p>It also has a high number of potential receptors which further reduces capacity.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Properties ▪ Local businesses ▪ Local attractions including Bolton Bridge, Bolton Abbey, The Strid, Cavendish Pavillion and the Yorkshire Dales National Park ▪ Local public rights of way ▪ The B6160 ▪ The Dales Way National Trail 	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	This is an attractive and scenic pastoral landscape which provides the setting for the Core Visitor Area and transition to the moorland uplands above it.	
	Remoteness/Tranquillity	Away from the busy B6160, the sense of tranquillity increases. However, where visible, the movement associated with the B6160 can reduce the sense of remoteness.	
Value	Landscape Value (including landscape related features)	The LCA contains the following landscape related designations: <ul style="list-style-type: none"> ▪ The entire LCA is located within the Yorkshire Dales National Park. ▪ Stank House is part of Bolton Priory scheduled Monument. ▪ Listed buildings 	

Overall Landscape Capacity Assessment

5.21 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

4 PASTORAL LANDSCAPE: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Low-Medium	<p>The existence of occasional farmsteads and the B6160 along with the screening opportunities offered by local topography and tree cover offers some potential for the LCA to accommodate development. However, this LCA is considered overall to have a low-medium capacity to accommodate development because:</p> <ul style="list-style-type: none"> ▪ Its location on the valley side increases its prominence and promotes visibility although local landform and tree cover does provide some screening. ▪ Built development is likely to contradict its agricultural character unless closely associated with existing built development. ▪ High scenic quality and sense of remoteness, particularly away from the B6160.

	<p>Capacity for development is therefore largely considered to be appropriate only for low impact development such as path improvements/ extension on the basis that it complements the existing pattern of the landscape.</p>
--	--

6a Bolton Priory

Location and Extent

5.22 This LCA is comprised of Bolton priory and its immediate setting which is located to the north east of Bolton Abbey Village.

Key Characteristics

- Defined by the presence of the distinctive Bolton Priory.
- Lowland, valley bottom location on the western bank of the river Wharfe.

Evaluation

5.23 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
-----	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	<p>Medium scale landscape enclosed by wooded valley sides and the historic Priory and its associated buildings and features.</p> <p>The Priory provides a large, central focal point and the pattern of the landscape is dominated by this feature. The scale of the Priory is increased by the medium scale of the landscape which provides its setting. Any additional built development would affect this balance. Capacity is therefore low.</p>	
	Landform	<p>Landform is relatively flat along the western bank of the river Wharfe, rising to meet the adjoining B6160 to the west. However, the prominence of the landform upon which the Priory is located in contrast to the river below it creates a distinctive feature, reducing capacity.</p>	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Landcover	This LCA is predominantly comprised of well maintained parkland and pastoral fields and land types associated with the Priory such as grounds and graveyard. Features associated with the meandering river Wharfe also provide landcover such as sand and shingle deposition on the river bends. Such landcover types are sensitive to development. Capacity is therefore low.	
	Non Designated Built Development and Infrastructure	<p>The prominence of the designated Bolton Priory removes any capacity for significant built development.</p> <p>There are however a number of well maintained paths, including the nationally designated Dales Way which increases capacity to provide improvement or very sensitive extensions to this network.</p>	
Visual	Skylines and Settings	The designated Bolton Priory creates a distinctive and nationally important skyline promoted in guidebooks and recorded in paintings. This LCA is therefore highly sensitive in this regard.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>The location and topography of this LCA creates long vistas between the adjoining LCAs which are highly sensitive and nationally important.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Bolton Priory and associated buildings ▪ Local businesses ▪ Local properties ▪ Local attractions including Yorkshire Dales National Park ▪ The B6160 ▪ The Dales Way national trail ▪ Local rights of way and permissive footpaths 	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	This LCA is a high quality, highly attractive landscape with a strong, unique sense of place. It therefore has very low capacity for development	
	Remoteness/ Tranquillity	Whilst this is a busy tourist destination, its scenic qualities give a sense of tranquillity and remoteness.	
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • The Dales Way National Trail • Bolton Priory Conservation Area • Bolton Priory Scheduled Monument • Listed Buildings 	

Overall Landscape Capacity Assessment

5.24 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

6a BOLTON PRIORY: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
<p>Very Low</p>	This LCA has very low capacity to accommodate development because: <ul style="list-style-type: none"> ▪ Of the prominence and national importance of Bolton Priory and its setting. ▪ Its high quality and scenic character including a unique sense of place. ▪ Its inclusion of key vistas, many of which are recorded in paintings and promoted in guide books. ▪ High number of important receptors, the majority of which it is highly visible from or to. ▪ The high number and importance of the landscape related designations which it includes.



As a result, this LCA only has the capacity to accommodate very low impact development such as sensitive path improvements, signage and interpretation, or insignificant alterations or extensions to buildings.

6b Bolton Abbey Village/ Hind House Close

Location and Extent

5.25 This LCA is comprised of Bolton Abbey Village and its immediate setting to the west and north where it extends along the B6160. It includes the historic boundary of the outer medieval precinct or service area/ farm to the west of the existing overflow car park.

Key Characteristics

5.26

- Defined by the historic settlement and picturesque character of Bolton Abbey Village
- Role as a tourist destination is apparent as a result of its large car park and tourist facilities

Evaluation

5.27 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	<p>Small to medium scale landscape defined by the settlement of Bolton Abbey Village. The character of the village itself is enclosed and intimate. To the west, a large car park opens up views to the rising rural landscape beyond, reducing the sense of enclosure and breaking the pattern of a small scale historic settlement.</p> <p>To the west of the settlement, and providing its setting, the field pattern is of medium to large scale fields bounded by a mix of dry stone walls and hedgerows, particularly along the local road which runs from Bolton Abbey Village to Halton East.</p>	
	Landform	Landform is relatively flat and is therefore considered to generally have higher capacity for development.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		It is worth noting however that there are some local variations in topography (particularly a small high point in topography to the south of the village and located at the southern boundary of the LCA on the B6160) which is more prominent and may be more sensitive to development and therefore have less capacity.	
	Landcover	<p>This LCA is predominantly comprised of built development with associated maintained green space, infrastructure and car parking. Pastoral fields are located outside of the village to the west, south west and south east.</p> <p>The Tithe barn and the former Barnyard are located on the eastern edge of the LCA and occupies a significant proportion of it although its presence is significantly screened by vegetation.</p> <p>As a settled LCA, it has higher capacity to accommodate further appropriate development on the basis that it is appropriately designed and sited.</p>	
	Non Designated Built Development and infrastructure	This LCA incorporates non designated built development which increases its capacity for more. The most notable features are the B6160 which runs through the LCA and the large car park located to the west.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Visual	Skylines and Settings	<p>The built form of the village provides localised developed skylines when viewed from within it. When viewed within its wider context however, the LCA’s location within the valley is clearer, with the well treed, settled pastoral landscape topped by moorland uplands forming its wider setting and backdrop.</p> <p>The LCA has capacity to accommodate appropriately located development which is in keeping with the existing scale and style of the existing built form of Bolton Abbey Village.</p>	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>Views within the LCA are limited by tree cover and the built form of the village. Inter-visibility between this LCA and Bolton Priory (LCA 6b Bolton Priory) is particularly restricted due to the walled boundary (an extant medieval precinct wall) located between the two LCAs. Longer distance views of the settlement are enabled by higher ground located to the west, east and north of the settlement. However, tree cover and local topography often provides screening, reducing visibility in medium to long views and increasing capacity for development.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Properties ▪ Local businesses ▪ Local attractions including Bolton Priory and Bolton Abbey Village ▪ the Yorkshire Dales National Park ▪ The B6160 ▪ Local road network 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	<p>Bolton Abbey Village is a high quality, attractive, historic village with a distinct sense of place. The relatively discrete location and existing character of the car park located to the west of settlement increases capacity for development in this area on the basis that the development is appropriate in scale, location, style and character of the village.</p>	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Remoteness/ Tranquillity	Where evident, the busy B6160 gives the village a relatively busy feel, reducing the sense of remoteness and tranquillity.	
Value	Landscape Value (Landscape related designations)	<p>This LCA includes the following landscape related designations:</p> <ul style="list-style-type: none"> ▪ Yorkshire Dales National Park ▪ Bolton Abbey Village Conservation Area ▪ Bolton Priory Scheduled Ancient Monument ▪ Listed Buildings 	

Overall Landscape Capacity Assessment

5.28 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

6b BOLTON ABBEY VILLAGE: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium-High	<p>Whilst this LCA includes a number of landscape related designations, this does not preclude it from incorporating sensitively sited, well designed and appropriate development. This LCA is therefore considered to have medium-high capacity to accommodate development because:</p> <ul style="list-style-type: none"> ▪ The existing pattern of a settled, developed LCA could accommodate more, particularly to the west which is the location of the existing car park and outside of the conservation area and scheduled monument. ▪ The existing landcover type and relatively flat landform is less sensitive. ▪ Views are relatively enclosed and, where visible, appropriately sited development is likely to be viewed in the context and character of the existing settlement. ▪ Its village character, the car park and the B6160 detracts from its tranquillity and remoteness. <p>Any new development would need to be designed and sited in order that it is in keeping with the existing settlement.</p> <p>This is dealt with in more detail within the Landscape and Visual Assessment (LVA) which was prepared in support of the Bolton Abbey Village Masterplan</p>

	<p>(April 2015). This LVA showed that the current layout of the village lacks a sense of arrival and that Bolton Abbey Village has capacity to accommodate sensitive and appropriately sited development.</p>
--	---

8 Sand Holme

Location and Extent

5.29 This LCA consists of the valley side on the west bank of the river Wharfe that incorporates the Cavendish Pavillion, car park and access roads.

Key Characteristics

5.30

- Linear area of land forming the gently falling shallow valley side of the river Wharfe
- Well maintained pasture with belts of woodland.

Evaluation

5.31 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Medium scale landscape becoming more enclosed to the north where the character areas narrows, becoming relatively dense woodland. Field pattern is medium and linear, delineated predominantly by the river, belts of trees, unenclosed access roads and dry stone walls.	
	Landform	Landform slopes gradually down to the river Wharfe, becoming flatter in the valley bottom. Capacity for development increases where landform becomes flatter lower in the valley.	
	Landcover	Landcover consists of belts of deciduous woodland and pasture with areas of managed grassland to the valley floor which provides overflow parking for	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		Cavendish Pavilion. The managed nature of this grassland reduced sensitivity and increases capacity for development, with potential screening provided by belts of trees. Areas of tree cover, particularly where they are dense to the north of the LCA, are however more sensitive to development and therefore have less capacity.	
	Non Designated Built Development and Infrastructure	This LCA includes the access road which leads from the B6160 to the Cavendish Pavilion and includes a payment kiosk. There are also a number of access roads within the valley floor which facilitate overflow car parking within the managed grassland in addition to informal permissive paths. The overall effect is to increase capacity for development.	
Visual	Skylines and Settings	There are areas within this LCA where Bolton Priory creates a distinctive skyline to the south. This LCA provides the setting for the Cavendish Pavilion, Memorial and Bolton Priory.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	The location and topography of this LCA creates medium to long views, particularly to the south to Bolton Priory. This is a key and highly sensitive view, promoted by boardwalks and footpaths located to the south of the LCA . Typical receptors include occupiers, users and visitors to the following: <ul style="list-style-type: none"> ▪ Nearby properties ▪ Local business ▪ Bolton Priory ▪ Cavendish Pavilion and Monument ▪ Yorkshire Dales National Park ▪ The B6160 	

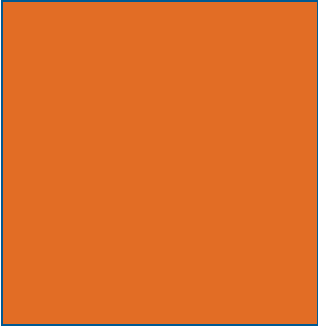
Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	The existence of a number of access roads and the overflow car park reduce scenic quality and character. However, this is an open landscape which provides the setting for and key views of the Priory to the south. Localised scenic quality and character is therefore increased.	
	Remoteness/Tranquillity	This is a busy tourist destination with associated vehicular access. It also adjoins the B6160. The sense of remoteness and tranquillity is therefore reduced. However, the presence of the Priory to the south is a sensual factor which can increase these perceptual qualities where it is evident.	
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • An area of Semi Ancient Natural Woodland • Listed building (Cavendish Memorial) 	

Overall Landscape Capacity Assessment

5.32 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

8 SAND HOLME: OVERALL LANDSCAPE CAPACITY TO DEVELOPMENT

OVERALL SENSITIVITY	
Low-medium	<p>Away from any views of Bolton Priory, this is a LCA which has the character of being a landscape which largely serves the adjoining Cavendish Pavilion as it incorporates its access road, payment kiosk and overflow car park. It also includes belts of trees which have some potential for screening. These factors increase capacity to accommodate development, particularly to the north. However, overall it is considered to have low-medium capacity because:</p> <ul style="list-style-type: none"> ▪ It includes highly sensitive views of Bolton Priory to the south. ▪ Its open character to the south increases visibility. ▪ It includes or provides the setting for a number of sensitive receptors.



Whilst overall this LCA has low-medium capacity, away from sensitive views and settings, there is capacity for development. It would have to be appropriate in scale and carefully sited so that it did not impact upon the views and setting of Cavendish Memorial, the Cavendish Pavilion but particularly the highly sensitive Bolton Priory. This would therefore suggest that it is generally has the capacity to accommodate more low impact development such as paths, signage and potentially appropriately designed and sited play areas.

9 Cavendish Pavilion and Tourist Facilities

Location and Extent

5.33 This is a small LCA which consists of the Cavendish Pavilion and the associated landscape features which constitute its setting.

Key Characteristics

5.34

- Small, linear area of land with the river Wharfe running along its length.
- Cavendish Pavilion and associated buildings and car parking located to the west bank.
- Bridge across the river Wharfe leads to small area of open green space and pasture to the east bank.
- Provides access point to Dales Way National Trail.

Evaluation

5.35 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Small scale landscape, enclosed to the east and west by woodland. Existence of the Cavendish Pavilion, its infrastructure and the river Wharfe create a complex, predominantly linear pattern.	
	Landform	LCA located in the relatively flat river valley floor.	
	Landcover	Landcover consists of hard surfacing associated with the Cavendish Pavilion and its parking area. Elsewhere managed grassland with mature trees accompany both banks of the river and in places provides additional car parking.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	This LCA includes the built development and facilities associated with and including Cavendish Pavilion. It also incorporates areas of hard standing and access roads, the bridge over the river Wharfe and a path network which runs alongside both banks of the river.	
Visual	Skylines and Settings	This is an enclosed LCA where the well wooded valley sides provide the skyline and setting. Such a skyline provides opportunities for backclothing and assimilating development.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>This is an enclosed LCA which does not share visual links with sensitive receptors such as Bolton Priory and Barden Tower.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Cavendish Pavilion and its facilities ▪ Yorkshire Dales National Park ▪ Dales Way national Trail ▪ Strid Wood 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	This is an attractive LCA with distinctive scenic qualities provided by Cavendish Pavilion, the river Wharfe and its historic bridge although car parking can detract from these qualities.	
	Remoteness/ Tranquillity	Whilst this feels like a remote and secluded valley location, it is also a busy tourist destination with associated vehicular access. The sense of tranquillity and remoteness is therefore reduced.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Dales Way National Trail 	

Overall Landscape Capacity Assessment

5.36 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

9 CAVENDISH PAVILION & TOURIST FACILITIES: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium-high	Whilst this LCA has scenic quality and includes landscape related designations in addition to having a high number of sensitive receptors, it is considered to have medium-high capacity for development because: <ul style="list-style-type: none"> ▪ It has a small scale, enclosed, character which already includes a developed pattern. ▪ Its landcover of hard surfacing and managed grassland lends itself to accommodate further appropriate development. ▪ It already includes non-designated development and infrastructure. ▪ Its enclosed nature restricts visibility. It is therefore considered that this LCA has the capacity to accommodate appropriate and sensitive built development along with lower impact development types such as signage, paths and play areas.

10 Bolton Priory to the Cavendish Pavilion

Location and Extent

5.37 This LCA consists of the continuously wooded areas which characterise Pickles Gill and the eastern bank of the river Wharfe opposite Sand Holme.

Key Characteristics

5.38

- Continuous dense woodland.
- Includes the Dales Way national trail from which there are filtered views of the Priory.

Evaluation

5.39 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Small scale, densely wooded pattern and therefore very enclosed.	
	Landform	Steep valley landscape along Pickles Gill Beck. Otherwise the LCA is comprised of the sloping valley side of the eastern bank of the river Wharfe.	
	Landcover	Landcover consists of a continuous belt of deciduous woodland which is sensitive to development.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	A local road runs through the woods but it is only for a short stretch and therefore has limited influence.	
Visual	Skylines and Settings	Enclosed, wooded skylines. If development were to interrupt this it would have a significant impact which reduces the capacity for development. Where the LCA borders the river, the valley beyond provides the skyline and setting. In places this includes Bolton Priory.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>Views within the LCA are largely restricted by dense woodland cover and topography. In that sense the LCA has some capacity for development as it would be very well screened. However, along the edges of the LCA (enabled by the route of the Dales Way national Trail) there are some key views into the Core Visitor Area which includes highly sensitive views of the Priory.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Nearby properties ▪ Bolton Priory ▪ Cavendish Pavilion ▪ Dales Way National Trail ▪ Yorkshire Dales National Park ▪ Local road network 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	Highly scenic with beautiful wooded character and glimpsed views of the Priory giving it a distinct sense of place.	
	Remoteness/ Tranquillity	A tranquil LCA, its dense woods providing a sense of remoteness, despite their popularity and the proximity of the busier tourist attractions.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Large area of Ancient Semi Natural Woodland • The Dales Way National Trail 	

Overall Landscape Capacity Assessment

5.40 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

10 BOLTON PRIORY TO THE CAVENDISH PAVILION: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
low	<p>Whilst the presence of a short stretch of road locally reduces sensitivity, overall this is a sensitive LCA with low capacity to accommodate development. This is because:</p> <ul style="list-style-type: none"> ▪ It is small scale and enclosed with a densely wooded pattern which would be sensitive to the interruption caused by built development. ▪ The wooded skyline would also be sensitive to disruption. ▪ The location of Bolton Priory on the opposing bank means that there are some key and highly sensitive views. ▪ It has a highly scenic and tranquil character. ▪ It includes sensitive landscape designations, Ancient Semi Natural Woodland (ASNW) being a particular constraint to development. <p>It is considered that only the most lowest impact types of development could be incorporated within this LCA such as path improvements and signage and potentially very minimal woodland themed play features although the ASNW is a significant constraint.</p>

11 Cavendish Pavilion to Barden/ Valley of Desolation

Location and Extent

5.41 This LCA consists of the wooded banks of the river Wharfe to include Strid Wood and Posforth Gill.

Key Characteristics

5.42

- Large area of Ancient Semi Natural Woodland and SSSI enclosing the rocky banks of the river Wharfe known as The Strid.
- Dales Way National Trail runs along its length.
- Includes colour coded path network.

Evaluation

5.43 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Small scale with a dense wooded pattern on either side of the river Wharfe and therefore very enclosed. Includes the distinct rocky feature formed by The Strid.	
	Landform	Steep valley landscape along Postforth Gill. Otherwise the LCA is comprised of the often steeply sloping valley sides of the banks of the river Wharfe, to include the exposed rocky banks known as The Strid.	
	Landcover	Landcover consists of a continuous belt of deciduous woodland broken only by the river Wharfe, the rocky embankments which form The Strid and occasional paths.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	<p>A local road runs through a section of the woods at Posforth Bridge, southwards to the Cavendish Pavilion. However, it is only for a short stretch and therefore has a limited influence on the LCA.</p> <p>Local network of colour coded, surfaced paths.</p>	
Visual	Skylines and Settings	Enclosed, wooded skylines, broken only by the river Wharfe. Incorporates The Strid and its wooded setting. If development were to interrupt this skyline it would have a significant impact which reduces the capacity for development.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>Views within the LCA are restricted by dense woodland cover and topography. In that sense the LCA has some capacity for development as it would be very well screened.</p> <p>However, there are some key views towards Barden Tower located at the north of the LCA which are highly sensitive in addition to attractive views of the river Wharfe.</p> <p>Typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ Nearby properties ▪ Bolton Priory ▪ Barden Tower ▪ Dales Way National Trail ▪ Yorkshire Dales National Park ▪ Local road network ▪ Strid Wood ▪ Cavendish Pavilion 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	Highly scenic with beautiful wooded character running alongside the river, the impact increased by the presence of The Strid and glimpsed views of Barden Tower giving it a distinct sense of place.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Remoteness/ Tranquillity	A tranquil LCA, its dense woods providing a sense of remoteness, despite their popularity.	
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Large area of Ancient Semi Natural Woodland • The Dales Way National Trail • SSSI 	

Overall Landscape Capacity Assessment

5.44 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

11 CAVENDISH PAVILION TO BARDEN/ VALLEY OF DESOLATION: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
low	<p>Whilst the presence of a short stretch of road locally reduces sensitivity, overall this is a sensitive LCA with low capacity to accommodate development. This is because:</p> <ul style="list-style-type: none"> ▪ It is small scale and enclosed with a densely wooded pattern which would be sensitive to development. ▪ The wooded skyline would also be sensitive to disruption. ▪ Includes some highly sensitive views of Barden Tower and generally attractive views of the river including The Strid. ▪ It has a highly scenic and tranquil character. ▪ It includes sensitive landscape designations, Ancient Semi Natural Woodland which is also a SSSI being a particular constraint to development. <p>It is considered that only the lowest impact types of development could be incorporated within this LCA such as path improvements and signage which would compliment the existing network. There is potentially limited capacity</p>



to incorporate very minimal woodland themed play features although the ASNW is a significant constraint.

12 Strid Wood Car Park and Camping Site

Location and Extent

5.45 A small LCA located on the B6160, sloping down to the river Wharfe through sometimes dense woodland and providing visitor access to Strid Wood. Includes visitor facilities such as car park, kiosk and café in addition to a well screened caravan and camp site and Montessori school.

Key Characteristics

5.46

- An LCA with two opposing characteristics; the first being the built development, camp site and visitor facilities already in existence and the second being dense and scenic Ancient Semi Natural Woodland.

Evaluation

5.47 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity	Medium capacity	Lower capacity
-----	-----------------	-----------------	----------------

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Small areas of pasture or developed land enclosed by dense woodland. Whilst the wooded areas are sensitive to development, outside of these areas, the pattern of small parcels of land enclosed by woodland lends itself to accommodate development. The assessment opposite therefore reflects these latter areas.	
	Landform	Fairly level topography to the south west, sloping down to the river Wharfe.	
	Landcover	Landcover consists of areas of development and hardstanding associated with tourist facilities, school and camp site along with pockets of pasture	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		enclosed by a mix of deciduous and coniferous woodland.	
	Non Designated Built Development and Infrastructure	The LCA includes tourist infrastructure including a car park, cafe and kiosk. There is also a well screened caravan park and a Montessori school (Strid Cottage). Further built development would therefore be in keeping with the LCA on the basis that it is away from the areas of Semi Ancient Natural Woodland. The assessment opposite reflects this distinction. Also includes path network.	
Visual	Skylines and Settings	Enclosed, wooded skylines. If development were to interrupt this it would have a significant impact which reduces the capacity for development. However, if development can be incorporated without interrupting the skyline, the wooded setting provides opportunities for backclothing and screening.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	To the north there are key views of the river Wharfe. Away from the river, views within and into the LCA are restricted by dense woodland cover. In that sense the LCA has capacity for development as it could be integrated without impacting on important views. Typical receptors include occupiers, users and visitors to the following: <ul style="list-style-type: none"> ▪ Camping and Caravan Site ▪ Montessori school ▪ Strid Wood and associated tourist facilities ▪ Dales Way National Trail ▪ Yorkshire Dales National Park ▪ B6160 	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	Within Strid Wood and along the riverside, the LCA is highly scenic with a very distinctive sense of place. Closer to the B6160, the presence of the campsite (albeit very well screened) and the tourist facilities associated with the kiosk and car park, reduce these scenic qualities.	
	Remoteness/Tranquillity	Within Strid wood the LCA feels remote and tranquil. Closer to the B6160 and the facilities associated with the car park and caravan site, the LCA loses this tranquillity, thereby increasing capacity for development in this area.	
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following landscape related designations: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Ancient Semi Natural Woodland (ASNW) • The Dales Way National Trail Unlike other LCAs who consist entirely of ASNW, it is worth noting here that it would be possible for appropriately sited development to avoid these areas.	

Overall Landscape Capacity Assessment

5.48 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

12 STRID WOOD CAR PARK AND CAMPING SITE: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Medium-High	This is a LCA of two opposing characters. Within the areas of Ancient Semi Natural Woodland (ASNW), capacity for development is very low. However, away from this area and towards the B6160, the pattern of parcels of land utilised for development or pasture enclosed by woodland lends itself to accommodate further development. Capacity is therefore higher. Therefore, the assessment here reflects these area outside of the ASNW and which is considered to have a medium-high capacity to accommodate development. This is because:

- The existing pattern of parcels of developed land or pasture surrounded by woodland screening has the potential to accommodate development.
- Built development already forms part of the character.
- Existing woodland provides opportunities for backclothing and screening.

It is considered that these factors provide the potential to accommodate built development in addition to development considered to be of a lower impact such as play areas, paths and signage on the basis that they are appropriately designed and sited.

14a Barden

Location and Extent

5.49 This LCA forms the northern most point of the Bolton Abbey Core Visitor Area (CVA) and consists of the riverside pasture north of Strid Wood.

Key Characteristics

5.50

- Lowland pasture and woodland flanking River Wharfe.
- Provides the setting for Bardon Tower which, although outside of this LCA, is visible and is a distinctive landmark.

Evaluation

5.51 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the **highest impact developments** described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Medium scale landscape consisting of medium sized, relatively regular pastoral fields enclosed by dry stone walls. Ultimately enclosed by wooded valley sides with moorland above.	
	Landform	Wide shallow river valley. Relatively flat adjacent to east of river.	
	Landcover	Grass pasture with drystone wall boundaries, individual trees and blocks of deciduous woodland. Occasionally fields are used for car parking.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
	Non Designated Built Development and Infrastructure	Isolated farmsteads only. Roads form north east and south west boundaries of this LCA but do not dominate. Therefore area is characterised by a lack of non designated built development and infrastructure which limits the capacity.	
Visual	Skylines and Settings	Higher ground to east and west provides attractive setting. To north and south more distant higher ground provides dramatic backdrop.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	Includes sensitive views of Barden Tower. Typical receptors include occupiers, users and visitors to the following: <ul style="list-style-type: none"> ▪ properties ▪ Dales Way National Trail ▪ Yorkshire Dales National Park ▪ The B6160 ▪ Local Road network ▪ Small section of Sustrans National Cycle Trail 	
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	Very high scenic quality and distinctive character	
	Remoteness/ Tranquillity	Feels the most remote and tranquil part of the CVA.	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Value	Landscape Value (Landscape related designations)	This LCA is covered by the following designations: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Dales Way National Trail • Sustrans Regional Cycle Trail (Yorkshire Dales Cycleway) • Ancient Semi Natural Woodland to the south near Strid Wood • Listed structure (Barden Bridge) 	

Overall Landscape Capacity Assessment

5.52 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

14a BARDEN: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

OVERALL SENSITIVITY	
Low-Medium	<p>Some woodland cover and a medium scale pattern to the landscape increases capacity but this is a sensitive LCA with only a low to medium capacity to accommodate the developments because:</p> <ul style="list-style-type: none"> ▪ Provides a setting for and frames views of Barden Tower. ▪ Is covered by national designations. ▪ Has high scenic quality and is particularly tranquil. ▪ Does not incorporate much existing non designated development so feels undeveloped. <p>It is therefore considered that any development would have to be well sited and appropriate in scale and should not impact on the overall scenic value of the area or views of Bardon Tower. This would suggest lower impact development such as signage and path improvement.</p>

14a Barden Tower

Location and Extent

5.53 This is a small, discrete LCA associated with Bardon Tower. Although self-contained, its elevated location promotes visibility, the tower being visible, particularly from the south east forming an attractive focal point for the core visitor area.

Key Characteristics

5.54

- Historic remains of Barden Tower, The Priests House and Barns within intimate landscape setting.
- Elevated LCA which allows iconic views of Barden tower.

Evaluation

5.55 The following table illustrates the appraisal of this Landscape Character Area (LCA) against capacity criteria which have been predetermined for the highest impact developments described within section 3 Potential Developments. The criteria for this assessment are described in more detail within Table 1 within Section 4 Methodology. The definition of the assessed capacity is contained within Table 2, also within the Section 4 Methodology.

Key	Higher capacity		Medium capacity		Lower capacity	
------------	-----------------	--	-----------------	--	----------------	--

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Landscape	Landscape Pattern Scale and Enclosure	Small scale, semi enclosed grounds and pasture providing setting to Barden Tower and associated buildings. Distinct pattern of historic development within landscaped grounds. LCA is enclosed by woodland to north, east and west but is more open to south.	
	Landform	Occupies prominent higher ground relative to east and south which reduces capacity.	
	Landcover	Semi formal grounds to the Tower with pasture on sloping grounds to north east. The Tower is a ruin, a Priests House provides accommodation and is also a restaurant and one of the old barns has been converted into a hikers bunk barn. Other barns exist but appear unused and semi derelict. On the	

Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
		opposite side of the road an historic school house has been converted into a Nursery. Together these buildings form a cluster of development surrounded by their grounds, pasture and woodland.	
	Non Designated Built Development and infrastructure	<p>Most development is listed or within the area designated as a Scheduled Ancient Monument so limited non designated development means that capacity is low. The derelict barns do however offer some potential.</p> <p>The busy B6160 is an influence on the LCA.</p>	
Visual	Skylines and Settings	Skylines are generally enclosed by surrounding woodland but there are some views out to higher ground beyond providing some context. The surrounding pasture and woodland provide an important setting for the Tower and associated historic buildings.	
	Visibility, Key Views, Vistas and Typical Receptors (both within and outside of each Landscape Character Area)	<p>There are no sensitive residential receptors but typical receptors include occupiers, users and visitors to the following:</p> <ul style="list-style-type: none"> ▪ The Nursery ▪ The Tower remains and Priest House ▪ The Bunk Barn ▪ Yorkshire Dales National Park ▪ The B6160 ▪ Dales Way National Trail ▪ Sustrans Cycle Route <p>The aesthetic value of the Tower and its position means that it acts as an important landmark when viewed from a distance from the surrounding landscape from the north, east and south. From the west views are limited to those from the B6160 as the rising ground and woodland to the west limit wider views but provide an important back drop.</p> <p>The historic picturesque views of Barden Tower along the River Wharf and from Pembroke seat are particularly significant.</p>	

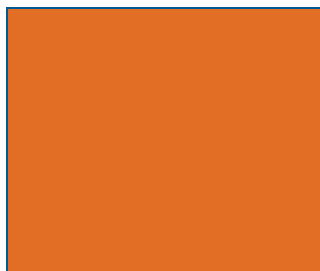
Capacity Criteria		Characteristics of the LCA	Assessment of Landscape Capacity to Accommodate Potential Development
Aesthetic, Perceptual and Experiential	Scenic Quality and Character	The historic remains of Barden Tower and surrounding historic buildings, their grounds and the wooded back drop creates a distinctive sense of place and is highly scenic	
	Remoteness/Tranquillity	Feels remote from rest of CVA and relatively tranquil interrupted only by the proximity of the B6160.	
Value	Landscape Value (Landscape related designations)	This LCA incorporates the following: <ul style="list-style-type: none"> • Yorkshire Dales National Park • Scheduled Ancient Monument (Barden Tower medieval fortified house and medieval garden and earthworks) • Listed Buildings • Sustrans Cycle Trail using the B6160 • Ancient Semi Natural Woodland to the west of the LCA 	

Overall Landscape Capacity Assessment

5.56 The following table provides an overall summary of landscape capacity to accommodate the development types outlined within section 3 Potential Development. The definition of the overall assessment (from lower to higher) is contained within Table 3 within Section 4 Methodology.

14a BARDEN TOWER: OVERALL LANDSCAPE CAPACITY TO ACCOMMODATE DEVELOPMENT

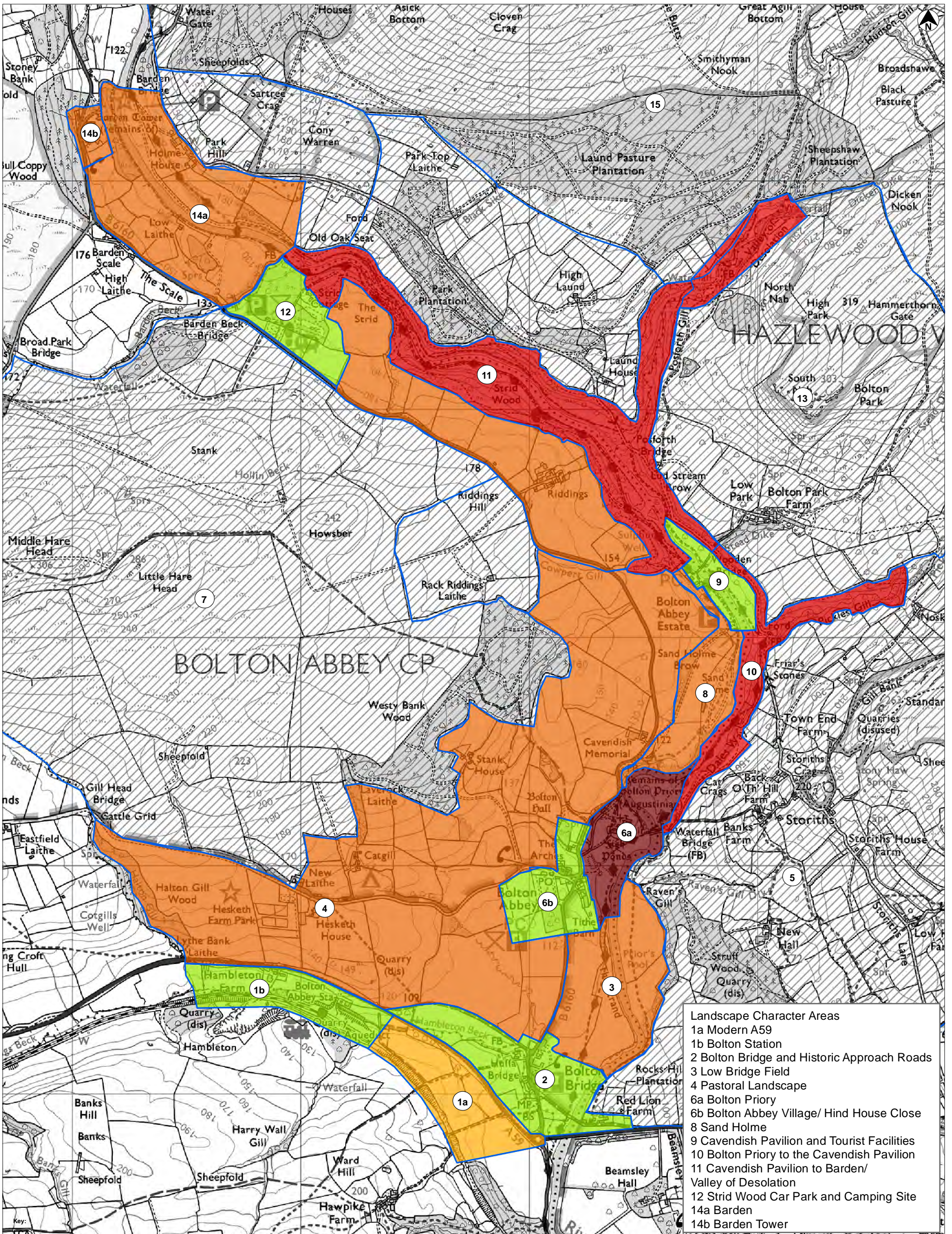
OVERALL SENSITIVITY	
Low-Medium	<p>Whilst the area includes a Scheduled Ancient Monument, the existing woodland and small scale intimate nature of this LCA together with derelict barns and outbuildings provide opportunity for development. The remains of the Tower itself also holds some potential for sensitive appropriate use, but generally this LCA has low to medium capacity for the development because:</p> <ul style="list-style-type: none"> ▪ Provides an important setting for Barden Tower ▪ Incorporates a significant number of national designations ▪ Has particularly high scenic quality ▪ Barden Tower is a visually prominent and highly sensitive landmark



Any development should be modest in scale, work with the historic grain of this cluster of buildings and be sensitively designed.

6 Conclusion

- 6.1 No LCA is found to have a **High** capacity to accommodate development.
- 6.2 The following landscape character areas are found to have a **medium-high capacity** to accommodate development:
- 1b Bolton Station
 - 2 Bolton Bridge and Historic Approach Roads
 - 6b Bolton Abbey Village/ Hind House Close
 - 9 Cavendish Pavilion and Tourist Facilities
 - 12 Strid Wood Car Park and Camping Site
- 6.3 The following LCA is found to have a **medium capacity** to accommodate development:
- 1a Modern A59
- 6.4 The following LCAs are found to have a **Low-Medium capacity** to accommodate development:
- 3 Low Bridge Field
 - 4 Pastoral Landscape
 - 8 Sand Holme
 - 14a Barden
 - 14b Barden Tower
- 6.5 The following LCAs are found to have a **low capacity** to accommodate development
- 10 Bolton Priory to the Cavendish Pavilion
 - 11 Cavendish Pavilion to Barden/ Valley of Desolation
- 6.6 The following LCA is found to have a **very low capacity** to accommodate development:
- 6a Bolton Priory



- Landscape Character Areas**
- 1a Modern A59
 - 1b Bolton Station
 - 2 Bolton Bridge and Historic Approach Roads
 - 3 Low Bridge Field
 - 4 Pastoral Landscape
 - 6a Bolton Priory
 - 6b Bolton Abbey Village/ Hind House Close
 - 8 Sand Holme
 - 9 Cavendish Pavilion and Tourist Facilities
 - 10 Bolton Priory to the Cavendish Pavilion
 - 11 Cavendish Pavilion to Barden/ Valley of Desolation
 - 12 Strid Wood Car Park and Camping Site
 - 14a Barden
 - 14b Barden Tower

Capacity of Landscape to Accommodate Development

Unassessed
Very Low
Low
Low-Medium
Medium
Medium-High
High

02	06.07.16	Cosmetic amendments only	LR	TW	TW
01	05.7.16	Amended LCA boundaries	LR	TW	TW
Rev	Date	Detail	Made	Chkd	Appd

Project:
**BOLTON ABBEY DEVELOPMENT
 OPTIONS APPRAISAL STUDY
 LANDSCAPE CAPACITY ASSESSMENT**

Drawing Title:
**FIGURE 2:
 CAPACITY OF LANDSCAPE TO
 ACCOMMODATE DEVELOPMENT**

Drawn: LR Checked: TW Approved: TW Date: 29/06/2016

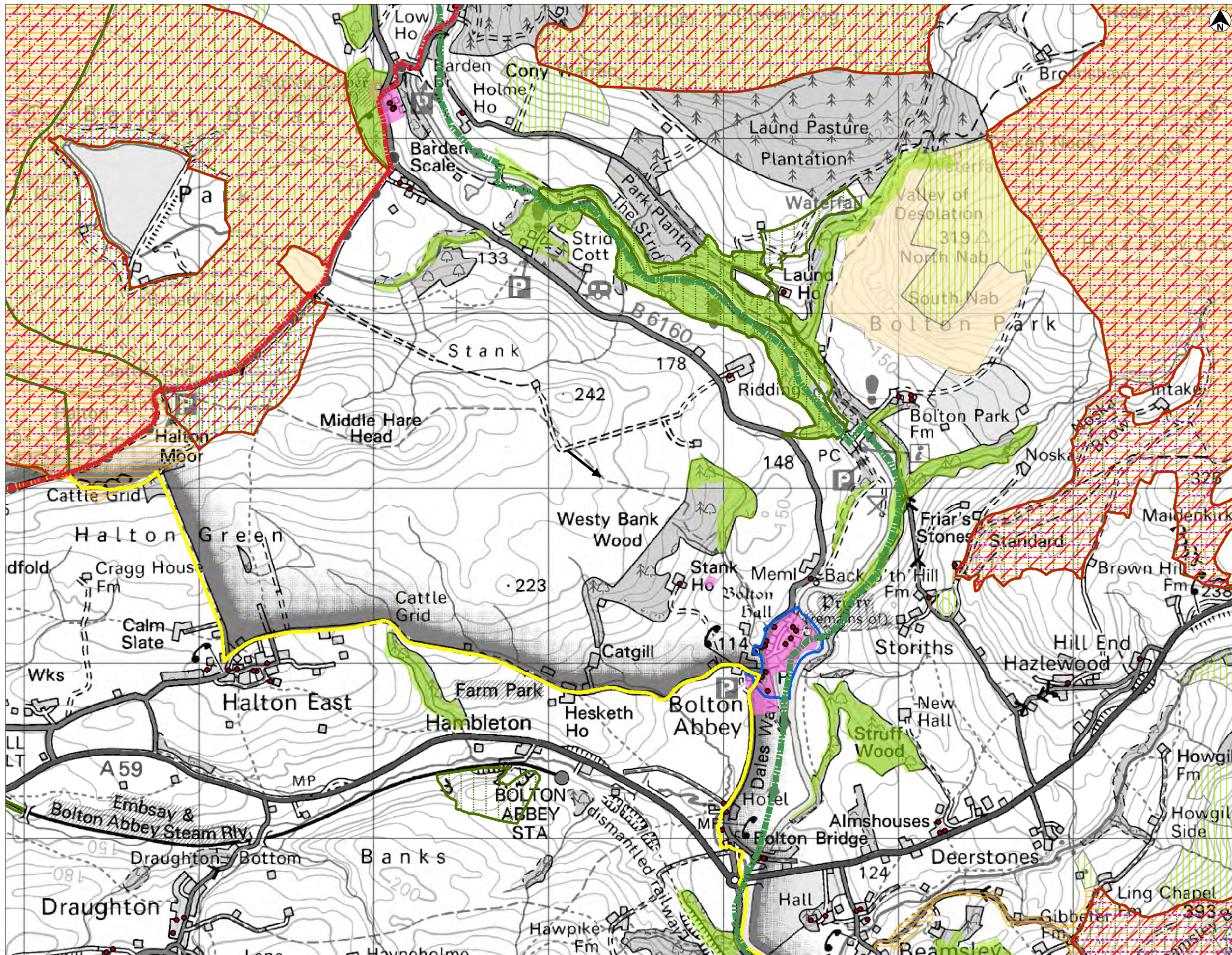
Sheet Size: A3 (297x420mm) Scale: 1:15,000

Drawing File Location:
 P10713-00-001\DRAWINGSLAYOUTS

Client:
**CHATSWORTH SETTLEMENT
 TRUSTEES**

GILLESPIES

www.gillespies.co.uk
 T: +44 (0)161 928 7715 E: design.manchester@gillespies.co.uk
 Westgate House, 44 Hale Road, Hale, Cheshire, WA14 2EX



- Key:**
- National Park
 - AONB
 - Scheduled Monument
 - National Trail / Long Distance Route
 - Sustrans Regional Route
 - CRoW Open Country
 - CRoW Registered Common Land
 - CRoW S15 Land
 - Conservation Area
 - Listed Building
 - Ancient Woodland Inventory
 - SPA
 - SAC
 - SSSI

01	06.07.16	Cosmetic changes only	LR	TW	TW
Rev	Date	Detail	Made	Chk'd	App'd

Project:
**BOLTON ABBEY DEVELOPMENT
 OPTIONS APPRAISAL STUDY
 LANDSCAPE CAPACITY STUDY**

Drawing Title:
**FIGURE 1:
 LANDSCAPE RELATED
 DESIGNATIONS**

Drawn:	LR	Sheet Size:	A3 (420mm x 297mm)
Checked:	TW	Date:	June 2016
Approved:	TW	Scale:	1:20000

Drawing File Location:
 Pxxxx BADAOS
 DRAWINGSLAYOUTS

Client:
 CHATSWORTH SETTLEMENT
 TRUSTEES

Appendix 13: Bolton Abbey Ecology Statement



Bolton Abbey Core Visitor Area

High Level Ecology Statement

Chatsworth Settlement Trustees

Details	Date
Author	Bill Lever BSc (Hons) MCIEEM Principal Ecologist
Reference:	0113_16 RE01
Date	30 th October 2016
Version	3

Report History

Details	New Version number	Date submitted	Comments
BL Ecology Ltd review process	V0		N/A
Issued to client	V1	06.09.16	N/A
CST comments	V2	19.09.16	N/A
NE comments	V3	30.10.16	Sara Moore

Table of Contents

1	INTRODUCTION	3
1.1	Purpose of Report	3
1.2	Structure of Report	3
2	CONTEXT	4
2.1	Chatsworth Settlement Trustees (CST)	4
2.2	Bolton Abbey and the Bolton Abbey Estate	4
2.3	Work to date.....	5
3	DEVELOPMENT.....	6
3.1	Strategic Development options.....	6
3.2	Detailed Development Options	6
4	ECOLOGICAL CAPACITY	7
4.1	Statutory and Non Statutory Designated Sites.....	7
4.2	General Habitat and Ecological Network Description	8
4.3	Protected Species.....	9
5	ASSESSMENT	10
5.1	General	10
5.2	Impact Assessment of Development Areas.....	10
6	CONCLUSION.....	12

1 Introduction

1.1 Purpose of Report

1.1.1 BL Ecology Ltd has been commissioned by The Chatsworth Settlement Trustees (CST) to prepare a high level ecology statement report in order to provide evidence to inform both its intended development proposals at Bolton Abbey and a specific allocation or policy in the Craven District Local Plan (CDLP). This report has therefore been prepared in conjunction with the Bolton Abbey Development Options Appraisal Study (BADOAS) report by Nathaniel Lichfield and Partners (NLP) to evaluate development options in the Core Visitor Area (CVA) from Bolton Bridge to Barden Bridge so as to sustain its role as a major tourist destination.

1.2 Structure of Report

1.2.1 This report considers the following:

- Context;
- Existing conditions/capacity for development;
- Preferred development option (as identified in the BADOAS report);
- Potential impact of development; and
- Prescribed mitigation measures.

1.2.2 It concludes that there is sufficient ecological capacity to accommodate development, and that the intended development proposals will not harm the ecological value of the area.

2 Context

2.1 Chatsworth Settlement Trustees (CST)

2.1.1 CST is a business which owns and manages property on behalf of the Cavendish family, and has a strong brand identity and commitment to quality. It derives incomes from rents, admissions and trading, and thereby funds a range of high quality environmental management activities (e.g. architectural conservation). As such, it has a custodial role but must ensure projects are viable and provide a commercial return.

2.2 Bolton Abbey and the Bolton Abbey Estate

2.2.1 Bolton Abbey is a settlement comprising Bolton Abbey village, Bolton Bridge and Bolton Abbey Station. It is situated on high ground west of the River Wharfe and located less than a mile north of the junction of the A59 and B6160. Bolton Abbey contains 58 properties, 39 of which are dwelling units.

2.2.2 The Bolton Abbey Estate comprises c.12,000 hectares owned by CST situated mostly in the southern part of the YDNP. This landholding includes the Bolton Abbey Core Visitor Area (CVA), which in turn includes major tourist attractions such as: The Strid; Bolton Priory; Devonshire Arms Hotel; Cavendish Pavilion; Barden Tower.

2.2.3 The CVA is a sensitive area. It is protected by several planning designations (including National Park, Scheduled Monument, Conservation Area, Listed Buildings) and managed in line with the Bolton Abbey Heritage Landscape Management Plan (BAHLMP) 1993. CST is exempt from some taxes in return for open access across parts of the estate (eg the CVA) as well as an obligation for CST to maintain, repair and preserve the buildings and land that is covered by the agreement. However, related costs are rising, and now stand at c.£1.5m per year, thereby putting a strain on CST's ability to fund such management.

2.2.4 Key Issues

2.2.5 The CVA has outstanding heritage assets, natural features and landscape quality. It also acts as the main strategic "southern gateway" for most of the 3.5 million visitors to the Yorkshire Dales National Park. [There are c.450,000 visitors to Bolton Abbey each year.] However, it is also constrained by the following:

- Lack of sense of arrival (and departure) for visitors;
- Visitor operation dependent on weather and school holidays;
- Brief trips with little or no secondary spend;
- Major planning constraints (especially the YDNP) limit growth;
- High/increasing maintenance costs;
- Loss-making entities (eg Post Office);
- Staff cannot afford local house prices (ie long journeys to work);
- Limited visitor accommodation; and
- Increased competition from other local attractions.

2.2.6 As such, the CVA has a limited and low value offer to visitors. Since CST receives no grant support for its environmental management of the area (including architectural conservation of listed buildings etc), it needs to diversify its current visitor operation to generate more income to sustain its activities.

2.3 **Work to date**

2.3.1 In view of the foregoing, CST has:

- Liaised with Craven District Council (CDC), the Yorkshire Dales National Park Authority (YDNPA) and Historic England (HE);
- Gathered related evidence (including Visitor Accommodation Needs Assessment, Staff Accommodation Needs Assessment, Heritage Capacity Assessment, Landscape Capacity Study, Ecological Statement);
- Commissioned Rural Solutions Ltd (RSL) to design a series of development options;
- Undertaken the Bolton Abbey Development Options Appraisal Study (BADOAS) by Nathaniel Lichfield and Partners (NLP) to evaluate the development options and identify a preferred development option; and
- Held a well-attended public liaison event in July 2016 to gauge reactions to the preferred development option arising from the BADOAS report.

2.3.2 It is understood that CDC, YDNPA and HE now support the preferred development option in principle, and that the only real concern raised by the majority of attendees at the public liaison event was the impact of the proposals on traffic (since the capacity of the local road network can be stretched on c.10 days per year at high peak visitor times).

3 Development

3.1 Strategic Development options

3.1.1 The BADOAS report by NLP has identified and considered 4 strategic options for development in the CVA as follows:

- Option 1: All development in the YDNP;
- Option 2: All development in Bolton Abbey village;
- Option 3: all development in Bolton Bridge; and
- Option 4: Most development in Bolton Bridge and Bolton Abbey with some small-scale development in the YDNP.

3.1.2 The BADOAS work has identified Option 4 as the preferred option for development. This provides for:

- Barden Bridge: scope for play area, facilities and ancillary parking;
- Barden Tower: scope for play area or staff/visitor/other accommodation with ancillary parking;
- Strid Wood: scope for small play area;
- Cavendish Pavilion: scope for small play area;
- Sandholme/The Ungain: Scope for special events (ie no “hard” development);
- Bolton Priory: Scope for church-related development;
- Bolton Abbey village: Scope for new barnyard green, play barn, play area, pub, staff/visitor/other accommodation, biomass boiler and wedding barn; and
- Bolton Bridge: Scope for farm shop, cycle hub, café, offices, play area, hotel extension, spa extension and staff/visitor/other accommodation

3.1.3 It must be stressed however that 90-95% of development would take place in Bolton Bridge and Bolton Abbey, with only 5-10% of the remaining development taking place in the YDNP (and very small-scale development at that with uses largely confined to the visitor season in summer only).

3.2 Detailed Development Options

3.2.1 The BADOAS report provides indicative layout plans of the preferred Development Option 4 in relation to Bolton Bridge and Bolton Abbey. It must be stressed that these “detailed” plans are conceptual and indicative only, and that CST is now seeking to work up a masterplan which will consider related issues (and that any planning applications in the future would consider related issues further still). Nevertheless, CST is keen to define and assess related access options now so as to inform revised detailed layouts accordingly.

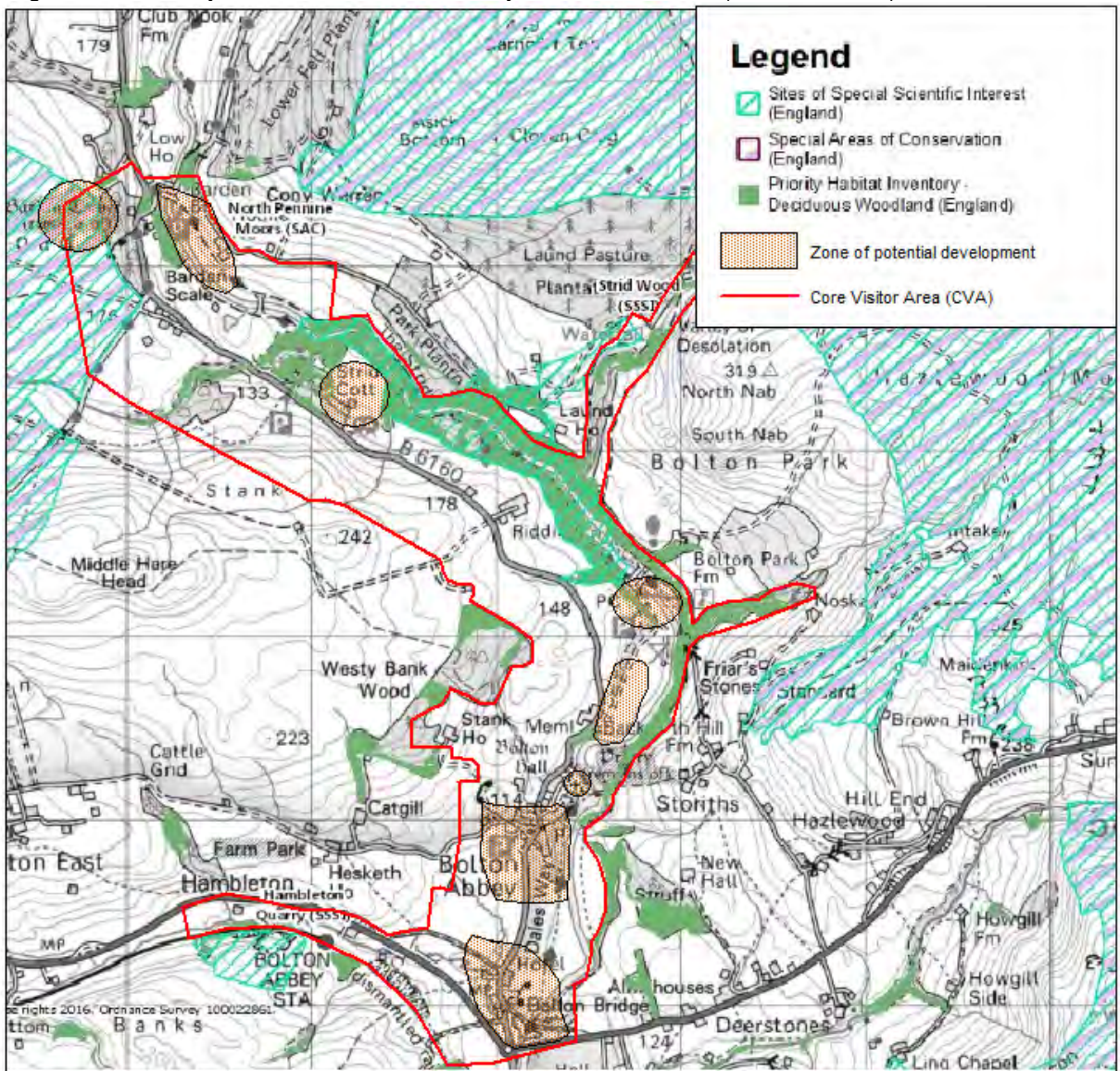
4 Ecological Capacity

4.1 Statutory and Non Statutory Designated Sites

4.1.1 Figure 1 outlines the location of statutory sites protected for their ecological value, in addition the figure illustrates priority 'ancient' woodland as protected through the Natural Environment and Rural Communities Act 2006.

4.1.2 Figure 1 illustrates the distance of the proposals to statutory sites and priority habitat, additional information on sites and priority habitats is provided in this section.

Figure 1 – Statutory Protected Sites and Priority Woodland Habitat (S41 NERC Act).



North Pennines SPA / SAC

- 4.1.3 The North Pennine Moors SPA / SAC support extensive upland habitats including blanket bogs and dry heathland. The SPA / SAC area is located to the north east and north west of Bolton Bridge and Bolton Abbey Village, the majority of the proposed development is over a kilometre away from the closest extent of the North Pennines SPA / SAC. However some proposals associated with Barden Tower fall within the likely zone of influence of the SPA / SAC.

West Nidderdale, Barden and Blubberhouses SSSI

- 4.1.4 The boundary of this site largely correlates with the SAC listed above, SSSIs being the national level designation. The habitats include blanket bogs and dry heath.

Strid Wood SSSI

- 4.1.5 Strid Wood is designation is due to the presence of significant sessile oak woodland which supports a diverse array of lichens and other flora and fauna. The SSSI is used as a significant recreational attraction which includes walks, seasonal activities combined with car parking and a caravan site. The proposals include a small children's play area within the SSSI or the zone of influence.

Hambleton Quarry SSSI

- 4.1.6 Hambleton quarry is designated for geological interest therefore is not considered in this ecology statement. The site is located around 1km to the west of the development proposals at Bolton Bridge.

Ancient Woodland

- 4.1.7 Ancient woodland is considered due to the abundance of the priority habitat within Bolton Abbey Estate. The proposals include potential small areas of development at Sandholme, Strid Wood, Barden Bridge and Barden Tower all of which are within the zone of influence of Ancient Woodland.

4.2 General Habitat and Ecological Network Description

Bolton Bridge

- 4.2.1 The predominant habitat present around Bolton Bridge is improved grazed pasture, this habitat is generally of low ecological value. However habitats of ecological value are present including Hambleton Beck and the old A59 which supports a tree lined corridor not used by traffic. In addition individual trees and areas of scrub/sapling planting support potential for nesting birds, roosting and foraging bats.

Bolton Abbey Village and Bolton Priory

- 4.2.2 The habitats present around Bolton Abbey Village and The Priory are largely improved grazed pasture but with more significant features such as mature trees, hedgerows and mature gardens. The built environment supports known bat roosts which utilise the habitat features present for foraging and commuting bats.

- 4.2.3 The hedgerows present in the village are un-laid species poor hedges which are managed for aesthetic reasons. They are therefore not considered to be 'important' hedgerows however would need to be considered under the Hedgerow Regs.

Sandholme / The Ungain

- 4.2.4 The habitats present around Sandholme and The Ungain are heavily influenced by landscape management being a large car park for the estates visitors. Habitats largely include mown amenity grassland and grazed pasture however some mature trees are present together with The River Wharfe which is accessible from Sandholme car park.

Cavendish Pavilion

- 4.2.5 The habitats present around The Cavendish Pavilion are similar to those of Sandholme with a well managed visitor area consisting of hard standing and amenity grassland. However the pavilion is directly adjacent to Strid Wood SSSI and the River Wharfe.

Strid Wood

- 4.2.6 The area is largely known for woodland, however an area falls outside of the SSSI boundary which includes car parking and a caravan site. Habitats within Strid are diverse and are subject to statutory protection.

Barden Bridge

- 4.2.7 The habitats present around Barden Bridge are generally improved grazed pasture and well used amenity grassland, this habitat is generally of low ecological value. However habitats of ecological value are present including the River Wharfe, Ancient Woodland and built structures suitable for roosting bats.

Barden Bridge

- 4.2.8 The habitats present around Barden Tower are largely well used visitor areas including hard standing and amenity grassland, however Barden Tower forms the closest part of the proposals to the SPA / SAC. Whilst no development will occur in the protected site any proposals would be within the zone of influence.

4.3 Protected Species

Bats

- 4.3.1 Bats are a significant consideration with known roosts within Bolton Abbey Village, The Priory and Barden Bridge. Also other roosts are likely to be present in built structures and mature trees throughout the estate. A bat barn is proposed to the south of the Tithe Barn which will be located within foraging and commuting habitat on the bank of the Wharfe, habitat linkages are present throughout the village and Bolton Bridge such as Hambleton Beck and the old A59 and overall the Wharfe river corridor provides significant value to local bat populations through an abundance of woodland and the river habitat itself..

Aquatic Species

- 4.3.2 White clawed crayfish are known to be present within the Wharfe and Kex Beck both within the immediate catchment of Hambleton Beck. In addition otter are known to be present and generally river quality around the Wharfe is good with migratory fish and good invertebrate numbers. It should also be considered that all tributaries of the Wharfe and Kex Beck could support aquatic species including otter and white clawed crayfish.

5 Assessment

5.1 General

5.1.1 This chapter provides a high level ecological assessment in relation to the potential impacts of development proposals. The chapter outlines the likely significance of impacts based on the strategic development options as outlined in Chapter 1. It is the case that until detailed design is undertaken a full ecological impact statement cannot be prepared, however this chapter details a generic assessment based on the known ecological baseline.

5.1.2 The eight distinct areas are detailed here, outlining the potential ecological impacts, likely mitigation required and residual impacts following mitigation measures.

5.1.3 A consultation was held with the Natural England advisor for the statutory protected sites within Bolton Abbey Estate on 28th September 2016 (Sara Moore Tel: 0300 0604240). The consultation outlined the following:

- Any development at Bolton Bridge and Bolton Abbey Village would unlikely reach Natural England at the formal consultation stage due to the distance from statutory sites, however if consulted at the design/planning application stage then providing the development resulted in no residual harm to the protected site or indeed similar habitats then there would be no objection. For protected species providing surveys had been completed meeting the guidelines and mitigation ensured the favorable conservation status was met there would likely be no objections;
- Proposals within the any protected site would likely be deemed unsuitable, Natural England believe the option of a play area within Strid was discussed several years ago and this was generally pushed more in the direction of being outside the SSSI boundary; and
- Any proposals adjacent to SSSI/SAC (i.e. not in the boundary) would be more acceptable, indeed with mitigatory measures in place such as fencing to discourage increased pressure on SSSI/SAC such as erosion etc then there would be no objection. Natural England explained they are understanding to the need to diversify visitor attractions and said anything that strove to do this in an ecologically sympathetic way would be looked on very favorably.

5.2 Impact Assessment of Development Areas

Bolton Bridge

5.2.1 The majority of the development proposals are focused around Bolton Bridge, overall this is a positive due to abundance of low ecological land (improved grazed pasture). However there would potentially be some loss of trees, combined with the proximity to Hambleton Beck and the old A59 development therefore has the potential to indirectly affect aquatic species and roosting/foraging bats.

5.2.2 Whilst there would unlikely be any direct impact on Hambleton Beck, mitigation would be required to avoid indirect damage to the habitat features. This could include consideration for sustainable drainage and water runoff treatment together with standoff distances from the bankside to prevent damage to the

water course. Any flood remediation measures would need to be evaluated for their affect on protected species including otter and white clawed crayfish and appropriate mitigation completed.

5.2.3 The Old A59 Supports suitable bat foraging and commuting habitat. Consideration will need to be made for reduced light levels during and post development, retention of mature trees and additional planting to compensate and enhance the area post development.

5.2.4 Due to the limited ecological value of the majority of the area combined with the suggested mitigation for protected species and replanting, the residual ecological impact is likely to be neutral in this area.

Bolton Village and Bolton Priory

5.2.5 The majority of the development proposals are focused around the existing built environment of the village. Bats are known to roost in several buildings in the village with one significant roost of Natterer's bat present within the Tithe Barn. Significant consideration will need to be given to identifying how bats utilise the wider village landscape and thus protecting (or mitigating for the loss of) any commuting/foraging areas. Detailed design will need to limit lighting within the village in addition provide planting to ensure no net loss of habitats.

5.2.6 Hedgerows are present in Bolton Abbey Village and it is likely some sections will need to be removed. Significant compensatory planting is proposed in the village and planting will ensure habitat linkages with surrounding key features such as the proposed bat barn at Tithe Barn and reinstating defunct hedgerows adjacent to ensure 'no net loss' of hedgerow habitat.

5.2.7 With replacement planting, consideration of lighting levels and general habitat enhancements the residual ecological impact is likely to be slight beneficial in this area.

Sandholme/The Ungain

5.2.8 The proposals here are likely to be restricted to seasonal and special events and therefore no significant habitat impacts are expected. However Sandholme is located immediately adjacent to woodland and the River Wharfe and therefore indirect impacts from events such as increased lighting have the potential to adversely affect key species such as bats and otters. Consideration should be given to these species during detailed design by considering light management options and reducing the risk to otters through night traffic management.

5.2.9 With consideration for lighting, traffic measures and general ecological protection measures/enhancements the residual ecological impact is likely to be neutral.

Cavendish Pavilion

5.2.10 The development is likely to be very low key with a children's play area proposed. The pavilion is located adjacent to Strid Wood SSSI and the River Wharfe, however the surrounding is already a well used area by visitors. Consideration should be given to the siting of the play area by avoiding the SSSI and utilising existing amenity areas. Overall given the low key nature of the proposal, a careful siting of the play area and the low likelihood of additional disturbance post development, the residual impact is likely to be neutral.

Strid Wood

5.2.11 The development is likely to be very low key with a children's play area proposed. Similarly to the Cavendish Pavilion the area is subject to high visitor numbers with car parking, a caravan site and well used woodland walks. The main consideration is the siting of the play area, some parts of Strid Wood are not within the boundary of the SSSI (such as around Strid Cottage) and therefore have some potential for development of a play area. The play area would likely be in the zone of influence of the SSSI and therefore should consider natural constructions and where necessary only removal of non native trees/conifers and surveying them appropriately for bats and nesting birds.

5.2.12 Overall with careful siting and consideration for protected species the residual impact is likely to be neutral.

Barden Tower

5.2.13 The development is likely to be relatively small with either a play area or staff/guest accommodation and ancillary parking. Barden Tower is the closest proposal to the SAC/SPA and therefore is a material consideration, however the area is already subject to existing buildings and a visiting area which may have capacity for additional construction. Siting is important and no proposals will be located within the SAC/SPA boundary, in addition it is suggested that all built structures likely to be affected are surveyed appropriately for bats and mitigatory measures installed for lighting levels. Overall due to the likely low key nature of the proposals and the presence of existing car parking, restaurant and buildings the residual impact is likely to be neutral.

Barden Bridge

5.2.14 The area is largely of low ecological value however some significant habitats are present. The siting of any development is important avoiding mature woodland and keeping within well used visitor areas. Overall due to the likely low key nature of the proposals and the presence of existing car parking, visitors and buildings at Barden Bridge the residual impact is likely to be neutral.

6 Conclusion

6.1.1 The preferred option was partially chosen due to the reduced impact on protected sites. It is therefore expected that development would lead to a neutral impact on protected sites providing localised mitigation was completed as suggested in the previous chapter, careful siting of any play areas likely to be adjacent to Strid Wood SSSI is important together with concentrating proposals at Barden Tower within existing built areas avoiding natural habitat. The careful siting of development is also a view shared by Natural England and any efforts to do this would be looked upon favourably.

6.1.2 Given localised mitigation in all areas relating to bats, otters, white clawed crayfish and nesting birds it is expected that the development options would pose a residual impact of neutral, with some opportunities to improve habitat planting and linkages in Bolton Village leading to a residual impact of slight beneficial.

Appendix 14: Historic England Letter 27th January 2017



Historic England

Mr Will Kemp
The Estate Office
Bolton Abbey
Skipton
North Yorkshire
BD23 6EX

Our ref: PL00062503
Your ref:
Telephone 01904601897
Fax

27 January 2017

Dear Mr Kemp

Re: Bolton Abbey Development Options Appraisal Study (BADOAS): Final Draft

Thank you for sending us the final copy of the BADOAS report for Historic England to comment on. Historic England is very grateful for the time and engagement the Estate has spent in producing this document and its appendices. We welcome this comprehensive approach to addressing our concerns about the capacity of the Bolton Abbey landscape to accept further development. We consider this work and in particular the heritage and landscape assessments have given a much better and clearer understanding of the landscape, the importance of the heritage assets and how they come together to contribute to a cultural landscape of quite exceptional significance. We also welcome the broader assessment of the Estate and its visitor and development needs which provide much context to future decision making.

We have seen the comments of the Yorkshire Dales National Park and would defer to them and Craven Council on matters of detail regarding local plan policy and the tourism offer in the Park and surrounding area.

Overall we have very little to add beyond supporting the areas identified for possible growth. We very much welcome the broad approach to identifying the different development opportunities between Bolton Bridge and Barden Tower and we accept that Bolton Abbey and Bolton Bridge represent the only significant areas for new development.

That said we do still have concerns about the design of the proposed development and car park at Bolton Abbey and the new development at Bolton Bridge. This will need to be addressed in detail as and when the proposals are brought forward. Whilst we understand the rationale behind the development and support the overall conclusions of the BADOAS report we would need to see more detail for Bolton Bridge and Bolton Abbey Village than currently set out in Figure 7.3 (Preferred



Historic England, 37 Tanner Row, York YO1 6WP
Telephone 01904 60 1948 HistoricEngland.org.uk

Please note that Historic England operates an access to information policy.

Correspondence or information which you send us may therefore become publicly available.





Historic England

Option Details Bolton Abbey Village) and Figure 7.4 (Preferred Option Details Bolton Bridge) before we could offer our full support.

In summary we welcome the report, are continue to be supportive of the Estate's ambitions in general. However, we do still have concerns regarding design, setting and layout of the proposed developments which will need to be addressed at a more detailed stage.

Yours sincerely

Neil Redfern
Principle Inspector of Ancient Monuments, Yorkshire
E-mail: Neil.Redfern@HistoricEngland.org.uk



Historic England, 37 Tanner Row, York YO1 6WP
Telephone 01904 60 1948 HistoricEngland.org.uk

Please note that Historic England operates an access to information policy.

Correspondence or information which you send us may therefore become publicly available.



Appendix 15: Bolton Abbey Transport Statement

Chatsworth Settlement Trustees
Bolton Abbey Village Masterplan
High Level Transport Statement

Issue | 14 December 2016

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 245165-05

Ove Arup & Partners Ltd
Admiral House Rose Wharf
78 East Street
Leeds LS9 8EE
United Kingdom
www.arup.com

ARUP

Contents

	Page
Executive Summary	1
1 Introduction	5
1.1 Purpose of Report	5
1.2 Report Content	5
2 Context	6
2.1 Chatsworth Settlement Trustees (CST)	6
2.2 Bolton Abbey and the Bolton Abbey Estate	6
2.3 Key Issues	6
2.4 Work to date	7
3 Indicative Development	8
3.1 Strategic Development Options	8
3.2 Detailed Development Options	8
4 Assessment Methodology	9
4.1 Baseline	9
4.2 Indicative Scheme Assessment	9
5 Existing Conditions	11
5.1 Local Highway Network	11
5.2 Public Transport	14
5.3 Cycling Facilities	15
5.4 Pedestrian Access	15
6 Indicative Development Scheme – Transport Context	17
6.1 Consultation	17
6.2 Bolton Bridge	17
6.3 Bolton Abbey Village	18
7 Impact and Assessment	20
7.1 Existing Traffic Flows	20
7.2 Preferred Scheme - Trip Generation Assumptions	23
7.3 Development Impact	24
8 Mitigation Measures	27
8.1 Summary of Suggested Mitigation Measures	27
8.2 Bolton Bridge	27
8.3 Bolton Abbey Village	30
8.4 Impact	32

9 Conclusions and Recommendations

34

Appendices

Appendix A

BADOAS Preferred Development Option – Indicative Plans

Appendix B

CST Car Park Data

Appendix C

2016 Survey Data

Appendix D

Transport Measures and Access Options Sketch

Executive Summary

This report provides a high level Transport Statement in support of the proposed allocation of land, or a related policy, at Bolton Abbey in the Craven District Local Plan. The Transport Statement is prepared in conjunction with the Bolton Abbey Development Options Appraisal Study (BADOAS) and Masterplan. In effect it examines and assesses the indicative scheme prepared by RSL and provides related mitigation measures accordingly to be considered in development of the Masterplan.

Background and Context

The Bolton Abbey Core Visitor Area (CVA), comprising Bolton Bridge and Bolton Abbey village, is located on the B6160 to the north of the roundabout junction with the A59. The BADOAS has identified that there are a number of issues and constraints associated with the current visitor operation at the CVA, including:

- lack of sense of arrival (and departure) for visitors;
- visitor operation dependent on weather and school holidays;
- brief trips with little or no secondary spend;
- major planning constraints (especially the YDNP) limit growth;
- high / increasing maintenance costs;
- loss-making entities (eg Post Office);
- staff cannot afford local house prices (ie long journeys to work);
- limited visitor accommodation;
- national speed limit (60mph) applies in / throughout Bolton Abbey;
- increased competition from other local attractions.

Therefore, CST has undertaken a range of consultation and evidence gathering in order to identify and assess a number of strategic development options. A preferred strategic option (4) has been identified, comprising: development of a farm shop and car park at Bolton Bridge (in Craven District); development of a play barn / area, pub and accommodation around a village green in Bolton Abbey village (in Craven District); limited development of play areas elsewhere in the CVA (in the YDNP). Draft indicative layouts have been developed by RSL accordingly. This high level Transport Statement has been prepared to assess the indicative layouts and provide mitigation measures accordingly to feed into the Masterplan as it is developed.

Existing Conditions and Issues

The B6160 provides access to Bolton Bridge and Bolton Abbey village from the A59 which runs in an east west direction between Harrogate and Skipton. The B6160 is generally a quiet country road, however at peak tourist times (Easter and summer holiday periods, particularly weekends and bank holidays), it can suffer from congestion in Bolton Abbey village and Bolton Bridge.

The main visitor car park is located in Bolton Abbey village with very limited public parking in Bolton Bridge. The Bolton Abbey visitor car park is located to the south west of the village with a two way access provided from the B6160. A manned kiosk is located at the car park entrance for payment. The existing payment on entry system causes delays at the car park entrance in peak tourist periods, with queues forming on the northbound approach to the car park. At its worst, at peak times during approx. 10 days per year, standing traffic waiting to park at the main car park in Bolton Abbey village can queue back as far as Bolton Bridge.

Due to the rural nature of Bolton Bridge and Bolton Abbey village, access options by sustainable modes of travel are limited. A local bus service is in operation but services are infrequent. Limited pedestrian and cycle infrastructure is provided within, and connecting, the villages.

Indicative Development

RSL have provided indicative layouts for development in Bolton Bridge and Bolton Abbey village.

The scheme for Bolton Bridge includes a farm shop, café / cycle hub and offices, as well as an extension to the existing hotel and spa and new visitor / staff / other accommodation. New car parking would be provided with access from the A59 and B6160. In Bolton Abbey village development includes provision of a new play area and play barn, pub and visitor / staff / other accommodation. The existing car park would provide the main visitor car park.

Transport Proposals and Mitigation Measures

Within this high level Transport Statement, Arup have considered access options and issues in both Bolton Bridge and Bolton Abbey village. As part of this process, Arup have met NYCC Highways on site, to consider access options. At this stage NYCC Highways are in broad approval of the preferred strategic development Option 4, however it is noted more detailed design and assessment will need to be undertaken in due course as the scheme progresses.

A number of options have been considered and measures recommended, including:

In Bolton Bridge:

- A number of car park access options for the farm shop, café / cycle hub and office have been considered and preferred access proposals recommended – this comprises upgrade to the existing B6160 junction;
- Car park reconfiguration issues and access options for the hotel and spa have been identified – it is recommended that the hotel car park access is relocated to improve visibility and additional parking at the spa is provided for overflow / staff parking;
- Proposals for access by sustainable modes of travel have been identified – in particular routes for pedestrian connections to the village.

In Bolton Abbey Village:

- A number of options to improve the efficiency of the car park access and reduce congestion have been considered and assessment undertaken to demonstrate the impacts of the preferred option – it is recommended that ticket machines are used at peak times instead of the manned kiosk;
- The location of local access junctions and measures to improve visibility are identified at a number of locations;
- Proposals for improved pedestrian access routes, including connections to the local bus stops have been identified to enhance pedestrian connections to village;
- An option to amend the B6160 highway alignment outside The Beeches to facilitate improved pedestrian routes has been considered;
- Further highway measures around The Beeches have been suggested to provide a new public square.

The review of access options and discussions with NYCC Highways provided within this Transport Statement will inform the Masterplan which will be developed for the preferred development option.

Assessment

Existing traffic data has been obtained for the 2016 August Bank Holiday weekend, representing a typical peak tourist period. From this, peak hours and traffic flows have been identified to enable highway assessments to be undertaken.

Assessment of operation of the existing A59 / B6160 roundabout and Bolton Abbey car park access has been undertaken. A high level assessment of the impact of using ticket machines instead of the manned kiosk at peak periods has also been tested.

A high level review of potential trips for the preferred option development has been undertaken and factors used to provide an uplift in trips for high level assessment purposes. Sensitivity Tests have been undertaken to assess the

potential impact of increased trips on the operation of the local highway, including the car park access and peak car park demand.

The junction assessment Sensitivity Test demonstrates that the A59 / B6160 junction can accommodate potential additional traffic associated with development at Bolton Abbey. Existing queuing on the B6160 approaching the Bolton Abbey visitor car park access would be exacerbated by development. However, as a result of using ticket machines instead of the manned payment kiosk at peak periods, congestion and queuing could be eliminated.

The car park occupancy Sensitivity Test demonstrates that additional car park capacity at Bolton Abbey village may be required to accommodate visitors during peak periods. It is noted that it will be important to ensure the new car park layout is designed such that drivers move through the car park efficiently to find spaces and do not cause delays to other cars at the car park entrance.

It is noted that, at this stage, these assessments are high level and more detailed assessment will need to be undertaken as the scheme progresses or in support of an application.

Conclusions

The transport proposals for Bolton Abbey consider access by all modes of transport. It is acknowledged that the majority of visitor trips to the Bolton Abbey CVA would be via car. A high level highway assessment of increased visitor trips has been undertaken and concludes additional trips can be broadly accommodated on the local network. Additional car parking is proposed and measures to relieve congestion as a result of queuing at the payment kiosk have been identified.

It is concluded therefore, that the preferred development option can be satisfactorily accommodated on the local transport network.

1 Introduction

1.1 Purpose of Report

Ove Arup and Partners Ltd (Arup) has been commissioned by The Chatsworth Settlement Trustees (CST) to prepare a high level Transport Statement report in order to provide evidence to inform both its intended development proposals at Bolton Abbey and a specific allocation or policy in the Craven District Local Plan (CDLP). This report has therefore been prepared in conjunction with the Bolton Abbey Development Options Appraisal Study (BADOAS) report by Nathaniel Lichfield and Partners (NLP) to evaluate development options in the Core Visitor Area (CVA) from Bolton Bridge to Barden Bridge, so as to sustain its role as a major tourist destination.

1.2 Report Content

This report considers the following:

- context for development within the CVA;
- the existing transport conditions/capacity for development;
- the preferred development option (as identified in the BADOAS report);
- the potential impact of development; and
- prescribed mitigation measures.

It concludes that the preferred development option can be satisfactorily accommodated on the local transport network.

2 Context

2.1 Chatsworth Settlement Trustees (CST)

CST is a business which owns and manages property on behalf of the Cavendish family, and has a strong brand identity and commitment to quality. It derives incomes from rents, admissions and trading, and thereby funds a range of high quality environmental management activities (e.g. architectural conservation). As such, it has a custodial role but must ensure projects are viable and provide a commercial return.

2.2 Bolton Abbey and the Bolton Abbey Estate

Bolton Abbey is a settlement comprising Bolton Abbey village, Bolton Bridge and Bolton Abbey Station. It is situated on high ground west of the River Wharfe and located less than a mile north of the junction of the A59 and B6160. Bolton Abbey contains 58 properties, 39 of which are dwelling units.

The Bolton Abbey Estate comprises c.12,000 hectares owned by CST situated mostly in the southern part of the YDNP. This landholding includes the Bolton Abbey Core Visitor Area (CVA), which in turn includes major tourist attractions such as: The Strid; Bolton Priory; Devonshire Arms Hotel; Cavendish Pavilion; Barden Tower.

The CVA is a sensitive area. It is protected by several planning designations (including National Park, Scheduled Monument, Conservation Area, Listed Buildings) and managed in line with the Bolton Abbey Heritage Landscape Management Plan (BAHLMP) 1993. CST is exempt from some taxes in return for open access across parts of the estate (eg the CVA). However, related costs are rising, and now stand at c.£1.5m per year, thereby putting a strain on CST's ability to fund such management.

2.3 Key Issues

The CVA has outstanding heritage assets, natural features and landscape quality. It also acts as the main strategic “southern gateway” for most of the 3.5 million visitors to the Yorkshire Dales National Park. [There are c.450,000 visitors to Bolton Abbey each year.] However, it is also constrained by the following:

- lack of sense of arrival (and departure) for visitors;
- visitor operation dependent on weather and school holidays;
- brief trips with little or no secondary spend;
- major planning constraints (especially the YDNP) limit growth;
- high/increasing maintenance costs;
- loss-making entities (eg Post Office);
- staff cannot afford local house prices (ie long journeys to work);

- limited visitor accommodation;
- national speed limit (60mph) applies in / throughout Bolton Abbey;
- increased competition from other local attractions.

As such, the CVA has a limited and low value offer to visitors. Since CST receives no grant support for its environmental management of the area (including architectural conservation of listed buildings etc), it needs to diversify its current visitor operation to generate more income to sustain its activities.

2.4 Work to date

In view of the foregoing, CST has:

- liaised with Craven District Council (CDC), the Yorkshire Dales National Park Authority (YDNPA), Historic England (HE) and North Yorkshire County Council (NYCC) as local highway authority;
- gathered related evidence (including Visitor Accommodation Needs Assessment, Staff Accommodation Needs Assessment, Heritage Capacity Assessment, Landscape Capacity Study, Ecological Statement);
- commissioned Rural Solutions Ltd (RSL) to design a series of indicative ‘strategic’ and ‘detailed’ development options;
- undertaken the Bolton Abbey Development Options Appraisal Study (BADOAS) by NLP to evaluate the strategic development options and identify a preferred development option accordingly;
- held a well-attended public liaison event in July 2016 to gauge reactions to the preferred development option arising from the BADOAS report.

It is understood, at the time of writing, that CDC, YDNPA and HE now support the preferred development option in principle, and that the only real concern raised by the majority of attendees at the public liaison event was the impact of the proposals on traffic (since the capacity of the local road network can be stretched on c.10 days per year at high peak visitor times).

There is a need therefore for this high level Transport Statement to consider related issues, assess impacts and prescribe related mitigation measures accordingly.

3 Indicative Development

3.1 Strategic Development Options

The BADOAS report by NLP has identified and considered 4 strategic options for development in the CVA as follows:

- Option 1: All development in the YDNP;
- Option 2: All development in Bolton Abbey village;
- Option 3: all development in Bolton Bridge;
- Option 4: Most development in Bolton Bridge and Bolton Abbey with some small-scale development in the YDNP.

The BADOAS work has identified Option 4 as the preferred option for development. This provides for:

- Barden Bridge: scope for play area, facilities and ancillary parking;
- Barden Tower: scope for play area or staff/visitor/other accommodation with ancillary parking;
- Strid Wood: scope for small play area;
- Cavendish Pavilion: scope for small play area;
- Sandholme/The Ungain: Scope for special events (ie no “hard” development);
- Bolton Priory: Scope for church-related development;
- Bolton Abbey village: Scope for new barnyard green, play barn, play area, pub, staff/visitor/other accommodation, biomass boiler and wedding barn;
- Bolton Bridge: Scope for farm shop, cycle hub, café, offices, play area, hotel extension, spa extension and staff/visitor/other accommodation.

It must be stressed however that 90-95% of development would take place in Bolton Bridge and Bolton Abbey, with only 5-10% of the remaining development taking place in the YDNP (and very small-scale development at that with uses largely confined to the visitor season in summer only).

3.2 Detailed Development Options

The BADOAS report provides indicative layout plans of the preferred Development Option 4 in relation to Bolton Bridge and Bolton Abbey. The indicative layout plans are shown in Appendix A.

It should be stressed that these ‘detailed’ plans are conceptual and indicative only, and that CST is now seeking to work up a revised indicative Masterplan which will consider related issues including any arising from this high level Transport Statement (and that any planning applications in the future would consider related issues further still).

4 Assessment Methodology

This report provides a high level assessment of potential transport impacts of the preferred development option to confirm general feasibility and identify possible mitigation measures. It is noted that more detailed assessment will be required as the scheme is progressed.

4.1 Baseline

This report provides a summary of the baseline transport situation, including highway access and parking as well as public transport, cycling and pedestrian infrastructure provision. Issues with existing transport infrastructure are identified.

As part of the baseline summary, CST has provided existing data including car park data at the Bolton Abbey village car park and visitor number patterns.

In addition, 2016 traffic survey data was collected for a representative tourist peak period to identify traffic flows in the peak hours and enable high level highway assessments.

4.2 Indicative Scheme Assessment

A high level assessment of Development Option 4 sketch layouts from a transport perspective has been undertaken. Mitigation measures and revisions to the layouts have been identified to be considered in more detail as the Masterplan is developed.

4.2.1 Scheme trip generation

A high level review of potential trip generation associated with the preferred scheme option was undertaken using the TRICS database. TRICS provides a database of travel survey data for a range of existing developments across the country, to enable identification of comparable sites and prediction of trips by different modes of travel for new developments.

4.2.2 Assessment

Assessment Scenarios

Assessments were undertaken for the baseline situation using the surveyed traffic flows. Two Sensitivity Test scenarios have been identified to enable a high level assessment of potential future scenarios resulting from development within the CVA. The following assessments have been undertaken as part of this transport statement;

- Sensitivity Test 1 – increase in peak hour trips. The existing peak hour trips have been uplifted and junction assessments undertaken to predict how junctions would operate in a potential future development scenario.

- Sensitivity Test 2 – extension to visitor length of stay. The existing arrival trips have been increased during the morning and departure trips increased during the afternoon to reflect additional visitors and visitors staying longer as a result of the new facilities provided within the CVA.

In addition, a Mitigation Test assessment was undertaken to predict the impact of potential mitigation measures at Bolton Abbey village car park.

- Mitigation Test – revised car park access arrangements. Assessment of the operation of the Bolton Abbey car park access has been undertaken, modelling both With and Without the manned kiosk in operation.

Junction Assessments

Junction assessments were undertaken for the identified peak hours at the A59 roundabout and Bolton Abbey car park access to understand existing capacity issues and to consider future operation in the Mitigation Test and Sensitivity Test scenario 1.

Peak hour assessments of the A59 roundabout junction were undertaken using the 'Junctions' (v8.0.2) programme. Junctions modelling software, is used for priority controlled junctions. It calculates the Ratio to Flow Capacity (RFC) and average queues experienced by all vehicles on each arm of a junction. The RFC is a key indicator of the likely performance of a turning movement at a junction under a given set of traffic flows. It is generally accepted that a junction approach with an RFC value of less than 0.85 is operating within its practical capacity. A modelled RFC of greater than 1.0 indicates that an approach is operating in excess of theoretical capacity.

Peak hour assessments of the Bolton Abbey car park access were undertaken using the 'Aimsun' (v8.1.2) programme. Aimsun provides a dynamic traffic model, simulating the behaviour of individual vehicles, based on highway network geometry, traffic flow and behavioural inputs. It can be used to show operation of a range of highway networks from small junctions to city wide networks. Aimsun provides a range of outputs, including traffic flows, vehicle speeds, journey times and queues. Aimsun has been used at the car park access because it enables delay at the manned kiosk to be modelled. The impact of removing the delay as a result of the kiosk has also been tested.

Car Park Accumulation

High level car park accumulation assessments have been undertaken based on the existing arrival and departure profiles for the Bolton Abbey car park. The car park accumulation identifies the peak car park demand on the surveyed days and assesses the potential increased car park demand as a result of the Sensitivity Test scenario 2.

5 Existing Conditions

Bolton Abbey is located on the south eastern corner of the Yorkshire Dales National Park (YDNP). Bolton Bridge and Bolton Abbey village are located on the B6160 immediately north of the A59 which runs in an east west direction between Skipton (5 miles) and Harrogate (15 miles) and the A1.

5.1 Local Highway Network

Bolton Bridge and Bolton Abbey village are located on the B6160 which runs in an approx. north south direction between the A65 at Addingham and villages within the YDNP, including Barden, Appletreewick, Burnsall and Grassington. The B6160 is generally a narrow single carriageway road. There is narrow footway provision through Bolton Bridge and Bolton Abbey village, as well as the section of road between the villages where a footway is provided on the eastern side of the carriageway. Along the length of road in the study area there is no street lighting and the national speed limit (60mph) applies throughout.

The B6160 is generally a quiet country road, however at peak tourist times, it can suffer from congestion in Bolton Abbey village and Bolton Bridge.

Green Lane runs in an approx. east west direction from Bolton Abbey village to Halton East past Hesketh Farm Park. Immediately north of The Beeches a narrow link provides a westbound connection for traffic from the south, while a two way link enables all other turning movements at the junction of B6160 and Green Lane. Green Lane is a narrow lightly trafficked road with passing places. There are limited footways and no street lighting in the vicinity.

To the south, the B6160 connects with the A59 at a large four arm roundabout. The A59 is a wide single carriageway road that runs eastbound to Harrogate and westbound to Skipton. In the vicinity of Bolton Abbey, there is limited footway provision and no street lighting and the national speed limit applies.

The B6160 Bolton Road continues southbound from the roundabout to Addingham and the A65. Bolton Road is a single carriageway road with no footways or street lighting.

5.1.1 Bolton Abbey Village Visitor Car Park

The main visitor car park is located in Bolton Abbey village. The car park is located to the south west of the village with a two way access provided from the B6160 to the south of the village. The car park is partly surfaced and partly grassed and provides parking for approx. 800 cars as well as 6 coaches. There is capacity for overflow parking which is used on a few occasions each year.

The car park is priced at a flat rate of £4 for motorcycles and £8 for cars and occupants (up to 11 people) with an additional cost for groups of 12 or more. Annual season tickets are also available. CST holds data for parking at its visitor car park in Bolton Abbey village.

Analysis of the data for 2015 and 2016 shows the peak tourist periods are the Easter and summer holiday periods (April / May and July / August) with weekends and bank holidays generally being the busiest. The graphs provided in Appendix B show that there are days when the car park capacity is exceeded. *It is noted, that the car park data does not include season ticket holders and reporting of groups may not fully reflect how this translates in to vehicles. As a result, the absolute numbers should not be relied upon but the broad conclusions are relevant. More detailed car park data has been obtained, as identified at Section 5.1.3 below.*

Visitor numbers are greatly affected by the weather; data provided by CST over the last 5 years demonstrates that extended periods of rainfall have suppressed visitor numbers, as shown in the graph in Appendix B.

The existing car park has three entry / exit lanes. For the majority of the time, the access comprises a single lane entry and single lane exit. At peak times, a second lane of entry is provided. A manned kiosk is provided at the car park entry for drivers to pay before parking. Queuing for approx. three cars is available within the car park on approach to the payment kiosk.

The existing payment on entry system causes delays at the car park entrance at peak times during the peak tourist periods. On occasion, at peak tourist times, queues form on the B6160. The vast majority of tourist traffic arrives and departs via the A59 south of the village. Queues therefore form on the northbound approach to the car park. At its worst, for approx. 10 days per year, standing traffic waiting to park at the main car park in Bolton Abbey village can queue back as far as Bolton Bridge.

5.1.2 Bolton Bridge Parking

Bolton Bridge contains six spaces for public parking (without charge) by the junction of the B6160 and the old A59 east of the cricket ground. However, these spaces are often used by the Forge motor garage at the south of Bolton Bridge. Otherwise, there is currently no public parking in Bolton Bridge. The Devonshire Arms Hotel and the related Spa provide parking for guests only.

5.1.3 Traffic Survey Data

Automatic Traffic Count (ATC) data was collected in Bolton Bridge, in Bolton Abbey village and at the Bolton Abbey car park access from Friday 26th August 2016 to Thursday 1st September 2016 inclusive. In addition, a video survey was undertaken at the A59 / B6160 roundabout and Bolton Abbey car park access priority junction over the August Bank Holiday weekend (Saturday 27th to Monday 29th August 2016) to provide peak hour junction turning count data. Surveys were undertaken at this time to capture data for potentially one of the peak tourist periods of the year. Details of the traffic survey locations and results are shown at Appendix C.

ATC Data

ATC tubes were laid across the road in five locations, collecting data on the B6160 in a northbound and southbound direction in Bolton Abbey village and Bolton Bridge and on the entry and exit lanes of the Bolton Abbey car park.

Note: The ATC's do have limitations and are less effective with slow moving traffic, the problem being the classification of vehicles which may record two vehicles travelling close together as one larger vehicle etc. Some discrepancies therefore do occur. If cars are queuing, this also stops the ATC's working effectively as the detector tubes are constantly being sat on. The ATCs at the Bolton Abbey car park have been checked against the turning count results and do give a reasonably good indicator of the vehicle numbers.

As a result of the ATC data, the peak hours for each Bank Holiday weekend day were identified as follows:

- Saturday 27th August – 11:00-12:00hrs and 15:00-16:00hrs;
- Sunday 28th August – 12:00-13:00hrs and 16:00-17:00hrs;
- Monday 29th August – 13:00-14:00hrs and 16:00-17:00hrs.

The ATC counts at Bolton Bridge and Bolton Abbey demonstrate the traffic flows are of a tidal nature. Northbound traffic flows in Bolton Bridge / Bolton Abbey village are highest earlier in the day representing the peak tourist arrivals. These flows are broadly consistent with the southbound flows later in the afternoon, representing the peak tourist departures. The car park arrivals and departures follow a similar pattern.

It is noted that the Bank Holiday Monday (29th August) was the busiest day of the weekend with significantly higher flows. The video surveys show that the weather was dry and grey on the Saturday, wet on the Saturday and dry and sunny on the bank holiday Monday.

Table 1: Summary of Surveyed ATC data

		Bolton Bridge		Bolton Abbey		Bolton Abbey Car Park*	
		N/bound	S/bound	N/bound	S/bound	Arr	Dep
Saturday 27 th August	11:00-12:00	421	177	400	143	116	10
	15:00-16:00	195	409	174	389	47	114
Sunday 28 th August	12:00-13:00	404	226	365	204	101	35
	16:00-17:00	145	377	143	340	26	99
Monday 29 th August	13:00-14:00	737	310	702	239	246	69
	16:00-17:00	173	855	172	835	62	244

*It is noted that the ATC data for the car park entry may be inaccurate as a result of the slow moving traffic. More detailed turning count data is provided for the identified peak hours.

Traffic Turning Counts

Video surveys were undertaken to provide traffic turning count data at the B6160 / A59 roundabout and at the Bolton Abbey car park access and to observe potential queuing on the B6160 northbound with cars waiting to turn into the car park. The video surveys were undertaken across the weekend with analysis undertaken for the identified peak hours. The full survey data is provided at Appendix C.

The turning count data is considered reasonably consistent with the ATC data, although generally slightly higher (indicating the ATC does not always register slow moving traffic). On the Bank Holiday Monday the B6160 northbound (arrivals) flows were approx. 750 (13:00-14:00) and southbound departures approx. 850 (16:00-17:00). At the car park, there were approx. 260 arrivals (13:00-14:00) and 310 departures (16:00-17:00). Flows on the Saturday and Sunday were approx. half those on the Bank Holiday Monday.

Queue lengths at the B6160 northbound car park entrance were observed every 5 minutes during the peak hours. The observed queues were 3-4 vehicles with a peak of 9 on Saturday (11:00-12:00), 3-5 vehicles with a peak of 7 on Sunday (12:00-13:00) and 10-14 vehicles with a peak of 15 on Monday (13:00-14:00). The observed queues are based on stopping / stationary vehicles, however the surveys indicate slow moving queues through Bolton Abbey and Bolton Bridge as a result of the delays at the Bolton Abbey car park access.

Details of the peak hour junction assessments are provided in Section 7.1.

5.2 Public Transport

Bus service provision through the rural area is limited with the 74/74A Dales bus providing occasional services only, as set out below.

Service 74/74A operates between Hebden, Grassington, Burnsall, Bolton Abbey and Ilkley currently providing two to four services per day on Mondays, Wednesdays and Saturdays. Two services operate on weekdays (Monday and Wednesday) between Ilkley and Hebden and three service between Hebden and Ilkley. On Saturdays four services operate in each direction in the summer months (to end of October) and three in each direction during the winter.

There are two bus stops at Bolton Bridge, the northbound bus stop is located just off the B6160 in a crescent and is opposite The Devonshire Arms, the stop has a pole and a timetable attached. The southbound bus stop is located immediately south of the Devonshire Arms and has a pole and a timetable attached.

There are also two bus stops in Bolton Abbey Village. The northbound stop is located on the triangle of green opposite the book shop and tea room but is not marked. The southbound stop is provided in a small layby just outside the café and has a pole with a timetable attached.

The table below shows the services that run from the bus stops described above.

Table 2: Bolton Bridge and Bolton Abbey Bus Services

Bus Service	Routes Served	Times of Service	
		Monday and Wednesday	Saturday
74A 74	Northbound to Grassington and Hebden	10:50, 14:30	10:00, 12:00, 16:55, 18:40
74A 74	Southbound to Addingham and Ilkley	09:48, 13:48, 17:38	09:15, 10:55, 16:10, 17:55

5.3 Cycling Facilities

There are no on street cycle facilities in the vicinity of Bolton Bridge and Bolton Abbey village. There are however a number of designated cycle routes on local roads, some of which form part of the National Cycle Network.

A section of National Cycle Route 696 runs from Bolton Abbey village to Embsay along Green Lane heading west out of the village. The route connects with National Cycle Route 10 which runs in an approx. southwest to northeast direction between Skipton and Barden along local roads. Northbound from Bolton Abbey Village along the B6160 is a local on-road route which is not part of the National Cycle Network. 3 miles north of the village at Barden the local route connects with National Cycle Route 10 which runs northbound towards Grassington and onwards into the Dales.

It is noted that a cyclist was fatally injured on the southern approach to the Cavendish Memorial fountain in 2015. The full details of the accident are not known, however, the accident highlights concerns over vehicle speeds and visibility to be considered in future scheme designs.

5.4 Pedestrian Access

There are no pedestrian footways along the initial section of the B6160 from the roundabout junction with the A59 to Bolton Bridge village. Footways are provided beyond the bridge over the stream at the junction with the local access road next to the Cricket Club. Through Bolton Bridge narrow footways and grass verges are provided on both sides of the carriageway.

Through Bolton Abbey village intermittent narrow footways are provided. Footways are provided on the eastern side of the carriageway between the car park access and local access to the Tithe Barn and residential properties. There is no footway provision for a short section of B6160 where existing buildings and hedges reduce the carriageway width. Footways are provided outside the tea rooms and book shop as well on the northern and eastern section of the small green to the north of The Beeches. Narrow, intermittent footways are provided on the eastern side of the B6160 to the north of the village. There is no footway provision on Green Lane, heading west out of Bolton Abbey Village.

Between the two villages a narrow footway is provided on the eastern side of the carriageway.

To the east of the village is the Dales Way footpath, which runs from Ilkley to Windermere, with routes also linking Leeds, Bradford and Harrogate. The Dales Way runs along the River Wharfe to the east of Bolton Bridge and Bolton Abbey village and is a well-used route. It provides access towards Addingham in the south (3 miles) and Barden to the north (3 miles).

A footpath also exists across the fields in a south west direction from Bolton Abbey village to the Bolton Abbey rail station.

6 Indicative Development Scheme – Transport Context

The BADOAS has considered a number of options for potential development at Bolton Abbey CVA and an indicative layout for preferred strategic development Option 4 has been prepared for two locations: Bolton Bridge, located immediately north of the A59 / B6160 / Bolton Road roundabout; and Bolton Abbey village, located on the B6160, approx. 900m north of the A59. The RSL indicative layouts are provided at Appendix A.

The indicative layout for Bolton Bridge includes a farm shop, café / cycle hub and offices with car parking and new accesses, as well as extension to the existing hotel and spa and new visitor / staff / other accommodation.

The indicative layout for Bolton Abbey village includes provision of a new play area and play barn, pub and a number of visitor / staff / other accommodation, as well as changes to the existing car park accesses and layout.

6.1 Consultation

CST held a well-attended public liaison event in July 2016 to gauge reactions to the indicative layouts arising from the BADOAS report. This consultation identified traffic issues as the only substantive concern of local residents. This high level Transport Statement therefore seeks to address these.

Arup have had preliminary discussions with NYCC Highways regarding access options for Bolton Bridge and Bolton Abbey village. A further meeting on site was undertaken on Tuesday 27th September 2016 to consider the indicative layouts and broadly agree potential access as appropriate. NYCC Highways feedback has informed the high level Transport Statement. It is noted that further detailed design and assessment will be required as the scheme progresses.

6.2 Bolton Bridge

The indicative layout for Bolton Bridge includes a farm shop, café / cycle hub and offices located to the south of the village in the triangle of land between the A59 and B6160. New areas of car parking would be provided as well as a new access from the A59 and B6160 proposed. In addition, the indicative layout includes an extension to the existing hotel and spa and new visitor / staff / other accommodation to the north of the former A59 to the north of the village.

6.2.1 Car Parking and Access

Car parking for approx. 150-200 cars would be provided for the farm shop, café / cycle hub and office, based on provision at similar developments on the Chatsworth Estate. Detailed analysis to predict trips and parking requirements will be undertaken as the proposals are developed further.

Parking would be provided adjacent to the proposed farm shop, café / cycle hub and office in the parcel of land between the A59 and B6160. Within this area, space is also available to provide formal / informal overflow parking for peak periods. The RSL layouts show access to the car parks via existing accesses with the A59 and B6160.

6.2.2 Sustainable Access

The proposed development is within a short walk of the existing bus stops in Bolton Bridge.

Access to the proposed cycle hub would be via the B6160 junction. Cycle parking would be provided at the cycle hub.

6.2.3 Initial Assessment

The existing accesses from the A59 and B6160 to the farm shop, cycle hub / café and office area are gated farm accesses. Upgrade to these would therefore be required to accommodate development traffic. It is anticipated that as a result of the proposed hotel and spa extensions, the existing car parking may also require upgrade.

Consideration of potential car park access options and mitigation measures for both areas of parking are set out at Chapter 8.

The indicative layouts do not identify access proposals for sustainable modes of travel. These are therefore considered further at Chapter 8.

6.3 Bolton Abbey Village

In Bolton Abbey village the indicative development scheme includes provision of a new village green, the Barnyard Green, in the centre of the village adjacent to The Beeches. A new pub is proposed adjacent to The Beeches and a play area and play barn located to the south of the existing car park. Visitor / staff / other accommodation is proposed at a number of locations including at the southern approach to the village, around the new Barnyard Green and to the north west of the village to the north of Green Lane. The indicative scheme also includes changes to the existing car park access.

6.3.1 Car Parking and Access

The existing visitor car park at Bolton Abbey village would continue to provide the main tourist parking in the area. The current indicative layout shows:

- Main access as existing (to/from B6160);
- Provision of a new secondary access only from Green Lane.

The existing access to the rear of The Beeches would be relocated approx. 15-20m westwards on Green Lane to provide access to parking for the pub and visitor / staff / other accommodation. This would provide a two way access to service the

new visitor / staff / other accommodation and the pub. New accesses with the B6160 and Green Lane provide access to other areas of visitor / staff / other accommodation.

6.3.2 Sustainable Access

The indicative development scheme is within a short walk of the existing bus stops in Bolton Abbey village.

The indicative layout shows footway provision on both sides of the B6160 between the car park access and The Beeches.

6.3.3 Initial Assessment

The indicative layout for Bolton Abbey shows a revised car park layout. This layout needs further consideration as the scheme is developed to provide efficient access and circulation. As identified at Section 5.1 in peak times there can be issues with cars queuing at the car park access causing congestion on the B6160. Chapter 8 considers potential options to improve operation of the car park access.

The indicative layout identifies limited proposals for access by sustainable modes. These are therefore considered further at Chapter 8.

7 Impact and Assessment

This chapter provides a high level assessment of the preferred strategic development option as at October 2016. Any specific proposals will be subject to a detailed application and related assessment in due course. Mitigation measures and their further assessment are considered at Chapter 8.

7.1 Existing Traffic Flows

As set out at Chapter 5, ATC and junction turning count surveys were undertaken at the end of August 2016, including the Bank Holiday weekend. These identified the Bank Holiday Monday as the busiest day and identified the peak hours as:

- 13:00-14:00hrs – greatest arrivals to Bolton Abbey;
- 16:00-17:00hrs – greatest departures from Bolton Abbey.

During the period of peak arrivals, some queuing on approach to the car park was observed, extending for some 10-15 vehicles, and both lanes of entry to the car park were used. In addition, slow moving traffic did appear to extend back to Bolton Bridge. The Bank Holiday Monday is therefore considered to represent a typical peak tourist day and worst case scenario in terms of traffic congestion.

Further high level analysis for these peak hours has been undertaken, as set out below.

7.1.1 Junction Assessments - Baseline

Junction assessments were undertaken at the A59 / B6160 roundabout and Bolton Abbey car park access for the Bank Holiday Monday peak hours; 13:00-14:00hrs and 16:00-17:00hrs.

A59 / B6160 Roundabout

Assessment of operation of the existing roundabout was undertaken using surveyed traffic data and junction geometry measured from mapping. The results of the assessment are provided at the table below.

Table 3: A59 / B6160 Peak Hour Assessments on 2016 August Bank Holiday Monday

Approach Arm	13:00-14:00		16:00-17:00	
	RFC	Queue	RFC	Queue
B6160 North	0.27	0.4	0.72	2.6
A59 East	0.49	1	0.53	1.1
B6160 South	0.45	0.8	0.19	0.2
A59 West	0.60	1.5	0.36	0.6

The modelled RFCs for this junction are below the normal threshold value of 0.85 during both peak periods on all approaches, indicating that the junction currently

operates within practical capacity. Average queue lengths of less than 3 passenger car units (pcus) are modelled on all approaches across the junction.

Bolton Abbey Car Park Access

The 'Aimsun' software (v8.1.2) was used to model the Bolton Abbey car park access as it enables modelling delay as a result of the manned payment kiosk. Assessment of the Bolton Abbey car park access junction has been undertaken for both peak hours.

For the purposes of this assessment, traffic flow, journey time and speed data has been collected for a subpath which covers the northbound route on B6160 turning into the car park. The results are presented in the table below.

Table 4: BA Car Park Peak Hour Assessments on 2016 August Bank Holiday Monday

13:00-14:00			16:00-17:00		
Traffic flow	Journey time (mm:ss)	Speed (kmh ⁻¹)	Traffic flow	Journey time (mm:ss)	Speed (kmh ⁻¹)
216	04:43	5.2	42	01:20	17.1

The results of the assessment show an average journey time of 4:43 minutes and average speed of 5.2km during the 13:00-14:00hrs peak hour for arrivals to the car park. This clearly demonstrates delay at the car park access with slow moving traffic travelling northbound on approach to the car park. Between 16:00-17:00hrs the northbound flows are significantly lower and the journey times and speeds improved.

A snapshot image from the Aimsun model shows the extent of queuing in the 13:00-14:00 peak hour, which is considered representative of observed conditions.



Map data ©2016 Google

7.1.2 Car Park Occupancy - Baseline

The surveyed ATC data has been used to identify hourly arrival and departures at the car park entrance and calculate the car park occupancy levels throughout the bank holiday weekend. These are presented in the table below.

Table 5: Bolton Abbey Car Park – August 2016 Arrivals / Departures and Occupancy

Hour starting	Saturday 27 August			Sunday 28 August			Monday 29 August (BH)		
	Arr	Dep	Occ	Arr	Dep	Occ	Arr	Dep	Occ
0700	3	0	3	0	0	0	2	2	0
0800	9	2	10	1	0	1	1	0	1
0900	13	3	20	19	4	16	47	6	42
1000	69	7	82	58	4	70	122	5	159
1100	116	10	188	83	15	138	233	24	368
1200	108	19	277	101	35	204	243	34	577
1300	100	55	322	87	39	252	246	69	754
1400	61	90	293	57	57	252	157	111	800
1500	47	114	226	47	87	212	99	181	718
1600	28	120	134	26	99	139	62	244	536
1700	9	68	75	26	77	88	42	215	363
1800	0	25	50	1	50	39	2	146	219
1900	1	13	38	0	14	25	0	50	169
2000	0	5	33	0	4	21	0	14	155

It is noted that there are limitations with the ATC data which can be inaccurate with slow moving traffic. On review against the video surveys the ATC is considered reasonable, however there are some discrepancies and generally more arrivals than departures recorded throughout the day.

The ATC data indicates that the car park peak occupancy occurs from approx. 12:00-15:00 on Saturday and from approx. 13:00-15:00 on Sunday and Monday. The peak occupancy was approx. 300-320 on Saturday, 250 on Sunday and 750-

800 on Monday. On the Bank Holiday Monday the car park reached its maximum capacity.

7.2 Preferred Scheme - Trip Generation Assumptions

A review of the preferred indicative layouts at Bolton Abbey has been undertaken. The intention of the preferred scheme is not necessarily to attract significant new visitors but to provide additional facilities for existing visitors such as play facilities, farm shop and pub, as well as provide wet weather options. As a result it is considered that there would not be significant new trips, but visitors may visit the area for longer.

A review of the TRICS database has been undertaken to consider trip generation associated with the new development. The potential for trips in the peak tourist periods for each proposed use has also been considered, as set out below:

- Office – the office development is likely to be relatively small scale and therefore generate a low number of trips. Office trips peak in the weekday morning and evening commuter peak hours and are likely to be negligible in peak tourist periods, ie at weekends and holidays.
- Farm Shop – the farm shop would most likely generate a steady number of trips throughout the day and a high proportion would be drivers ‘passing by’ rather than dedicated trips. There is no Farm Shop category within the TRICS database. The Garden Centre category is considered reasonably comparable – within this, the peak arrivals are 13:00-14:00hrs and departures 15:00-16:00hrs. Further detail from the Chatsworth Farm Shop may be appropriate for more detailed assessment (at a future application stage).
- Cycle Hub/Café – there is no category within TRICS that would represent the cycle hub / café. It is considered that there would be limited dedicated vehicle trips with the cycle hub serving cyclists and the café being ancillary to other development.
- Hotel / Spa Extension – the TRICS database does not have weekend data for the Hotel category, therefore the impact during the peak tourist periods cannot be identified. In any future assessment, data from the existing Hotel and Spa should be obtained to consider the impact of the extension. Peak arrivals for Hotels are generally early evening and departures early to mid-morning. These are likely to be outside of the identified tourist peak periods.
- Staff / Visitor / Other Accommodation – the holiday accommodation category within TRICS represents caravan park / Butlins type accommodation and is therefore not considered appropriate for CVA accommodation. The preferred option suggests accommodation that would be small scale and generate a low number of trips. The provision of local accommodation may reduce vehicle trips as staff or visitors are able to walk / cycle to Bolton Abbey amenities.
- Playground / Play Barn – there is no category within TRICS for playgrounds / play barns. It may be appropriate to obtain data from surveys at an existing facility for more detailed assessment. Play facilities are an important factor in

family days out. It is unlikely that visitors would make a dedicated trip to the play facilities but the new facilities would likely increase visitor numbers as a) existing visitors extend their stay for an hour or two of play or b) new visitors are attracted to the wider range on offer for children, as well as wet weather options.

- Pub / Restaurant – there is a pub/restaurant category within TRICS, including surveys on Saturdays. The data identifies arrival peaks at approx. 13:00-14:00hrs and 19:00-20:00hrs with departure peaks at approx. 14:00-15:00hrs and 20:00-21:00hrs. For a typical pub/restaurant of 500sqm this would potentially generate 12-15 vehicle arrivals and departures in an hour. However, as with the play facilities, it is unlikely that the new pub/restaurant would generate significant new trips but likely encourage existing visitors to stay longer.

It is noted that it is not appropriate to consider each development in isolation. It is unlikely that visitors would come to just one element, rather, that they visit a number of elements, in addition to visiting the Priory ruins (visiting the Priory, playground/play barn and pub or calling in at the farm shop on the way to the Priory). As a result visitors may stay longer.

At this stage, land uses are not confirmed and floor areas are not known. As a result of this and the above review, more detailed trip generation has not been undertaken for this high level study. A number of sensitivity tests have been undertaken, and are presented below, to consider potential impact at local junctions and the car park access. It is acknowledged that more detailed assessment will be required in support of any future application.

7.3 Development Impact

At this stage, detailed assessment of development impacts has not been undertaken as sufficient information is not available. Sensitivity Tests have been undertaken which ‘uplift’ the existing traffic levels to enable junction assessments and car park accumulation calculations for future development scenarios:

- Sensitivity Test 1 – increase in peak hour trips. The existing peak hour trips have been uplifted by 20% as a reasonable judgement of potential growth. The existing junction assessments have been re-run with the uplifted traffic flows.
- Sensitivity Test 2 – extension to visitor length of stay. The existing arrival trips have been increased by 10% from 09:00 to 12:00 hours and departure trips increased by 10% from 15:00 to 18:00 hours. The arrivals and departures from 12:00 to 15:00 hours have been increased by 5%. The car park accumulation has been recalculated with these increased arrivals and departures to predict the impact on car park occupancy levels. The results of this assessment are presented below.

7.3.1 Junction Assessments – Sensitivity Test 1

A59 / B6160 Roundabout

Assessment of the operation of the A59 / B6160 roundabout has been undertaken with the uplifted peak hour traffic flows. The results of the assessment are provided in the table below.

Table 6: Peak Hour Assessments for Uplifted Traffic Flows

Approach Arm	13:00-14:00		16:00-17:00	
	RFC	Queue	RFC	Queue
B6160 North	0.34	0.5	0.92	9.5
A59 East	0.60	1.5	0.69	2.2
B6160 South	0.59	1.4	0.24	0.3
A59 West	0.76	3.2	0.43	0.8

Within the Sensitivity test scenario, the modelled RFCs for this junction generally remain below the normal threshold value of 0.85 during both peak hours tested, with minimal queuing. The exception to this is the B6160 North approach to the junction in the afternoon peak where the RFC is 0.92 and queues of 10pcus are predicted. It is considered that this level of queuing would be acceptable in peak periods.

Bolton Abbey Car Park

Assessment has been undertaken for the Sensitivity Test uplifted flows, with the results for the arrivals subpath presented in the table below.

Table 7: Car Park Peak Arrivals Assessment - Uplifted flows

13:00-14:00		
Traffic flow	Journey time (mm:ss)	Speed (km/hr)
212	05:50	4.3

The uplift in traffic flows increases the predicted journey time by just over 1 minute from the baseline to 5mins 50secs and reduces the traffic speed to 4.3km/h. This demonstrates that any increase in traffic flows as a result of development will exacerbate the existing queuing and congestion on approach to the Bolton Abbey car park.

7.3.2 Car Park Occupancy – Sensitivity Test 2

Sensitivity test 2 comprises an increase in morning arrivals and afternoon departures to reflect visitors potentially arriving earlier, staying longer and leaving later. The table below shows the predicted car park occupancy for the Sensitivity Test scenario when the arrival / departure profile is adjusted.

Table 8: Car Park Arrivals / Departures and Occupancy for Uplifted Flows

Hour starting	Monday 29 August (BH) – uplifted		
	Arr	Dep	Occ
0700	2	2	0
0800	1	0	1
0900	52	6	47
134	134	5	176
1100	256	24	408
1200	255	36	628
1300	258	72	814
1400	165	117	862
1500	99	199	762
1600	62	268	555
1700	42	237	361
1800	2	146	217
1900	0	50	167
2000	0	14	153

The results indicate that if visitors do stay longer at the Bolton Abbey car park, then additional parking / overflow may need to be provided on peak tourist days. On the basis of the above assessment, the peak car park accumulation would be approx. 860.

8 Mitigation Measures

This chapter provides a high level summary of suggested / recommended mitigation measures to consider so as to address the issues identified earlier in relation to the indicative layouts prepared by RSL. Any specific measures would be subject to a detailed application and related assessment in due course.

8.1 Summary of Suggested Mitigation Measures

Transport related comments and recommended mitigation measures are marked on the indicative layout sketches provided at Appendix D. A summary is provided below and further detail provided at Section 8.2 for Bolton Bridge and 8.3 for Bolton Abbey village.

In Bolton Bridge:

- A number of car park access options for the farm shop, café / cycle hub and office have been considered and preferred access proposals recommended;
- Car park reconfiguration issues and access options for the hotel and spa have been identified;
- Proposals for access by sustainable modes of travel have been identified.

In Bolton Abbey Village:

- A number of options to improve the efficiency of the car park access have been considered and assessment undertaken to demonstrate the impacts of the preferred option;
- The location of local access junctions and measures to improve visibility are identified;
- Proposals for improved pedestrian access routes, including connections to the local bus stops have been identified;
- An option to amend the B6160 highway alignment outside The Beeches to facilitate improved pedestrian routes has been considered;
- Further highway measures around The Beeches have been identified to provide a new public square.

8.2 Bolton Bridge

8.2.1 Car Parking and Access

A number of access options for the farm shop, café / cycle hub and office development at Bolton Bridge have been considered and discussed with NYCC Highways, as shown on the Sketch in Appendix D. These are identified below and a high level review of their advantages / disadvantages undertaken:

- Option Ai) – comprises upgrade of the existing A59 access, located approx. 140m northwest of the A59 / B6160 roundabout. The existing gated field

access would need to be widened and stone walling removed to provide a suitable geometry and visibility. More detailed review of visibility would be required with NYCC; some existing street furniture may need to be relocated. NYCC standards require that a right turn lane is required for any development generating more than 500 trips per day. Significant highway works and costs are required to achieve this. There are potential safety concerns regarding right turning manoeuvres on the higher speed busy A59. This location would not provide suitable pedestrian access to the development. An all movements junction at this location is therefore not considered appropriate.

- Option Aii) – comprises restricting turning movements at the A59 junction to prevent the more dangerous right turn manoeuvres. Additional access to the site would therefore also be required. A left-in, left-out junction would reduce right turn conflicts, however, more significant works and costs (such as physical kerb/central reservation) would be required to prevent drivers from ‘illegally’ making the right turn manoeuvres. A left turn in only junction would provide access to drivers from the north / west, thus avoiding routing through the A59/B6160 junction and requires less significant works / costs. This option is considered feasible, however, may not be necessary if all turning movements are provided at an alternative location. At this stage, it is considered appropriate to retain the gated access in some form as an emergency access only.
- Option B – comprises upgrade of the existing B6160 access, located approx. 90m north of the A59 / B6160 roundabout. The existing gated field access would need to be widened and stone walling removed to provide a suitable geometry and visibility. A review of visibility on site was undertaken with NYCC Highways, in relation to the bridge parapet to the north which is located close to the junction. It was concluded that suitable visibility could be provided achieving approx. 70m to/from the north (bend in road at the junction at the Forge Garage) and 90m to/from the south (A59 roundabout). An all movement junction could be provided at this location. NYCC has indicated that the requirement for turning lanes above the 500 trips per day does potentially apply, but as the vast majority of trips would arrive from the A59 to the south and generate left turn manoeuvres into the site, the requirement for a right turn lane would be unlikely. This junction would not be appropriate for pedestrian access as there are no pedestrian facilities on B6160 in the vicinity of the junction and no scope for provision over the bridge immediately north of the access. Pedestrian access is considered further at Section 8.2.2 below.
- Option C – comprises the provision of a new access from the former A59 to the north of the site and connecting to the B6160 opposite the Devonshire Arms Hotel. This option avoids potential geometry / visibility issues associated with Option Ai). This option would require an approx. 200-250m length of new access road and crossing over the Beck. A review of engineering issues would be required to identify potential costs associated with this. The access could provide two way movements, however, would provide a relatively convoluted access route through Bolton Bridge, and therefore may not attract ‘pass by’ trips. If all traffic used this route, it may create amenity issues for the nearby hotel and spa. This option is not

considered appropriate based on engineering / cost grounds and amenity issues for the hotel and spa.

In terms of access to the potential farm shop site, the preferred access is via the B6160 as this route is reasonably direct for passing traffic and limits the potential costs associated with the highway works. In terms of egress, there are issues regarding appropriate junction geometry and visibility for some options. Significant works would be required to provide a suitable access / egress via the A59. It is noted that NYCC's preference is for no access with the A59 and are supportive of access via the B6160. To limit the required highway works, and therefore costs, an all-movements access via the B6160 is recommended / preferred (Option B). A secondary access only may be suitable from the A59 (Option Aii) to reduce traffic movements through the A59 / B6160 junction. A secondary egress via the former A59 (Option C) may be suitable to reduce traffic movements directly on to the B6160, if junction capacity is a concern (to be determined through more detailed assessment as scheme progresses).

In terms of car parking / access to the potential hotel and spa extension this would comprise extension / reconfiguration of the existing car parking. NYCC have stated that they would not be supportive of extension to the hotel without junction improvements. It is suggested that the access to / from the hotel should be relocated northwards to improve visibility. The existing access to / from the spa would be retained with the car park potentially extended to provide additional parking for the spa, overflow parking for the hotel and/or staff parking. Further details regarding the hotel and spa extension and associated car parking requirements are being considered.

In addition to a more detailed review of junction geometry / visibility, detailed trip predictions and junction assessments will be required to confirm feasibility of the above recommendations. These would be undertaken as the indicative scheme progresses and in support of any planning application.

8.2.2 Sustainable Access

The indicative layouts do not identify access by sustainable modes of travel. Further consideration is given below and highlighted on the marked up sketch layouts provided at Appendix D. Access by sustainable modes of travel is important to reduce the potential number of car trips as well as provide a safer environment for all visitors.

An existing footbridge over the Beck to the south of the spa would provide pedestrian access between the proposed new farm shop, café / cycle hub and offices development area and existing amenities in Bolton Bridge. The route between the development, proposed car parking and existing village would be clearly signed / marked to avoid pedestrians accessing the area via the highway access routes. This route would facilitate pedestrian access from the farm shop site to Bolton Bridge (over the River Wharfe) and to Bolton Priory.

Pedestrian access routes would be provided along the former A59 route to provide access to the visitor / staff / other accommodation. These would connect with the existing footway provision in Bolton Bridge.

8.3 Bolton Abbey Village

8.3.1 Car Parking and Access

Improvements to the car park are recommended for inclusion within the Masterplan for the village. These comprise:

- Improvements at the main car park access to reduce delay / congestion in peak periods. A number of options have been considered as set out below;
- Revised car park layout to improve circulation and access / egress efficiency. This would comprise radial parking with hedgerow planting to protect views from the south west. Vehicular and pedestrian routes would be identified as well as potential overflow parking provision for peak periods. There is scope for a limited increase in parking capacity, such as can be accommodated within the existing highway capacity (although it should be stressed that the objective of development at Bolton Abbey is to diversify visitor experience rather than increase visitor trips).

The potential car park proposals have been considered in terms of how to address and alleviate current and future congestion issues at peak times. A number of car park options have been considered. These are identified below and a high level review of advantages / disadvantages provided:

- Option A – comprises relocating the main car park access to provide a longer entrance into the main car park to accommodate queuing traffic. To provide a longer access, a new junction would need to be provided to the south of the village. A significant length of new access track would be required to accommodate queuing traffic in peak periods. This would provide a visual intrusion in the open countryside. There may be issues with drivers passing the car park access before realising the need to turn into the car park, thus creating problems in Bolton Abbey village itself;
- Option B – provide a longer entrance into the existing main entrance by setting back the payment kiosk deeper into the car park. This would help alleviate some traffic congestion in peak periods, but may be limited. It would make the car park design more difficult and reduce the car park capacity;
- Option C – remove the manned payment kiosk and install ticket machines. This option would greatly improve car park access and efficiency, to alleviate peak period queuing and congestion. However, CST value the visitor experience of the personal welcome and would not wish to remove this entirely;
- Option D - install ticket machines for use at peak periods (instead of the manned kiosks). The payment kiosk, however, would continue to be manned for the majority of the time. At peak times only, the kiosk would be closed and ticket machines used. At these times, the kiosk attendants would become parking wardens and enforce the parking restrictions. This approach would alleviate traffic congestion at peak times and minimise the loss of any personal welcome to Bolton Abbey to peak times only. Further analysis is provided below to consider the potential capacity improvements.

It is considered that Option D above is the preferred option for car parking and access.

8.3.2 Local Accesses

The existing access to the rear of The Beeches would be relocated approx. 15-20m westwards on Green Lane. This would provide a two way access to service the new visitor / staff / other accommodation and the pub. In order to provide suitable visibility to the west, the existing hedge in front of the village hall / post office would need to be removed.

Further west along Green Lane access to the visitor / staff / other accommodation needs to be revised. On the southern side, there is not suitable visibility at the location shown. It is suggested that the existing access immediately west of the village hall provides the new one way access to the car park as well as access to / from the visitor / staff / other accommodation. To the north of Green Lane it is recommended that the existing track access to the west of the village provides vehicular access to the new visitor / staff / other accommodation.

To the south of the village the visitor / staff / other accommodation access should be relocated slightly south to the brow of the hill to maximise visibility.

8.3.3 Sustainable Access

Pedestrian access routes would need to be provided along the B6160 and Green Lane to provide improved pedestrian connections within the village. These would connect with the existing footway provision in Bolton Abbey village. New footways would be located along the western side of the B6160 carriageway between the new visitor / staff accommodation, play barn and play area, car park access, alongside the new Barnyard Green to The Beeches.

There is scope for realignment of the B6160 carriageway in front of The Beeches to enable new footway provision on the eastern side of the carriageway. NYCC Highways have indicated that the provision of a 5m carriageway with 'road narrows' signs would be appropriate. 1.5m wide footways could be provided on both sides of the carriageway. This would improve the pedestrian connections on the eastern side of the carriageway, continuing the link into the village and Hole in the Wall access to the Priory.

New footway provision could also be provided along Green Lane to the south of the carriageway to provide improved access to the post office and village hall as well as the new visitor / staff / other accommodation.

Improved pedestrian routes between the car park and village could be provided; to the north on to Green Lane and via the main vehicular access. These would be well signed and marked.

8.3.4 Village Square

There is scope for the existing carriageway immediately north of The Beeches to be reconfigured to remove the triangular junction configuration, redefine the

junction of Green Lane / B6160 and provide a ‘village square’ for public space / spill out and access to the bus stop and new cycle parking. Further consideration of planning issues associated with this would be required.

8.4 Impact

A Mitigation Test has been undertaken to test the potential impact to improve the Bolton Abbey car park access arrangements. Assessment of the operation of the car park access has been undertaken, modelling the access both With and Without the manned kiosk. The With Kiosk scenario (as baseline) includes an approx. 25 second delay for cars stopping at the kiosk when entering the car park. The Without Kiosk scenario removes the delay enabling cars to enter the car park without stopping.

8.4.1 Bolton Abbey Car Park Access – Mitigation Test

Assessment has been undertaken to consider the impact of the option to use ticket machines instead of the manned kiosk at the Bolton Abbey car park during peak periods. Within Aimsun, the delay at the car park entrance has been removed. The table below provides the results of the assessment undertaken both With and Without the delay caused by the manned kiosk for the peak hour of arrivals to the car park.

Table 9: BA Car Park Peak Arrivals Assessment – 2016 Surveyed Flows (13:00-14:00)

With Kiosk			Without Kiosk		
Traffic flow	Journey time (mm:ss)	Speed (kmh-1)	Traffic flow	Journey time (mm:ss)	Speed (kmh-1)
216	04:43	5.2	237	00:38	34.4

The results of the assessment show that by using ticket machines instead of the manned kiosk, the journey times on the subpath are significantly reduced (from 4mins 43secs to 38secs) and the average speeds greatly increased (from 5.2 km/hr to 34.4 km/hr). This demonstrates that by removing the delay caused by the kiosk at the car park access, vehicles are able to flow freely and congestion and delay on the B6160 is significantly improved. The screenshot image from the Aimsun model shows that there is no predicted queuing at the car park entrance.



Map data ©2016 Google

It is noted, that the Aimsun model does not model any delay once cars have entered the car park. It will therefore be important to ensure the new car park layout is designed such that drivers move through the car park efficiently to find spaces and do not cause delays to other cars at the car park entrance.

The Mitigation Test has also been undertaken for the uplifted traffic flows used within Sensitivity Test 1 scenario. The results of the assessment show that by using ticket machines instead of the manned kiosk, the journey times on the subpath are significantly reduced and the speeds greatly increased. In the Without Kiosk scenario the uplift in flows does not have detrimental effect when compared against the assessment of the baseline surveyed flows.

Table 10: Car Park Peak Arrivals Assessment - Uplifted flows (13:00-14:00)

With Kiosk			Without Kiosk		
Traffic flow	Journey time (mm:ss)	Speed (km/hr)	Traffic flow	Journey time (mm:ss)	Speed (kmh-1)
212	05:50	4.3	284	00:39	33.9

9 Conclusions and Recommendations

This report provides a high level study of existing and proposed transport infrastructure in Bolton Abbey.

A high level review of the RSL indicative layouts has been undertaken and a range of transport mitigation measures recommended. The transport proposals for Bolton Abbey consider access by all modes of transport. It is acknowledged that the majority of visitor trips to the Bolton Abbey CVA would be via car. A high level highway assessment of increased visitor trips has been undertaken and concludes additional trips can be broadly accommodated on the local network. Additional car parking is proposed and measures to relieve congestion as a result of queuing at the payment kiosk have been identified.

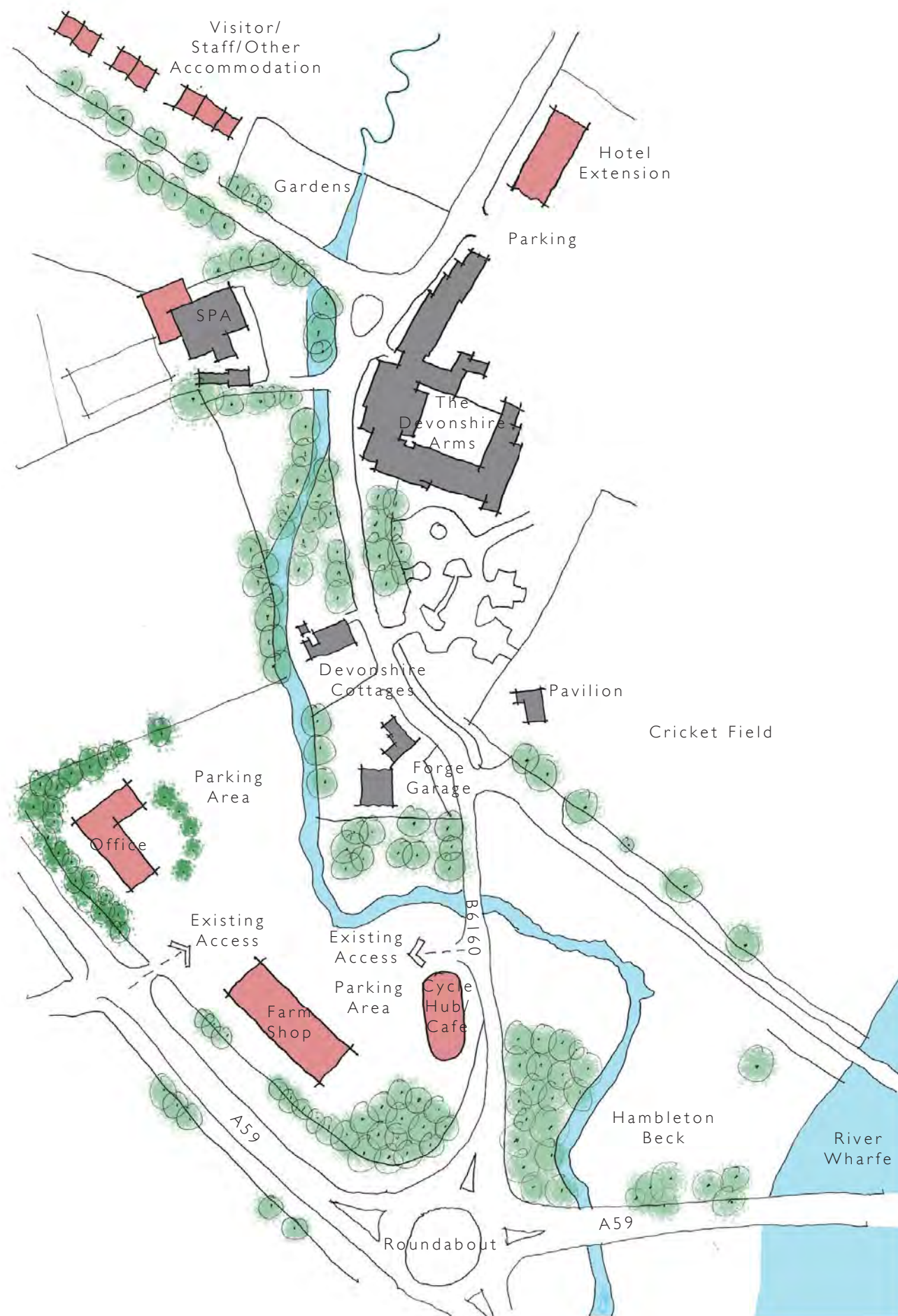
As a result, it is concluded that additional development in Bolton Abbey and Bolton Bridge can be satisfactorily accommodated on the local transport network.

It is highlighted, that this report provides a high level Transport Statement only. As the Masterplan scheme is developed, further more detailed work is recommended, including:

- Further discussions with NYCC Highways;
- More detailed assessment of predicted development trips and their impact;
- More detailed design of the proposed access junctions and car park.

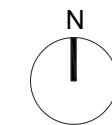
Appendix A

**BADOAS Preferred
Development Option –
Indicative Plans**



KEY

- Existing Buildings
- Existing Trees
- Proposed Buildings
- Proposed Trees



Canalside House,
Brewery Lane,
Skipton,
North Yorkshire,
BD23 1DR

tel: 01756 797501
e-mail: info@ruralsolutions.co.uk
web: www.ruralsolutions.co.uk

Client
Chatsworth Estates

Project
Bolton Abbey Development Options
Appraisal Study

Title
Option 4 -
Detailed Plan of Bolton Bridge Proposals

Scale	Date
NTS	01-07-16

Drawn	Checked
AGF	MB

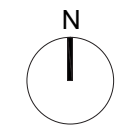
Drawing Number	Revision
GA_I005	A

DO NOT SCALE FROM THIS DRAWING
© Rural Solution Ltd

Preferred Option Details (Bolton Bridge)



- KEY**
- Existing Buildings
 - Existing Trees
 - Proposed Buildings
 - Proposed Trees
 - Proposed Refurbishments



Canalside House,
Brewery Lane,
Skipton,
North Yorkshire,
BD23 1DR

tel: 01756 797501
e-mail: info@ruralsolutions.co.uk
web: www.ruralsolutions.co.uk

Client
Chatsworth Estates

Project
Bolton Abbey Development Options
Appraisal Study

Title
Option 4 -
Detailed Plan of Bolton Abbey Proposals

Scale	Date
NTS	01-07-16

Drawn	Checked
AGF	MB

Drawing Number	Revision
GA_I006	A

DO NOT SCALE FROM THIS DRAWING
© Rural Solution Ltd

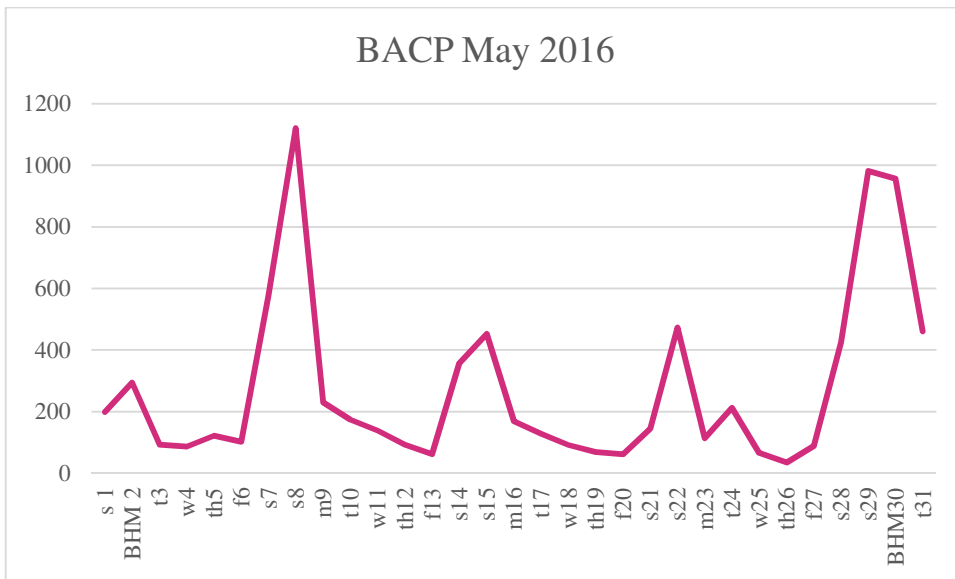
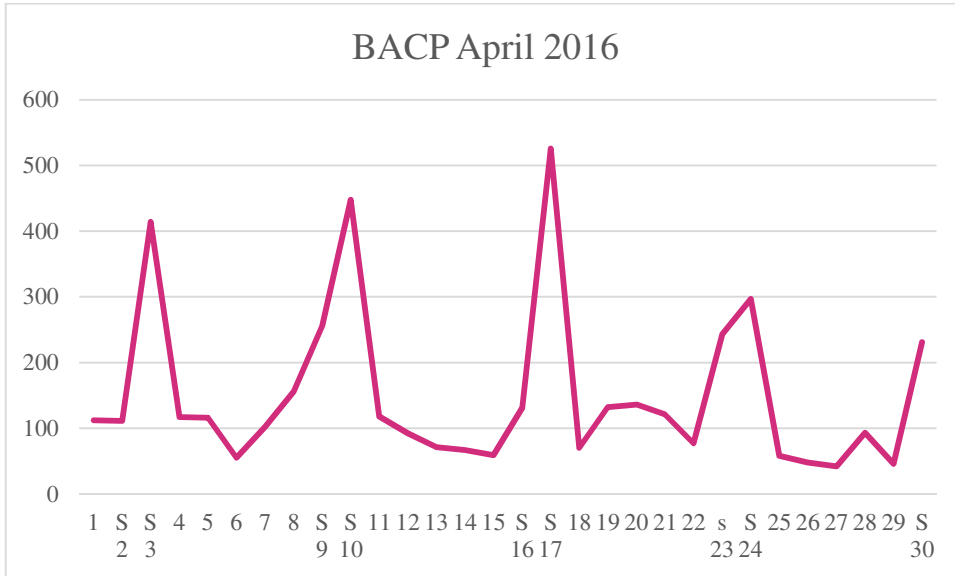
Preferred Option Details (Bolton Abbey Village)

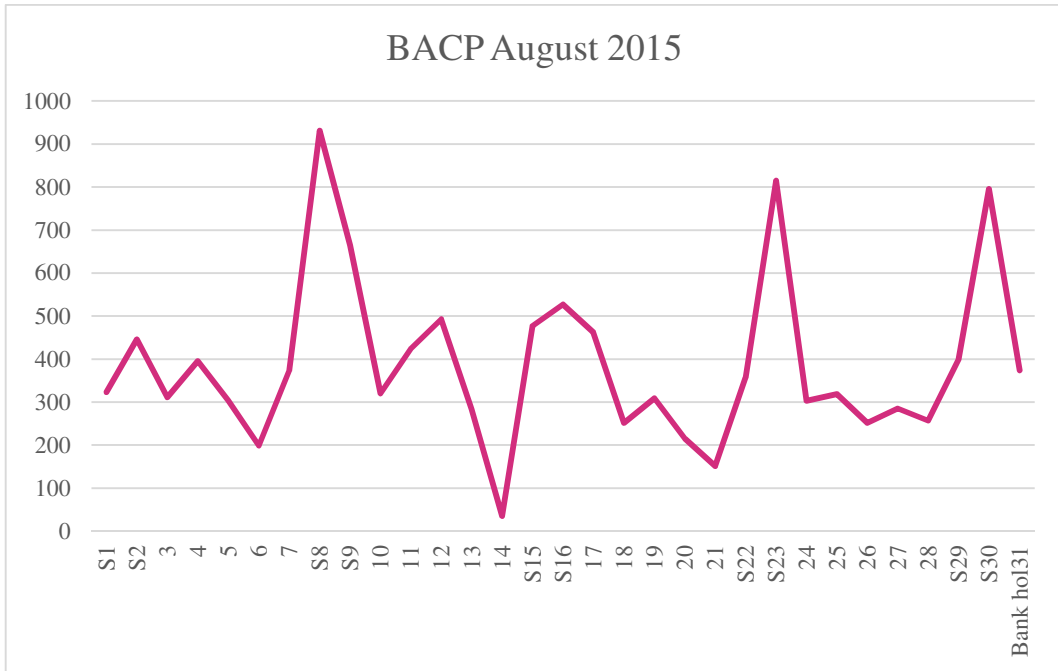
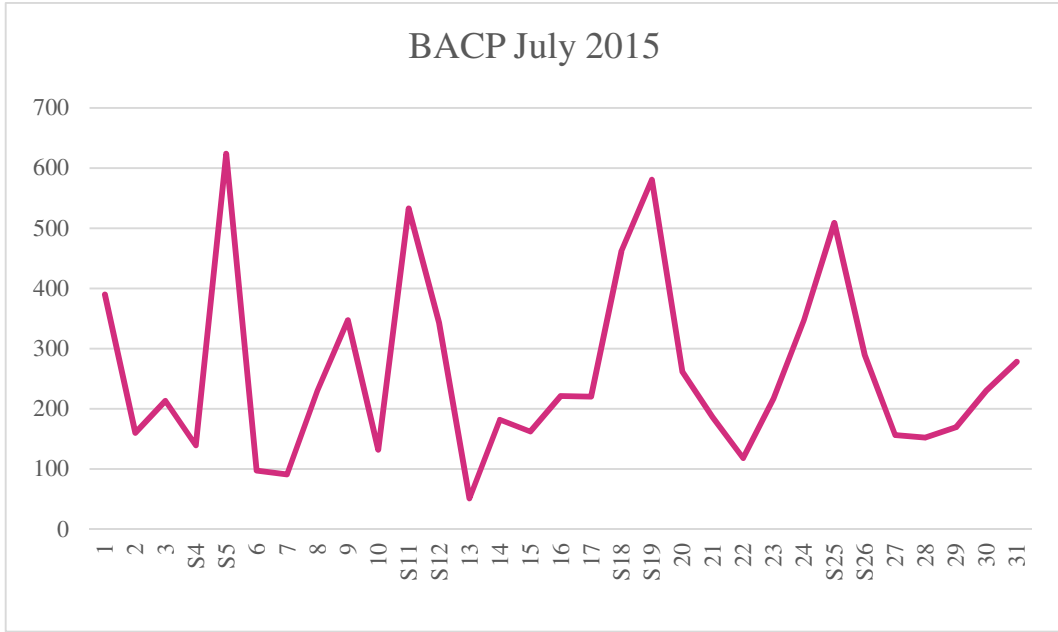
Appendix B

CST Car Park Data

B1 Bolton Abbey Car Park Data

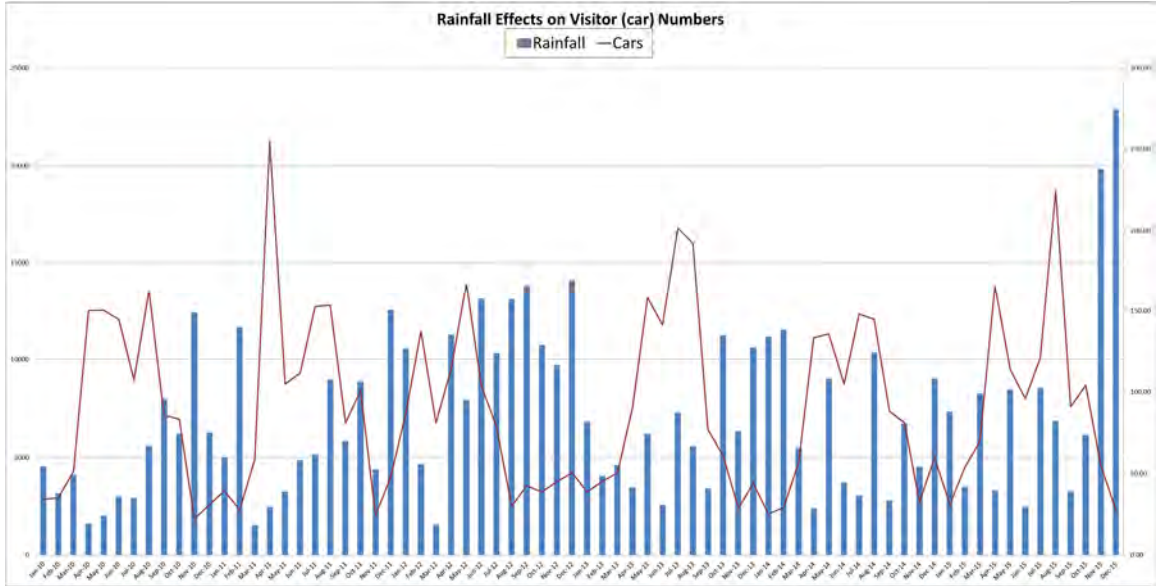
CST data





B2 CST Visitor Numbers

Table: Rainfall effects on visitor numbers – BADOAS report



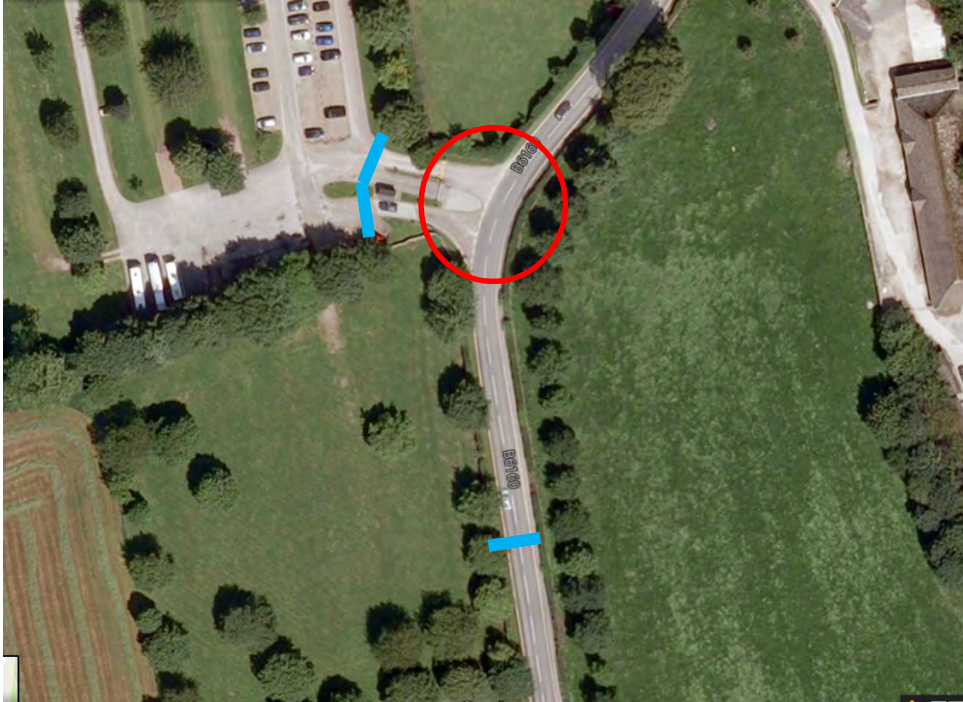
Appendix C

2016 Survey Data

C1 Traffic Survey Data

Survey Locations

Bolton Abbey Village



Bolton Bridge





North

Dearden House,
Dearden Street,
Ossett,
West Yorkshire,
WF5 8NR.

Tel: 01924 288040
Fax: 01924 278670

Arup Bolton Abbey ATC Survey Report August 2016

PROJECT NO.	6600
CHECKED	R. NAYLOR
DATE	08/09/2016
CONTACT	K. SHORTER
REVISION	1

CONTENTS

Introduction

Automatic Traffic Counts

General Location Plan

Appendix A – Vehicle Categories

Appendix B - Speed bins and data headings

Appendix C – Survey Results

INTRODUCTION

Nationwide Data Collection (NDC) was instructed by Arup to undertake Automatic Traffic Counts at several locations around Bolton Abbey.

A general location plan is given below, with site photos included within the results.

AUTOMATIC TRAFFIC COUNTS

Automatic traffic counts were undertaken at the following sites :

Site No.	Location.	Day / Date
3A	Bolton Abbey - Entrance to car park, left lane. Attached to sign	Friday 26th August 2016 – Thursday 1st September 2016
3B	Entrance to car park, middle lane - Attached to gate - N53.98052, W1.89242	Friday 26th August 2016 – Thursday 1st September 2016
3C	Exit to car park, right lane - Attached to tree - N53.98052, W1.89242	Friday 26th August 2016 – Thursday 1st September 2016
4	B6160 - Attached to sign - N53.98000, W1.89235	Friday 26th August 2016 – Thursday 1st September 2016
5	B6160 - Attached to telegraph pole - N53.98000, W1.89235	Friday 26th August 2016 – Thursday 1st September 2016

METROCOUNT 5600 series automatic traffic counters, attached to pneumatic tubes, were used at all the sites. Data was collected in both directions at both locations.

The survey was carried out with survey hours of 00:00 to 00:00 (24 Hours).

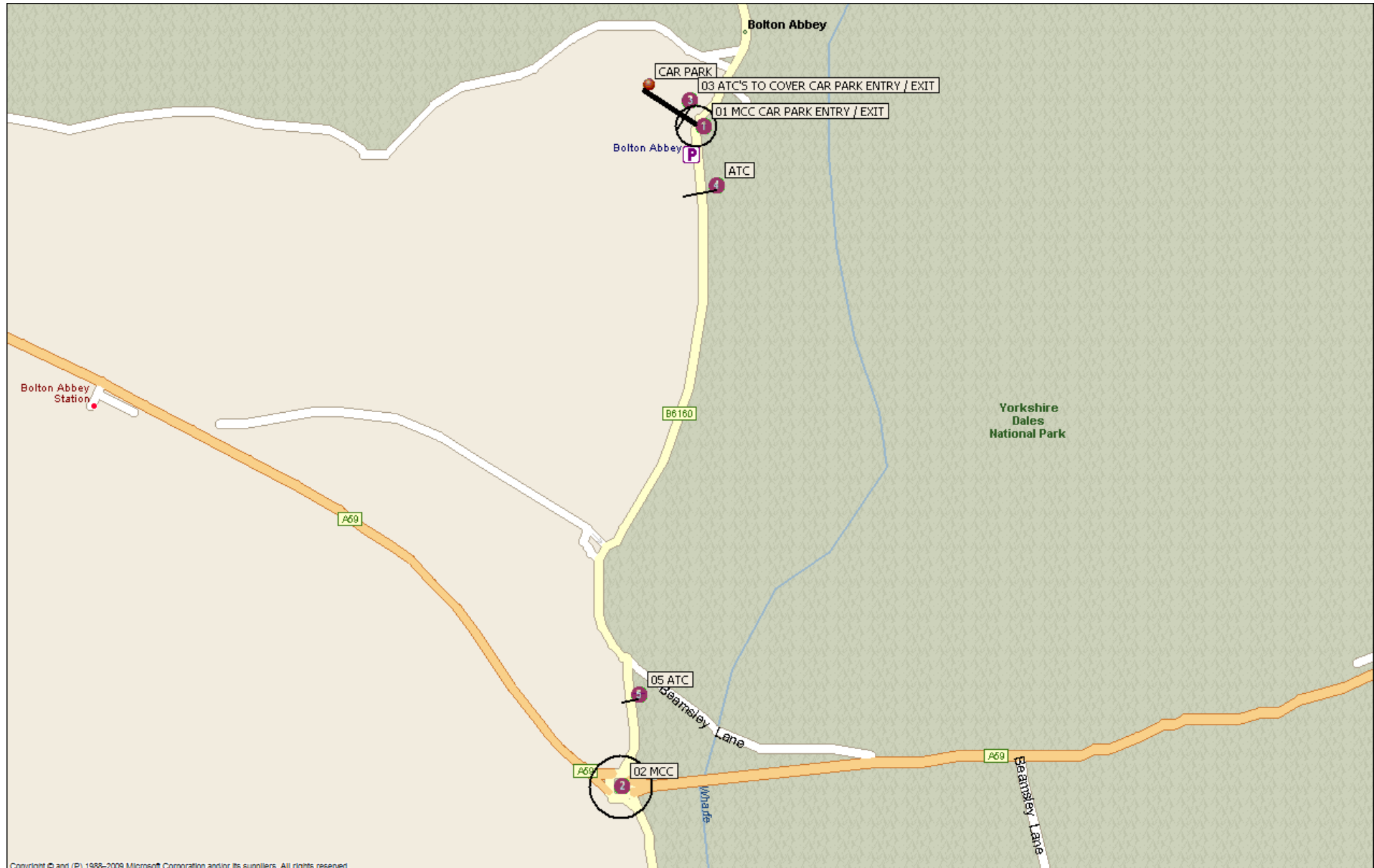
The results have been provided in excel, in hourly totals and includes the following information:

- Total Vehicles
- Class Bin Totals (12 Class)
- Number of Vehicles over Speed Limit
- Percentage of Vehicles over Speed Limit
- Number of Vehicles over Speed Limit 1 (ACPO Standard – 110% Speed Limit + 2mph)
- Percentage of Vehicles over Speed Limit 1
- Number of Vehicles over Speed Limit 2 – (DfT Standard – 100% Speed Limit + 2mph)
- Percentage of Vehicles over Speed Limit 2
- Mean Speed
- 85th Percentile Speed
- Speed Bin Totals (Range 0 to 140mph)

12hr (07:00 to 19:00), 16hr (06:00 to 22:00), 18hr (06:00 to 00:00) and 24hr (00:00 to 00:00) totals are also included along with a virtual day, week and grand total. The peak time period for both the a.m (00:00 to 12:00) and p.m (12:00 to 24:00) are also highlighted.

A detailed description of the vehicles included in each category is provided in Appendix A.






GENERAL LOCATION PLAN



APPENDIX A

VEHICLE CATEGORIES

ATC VEHICLE CATEGORIES

Axles	Groups	Description	Class		Parameters	Dominant Vehicle	Aggregate
2	1 or 2	Very Short Bicycle or Motorcycle	MC	1	d(1)<1.7m & axles=2		
2	1 or 2	Short Sedan, Wagon, 4WD, Utility, Light Van	SV	2	d(1)>=1.7m, d(1)<=3.2m & axles=2		
3, 4 or 5	3	Short Towing Trailer, Caravan, Boat, etc.	SVT	3	groups=3, d(1)>=2.1m, d(1)<=3.2m, d(2)>=2.1m & axles=3,4,5		1 (Light)
2	2	Two axle truck or Bus	TB2	4	d(1)>3.2m & axles=2		
3	2	Three axle truck or Bus	TB3	5	axles=3 & groups=2		2 (Medium)
>3	2	Four axle truck	T4	6	axles>3 & groups=2		
3	3	Three axle articulated vehicle or Rigid vehicle and trailer	ART3	7	d(1)>3.2m, axles=3 & groups=3		
4	>2	Four axle articulated vehicle or Rigid vehicle and trailer	ART4	8	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles = 4 & groups>2		
5	>2	Five axle articulated vehicle or Rigid vehicle and trailer	ART5	9	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles=5 & groups>2		
>=6	>2	Six (or more) axle articulated vehicle or Rigid vehicle and trailer	ART6	10	axles=6 & groups>2 or axles>6 & groups=3		
>6	4	B-Double or Heavy truck and trailer	BD	11	groups=4 & axles>6		3 (Heavy)
>6	>=5	Double or triple road train or Heavy truck and two (or more) trailers	DRT	12	groups>=5 & axles>6		

APPENDIX C

SPEED BINS & DATA HEADINGS

ATC SPEED BINS & DATA HEADINGS


Heading	Description
0 - 5	Speed bin totals 0 - 5 mph
5 - 10	Speed bin totals 5 - 10 mph
10-15	Speed bin totals 10 - 15 mph
15 - 20	Speed bin totals 15 - 20 mph
20 - 25	Speed bin totals 20 - 25 mph
25 - 30	Speed bin totals 25 - 30 mph
30 - 35	Speed bin totals 30 - 35 mph
35 - 40	Speed bin totals 35 - 40 mph
40 - 45	Speed bin totals 40 - 45 mph
45 - 50	Speed bin totals 45 - 50 mph
50 - 55	Speed bin totals 50 - 55 mph
55 - 60	Speed bin totals 55 - 60 mph
60 - 65	Speed bin totals 60 - 65 mph
65 - 70	Speed bin totals 65 - 70 mph
70 - 75	Speed bin totals 70 - 75 mph
75 - 80	Speed bin totals 75 - 80 mph
80 - 85	Speed bin totals 80 - 85 mph
85 - 90	Speed bin totals 85 - 90 mph
90 - 95	Speed bin totals 90 - 95 mph
95 - 100	Speed bin totals 95 - 100 mph
100 - 105	Speed bin totals 100 - 105 mph
105 - 110	Speed bin totals 105 - 110 mph
110 - 115	Speed bin totals 110 - 115 mph
115 - 120	Speed bin totals 115 - 120 mph
120 - 125	Speed bin totals 120 - 125 mph
125 - 130	Speed bin totals 125 - 130 mph
130 - 135	Speed bin totals 130 - 135 mph
135 - 140	Speed bin totals 135 - 140 mph

Heading	Description
>PSL	Greater than the posted speed limit
>PSL%	Greater than the posted speed limit as a percentage
>SL1 ACPO	Greater than ACPO (Association of Chief Police Officers) standard. ACPO is PSL x 10%+2mph
>SL1% ACPO	Greater than ACPO displayed as a percentage
>SL2 DFT	Greater than DFT (Department For Transport) standard. DFT is PSL plus 15mph.
>SL2% DFT	Greater than DFT displayed as a percentage
Mean	Average speed
Vpp 85	85th percentile speed

APPENDIX C

SURVEY RESULTS



	Site / Location:	Bolton Abbey - Entrance to car park, left lane. Attached to sign	Project No:	6600	Photo No:	1	Drawn By:	RN
	Survey Date:	Friday 26th August 2016 - Thursday 1st September 2016		Project Name:	Bolton Abbey			
	Survey Times:	00:00 - 00:00 (24 Hour)		Title:	Site Photograph - looking westbound			



**6600 / Bolton Abbey
Aug-16
Automatic Traffic Count**

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
3A	Bolton Abbey - Entrance to car park, left lane. Attached to sign	Westbound	5	Friday 26 August 2016	Thursday 01 September 2016	3582	503	512	1477	41.2	48	1.3	0	0.0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Friday 26 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	5	5	100	2	40	0	0	7.4	-
0800	15	13	86.7	7	46.7	0	0	8.1	11
0900	22	10	45.5	0	0	0	0	4.9	5.8
1000	58	15	25.9	0	0	0	0	4.5	5.1
1100	121	47	38.8	0	0	0	0	4.9	5.8
1200	90	37	41.1	1	1.1	0	0	4.7	5.6
1300	72	22	30.6	0	0	0	0	4.7	5.6
1400	49	17	34.7	0	0	0	0	4.7	5.8
1500	25	5	20	0	0	0	0	4.6	5.1
1600	21	10	47.6	0	0	0	0	4.8	6.3
1700	11	7	63.6	1	9.1	0	0	5.5	5.6
1800	2	2	100	0	0	0	0	5.9	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	491	190	38.7	11	2.2	0	0	4.9	5.8
06-22	491	190	38.7	11	2.2	0	0	4.9	5.8
06-00	491	190	38.7	11	2.2	0	0	4.9	5.8
00-00	491	190	38.7	11	2.2	0	0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Saturday 27 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	3	3	100	2	66.7	0	0	8.4	-
0800	9	8	88.9	5	55.6	0	0	8.2	-
0900	13	5	38.5	0	0	0	0	4.8	6
1000	69	30	43.5	1	1.4	0	0	5	6
1100	115	46	40	0	0	0	0	4.8	5.8
1200	108	58	53.7	1	0.9	0	0	5.1	6
1300	100	35	35	2	2	0	0	4.9	5.8
1400	61	30	49.2	0	0	0	0	4.9	5.6
1500	47	18	38.3	0	0	0	0	4.7	5.8
1600	27	6	22.2	0	0	0	0	4.5	5.1
1700	9	1	11.1	0	0	0	0	4.5	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	561	240	42.8	11	2	0	0	5	6
06-22	561	240	42.8	11	2	0	0	5	6
06-00	561	240	42.8	11	2	0	0	5	6
00-00	561	240	42.8	11	2	0	0	5	6

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Sunday 28 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	1	1	100	0	0	0	0	6.2	-
0900	19	13	68.4	0	0	0	0	5.5	6.3
1000	58	22	37.9	0	0	0	0	4.8	5.6
1100	83	22	26.5	0	0	0	0	4.5	5.4
1200	101	30	29.7	0	0	0	0	4.7	5.4
1300	87	27	31	1	1.1	0	0	4.8	5.8
1400	57	12	21.1	0	0	0	0	4.4	5.1
1500	47	21	44.7	0	0	0	0	4.9	6
1600	26	6	23.1	0	0	0	0	4.4	4.9
1700	26	8	30.8	0	0	0	0	4.7	5.4
1800	1	0	0	0	0	0	0	3.8	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	506	162	32	1	0.2	0	0	4.7	5.6
06-22	506	162	32	1	0.2	0	0	4.7	5.6
06-00	506	162	32	1	0.2	0	0	4.7	5.6
00-00	506	162	32	1	0.2	0	0	4.7	5.6

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Monday 29 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	2	0	0	0	0	0	0	4.3	-
0800	1	0	0	0	0	0	0	4.3	-
0900	47	30	63.8	0	0	0	0	5.3	5.8
1000	122	72	59	3	2.5	0	0	5.3	6
1100	155	68	43.9	1	0.6	0	0	4.9	6
1200	135	52	38.5	3	2.2	0	0	4.7	6
1300	124	64	51.6	0	0	0	0	4.9	5.8
1400	137	46	33.6	0	0	0	0	4.6	5.6
1500	99	44	44.4	0	0	0	0	4.8	5.8
1600	62	20	32.3	0	0	0	0	4.6	5.6
1700	42	16	38.1	1	2.4	0	0	4.8	5.8
1800	2	0	0	0	0	0	0	3.6	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	928	412	44.4	8	0.9	0	0	4.9	5.8
06-22	928	412	44.4	8	0.9	0	0	4.9	5.8
06-00	928	412	44.4	8	0.9	0	0	4.9	5.8
00-00	928	412	44.4	8	0.9	0	0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Tuesday 30 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	2	2	100	1	50	0	0	7.9	-
0900	18	11	61.1	1	5.6	0	0	5.2	5.6
1000	60	24	40	1	1.7	0	0	4.8	5.8
1100	73	36	49.3	0	0	0	0	5.1	5.8
1200	84	34	40.5	0	0	0	0	4.7	5.8
1300	60	18	30	0	0	0	0	4.7	5.1
1400	50	25	50	0	0	0	0	5	6
1500	45	20	44.4	0	0	0	0	4.9	5.8
1600	26	12	46.2	0	0	0	0	5	6
1700	11	4	36.4	0	0	0	0	4.5	5.6
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	429	186	43.4	3	0.7	0	0	4.9	5.8
06-22	429	186	43.4	3	0.7	0	0	4.9	5.8
06-00	429	186	43.4	3	0.7	0	0	4.9	5.8
00-00	429	186	43.4	3	0.7	0	0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Wednesday 31 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	4	4	100	1	25	0	0	7.5	-
0800	12	10	83.3	8	66.7	0	0	7.8	8.9
0900	11	5	45.5	0	0	0	0	5	5.8
1000	34	15	44.1	1	2.9	0	0	4.9	5.4
1100	78	26	33.3	0	0	0	0	4.6	5.6
1200	60	28	46.7	1	1.7	0	0	4.9	6
1300	41	11	26.8	1	2.4	0	0	4.6	5.6
1400	40	16	40	0	0	0	0	5	6
1500	14	10	71.4	1	7.1	0	0	5.3	5.8
1600	7	4	57.1	0	0	0	0	5.1	-
1700	9	4	44.4	0	0	0	0	5.3	-
1800	1	1	100	0	0	0	0	6.4	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	311	134	43.1	13	4.2	0	0	5	6
06-22	311	134	43.1	13	4.2	0	0	5	6
06-00	311	134	43.1	13	4.2	0	0	5	6
00-00	311	134	43.1	13	4.2	0	0	5	6

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Thursday 01 September 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	1	1	100	0	0	0	0	7.4	-
0800	6	6	100	0	0	0	0	6.4	-
0900	18	13	72.2	0	0	0	0	5.4	6.5
1000	68	28	41.2	0	0	0	0	4.9	5.8
1100	87	27	31	0	0	0	0	4.7	5.6
1200	50	25	50	0	0	0	0	5	6
1300	49	13	26.5	0	0	0	0	4.6	5.4
1400	34	20	58.8	1	2.9	0	0	5.2	5.8
1500	28	14	50	0	0	0	0	5	5.8
1600	13	6	46.2	0	0	0	0	5	6
1700	2	0	0	0	0	0	0	4.6	-
1800	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0
07-19	356	153	43	1	0.3	0	0	4.9	5.8
06-22	356	153	43	1	0.3	0	0	4.9	5.8
06-00	356	153	43	1	0.3	0	0	4.9	5.8
00-00	356	153	43	1	0.3	0	0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Virtual Day (7)

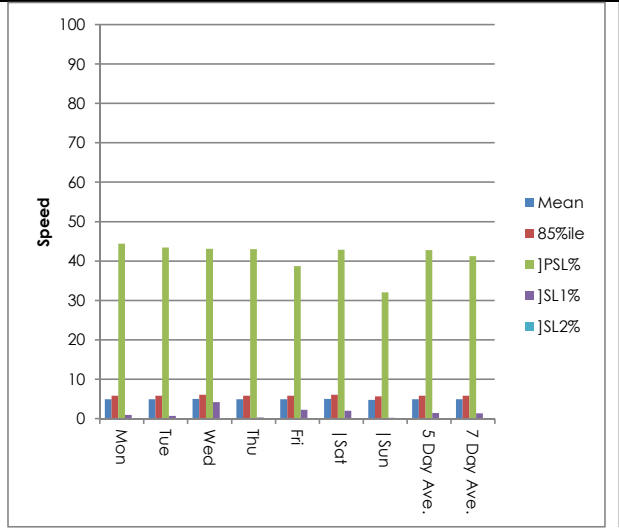
Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	2	2	86.7	1	33.3	0	0	7.2	-
0800	7	6	87	3	45.7	0	0	7.7	-
0900	21	12	58.8	0	0.7	0	0	5.2	6
1000	67	29	43.9	1	1.3	0	0	4.9	5.8
1100	102	39	38.2	0	0.1	0	0	4.8	5.8
1200	90	38	42	1	1	0	0	4.8	5.8
1300	76	27	35.6	1	0.8	0	0	4.8	5.6
1400	61	24	38.8	0	0.2	0	0	4.8	5.8
1500	44	19	43.3	0	0.3	0	0	4.8	5.8
1600	26	9	35.2	0	0	0	0	4.7	5.8
1700	16	6	36.4	0	1.8	0	0	4.8	5.6
1800	1	0	50	0	0	0	0	4.9	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	512	211	41.2	7	1.3	0	0	4.9	5.8
06-22	512	211	41.2	7	1.3	0	0	4.9	5.8
06-00	512	211	41.2	7	1.3	0	0	4.9	5.8
00-00	512	211	41.2	7	1.3	0	0	4.9	5.8

Site 3A
 Location Bolton Abbey - Entrance to car park, left lane
 Direction Westbound

Virtual Week (1)

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
Mon	928	412	44.4	8	0.9	0	0	4.9	5.8
Tue	429	186	43.4	3	0.7	0	0	4.9	5.8
Wed	311	134	43.1	13	4.2	0	0	5	6
Thu	356	153	43	1	0.3	0	0	4.9	5.8
Fri	491	190	38.7	11	2.2	0	0	4.9	5.8
Sat	561	240	42.8	11	2	0	0	5	6
Sun	506	162	32	1	0.2	0	0	4.7	5.6
5 Day Ave.	503	215	42.7	7	1.4	0	0.0	4.9	5.8
7 Day Ave.	512	211	41.2	7	1.3	0	0.0	4.9	5.8
--	3582	1477	41.2	48	1.3	0	0.0	4.9	5.8

Summary Graphs



Site 3A
 Location Bolton
 Direction Westbound
 Friday 21

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	15	2	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	22	12	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	58	43	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	121	74	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	90	53	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	72	50	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	49	32	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	25	20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	21	11	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	11	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	491	301	186	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	491	301	186	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	491	301	186	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	491	301	186	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Saturday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	9	1	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	13	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	69	39	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	115	69	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	108	50	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	100	65	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	61	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	47	29	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	27	21	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	9	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	561	321	237	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	561	321	237	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	561	321	237	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	561	321	237	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Sunday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	19	6	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	58	36	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	83	61	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	101	71	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	87	60	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	57	45	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	47	26	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	26	20	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	26	18	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	506	344	161	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	506	344	161	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	506	344	161	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	506	344	161	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Monday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	47	17	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	122	50	70	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	155	87	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	135	83	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	124	60	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	137	91	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	99	55	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	62	42	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	42	26	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	928	516	410	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	928	516	410	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	928	516	410	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	928	516	410	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Tuesday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	18	7	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	60	36	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	73	37	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	84	50	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	60	42	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	50	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	45	25	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	26	14	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	11	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	429	243	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	429	243	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	429	243	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	429	243	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Wednesday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-100	100-105	105-110	110-115	115-120	120-125	125-130	130-135	135-140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	12	2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	11	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	34	19	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	78	52	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	60	32	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	41	30	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	40	24	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	14	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	7	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	9	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	311	177	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	311	177	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	311	177	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	311	177	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Thursday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	18	5	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	68	40	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	87	60	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	50	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	49	36	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	34	14	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	28	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	13	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	356	203	152	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	356	203	152	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	356	203	152	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	356	203	152	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3A
 Location Bolton
 Direction Westbound
 Virtual D

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	7	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	21	9	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	67	38	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	102	63	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	90	52	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	76	49	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	61	37	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	44	25	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	26	17	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	16	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	512	301	209	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	512	301	209	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	512	301	209	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	512	301	209	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



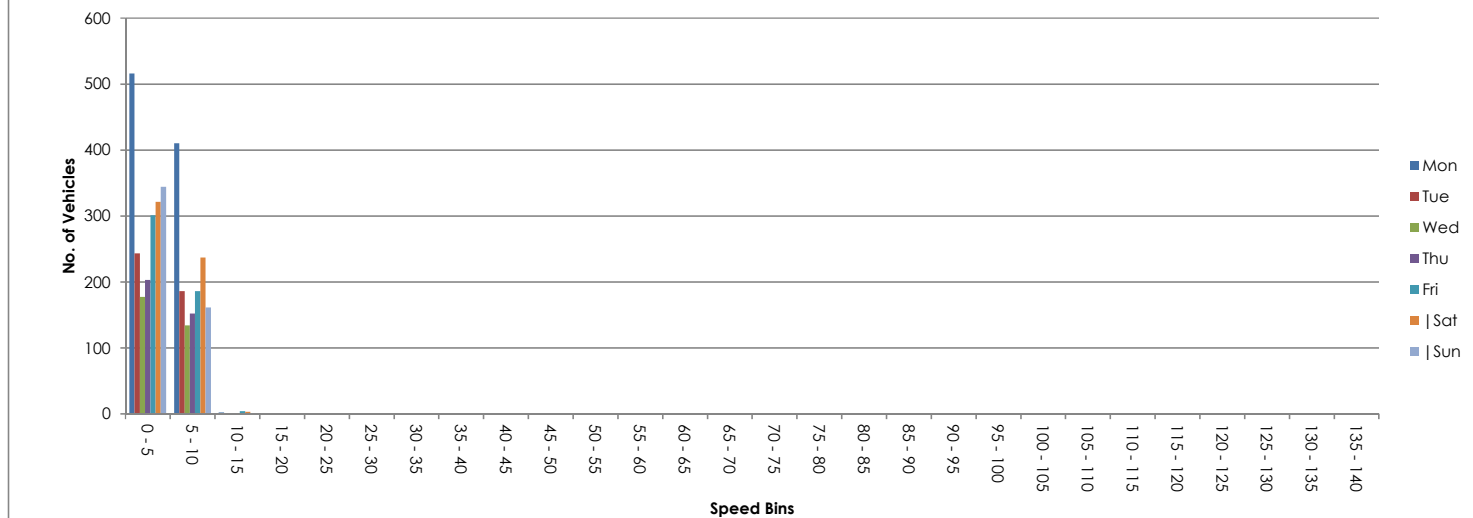
Site 3A
 Location Bolton
 Direction Westbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count


Virtual W

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
Mon	928	516	410	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	429	243	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wed	311	177	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thu	356	203	152	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fri	491	301	186	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sat	561	321	237	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sun	506	344	161	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	503	288	214	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Day Ave.	512	301	209	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--	3582	2105	1466	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary Graphs





	Site / Location:	Entrance to car park, middle lane - Attached to gate - N53.98052, W1.89242	Project No:	6600	Photo No:	1	Drawn By:	RN
	Survey Date:	Friday 26th August 2016 - Thursday 1st September 2016		Project Name:	Bolton Abbey			
	Survey Times:	00:00 - 00:00 (24 Hour)		Title:	Site Photograph - looking westbound			



6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
3B	Entrance to car park, middle lane - Attached to gate - N53.98052, W1.89242	Westbound	5	Friday 26 August 2016	Thursday 01 September 2016	331	328	47	1	0.3	0	0.0	0	0.0	1.0	2.2

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Friday 26 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	0	0	0	0	0	0	0	-	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	0	0	0	0	0	0	0	-	-
06-22	0	0	0	0	0	0	0	-	-
06-00	0	0	0	0	0	0	0	-	-
00-00	0	0	0	0	0	0	0	-	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Saturday 27 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	1	0	0	0	0	0	0	0	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	1	0	0	0	0	0	0	0	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	1	0	0	0	0	0	0	0	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	2	0	0	0	0	0	0	0	-
06-22	3	0	0	0	0	0	0	0	-
06-00	3	0	0	0	0	0	0	0	-
00-00	3	0	0	0	0	0	0	0	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Sunday 28 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	0	0	0	0	0	0	0	-	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	0	0	0	0	0	0	0	-	-
06-22	0	0	0	0	0	0	0	-	-
06-00	0	0	0	0	0	0	0	-	-
00-00	0	0	0	0	0	0	0	-	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Monday 29 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	78	0	0	0	0	0	0	0	0
1200	108	0	0	0	0	0	0	0.4	0.4
1300	122	0	0	0	0	0	0	1.9	2.2
1400	20	1	5	0	0	0	0	2.7	3.4
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	328	1	0.3	0	0	0	0	1	2.2
06-22	328	1	0.3	0	0	0	0	1	2.2
06-00	328	1	0.3	0	0	0	0	1	2.2
00-00	328	1	0.3	0	0	0	0	1	2.2

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Tuesday 30 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	0	0	0	0	0	0	0	-	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	0	0	0	0	0	0	0	-	-
06-22	0	0	0	0	0	0	0	-	-
06-00	0	0	0	0	0	0	0	-	-
00-00	0	0	0	0	0	0	0	-	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Wednesday 31 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	0	0	0	0	0	0	0	-	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	0	0	0	0	0	0	0	-	-
06-22	0	0	0	0	0	0	0	-	-
06-00	0	0	0	0	0	0	0	-	-
00-00	0	0	0	0	0	0	0	-	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Thursday 01 September 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	0	0	0	0	0	0	0	-	-
1200	0	0	0	0	0	0	0	-	-
1300	0	0	0	0	0	0	0	-	-
1400	0	0	0	0	0	0	0	-	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	-	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	-	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	0	0	0	0	0	0	0	-	-
06-22	0	0	0	0	0	0	0	-	-
06-00	0	0	0	0	0	0	0	-	-
00-00	0	0	0	0	0	0	0	-	-

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Virtual Day (7)

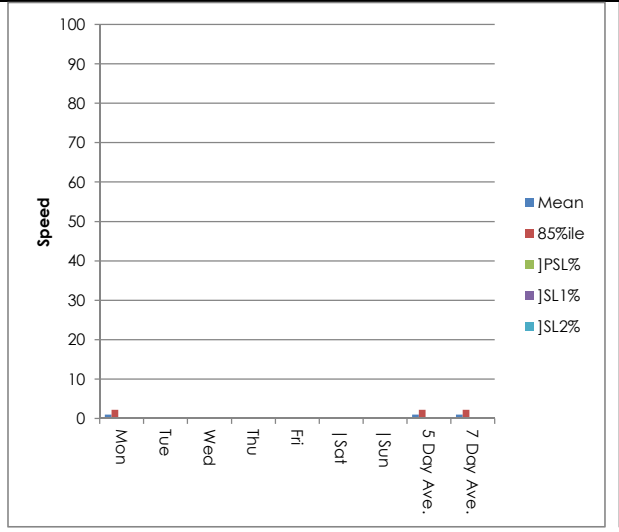
Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	0	0	0	0	0	0	0	-	-
1100	11	0	0	0	0	0	0	0	0
1200	15	0	0	0	0	0	0	0.4	0.4
1300	17	0	0	0	0	0	0	1.9	2.2
1400	3	0	5	0	0	0	0	2.7	-
1500	0	0	0	0	0	0	0	-	-
1600	0	0	0	0	0	0	0	0	-
1700	0	0	0	0	0	0	0	-	-
1800	0	0	0	0	0	0	0	-	-
1900	0	0	0	0	0	0	0	0	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	47	0	0.3	0	0	0	0	1	2.2
06-22	47	0	0.3	0	0	0	0	1	2.2
06-00	47	0	0.3	0	0	0	0	1	2.2
00-00	47	0	0.3	0	0	0	0	1	2.2

Site 3B
 Location Entrance to car park, middle lane - Attached
 Direction Westbound

Virtual Week (1)

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
Mon	328	1	0.3	0	0	0	0	1	2.2
Tue	0	0	0	0	0	0	0	-	-
Wed	0	0	0	0	0	0	0	-	-
Thu	0	0	0	0	0	0	0	-	-
Fri	0	0	0	0	0	0	0	-	-
Sat	3	0	0	0	0	0	0	0	-
Sun	0	0	0	0	0	0	0	-	-
5 Day Ave.	328	1	0.3	0	0.0	0	0.0	1.0	2.2
7 Day Ave.	47	0	0.3	0	0.0	0	0.0	1.0	2.2
--	331	1	0.3	0	0.0	0	0.0	1.0	2.2

Summary Graphs



Site 3B
 Location Entran
 Direction Westbo
 Friday 2

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbo
 Saturday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbo
 Sunday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbound
 Monday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	78	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	108	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	122	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	20	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbo
 Tuesday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbo
Wednes

6600 / Bolton Abbey
Aug-16
Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Site 3B
 Location Entran
 Direction Westbo
 Thursday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3B
 Location Entran
 Direction Westbound
 Virtual D

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



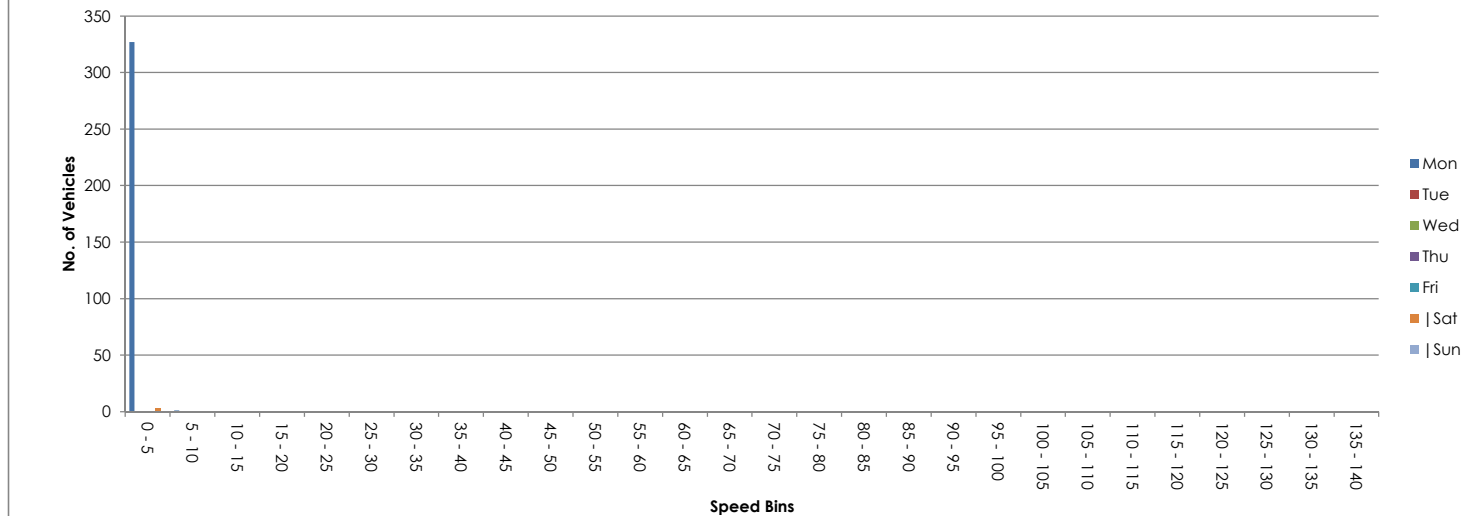
Site 3B
 Location Entran
 Direction Westb

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count


Virtual W

Time	Total	Speed Bins (mph)																												
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140	
Mon	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sat	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	328	327	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Day Ave.	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--	331	330	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary Graphs





	Site / Location:	Exit to car park, right lane - Attached to tree - N53.98052, W1.89242	Project No:	6600	Photo No:	3	Drawn By:	RN
	Survey Date:	Friday 26th August 2016 - Thursday 1st September 2016		Project Name:	Bolton Abbey			
	Survey Times:	00:00 - 00:00 (24 Hour)		Title:	Site Photograph - looking westbound			



6600 / Bolton Abbey
Aug-16
Automatic Traffic Count

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
3C	Exit to car park, right lane - Attached to tree - N53.98052, W1.89242	Eastbound	5	Friday 26 August 2016	Thursday 01 September 2016	3654	527	522	171	4.7	4	0.1	0	0.0	3.2	4.0

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Friday 26 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	1	0	0	0	0	0	0	2.8	-
0800	6	1	16.7	0	0	0	0	3.7	-
0900	1	0	0	0	0	0	0	3.5	-
1000	13	3	23.1	0	0	0	0	4	5.1
1100	10	0	0	0	0	0	0	3.9	-
1200	24	0	0	0	0	0	0	3.1	3.8
1300	40	0	0	0	0	0	0	3.2	3.8
1400	66	2	3	0	0	0	0	3.5	3.8
1500	85	2	2.4	0	0	0	0	3.2	4
1600	109	0	0	0	0	0	0	3.2	3.6
1700	72	6	8.3	0	0	0	0	3.5	4
1800	39	12	30.8	2	5.1	0	0	4.3	5.1
1900	5	0	0	0	0	0	0	2.9	-
2000	0	0	0	0	0	0	0	-	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	466	26	5.6	2	0.4	0	0	3.4	4
06-22	471	26	5.5	2	0.4	0	0	3.4	4
06-00	471	26	5.5	2	0.4	0	0	3.4	4
00-00	471	26	5.5	2	0.4	0	0	3.4	4

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Saturday 27 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	2	1	50	0	0	0	0	4.9	-
0900	3	2	66.7	0	0	0	0	5.6	-
1000	7	3	42.9	1	14.3	0	0	5.4	-
1100	10	1	10	0	0	0	0	3.7	-
1200	19	0	0	0	0	0	0	3.5	3.8
1300	55	3	5.5	0	0	0	0	3.6	4
1400	90	0	0	0	0	0	0	3.1	3.8
1500	114	4	3.5	0	0	0	0	3.1	3.6
1600	120	5	4.2	0	0	0	0	3.2	3.8
1700	68	12	17.6	0	0	0	0	3.7	5.1
1800	25	1	4	0	0	0	0	3.4	3.6
1900	13	0	0	0	0	0	0	3.1	3.1
2000	5	0	0	0	0	0	0	3.1	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	513	32	6.2	1	0.2	0	0	3.3	4
06-22	531	32	6	1	0.2	0	0	3.3	4
06-00	531	32	6	1	0.2	0	0	3.3	4
00-00	531	32	6	1	0.2	0	0	3.3	4

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Sunday 28 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	4	1	25	0	0	0	0	3.7	-
1000	4	1	25	0	0	0	0	4.3	-
1100	15	2	13.3	0	0	0	0	4.5	4.9
1200	35	7	20	0	0	0	0	3.7	5.1
1300	39	1	2.6	0	0	0	0	3.1	3.6
1400	57	1	1.8	0	0	0	0	3.2	4
1500	87	1	1.1	0	0	0	0	3.1	3.6
1600	99	2	2	0	0	0	0	3.1	3.8
1700	77	2	2.6	0	0	0	0	3	3.4
1800	50	4	8	0	0	0	0	3.1	4.3
1900	14	0	0	0	0	0	0	3.8	4
2000	4	0	0	0	0	0	0	2.8	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	2	0	0	0	0	0	0	3.6	-
07-19	467	22	4.7	0	0	0	0	3.2	4
06-22	485	22	4.5	0	0	0	0	3.2	4
06-00	487	22	4.5	0	0	0	0	3.2	4
00-00	487	22	4.5	0	0	0	0	3.2	4

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Monday 29 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	2	0	0	0	0	0	0	4.8	-
0800	0	0	0	0	0	0	0	-	-
0900	6	6	100	0	0	0	0	6	-
1000	5	2	40	0	0	0	0	4.9	-
1100	24	4	16.7	0	0	0	0	3.1	3.4
1200	34	0	0	0	0	0	0	3	3.1
1300	69	1	1.4	0	0	0	0	2.8	3.1
1400	111	3	2.7	0	0	0	0	3.2	4.3
1500	181	2	1.1	0	0	0	0	2.7	3.4
1600	244	1	0.4	0	0	0	0	2.7	3.1
1700	215	3	1.4	0	0	0	0	2.9	3.4
1800	146	2	1.4	0	0	0	0	3	3.8
1900	50	2	4	0	0	0	0	3.4	4.3
2000	14	0	0	0	0	0	0	2.9	3.6
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	1037	24	2.3	0	0	0	0	2.9	3.4
06-22	1101	26	2.4	0	0	0	0	2.9	3.6
06-00	1101	26	2.4	0	0	0	0	2.9	3.6
00-00	1101	26	2.4	0	0	0	0	2.9	3.6

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Tuesday 30 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	0	0	0	0	0	0	0	-	-
1000	7	0	0	0	0	0	0	3.2	-
1100	8	0	0	0	0	0	0	2.8	-
1200	18	0	0	0	0	0	0	3.1	3.8
1300	31	1	3.2	0	0	0	0	3.1	3.6
1400	58	1	1.7	0	0	0	0	3.3	3.8
1500	104	7	6.7	0	0	0	0	3.4	4
1600	72	2	2.8	0	0	0	0	3.6	4.3
1700	67	1	1.5	0	0	0	0	3.2	3.8
1800	26	2	7.7	0	0	0	0	3.4	4
1900	14	0	0	0	0	0	0	3	3.4
2000	13	0	0	0	0	0	0	2.3	2.2
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	391	14	3.6	0	0	0	0	3.3	4
06-22	418	14	3.3	0	0	0	0	3.3	4
06-00	418	14	3.3	0	0	0	0	3.3	4
00-00	418	14	3.3	0	0	0	0	3.3	4

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Wednesday 31 August 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	3	1	33.3	0	0	0	0	4.4	-
0900	2	0	0	0	0	0	0	4	-
1000	1	0	0	0	0	0	0	2.1	-
1100	10	2	20	0	0	0	0	4	-
1200	22	0	0	0	0	0	0	2.9	3.6
1300	37	0	0	0	0	0	0	3.2	3.1
1400	47	1	2.1	0	0	0	0	3.2	4
1500	58	3	5.2	0	0	0	0	3.5	4.3
1600	65	8	12.3	0	0	0	0	4.1	4.7
1700	36	2	5.6	0	0	0	0	4	4.3
1800	18	1	5.6	0	0	0	0	3.5	4.7
1900	1	0	0	0	0	0	0	4.7	-
2000	1	0	0	0	0	0	0	4.7	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	-	-
07-19	299	18	6	0	0	0	0	3.6	4.3
06-22	301	18	6	0	0	0	0	3.6	4.3
06-00	301	18	6	0	0	0	0	3.6	4.3
00-00	301	18	6	0	0	0	0	3.6	4.3

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Thursday 01 September 2016

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	-	-
0800	0	0	0	0	0	0	0	-	-
0900	1	0	0	0	0	0	0	4.7	-
1000	11	5	45.5	0	0	0	0	4.9	6
1100	20	8	40	0	0	0	0	4.6	6
1200	19	2	10.5	0	0	0	0	3.6	4.7
1300	30	1	3.3	0	0	0	0	3.5	4.5
1400	45	0	0	0	0	0	0	3.1	3.4
1500	69	4	5.8	1	1.4	0	0	3.3	3.8
1600	72	4	5.6	0	0	0	0	3.8	4.7
1700	48	5	10.4	0	0	0	0	3.6	4.3
1800	22	4	18.2	0	0	0	0	3.9	4.9
1900	8	0	0	0	0	0	0	2.9	-
2000	0	0	0	0	0	0	0	0	-
2100	0	0	0	0	0	0	0	0	-
2200	0	0	0	0	0	0	0	0	-
2300	0	0	0	0	0	0	0	0	-
07-19	337	33	9.8	1	0.3	0	0	3.6	4.7
06-22	345	33	9.6	1	0.3	0	0	3.6	4.7
06-00	345	33	9.6	1	0.3	0	0	3.6	4.7
00-00	345	33	9.6	1	0.3	0	0	3.6	4.7

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Virtual Day (7)

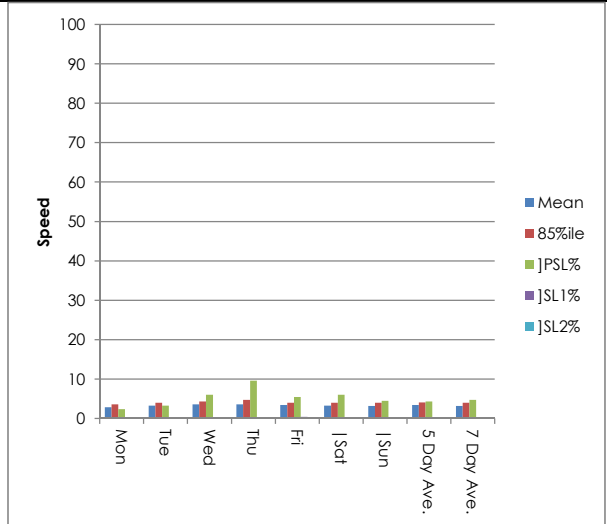
Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 Dft	JSL2% 20 Dft	Mean	Vpp 85
0000	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	-	-
0500	0	0	0	0	0	0	0	-	-
0600	0	0	0	0	0	0	0	-	-
0700	0	0	0	0	0	0	0	4.2	-
0800	2	0	27.3	0	0	0	0	4.1	-
0900	2	1	52.9	0	0	0	0	4.9	-
1000	7	2	29.2	0	2.1	0	0	4.4	-
1100	14	2	17.5	0	0	0	0	3.8	4.9
1200	24	1	5.3	0	0	0	0	3.3	3.8
1300	43	1	2.3	0	0	0	0	3.2	3.8
1400	68	1	1.7	0	0	0	0	3.2	4
1500	100	3	3.3	0	0.1	0	0	3.1	3.8
1600	112	3	2.8	0	0	0	0	3.2	4
1700	83	4	5.3	0	0	0	0	3.2	4
1800	47	4	8	0	0.6	0	0	3.3	4
1900	15	0	1.9	0	0	0	0	3.3	4
2000	5	0	0	0	0	0	0	2.7	-
2100	0	0	0	0	0	0	0	-	-
2200	0	0	0	0	0	0	0	-	-
2300	0	0	0	0	0	0	0	3.6	-
07-19	501	24	4.8	1	0.1	0	0	3.2	4
06-22	522	24	4.7	1	0.1	0	0	3.2	4
06-00	522	24	4.7	1	0.1	0	0	3.2	4
00-00	522	24	4.7	1	0.1	0	0	3.2	4

Site 3C
 Location Exit to car park, right lane - Attached to tree -
 Direction Eastbound

Virtual Week (1)

Time	Total	JPSL 5	JPSL% 5	JSL1 8 ACPO	JSL1% 8 ACPO	JSL2 20 DfT	JSL2% 20 DfT	Mean	Vpp 85
Mon	1101	26	2.4	0	0	0	0	2.9	3.6
Tue	418	14	3.3	0	0	0	0	3.3	4
Wed	301	18	6	0	0	0	0	3.6	4.3
Thu	345	33	9.6	1	0.3	0	0	3.6	4.7
Fri	471	26	5.5	2	0.4	0	0	3.4	4
Sat	531	32	6	1	0.2	0	0	3.3	4
Sun	487	22	4.5	0	0	0	0	3.2	4
5 Day Ave.	527	23	4.4	1	0.2	0	0.0	3.4	4.1
7 Day Ave.	522	24	4.7	1	0.1	0	0.0	3.2	4.0
--	3654	171	4.7	4	0.1	0	0.0	3.2	4.0

Summary Graphs



Site 3C
 Location Exit to
 Direction Eastbc
 Friday 2:

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	6	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	13	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	66	64	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	85	83	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	109	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	72	66	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	39	27	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	466	440	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	471	445	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	471	445	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	471	445	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 3C
 Location Exit to
 Direction Eastbc
 Saturday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	7	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	10	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	55	52	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	90	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	114	110	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	120	115	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	68	56	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	25	24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	513	481	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	531	499	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	531	499	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	531	499	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3C
 Location Exit to
 Direction Eastbc
 Sunday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	15	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	35	28	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	39	38	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	57	56	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	87	86	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	99	97	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	77	75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	50	46	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	467	445	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	485	463	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	487	465	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	487	465	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 3C
 Location Exit to
 Direction Eastbc
 Monday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	5	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	24	20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	34	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	69	68	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	111	108	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	181	179	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	244	243	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	215	212	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	146	144	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	50	48	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1037	1013	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1101	1075	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1101	1075	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1101	1075	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 3C
 Location Exit to
 Direction Eastbc
 Tuesday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	31	30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	58	57	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	104	97	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	72	70	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	67	66	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	26	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	391	377	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	418	404	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	418	404	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	418	404	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 3C
 Location Exit to
 Direction Eastbc
 Wednes

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	10	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	47	46	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	58	55	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	65	57	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	36	34	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	18	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	299	281	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	301	283	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	301	283	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	301	283	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 3C
 Location Exit to
 Direction Eastbc
 Thursday

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	11	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	20	12	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	19	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	30	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	45	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	69	65	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	72	68	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	48	43	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	22	18	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	337	304	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	345	312	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	345	312	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	345	312	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 3C
 Location Exit to
 Direction Eastbc
 Virtual D

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	7	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	14	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	24	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	43	42	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	68	67	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	100	96	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	112	108	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	83	79	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	47	43	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	501	477	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	522	497	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	522	498	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	522	498	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



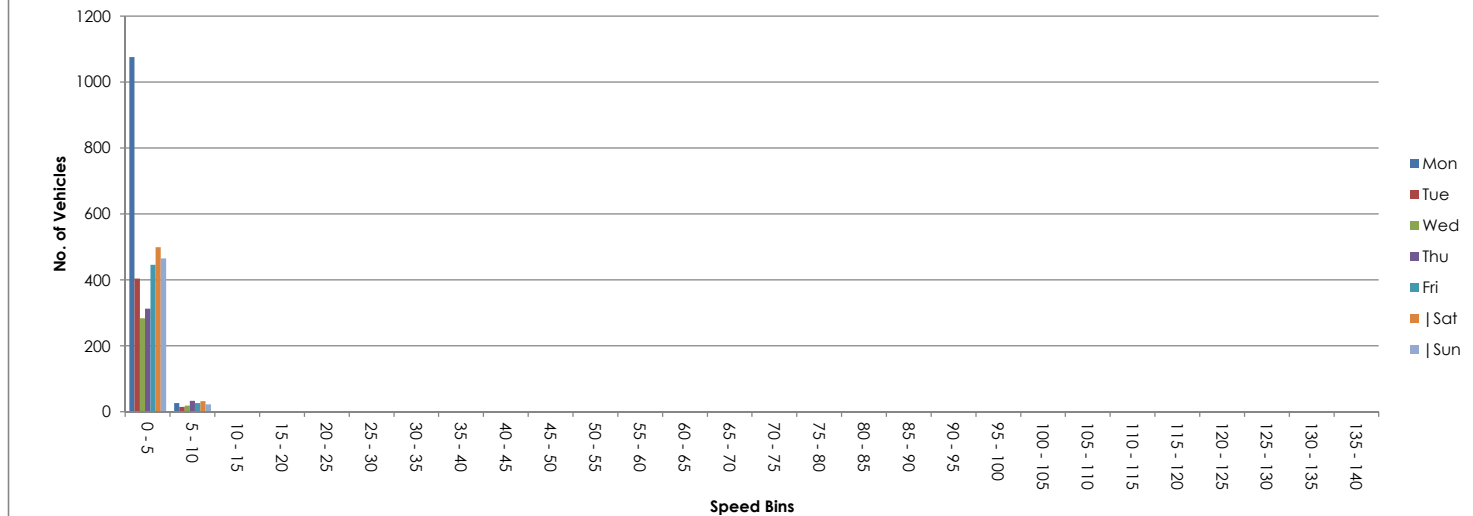
Site 3C
 Location Exit to
 Direction Eastbc

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count


Virtual W

Time	Total	Speed Bins (mph)																												
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140	
Mon	1101	1075	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	418	404	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wed	301	283	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	345	312	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	471	445	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	531	499	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	487	465	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	527	504	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	522	498	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	3654	3483	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Summary Graphs





	Site / Location:	B6160 - Attached to sign - N53.98000, W1.89235	Project No:	6600	Photo No:	4	Drawn By:	RN
	Survey Date:	Friday 26th August 2016 - Thursday 1st September 2016		Project Name:	Bolton Abbey			
	Survey Times:	00:00 - 00:00 (24 Hour)		Title:	Site Photograph - looking southbound			



6600 / Bolton Abbey
Aug-16
Automatic Traffic Count

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
4	B6160 - Attached to sign - N53.98000, W1.89235	Northbound	60	Friday 26 August 2016	Thursday 01 September 2016	16702	2421	2386	6	0.0	1	0.0	1	0.0	29.3	38.5
		Southbound	60	Friday 26 August 2016	Thursday 01 September 2016	16955	2463	2422	0	0.0	0	0.0	0	0.0	30.2	36.0
		Both Directions	60	Friday 26 August 2016	Thursday 01 September 2016	33657	4885	4808	6	0.0	1	0.0	1	0.0	29.7	37.4

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.2	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46.2	-
0600	9	0	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	-
0700	26	3	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.1	45
0800	71	4	37	0	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	37	43.4
0900	141	7	77	1	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.3	40.7
1000	275	16	131	1	123	0	4	0	0	0	0	0	0	0	0	0	0	0	0	33.4	39.1
1100	402	21	223	1	149	0	3	3	0	1	1	0	0	0	0	0	0	0	0	26.7	35.3
1200	367	20	194	0	151	0	1	0	1	0	0	0	0	0	0	0	0	0	0	29.8	35.3
1300	275	13	136	3	118	0	0	5	0	0	0	0	0	0	0	0	0	0	0	31.8	37.6
1400	214	11	108	6	80	0	4	3	2	0	0	0	0	0	0	0	0	0	0	30.5	37.1
1500	166	13	93	1	55	0	2	1	1	0	0	0	0	0	0	0	0	0	0	27.6	33.1
1600	127	7	64	2	51	0	1	1	1	0	0	0	0	0	0	0	0	0	0	31.6	38.9
1700	121	8	55	1	54	0	0	2	1	0	0	0	0	0	0	0	0	0	0	34.8	40
1800	110	6	58	0	44	0	0	1	1	0	0	0	0	0	0	0	0	0	0	37.7	44.1
1900	74	5	33	1	32	0	0	3	0	0	0	0	0	0	0	0	0	0	0	38.5	44.1
2000	34	1	22	0	11	0	0	0	0	0	0	0	0	0	1	2.9	0	0	0	41.1	48.3
2100	19	0	10	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.8	43.6
2200	12	0	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.9	47.4
2300	6	0	2	0	4	0	0	0	0	0	0	0	0	0	1	16.7	0	0	0	45	-
07-19	2295	129	1191	16	918	1	15	16	7	1	1	0	0	0	0	0	0	0	0	31.2	38.5
06-22	2431	135	1259	17	976	1	15	19	7	1	1	0	0	1	0	0	0	0	0	31.7	38.9
06-00	2449	135	1270	17	983	1	15	19	7	1	1	0	0	2	0.1	0	0	0	0	31.8	38.9
00-00	2453	135	1272	17	985	1	15	19	7	1	1	0	0	2	0.1	0	0	0	0	31.8	38.9

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Saturday 27 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.5	-
0100	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.2	-
0200	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47.5	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	-
0500	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.1	-
0600	9	1	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.5	-
0700	35	9	16	0	8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	32.2	39.8
0800	54	11	25	1	13	1	2	0	1	0	0	0	0	0	0	0	0	0	0	34.3	43.4
0900	170	31	76	1	54	0	6	1	0	0	0	1	0	0	0	0	0	0	0	32.2	40.9
1000	316	30	135	1	135	0	9	1	1	0	1	0	3	0	0	0	0	0	0	30.1	38.5
1100	400	34	194	0	164	0	5	0	0	0	2	1	0	0	0	0	0	0	0	29.1	36.5
1200	363	17	178	2	158	0	4	0	0	1	2	1	0	0	0	0	0	0	0	28.8	35.6
1300	335	7	166	0	155	1	2	3	1	0	0	0	0	0	0	0	0	0	0	28.2	34.9
1400	220	7	115	0	96	0	0	1	1	0	0	0	0	0	0	0	0	0	0	31.6	36.7
1500	174	4	98	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.5	37.8
1600	98	1	47	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.3	40.5
1700	68	2	26	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.5	41.4
1800	60	1	32	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.9	43.8
1900	45	0	15	0	30	0	0	0	0	0	0	0	0	1	2.2	0	0	0	0	38.3	45.4
2000	23	0	18	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.9	43.4
2100	18	0	10	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.2	45.4
2200	10	0	7	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	-
2300	12	0	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.9	49
07-19	2293	154	1108	5	972	2	29	7	4	1	5	3	3	0	0	0	0	0	0	30.7	38.3
06-22	2388	155	1154	5	1020	2	29	7	4	1	5	3	3	1	0	0	0	0	0	31	38.5
06-00	2410	155	1165	5	1031	2	29	7	4	1	5	3	3	1	0	0	0	0	0	31.1	38.7
00-00	2423	155	1171	5	1038	2	29	7	4	1	5	3	3	1	0	0	0	0	0	31.1	38.9

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	9	0	2	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.5	-
0100	5	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.2	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.8	-
0500	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.6	-
0600	8	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.4	-
0700	22	2	10	0	9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	37.9	45.4
0800	28	3	14	1	8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	37	47.6
0900	121	10	70	0	37	0	3	1	0	0	0	0	0	0	0	0	0	0	0	34.6	41.6
1000	246	13	116	1	112	0	2	0	0	0	1	1	0	0	0	0	0	0	0	31.2	38
1100	311	13	156	0	134	1	4	2	0	1	0	0	0	0	0	0	0	0	0	29.5	36.9
1200	365	18	175	1	166	0	4	0	0	0	1	0	0	0	0	0	0	0	0	29.7	35.1
1300	290	9	138	0	139	0	4	0	0	0	0	0	0	0	0	0	0	0	0	29.8	36
1400	188	6	80	0	97	0	4	1	0	0	0	0	0	0	0	0	0	0	0	31.9	37.1
1500	169	5	88	0	75	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32.3	37.4
1600	143	3	71	0	68	0	0	0	1	0	0	0	0	0	0	0	0	0	0	35	39.1
1700	93	5	44	0	43	0	1	0	0	0	0	0	0	0	0	0	0	0	0	33.8	39.1
1800	82	0	45	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.6	41.8
1900	42	1	22	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.6	43.2
2000	23	1	13	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	45.6
2100	13	0	7	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	42.9
2200	4	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.6	-
2300	7	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.3	-
07-19	2058	87	1007	3	925	1	24	5	1	1	3	1	0	0	0	0	0	0	0	31.6	38
06-22	2144	89	1053	3	963	1	24	5	1	1	3	1	0	0	0	0	0	0	0	31.9	38.3
06-00	2155	89	1059	3	968	1	24	5	1	1	3	1	0	0	0	0	0	0	0	31.9	38.5
00-00	2172	89	1065	3	979	1	24	5	1	1	3	1	0	0	0	0	0	0	0	32	38.5

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.3	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.2	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.4	-
0400	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46.2	-
0500	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.9	-
0600	10	0	6	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	39	-
0700	32	5	18	0	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	36.5	45.6
0800	74	9	32	1	28	0	3	1	0	0	0	0	0	0	0	0	0	0	0	34.4	42.1
0900	261	23	142	0	87	0	7	0	0	0	1	1	0	0	0	0	0	0	0	31.7	39.4
1000	562	21	314	2	209	1	7	2	2	0	2	1	1	0	0	0	0	0	0	24.9	36.5
1100	579	16	357	2	194	0	2	2	4	1	1	0	0	0	0	0	0	0	0	11.5	16.6
1200	636	15	406	3	201	2	3	3	0	0	3	0	0	0	0	0	0	0	0	11	15
1300	702	14	458	2	221	2	1	1	3	0	0	0	0	0	0	0	0	0	0	14.3	20.1
1400	453	14	299	2	132	1	2	0	2	0	1	0	0	0	0	0	0	0	0	15.6	25.5
1500	283	9	168	1	103	0	1	1	0	0	0	0	0	0	0	0	0	0	0	26.4	33.1
1600	172	16	79	0	73	1	2	1	0	0	0	0	0	0	0	0	0	0	0	29.2	34.2
1700	102	5	51	1	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.2	37.6
1800	74	3	47	0	23	0	1	0	0	0	0	0	0	0	0	0	0	0	0	33	40
1900	45	1	27	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.2	42.9
2000	22	0	9	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	42.7
2100	12	0	7	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.6	48.5
2200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.7	-
2300	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	53	-
07-19	3930	150	2371	14	1323	8	30	11	11	1	8	2	1	0	0	0	0	0	0	19	32.9
06-22	4019	151	2420	14	1360	8	30	12	12	1	8	2	1	0	0	0	0	0	0	19.5	33.6
06-00	4024	151	2424	14	1361	8	30	12	12	1	8	2	1	1	0	0	0	0	0	19.5	33.8
00-00	4039	151	2428	14	1372	8	30	12	12	1	8	2	1	1	0	0	0	0	0	19.6	33.8

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.7	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.6	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	4	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.7	-
0600	15	0	5	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	40.7	48.3
0700	34	4	14	1	14	0	0	0	1	0	0	0	0	0	0	0	0	0	0	39.5	47.4
0800	53	1	21	0	30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	39.8	45.4
0900	159	9	81	1	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.2	40.3
1000	306	15	166	1	118	0	4	2	0	0	0	0	0	0	0	0	0	0	0	32.5	38
1100	408	19	219	1	166	0	1	1	1	0	0	0	0	0	0	0	0	0	0	30.5	36.7
1200	366	13	204	0	147	0	2	0	0	0	0	0	0	0	0	0	0	0	0	30.8	36.7
1300	257	9	143	1	103	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32	37.4
1400	174	4	104	1	63	0	2	0	0	0	0	0	0	0	0	0	0	0	0	31.2	36.7
1500	156	7	81	1	64	0	1	0	1	0	1	0	0	0	0	0	0	0	0	32.6	38
1600	95	9	39	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.4	41.2
1700	70	1	30	1	37	0	1	0	0	0	0	0	0	0	0	0	0	0	0	36.3	42.3
1800	60	8	30	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.1	42.9
1900	32	3	18	1	9	0	0	0	1	0	0	0	0	0	1	3.1	1	3.1	1	36.7	42.1
2000	21	0	11	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.5	43.2
2100	6	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.5	-
2200	8	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.8	-
2300	4	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.8	-
07-19	2138	99	1132	8	879	0	12	3	4	0	1	0	0	0	0	0	0	0	0	32.5	38.5
06-22	2212	102	1171	9	908	0	12	3	6	0	1	0	0	1	0	1	0	1	0	32.7	38.9
06-00	2224	102	1176	9	915	0	12	3	6	0	1	0	0	1	0	1	0	1	0	32.8	38.9
00-00	2230	102	1177	9	920	0	12	3	6	0	1	0	0	1	0	1	0	1	0	32.8	39.1

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0100	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.7	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.2	-
0600	8	1	1	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	33.3	-
0700	32	5	19	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	39.8
0800	52	0	25	0	24	2	0	1	0	0	0	0	0	0	0	0	0	0	0	37.6	43.2
0900	105	7	55	0	42	0	1	0	0	0	0	0	0	0	0	0	0	0	0	35.5	42.3
1000	203	9	106	1	83	1	2	1	0	0	0	0	0	0	0	0	0	0	0	34.1	40
1100	277	6	143	0	125	1	1	0	0	1	0	0	0	0	0	0	0	0	0	32.4	37.1
1200	232	8	124	2	95	0	2	1	0	0	0	0	0	0	0	0	0	0	0	32.6	37.6
1300	153	9	85	1	55	0	2	1	0	0	0	0	0	0	0	0	0	0	0	32.9	37.8
1400	176	10	92	1	67	0	0	1	1	1	3	0	0	0	0	0	0	0	0	31.8	38
1500	105	7	59	0	38	0	0	0	1	0	0	0	0	0	0	0	0	0	0	32.9	37.4
1600	82	1	36	0	42	0	1	0	1	1	0	0	0	0	0	0	0	0	0	35.5	42.3
1700	84	1	47	0	32	0	2	2	0	0	0	0	0	0	0	0	0	0	0	37	41.8
1800	66	9	27	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	45.2
1900	39	4	24	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.9	44.1
2000	20	0	13	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.8	43.2
2100	13	0	5	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.3	42.3
2200	5	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.6	-
2300	5	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	-
07-19	1567	72	818	5	641	4	11	7	3	3	3	0	0	0	0	0	0	0	0	33.7	39.6
06-22	1647	77	861	5	672	4	11	7	4	3	3	0	0	0	0	0	0	0	0	33.9	39.8
06-00	1657	77	867	5	676	4	11	7	4	3	3	0	0	0	0	0	0	0	0	34	39.8
00-00	1660	77	868	5	678	4	11	7	4	3	3	0	0	0	0	0	0	0	0	34	39.8

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.1	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.5	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	3	0	0	0	3	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	36.9	-
0600	5	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.8	-
0700	25	4	9	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	45.9
0800	39	4	21	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.2	42.9
0900	114	3	63	1	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	42.5
1000	279	10	145	0	115	1	6	2	0	0	0	0	0	0	0	0	0	0	0	32.1	37.8
1100	331	15	178	0	135	1	1	0	0	0	0	1	0	0	0	0	0	0	0	29.7	36.7
1200	198	7	95	0	92	1	2	1	0	0	0	0	0	0	0	0	0	0	0	33.3	38.5
1300	171	10	79	3	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.5	38.7
1400	141	9	73	1	57	0	0	0	0	0	1	0	0	0	0	0	0	0	0	33.4	38.7
1500	112	3	55	0	51	0	1	1	1	0	0	0	0	0	0	0	0	0	0	34.8	40
1600	81	4	40	0	35	0	0	1	1	0	0	0	0	0	0	0	0	0	0	35.5	41.2
1700	60	3	25	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	42.9
1800	64	7	29	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	44.1
1900	44	7	13	0	17	0	2	1	0	0	1	1	2	0	0	0	0	0	0	33.1	41.4
2000	27	0	10	0	15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	36.8	42.9
2100	14	0	9	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.8	47.2
2200	10	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.8	-
2300	4	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	-
07-19	1615	79	812	6	696	3	10	5	2	0	1	1	0	0	0	0	0	0	0	33.3	40
06-22	1705	86	845	6	737	3	14	6	2	0	2	2	2	0	0	0	0	0	0	33.4	40
06-00	1719	86	853	6	743	3	14	6	2	0	2	2	2	0	0	0	0	0	0	33.5	40.3
00-00	1725	86	853	6	749	3	14	6	2	0	2	2	2	1	0.1	0	0	0	0	33.5	40.3

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Virtual Day (7)

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.4	-
0100	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.3	-
0200	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.4	-
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.7	-
0400	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46.2	-
0500	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5.6	0	0	0	40.2	-
0600	9	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.8	-
0700	29	5	14	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	45.4
0800	53	5	25	0	21	1	1	0	0	0	0	0	0	0	0	0	0	0	0	36.6	44.1
0900	153	13	81	1	56	0	2	0	0	0	0	0	0	0	0	0	0	0	0	34.1	40.9
1000	312	16	159	1	128	0	5	1	0	0	1	0	1	0	0	0	0	0	0	30.3	38
1100	387	18	210	1	152	0	2	1	1	1	1	0	0	0	0	0	0	0	0	25.7	36
1200	361	14	197	1	144	0	3	1	0	0	1	0	0	0	0	0	0	0	0	25.6	35.3
1300	312	10	172	1	124	0	1	1	1	0	0	0	0	0	0	0	0	0	0	25.5	35.8
1400	224	9	124	2	85	0	2	1	1	0	1	0	0	0	0	0	0	0	0	27	36.2
1500	166	7	92	0	65	0	1	0	1	0	0	0	0	0	0	0	0	0	0	30.6	36.9
1600	114	6	54	0	52	0	1	0	1	0	0	0	0	0	0	0	0	0	0	33.3	39.6
1700	85	4	40	0	40	0	1	1	0	0	0	0	0	0	0	0	0	0	0	34.7	41.2
1800	74	5	38	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.9	43.6
1900	46	3	22	0	19	0	0	1	0	0	0	0	0	0	0	0.6	0	0.3	0	37.2	44.1
2000	24	0	14	0	10	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	38.4	44.7
2100	14	0	8	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.8	47.2
2200	7	0	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.3	-
2300	6	0	2	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	43.5	-
07-19	2271	110	1206	8	908	3	19	8	5	1	3	1	1	0	0	0	0	0	0	28.8	38
06-22	2364	114	1252	8	948	3	19	8	5	1	3	1	1	0	0	0	0	0	0	29.2	38.3
06-00	2377	114	1259	8	954	3	19	8	5	1	3	1	1	1	0	0	0	0	0	29.2	38.5
00-00	2386	114	1262	8	960	3	19	8	5	1	3	1	1	1	0	0	0	0	0	29.3	38.5



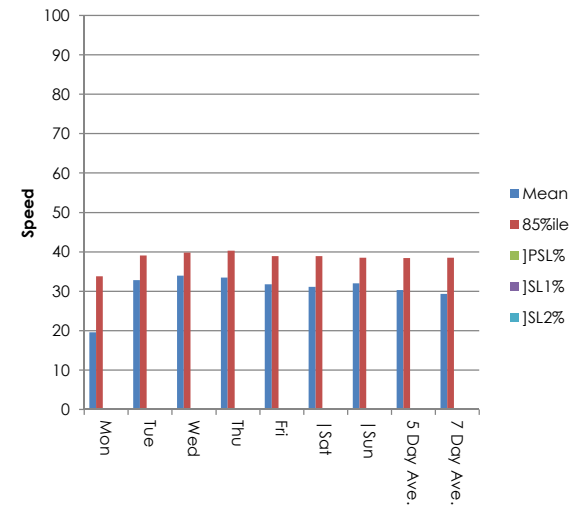
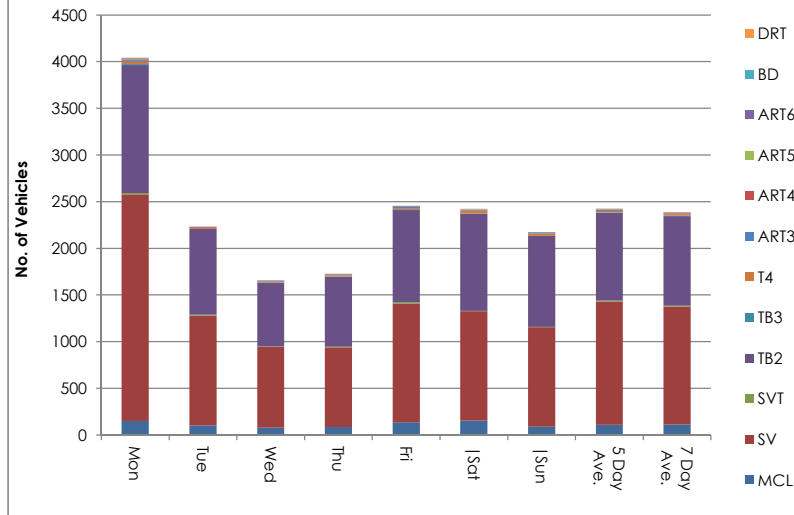
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	4039	151	2428	14	1372	8	30	12	12	1	8	2	1	1	0	0	0	0	19.6	33.8	
Tue	2230	102	1177	9	920	0	12	3	6	0	1	0	0	1	0	1	0	1	32.8	39.1	
Wed	1660	77	868	5	678	4	11	7	4	3	3	0	0	0	0	0	0	0	34	39.8	
Thu	1725	86	853	6	749	3	14	6	2	0	2	2	2	1	0.1	0	0	0	33.5	40.3	
Fri	2453	135	1272	17	985	1	15	19	7	1	1	0	0	2	0.1	0	0	0	31.8	38.9	
Sat	2423	155	1171	5	1038	2	29	7	4	1	5	3	3	1	0	0	0	0	31.1	38.9	
Sun	2172	89	1065	3	979	1	24	5	1	1	3	1	0	0	0	0	0	0	32	38.5	
5 Day Ave.	2421	110	1320	10	941	3	16	9	6	1	3	1	1	1	0.0	0	0.0	0	30.3	38.4	
7 Day Ave.	2386	114	1262	8	960	3	19	8	5	1	3	1	1	1	0.0	0	0.0	0	29.3	38.5	
--	16702	795	8834	59	6721	19	135	59	36	7	23	8	6	6	0.0	1	0.0	1	29.3	38.5	

Summary Graphs



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	9	0	0	0	0	1	1	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	26	0	0	0	2	1	0	3	7	8	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	71	0	0	1	2	3	3	13	22	18	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	141	0	0	3	3	2	7	41	55	27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	275	0	0	2	14	16	29	72	113	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	402	0	23	33	30	68	81	99	53	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	367	0	2	15	24	28	80	147	65	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	275	0	1	7	14	9	47	112	69	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	214	0	0	7	17	17	51	62	46	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	166	0	0	2	16	37	53	43	13	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	127	0	0	5	5	18	23	30	31	7	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	121	0	0	1	4	7	10	26	53	14	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	110	0	0	0	3	4	6	17	36	32	9	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	74	0	0	0	1	3	0	12	32	20	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	34	0	0	0	1	0	1	5	10	9	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	19	0	0	0	0	0	1	1	5	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	12	0	0	0	0	0	0	0	5	2	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	6	0	0	0	0	0	1	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2295	0	26	76	134	210	390	665	563	178	44	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2431	0	26	76	136	214	393	684	613	220	53	10	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2449	0	26	76	136	214	394	684	619	223	59	10	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2453	0	26	76	136	214	394	685	620	223	59	11	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	6	0	0	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	9	0	0	1	0	0	0	1	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	35	0	0	0	7	3	1	3	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	54	0	1	1	7	4	0	9	14	12	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	170	0	0	4	21	22	12	30	46	26	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	316	0	2	11	24	68	33	68	77	28	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	400	0	0	16	50	55	75	114	68	18	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	363	0	3	22	33	43	73	120	54	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	335	1	10	17	29	24	90	113	41	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	220	0	0	2	8	9	62	87	38	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	174	0	0	1	2	10	33	79	36	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	98	0	0	0	0	4	16	24	34	17	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	68	0	0	0	2	0	2	21	25	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	60	0	0	0	1	0	4	10	19	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	45	0	0	0	0	1	5	6	18	7	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	23	0	0	0	0	0	3	7	8	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	18	0	0	0	0	0	1	2	6	4	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	12	0	0	0	0	0	0	1	1	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2293	1	16	74	184	242	401	678	468	188	34	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2388	1	16	75	184	243	410	694	502	202	50	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2410	1	16	75	184	243	410	698	508	209	53	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2423	1	16	75	184	243	410	698	512	212	56	13	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	9	0	0	0	0	0	0	0	3	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	5	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	8	0	0	0	0	0	0	1	3	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	22	0	0	0	2	1	0	3	6	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	28	0	0	0	2	3	0	5	8	3	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	121	0	0	6	8	4	4	31	38	22	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	246	0	3	2	20	26	33	81	61	18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	311	1	9	13	36	22	33	107	78	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	365	0	1	5	32	31	100	134	50	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	290	0	0	7	24	24	76	107	44	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	188	0	0	1	9	6	39	77	49	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	169	0	0	1	4	12	26	72	47	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	143	0	1	0	2	1	19	44	58	11	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	93	0	0	3	1	3	16	31	27	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	82	0	0	0	2	7	12	34	23	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	42	0	0	0	2	0	1	6	21	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	23	0	0	0	1	0	2	8	7	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	13	0	0	0	0	0	0	2	6	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	4	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	7	0	0	0	0	0	0	1	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2058	1	14	38	140	135	353	704	500	128	42	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2144	1	14	38	143	135	356	721	537	142	49	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2155	1	14	38	143	135	356	723	540	145	51	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2172	1	14	38	143	135	356	724	544	149	56	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																													
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140		
0000	6	0	0	0	0	1	1	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0200	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0300	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0400	3	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0500	3	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0600	10	0	0	0	0	1	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0700	32	0	0	1	5	1	0	0	13	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0800	74	0	0	1	12	2	0	14	26	12	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0900	261	0	0	5	31	19	36	55	82	30	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1000	562	5	70	71	56	59	48	132	99	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1100	579	26	213	192	126	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1200	636	17	272	249	80	13	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1300	702	13	184	241	155	56	29	17	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400	453	9	105	156	65	46	44	19	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500	283	0	5	12	36	50	100	58	16	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1600	172	0	0	5	20	7	47	69	16	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700	102	0	0	1	13	10	16	35	20	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1800	74	0	0	0	4	6	13	18	21	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1900	45	0	0	0	1	0	3	10	21	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2000	22	0	0	0	0	0	1	3	8	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2100	12	0	0	0	0	0	0	2	2	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2200	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	3930	70	849	934	603	291	337	417	309	98	18	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	4019	70	849	934	604	291	342	434	343	113	32	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4024	70	849	934	604	291	342	434	343	115	34	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4039	70	849	934	604	292	343	435	346	119	37	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Tuesday 30 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																												
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140	
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0100	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0300	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0500	4	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0600	15	0	0	0	0	0	1	2	2	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0700	34	0	0	0	3	1	0	2	10	9	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0800	53	0	0	1	0	0	0	6	20	15	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0900	159	0	0	1	8	5	9	36	73	20	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1000	306	0	0	7	16	17	37	116	88	20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1100	408	0	2	13	32	31	59	164	92	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1200	366	0	5	7	20	15	80	154	74	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	257	0	0	0	14	22	38	106	66	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400	174	0	0	2	6	4	59	61	34	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500	156	0	0	1	8	3	34	59	36	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1600	95	0	0	1	2	4	10	36	24	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700	70	0	0	0	4	1	3	18	21	16	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1800	60	0	0	1	2	4	2	8	19	19	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1900	32	0	0	0	1	1	4	8	10	6	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
2000	21	0	0	0	0	0	0	3	9	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2100	6	0	0	0	0	0	0	1	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2200	8	0	0	0	0	0	0	1	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300	4	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	2138	0	7	34	115	107	331	766	557	161	51	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	2212	0	7	34	116	108	336	780	578	182	58	10	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
06-00	2224	0	7	34	116	108	337	781	580	188	60	10	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
00-00	2230	0	7	34	116	108	337	781	582	190	62	10	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Wednesday 31 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	8	0	0	0	1	0	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	32	0	1	0	2	2	2	4	16	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	52	0	0	0	0	0	1	15	23	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	105	0	0	0	8	0	6	29	34	25	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	203	0	0	3	10	7	18	59	75	25	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	277	0	0	4	5	8	56	119	70	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	232	0	0	0	9	13	42	94	61	12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	153	0	0	2	8	2	26	54	47	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	176	0	0	3	15	6	33	60	48	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	105	0	0	1	5	7	12	36	38	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	82	0	0	0	2	1	12	23	26	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	84	0	0	1	1	1	3	23	31	16	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	66	0	0	1	4	1	4	12	14	18	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	39	0	0	0	2	1	1	6	10	13	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	20	0	0	0	0	0	1	4	7	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	13	0	0	0	0	0	0	3	5	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	5	0	0	0	0	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	5	0	0	0	0	0	0	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1567	0	1	15	69	48	215	528	483	159	39	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1647	0	1	15	72	49	218	543	507	184	46	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1657	0	1	15	72	49	219	543	509	188	46	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1660	0	1	15	72	49	219	545	509	189	46	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Thursday 01 September 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	5	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	25	0	0	0	3	1	0	0	5	10	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	39	0	0	0	4	0	1	3	16	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	114	0	0	0	2	0	6	21	50	25	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	279	0	0	0	22	19	47	91	80	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	331	1	1	16	37	20	61	112	65	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	198	0	1	3	5	9	17	97	42	18	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	171	0	0	2	9	13	28	58	38	17	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	141	0	0	3	5	4	23	50	39	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	112	0	0	1	3	4	9	40	37	13	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	81	0	0	1	2	2	6	23	30	14	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	60	0	0	0	2	1	6	13	20	15	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	64	0	0	0	5	1	5	10	15	20	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	44	0	0	0	7	7	1	6	10	8	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	27	0	0	0	2	0	0	6	11	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	14	0	0	0	0	0	0	2	5	2	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	0	0	0	1	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	4	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1615	1	2	26	99	74	209	518	437	188	48	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1705	1	2	26	108	81	210	532	465	206	58	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1719	1	2	26	108	81	210	532	467	217	58	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1725	1	3	26	108	81	210	533	469	218	58	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound
 Virtual Day (7)

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	3	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	9	0	0	0	0	0	1	1	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	29	0	0	0	3	1	0	2	10	6	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	53	0	0	1	4	2	1	9	18	12	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	153	0	0	3	12	7	11	35	54	25	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	312	1	11	14	23	30	35	88	85	22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	387	4	35	41	45	32	52	102	61	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	361	2	41	43	29	22	57	107	50	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	312	2	28	39	36	21	48	81	44	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	224	1	15	25	18	13	44	59	38	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	166	0	1	3	11	18	38	55	32	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	114	0	0	2	5	5	19	36	31	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	85	0	0	1	4	3	8	24	28	13	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	74	0	0	0	3	3	6	12	23	21	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	46	0	0	0	2	2	2	8	17	9	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	24	0	0	0	1	0	1	5	9	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	14	0	0	0	0	0	0	2	4	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	7	0	0	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	6	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2271	10	131	171	192	158	319	611	474	157	39	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2364	10	131	171	195	160	324	627	506	178	49	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2377	10	131	171	195	160	324	628	509	184	52	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2386	10	131	171	195	160	324	629	512	186	53	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



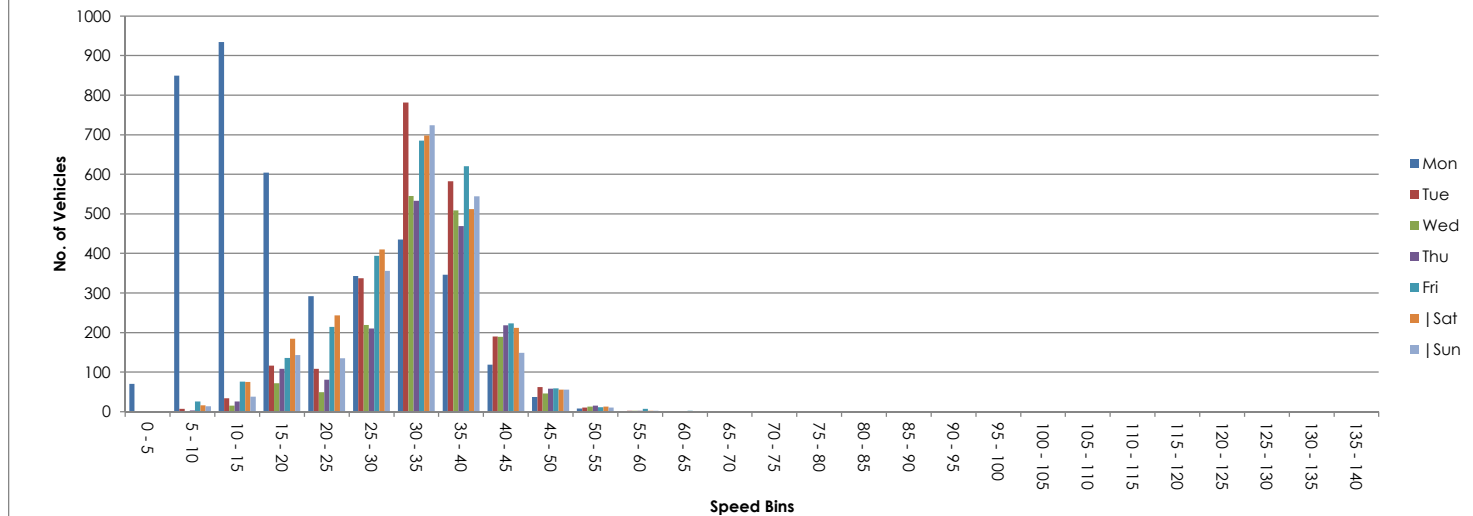
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
Mon	4039	70	849	934	604	292	343	435	346	119	37	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	2230	0	7	34	116	108	337	781	582	190	62	10	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Wed	1660	0	1	15	72	49	219	545	509	189	46	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	1725	1	3	26	108	81	210	533	469	218	58	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	2453	0	26	76	136	214	394	685	620	223	59	11	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	2423	1	16	75	184	243	410	698	512	212	56	13	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	2172	1	14	38	143	135	356	724	544	149	56	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	2421	14	177	217	207	149	301	596	505	188	52	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	2386	10	131	171	195	160	324	629	512	186	53	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	16702	73	916	1198	1363	1122	2269	4401	3582	1300	374	80	18	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	

Summary Graphs



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.5	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.3	-
0500	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.8	-
0600	4	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.3	-
0700	21	0	13	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.4	42.9
0800	34	3	27	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.3	43.6
0900	52	7	28	4	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	30.9	36.2
1000	93	5	59	5	20	0	2	2	0	0	0	0	0	0	0	0	0	0	0	32.9	38.3
1100	134	14	79	4	31	1	3	0	0	0	0	0	2	0	0	0	0	0	0	28	34.4
1200	135	16	89	1	26	0	1	1	0	0	1	0	0	0	0	0	0	0	0	29.9	35.6
1300	179	17	131	0	27	0	4	0	0	0	0	0	0	0	0	0	0	0	0	29	34.4
1400	235	9	187	1	35	0	3	0	0	0	0	0	0	0	0	0	0	0	0	29.4	34.4
1500	339	13	260	1	58	0	5	1	0	1	0	0	0	0	0	0	0	0	0	28.5	33.8
1600	399	13	322	1	60	0	2	0	0	0	1	0	0	0	0	0	0	0	0	29.9	34.7
1700	249	19	190	1	38	0	1	0	0	0	0	0	0	0	0	0	0	0	0	30.1	34.9
1800	156	8	118	0	29	0	0	1	0	0	0	0	0	0	0	0	0	0	0	33.5	38.5
1900	75	1	61	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.1	39.6
2000	58	3	45	0	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	34.9	40.3
2100	30	3	20	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	41.4
2200	21	0	18	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.8	39.8
2300	12	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.5	41.4
07-19	2026	124	1503	19	347	1	21	6	0	1	2	0	2	0	0	0	0	0	0	30.1	35.8
06-22	2193	132	1631	19	376	1	23	6	0	1	2	0	2	0	0	0	0	0	0	30.5	36.5
06-00	2226	132	1660	19	380	1	23	6	0	1	2	0	2	0	0	0	0	0	0	30.5	36.5
00-00	2230	132	1662	19	382	1	23	6	0	1	2	0	2	0	0	0	0	0	0	30.5	36.5

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Saturday 27 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	9	0	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.5	-
0100	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.5	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.8	-
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0600	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	-
0700	12	2	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.8	43.4
0800	29	3	15	2	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	33.4	42.3
0900	64	15	35	1	11	0	0	1	1	0	0	0	0	0	0	0	0	0	0	30.4	36.9
1000	148	26	86	5	23	0	5	0	0	0	1	2	0	0	0	0	0	0	0	29.5	37.4
1100	143	35	80	0	21	1	0	0	1	0	2	1	2	0	0	0	0	0	0	27.4	34.9
1200	138	23	91	1	15	0	4	0	0	1	1	1	1	0	0	0	0	0	0	29.1	36
1300	178	24	123	0	27	0	1	0	0	0	1	1	1	0	0	0	0	0	0	27.9	33.3
1400	284	17	204	1	50	0	6	0	0	0	5	1	0	0	0	0	0	0	0	28.5	34
1500	389	15	311	1	60	0	1	0	0	0	1	0	0	0	0	0	0	0	0	29.8	34
1600	430	4	357	1	66	1	1	0	0	0	0	0	0	0	0	0	0	0	0	30.2	34
1700	268	0	217	1	47	0	1	2	0	0	0	0	0	0	0	0	0	0	0	31	35.8
1800	149	0	122	0	25	0	1	0	0	1	0	0	0	0	0	0	0	0	0	32.7	38
1900	76	2	56	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.2	38.9
2000	42	0	33	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	39.4
2100	25	0	23	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.4	42.5
2200	21	0	19	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	41.2
2300	16	0	11	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.3	39.8
07-19	2232	164	1650	13	353	4	20	3	2	2	11	6	4	0	0	0	0	0	0	29.8	35.3
06-22	2377	166	1762	13	384	4	20	3	2	2	11	6	4	0	0	0	0	0	0	30	35.6
06-00	2414	166	1792	13	391	4	20	3	2	2	11	6	4	0	0	0	0	0	0	30.1	35.8
00-00	2431	166	1806	13	394	4	20	3	2	2	11	6	4	0	0	0	0	0	0	30.1	36

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	16	0	12	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	42.7
0100	9	0	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.7	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.4	-
0400	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.7	-
0500	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.1	-
0600	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.2	-
0700	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.3	-
0800	13	1	7	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	39.1
0900	45	2	33	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	34.3	39.6
1000	112	7	69	2	27	1	4	0	0	1	0	0	1	0	0	0	0	0	0	31.2	36.7
1100	167	15	123	0	25	0	2	1	0	0	0	1	0	0	0	0	0	0	0	30.9	37.1
1200	204	10	165	0	25	0	4	0	0	0	0	0	0	0	0	0	0	0	0	29.5	34.2
1300	170	7	131	0	25	1	4	0	1	0	1	0	0	0	0	0	0	0	0	29.1	35.1
1400	223	18	168	1	34	1	1	0	0	0	0	0	0	0	0	0	0	0	0	30.2	35.1
1500	284	11	214	0	58	0	1	0	0	0	0	0	0	0	0	0	0	0	0	29.9	34.2
1600	340	10	277	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.8	34.2
1700	233	9	179	0	41	0	1	1	0	0	2	0	0	0	0	0	0	0	0	30.7	36.2
1800	174	0	140	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.3	36.7
1900	106	0	83	0	22	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32.8	38.3
2000	52	2	43	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	41.2
2100	18	0	15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	38.9
2200	12	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.3	41.8
2300	16	0	12	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.2	38.5
07-19	1968	90	1509	4	335	3	17	2	2	1	3	1	1	0	0	0	0	0	0	30.4	35.8
06-22	2148	92	1654	4	367	3	18	2	2	1	3	1	1	0	0	0	0	0	0	30.7	36
06-00	2176	92	1677	4	372	3	18	2	2	1	3	1	1	0	0	0	0	0	0	30.8	36.2
00-00	2207	92	1700	4	380	3	18	2	2	1	3	1	1	0	0	0	0	0	0	30.9	36.2

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	17	0	12	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	42.3
0100	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.2	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.7	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.3	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.4	-
0500	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.3	-
0600	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	-
0700	6	0	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	39.2	-
0800	29	7	14	2	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32.1	38.7
0900	72	10	40	2	15	0	2	0	2	1	0	0	0	0	0	0	0	0	0	31.4	38.7
1000	114	13	70	4	19	0	4	3	1	0	0	0	0	0	0	0	0	0	0	27.5	35.1
1100	196	23	142	1	24	0	2	1	0	0	3	0	0	0	0	0	0	0	0	24	30.9
1200	163	14	120	3	19	0	6	0	0	0	1	0	0	0	0	0	0	0	0	23.8	28.6
1300	239	22	188	1	23	0	4	0	0	0	1	0	0	0	0	0	0	0	0	25.4	30.2
1400	362	16	299	0	41	0	6	0	0	0	0	0	0	0	0	0	0	0	0	25	30.2
1500	664	29	524	3	103	1	3	1	0	0	0	0	0	0	0	0	0	0	0	27.3	31.8
1600	835	27	678	1	127	0	1	0	0	0	1	0	0	0	0	0	0	0	0	27.8	32.4
1700	806	14	664	2	121	0	4	0	0	0	1	0	0	0	0	0	0	0	0	28.5	32.7
1800	579	12	465	0	100	0	2	0	0	0	0	0	0	0	0	0	0	0	0	29.3	33.6
1900	355	7	278	0	67	0	0	3	0	0	0	0	0	0	0	0	0	0	0	31	35.6
2000	109	2	86	1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.5	36
2100	24	0	20	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.9	43.6
2200	8	0	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.8	-
2300	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.8	-
07-19	4065	187	3208	19	598	2	35	5	3	1	7	0	0	0	0	0	0	0	0	27.4	32.4
06-22	4555	196	3593	20	690	2	35	8	3	1	7	0	0	0	0	0	0	0	0	27.9	32.9
06-00	4565	196	3601	20	692	2	35	8	3	1	7	0	0	0	0	0	0	0	0	27.9	33.1
00-00	4592	196	3620	20	700	2	35	8	3	1	7	0	0	0	0	0	0	0	0	27.9	33.1

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.9	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.9	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.5	-
0500	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.2	-
0600	7	0	4	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	38	-
0700	24	2	16	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36.4	43.6
0800	37	2	20	0	14	0	0	0	1	0	0	0	0	0	0	0	0	0	0	38.1	43.4
0900	36	1	22	0	12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	35	39.4
1000	93	7	69	3	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	32.3	38
1100	103	11	68	2	20	0	1	1	0	0	0	0	0	0	0	0	0	0	0	30.7	36.9
1200	113	21	67	2	18	0	4	0	1	0	0	0	0	0	0	0	0	0	0	28.7	35.6
1300	124	11	97	0	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	30.1	35.6
1400	267	11	204	0	50	0	0	1	1	0	0	0	0	0	0	0	0	0	0	30.3	34.9
1500	304	16	262	0	23	0	2	1	0	0	0	0	0	0	0	0	0	0	0	30.1	35.8
1600	345	9	278	1	53	0	3	0	1	0	0	0	0	0	0	0	0	0	0	30.7	34.9
1700	304	9	256	0	37	0	1	0	1	0	0	0	0	0	0	0	0	0	0	30.3	35.1
1800	198	10	149	0	36	0	1	2	0	0	0	0	0	0	0	0	0	0	0	31.5	37.4
1900	114	10	87	0	16	0	0	0	1	0	0	0	0	0	0	0	0	0	0	31.8	37.8
2000	75	0	66	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.1	36.9
2100	16	0	14	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.6	41.2
2200	7	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.4	-
2300	6	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.5	-
07-19	1948	110	1508	8	296	1	13	5	7	0	0	0	0	0	0	0	0	0	0	30.8	36.2
06-22	2160	120	1679	8	324	1	13	5	10	0	0	0	0	0	0	0	0	0	0	30.9	36.5
06-00	2173	120	1689	8	327	1	13	5	10	0	0	0	0	0	0	0	0	0	0	31	36.5
00-00	2179	120	1692	8	330	1	13	5	10	0	0	0	0	0	0	0	0	0	0	31	36.5

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.6	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.4	-
0600	5	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.4	-
0700	19	0	15	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	39.5	45.2
0800	40	4	24	1	10	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36	41.4
0900	58	1	41	1	13	0	1	1	0	0	0	0	0	0	0	0	0	0	0	34.4	39.1
1000	82	3	58	1	17	0	1	0	0	2	0	0	0	0	0	0	0	0	0	33.7	38.9
1100	112	1	88	2	18	1	2	0	0	0	0	0	0	0	0	0	0	0	0	30.6	34.4
1200	108	5	83	1	17	0	2	0	0	0	0	0	0	0	0	0	0	0	0	31.1	37.1
1300	130	13	83	0	30	0	3	0	1	0	0	0	0	0	0	0	0	0	0	30.7	36.9
1400	184	12	137	1	31	0	3	0	0	0	0	0	0	0	0	0	0	0	0	31	36.5
1500	278	6	227	0	41	0	2	0	1	0	1	0	0	0	0	0	0	0	0	31.6	35.8
1600	247	6	203	1	36	1	0	0	0	0	0	0	0	0	0	0	0	0	0	31.5	36
1700	151	4	125	0	18	0	3	1	0	0	0	0	0	0	0	0	0	0	0	31.9	37.1
1800	98	6	74	0	16	0	1	1	0	0	0	0	0	0	0	0	0	0	0	33.2	38.7
1900	47	7	35	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32.5	39.8
2000	36	0	34	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.5	40.3
2100	12	0	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	40.3
2200	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.3	-
2300	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.1	-
07-19	1507	61	1158	8	250	2	18	3	4	2	1	0	0	0	0	0	0	0	0	31.9	37.4
06-22	1607	68	1239	8	261	2	19	3	4	2	1	0	0	0	0	0	0	0	0	32.1	37.6
06-00	1617	68	1249	8	261	2	19	3	4	2	1	0	0	0	0	0	0	0	0	32.1	37.6
00-00	1623	68	1252	8	264	2	19	3	4	2	1	0	0	0	0	0	0	0	0	32.1	37.6

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.7	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.7	-
0600	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.4	-
0700	20	1	10	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.8	47.6
0800	32	1	22	2	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	36.7	42.3
0900	56	3	39	1	12	0	0	0	0	1	0	0	0	0	0	0	0	0	0	36	43.6
1000	79	8	50	1	16	1	1	1	1	0	0	0	0	0	0	0	0	0	0	33.2	40
1100	110	9	83	1	16	0	1	0	0	0	0	0	0	0	0	0	0	0	0	31.3	37.6
1200	117	17	74	1	22	2	1	0	0	0	0	0	0	0	0	0	0	0	0	30.5	36.7
1300	131	8	98	1	22	0	1	0	0	1	0	0	0	0	0	0	0	0	0	31	36.7
1400	195	11	153	0	26	1	3	0	1	0	0	0	0	0	0	0	0	0	0	30.5	35.3
1500	265	9	223	0	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	31.3	35.8
1600	286	7	231	1	44	0	3	0	0	0	0	0	0	0	0	0	0	0	0	31.6	37.1
1700	173	8	128	0	36	0	0	1	0	0	0	0	0	0	0	0	0	0	0	31.7	36.9
1800	103	7	78	0	14	0	2	1	0	0	1	0	0	0	0	0	0	0	0	30.8	36.9
1900	57	8	37	0	11	0	0	0	1	0	0	0	0	0	0	0	0	0	0	33.1	40.5
2000	29	6	17	0	1	0	3	0	0	0	1	1	0	0	0	0	0	0	0	29	39.8
2100	18	1	14	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.9	42.5
2200	10	0	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.6	-
2300	4	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	-
07-19	1567	89	1189	8	255	4	13	3	2	3	1	0	0	0	0	0	0	0	0	31.7	37.4
06-22	1674	104	1260	8	270	4	16	3	3	3	2	1	0	0	0	0	0	0	0	31.7	37.8
06-00	1688	104	1271	8	273	4	16	3	3	3	2	1	0	0	0	0	0	0	0	31.8	37.8
00-00	1693	104	1273	8	276	4	16	3	3	3	2	1	0	0	0	0	0	0	0	31.8	37.8



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Virtual Day (7)

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	-
0100	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.7	-
0200	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.9	-
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.6	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	-
0500	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	-
0600	4	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	-
0700	15	1	10	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.2	45.2
0800	31	3	18	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.6	42.3
0900	55	6	34	1	12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	33	39.6
1000	103	10	66	3	19	0	2	1	0	0	0	0	0	0	0	0	0	0	0	31.2	37.6
1100	138	15	95	1	22	0	2	0	0	0	1	0	1	0	0	0	0	0	0	28.6	35.6
1200	140	15	98	1	20	0	3	0	0	0	0	0	0	0	0	0	0	0	0	28.8	35.1
1300	164	15	122	0	24	0	3	0	0	0	0	0	0	0	0	0	0	0	0	28.6	34.4
1400	250	13	193	1	38	0	3	0	0	0	1	0	0	0	0	0	0	0	0	28.9	34.4
1500	360	14	289	1	54	0	2	0	0	0	0	0	0	0	0	0	0	0	0	29.4	34.4
1600	412	11	335	1	63	0	1	0	0	0	0	0	0	0	0	0	0	0	0	29.7	34.4
1700	312	9	251	1	48	0	2	1	0	0	0	0	0	0	0	0	0	0	0	30	34.9
1800	208	6	164	0	36	0	1	1	0	0	0	0	0	0	0	0	0	0	0	31.1	36.5
1900	119	5	91	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.1	37.8
2000	57	2	46	0	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	32.5	38.9
2100	20	1	16	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.8	42.5
2200	12	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.9	41.2
2300	9	0	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.8	-
07-19	2188	118	1675	11	348	2	20	4	3	1	4	1	1	0	0	0	0	0	0	29.8	35.3
06-22	2388	125	1831	11	382	2	21	4	3	1	4	1	1	0	0	0	0	0	0	30.1	35.8
06-00	2408	125	1848	11	385	2	21	4	3	1	4	1	1	0	0	0	0	0	0	30.1	35.8
00-00	2422	125	1858	11	389	2	21	4	3	1	4	1	1	0	0	0	0	0	0	30.2	36



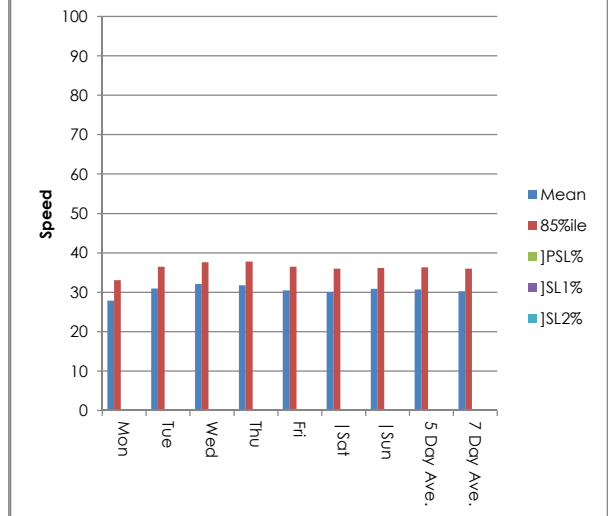
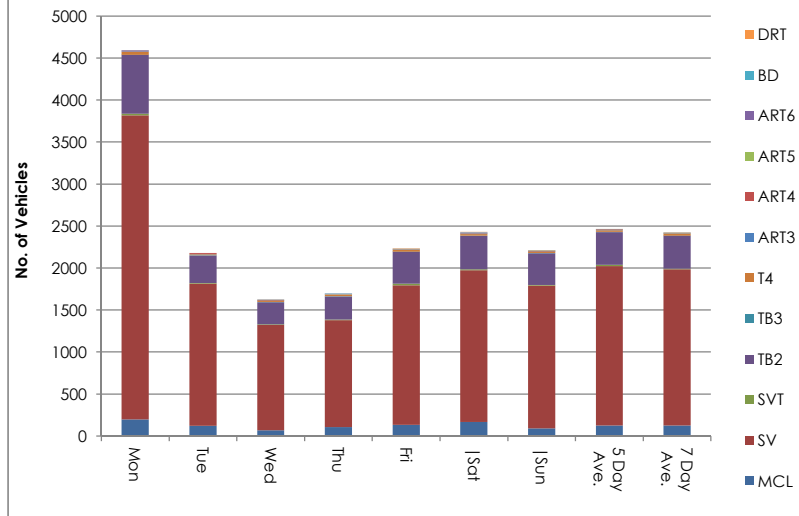
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	4592	196	3620	20	700	2	35	8	3	1	7	0	0	0	0	0	0	27.9	33.1		
Tue	2179	120	1692	8	330	1	13	5	10	0	0	0	0	0	0	0	0	31	36.5		
Wed	1623	68	1252	8	264	2	19	3	4	2	1	0	0	0	0	0	0	32.1	37.6		
Thu	1693	104	1273	8	276	4	16	3	3	3	2	1	0	0	0	0	0	31.8	37.8		
Fri	2230	132	1662	19	382	1	23	6	0	1	2	0	2	0	0	0	0	30.5	36.5		
Sat	2431	166	1806	13	394	4	20	3	2	2	11	6	4	0	0	0	0	30.1	36		
Sun	2207	92	1700	4	380	3	18	2	2	1	3	1	1	0	0	0	0	30.9	36.2		
5 Day Ave.	2463	124	1900	13	390	2	21	5	4	1	2	0	0	0	0.0	0.0	0	30.7	36.3		
7 Day Ave.	2422	125	1858	11	389	2	21	4	3	1	4	1	1	0	0.0	0.0	0	30.2	36.0		
--	16955	878	13005	80	2726	17	144	30	24	10	26	8	7	0	0.0	0	0.0	30.2	36.0		

Summary Graphs



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	4	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	21	0	0	0	0	1	1	6	4	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	34	0	0	0	2	2	3	7	7	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	52	0	1	1	3	4	7	22	11	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	93	0	0	0	4	4	15	39	18	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	134	0	1	5	14	15	45	35	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	135	0	0	2	10	11	36	53	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	179	0	0	3	14	28	44	67	17	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	235	0	0	5	7	30	76	88	24	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	339	0	0	10	19	53	110	108	32	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	399	0	0	7	20	41	116	158	48	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	249	0	0	3	18	18	69	102	32	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	156	0	0	0	5	5	26	56	52	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	75	0	0	0	0	3	10	22	29	8	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	58	0	0	0	1	2	7	21	17	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	30	0	0	0	0	0	2	8	15	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	21	0	0	0	0	3	0	5	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	12	0	0	0	0	0	2	3	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2026	0	2	36	116	212	548	741	281	73	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2193	0	2	36	117	218	567	793	342	92	22	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2226	0	2	36	117	221	569	801	355	98	23	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2230	0	2	36	117	221	569	802	355	100	24	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Saturday 27 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	9	0	0	0	0	0	2	2	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	6	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	12	0	0	0	1	1	0	1	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	29	0	0	1	1	5	1	8	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	64	0	0	0	9	9	4	24	13	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	148	0	0	2	21	23	17	51	21	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	143	0	0	2	24	31	24	41	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	138	2	0	4	11	17	31	49	21	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	178	1	1	4	13	33	52	58	11	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	284	1	1	12	23	35	81	95	27	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	389	0	0	2	17	30	150	150	33	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	430	0	1	1	3	34	171	177	34	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	268	0	0	0	4	21	88	100	44	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	149	0	0	0	4	16	27	46	42	7	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	76	0	0	1	3	5	21	18	18	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	42	0	0	0	0	4	15	12	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	25	0	0	0	1	1	0	5	9	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	21	0	0	0	0	0	1	7	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	16	0	0	0	0	0	0	7	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2232	4	3	28	131	255	646	800	274	66	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2377	4	3	29	135	265	682	836	308	85	25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2414	4	3	29	135	265	683	850	323	92	25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2431	4	3	29	135	265	685	852	329	98	26	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	16	0	0	0	0	0	2	4	3	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	9	0	0	0	0	0	0	1	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	4	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	13	0	0	0	0	1	2	4	4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	45	0	1	1	0	0	5	15	17	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	112	0	0	0	7	8	23	45	25	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	167	0	0	2	8	17	40	57	33	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	204	0	2	0	10	31	58	77	21	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	170	0	0	2	12	27	54	49	20	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	223	0	0	2	8	22	68	86	30	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	284	0	0	1	5	31	115	94	31	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	340	0	0	3	9	34	132	119	37	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	233	0	0	4	6	24	67	83	39	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	174	0	0	0	2	12	41	63	45	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	106	0	0	0	2	2	28	44	18	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	52	0	0	0	0	0	11	20	9	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	18	0	0	0	0	0	4	5	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	12	0	0	0	0	0	0	1	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	16	0	0	0	0	0	1	6	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1968	0	3	15	67	207	605	693	304	61	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2148	0	3	15	69	209	648	762	337	83	17	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2176	0	3	15	69	209	649	769	353	86	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2207	0	3	15	69	209	651	776	362	96	21	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	17	0	0	0	1	0	0	4	5	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	6	0	0	0	0	0	0	1	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	29	0	0	1	3	3	3	8	7	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	72	0	0	1	7	5	14	22	15	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	114	2	2	4	8	17	34	29	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	196	4	3	12	32	56	49	31	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	163	4	0	7	23	50	65	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	239	4	1	7	20	67	99	32	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	362	0	0	10	48	123	119	54	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	664	0	0	7	35	137	314	135	27	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	835	0	0	8	38	194	324	220	41	8	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	806	0	0	16	16	111	361	258	39	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	579	0	1	2	13	83	212	217	46	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	355	0	0	1	5	21	143	116	56	11	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	109	0	0	1	8	8	29	37	23	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	24	0	0	0	0	0	0	5	6	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	8	0	0	0	0	0	0	0	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4065	14	7	75	243	846	1594	1017	222	39	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4555	14	7	77	256	875	1766	1175	308	62	11	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4565	14	7	77	256	875	1766	1175	315	63	13	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4592	14	7	77	258	875	1766	1181	324	69	17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	7	0	0	0	0	0	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	24	0	0	0	0	2	2	6	6	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	37	0	0	0	1	1	2	8	10	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	36	0	0	1	0	0	3	12	16	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	93	0	0	0	4	6	18	35	23	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	103	0	0	3	9	6	17	36	26	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	113	0	0	2	16	17	24	32	18	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	124	0	0	2	7	14	25	52	21	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	267	0	0	3	8	31	65	120	35	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	304	0	0	3	14	31	91	108	48	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	345	0	0	1	6	33	102	151	44	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	304	0	0	2	13	31	82	121	49	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	198	0	0	0	7	22	50	64	37	16	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	114	0	0	1	4	9	29	36	26	5	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	75	0	0	0	0	5	22	28	15	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	16	0	0	0	0	0	3	3	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	7	0	0	0	0	0	0	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	6	0	0	0	1	0	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1948	0	0	17	85	194	481	745	333	79	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2160	0	0	18	89	208	536	813	383	94	16	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2173	0	0	18	90	208	537	817	386	95	18	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2179	0	0	18	90	208	537	818	389	96	19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Wednesday 31 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	5	0	0	0	0	0	1	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	19	0	0	0	0	0	0	4	6	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	40	0	0	1	0	4	1	5	19	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	58	0	0	0	0	3	10	17	19	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	82	0	0	0	3	4	10	28	27	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	112	0	0	2	5	6	30	53	12	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	108	0	0	5	1	9	28	38	21	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	130	0	0	5	5	7	39	44	24	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	184	0	0	2	11	9	52	64	39	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	278	0	0	0	9	12	71	121	55	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	247	0	0	0	6	14	73	101	35	14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	151	0	0	0	5	8	34	63	37	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	98	0	0	1	2	7	20	32	24	8	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	47	0	0	0	7	0	5	17	11	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	36	0	0	0	0	1	3	10	16	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	12	0	0	0	0	0	0	3	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	5	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	5	0	0	0	0	0	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1507	0	0	16	47	83	368	570	318	83	15	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1607	0	0	16	54	84	377	600	352	98	19	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1617	0	0	16	54	84	377	602	354	103	19	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1623	0	0	16	54	84	378	602	356	106	19	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Thursday 01 September 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0500	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0600	3	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0700	20	0	0	0	0	1	0	3	4	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0800	32	0	0	0	1	2	2	3	15	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0900	56	0	1	0	1	1	6	18	10	13	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1000	79	0	0	1	4	5	13	27	15	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1100	110	0	0	1	7	7	26	38	24	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1200	117	0	0	2	13	7	26	38	24	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1300	131	0	1	2	6	8	32	50	26	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400	195	0	0	1	8	17	57	77	27	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500	265	0	0	0	8	19	73	109	51	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1600	286	0	0	1	9	17	90	91	59	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700	173	0	0	0	4	10	47	67	34	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1800	103	0	0	0	9	14	21	30	20	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1900	57	0	0	0	4	6	11	13	13	7	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2000	29	0	0	0	6	7	3	6	3	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2100	18	0	0	0	1	0	1	7	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2200	10	0	0	0	0	0	0	5	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300	4	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	1567	0	2	8	70	108	393	551	309	96	25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	1674	0	2	8	81	121	408	578	329	109	30	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-00	1688	0	2	8	81	121	409	583	333	112	31	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00-00	1693	0	2	8	81	121	410	584	334	114	31	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound
 Virtual Day (7)

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	6	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	4	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	15	0	0	0	0	1	0	3	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	31	0	0	0	1	3	2	6	10	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	55	0	0	1	3	7	7	19	14	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	103	0	0	1	7	10	19	36	21	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	138	1	1	4	14	20	33	42	20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	140	1	0	3	12	20	38	42	18	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	164	1	0	4	11	26	49	50	18	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	250	0	0	5	16	38	74	83	27	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	360	0	0	3	15	45	132	118	40	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	412	0	0	3	13	52	144	145	43	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	312	0	0	4	9	32	107	113	39	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	208	0	0	0	6	23	57	73	38	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	119	0	0	0	4	7	35	38	24	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	57	0	0	0	2	4	13	19	13	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	20	0	0	0	0	0	1	5	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	12	0	0	0	0	0	0	3	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	9	0	0	0	0	0	1	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2188	3	2	28	108	272	662	731	292	71	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2388	3	2	28	114	283	712	794	337	89	20	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2408	3	2	28	115	283	713	800	346	93	21	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2422	3	2	28	115	283	714	802	350	97	22	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



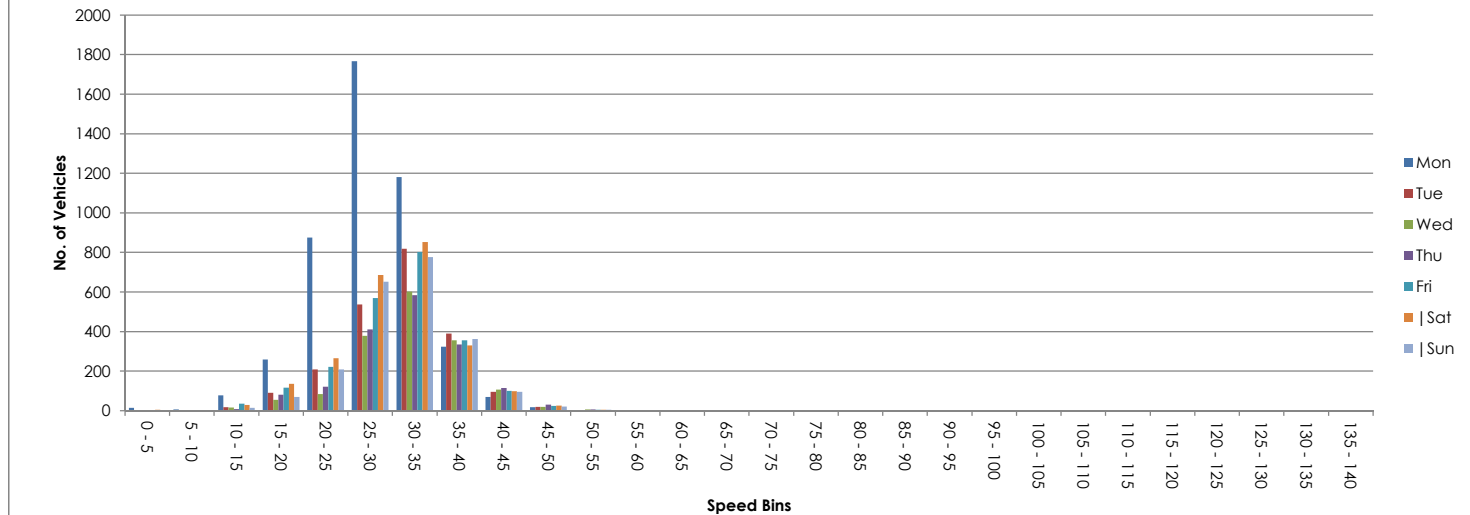
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
Mon	4592	14	7	77	258	875	1766	1181	324	69	17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	2179	0	0	18	90	208	537	818	389	96	19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wed	1623	0	0	16	54	84	378	602	356	106	19	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	1693	0	2	8	81	121	410	584	334	114	31	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	2230	0	2	36	117	221	569	802	355	100	24	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	2431	4	3	29	135	265	685	852	329	98	26	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	2207	0	3	15	69	209	651	776	362	96	21	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	2463	3	2	31	120	302	732	797	352	97	22	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	2422	3	2	28	115	283	714	802	350	97	22	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	16955	18	17	199	804	1983	4996	5615	2449	679	157	31	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Summary Graphs



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.2	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.5	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.3	-
0500	4	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	-
0600	13	1	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	45
0700	47	3	28	1	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	45
0800	105	7	64	0	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	36.8	43.6
0900	193	14	105	5	68	0	0	1	0	0	0	0	0	0	0	0	0	0	0	34.2	40.3
1000	368	21	190	6	143	0	6	2	0	0	0	0	0	0	0	0	0	0	0	33.3	38.9
1100	536	35	302	5	180	1	6	3	0	1	1	0	2	0	0	0	0	0	0	27	35.1
1200	502	36	283	1	177	0	2	1	1	0	1	0	0	0	0	0	0	0	0	29.8	35.6
1300	454	30	267	3	145	0	4	5	0	0	0	0	0	0	0	0	0	0	0	30.7	36.9
1400	449	20	295	7	115	0	7	3	2	0	0	0	0	0	0	0	0	0	0	29.9	35.6
1500	505	26	353	2	113	0	7	2	1	1	0	0	0	0	0	0	0	0	0	28.2	33.8
1600	526	20	386	3	111	0	3	1	1	0	1	0	0	0	0	0	0	0	0	30.3	36
1700	370	27	245	2	92	0	1	2	1	0	0	0	0	0	0	0	0	0	0	31.6	37.1
1800	266	14	176	0	73	0	0	2	1	0	0	0	0	0	0	0	0	0	0	35.3	41.8
1900	149	6	94	1	45	0	0	3	0	0	0	0	0	0	0	0	0	0	0	36.8	41.6
2000	92	4	67	0	19	0	2	0	0	0	0	0	0	1	1.1	0	0	0	0	37.2	43.2
2100	49	3	30	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.4	42.5
2200	33	0	27	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	44.5
2300	18	0	13	0	5	0	0	0	0	0	0	0	0	1	5.6	0	0	0	0	39.3	48.1
07-19	4321	253	2694	35	1265	2	36	22	7	2	3	0	2	0	0	0	0	0	0	30.7	37.1
06-22	4624	267	2890	36	1352	2	38	25	7	2	3	0	2	1	0	0	0	0	0	31.1	37.8
06-00	4675	267	2930	36	1363	2	38	25	7	2	3	0	2	2	0	0	0	0	0	31.2	38
00-00	4683	267	2934	36	1367	2	38	25	7	2	3	0	2	2	0	0	0	0	0	31.2	38

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	15	0	10	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	45.6
0100	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.5	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.4	-
0500	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.1	-
0600	11	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.2	45
0700	47	11	25	0	9	0	1	1	0	0	0	0	0	0	0	0	0	0	0	33.4	41.4
0800	83	14	40	3	20	3	2	0	1	0	0	0	0	0	0	0	0	0	0	34	42.9
0900	234	46	111	2	65	0	6	2	1	0	0	1	0	0	0	0	0	0	0	31.8	40.3
1000	464	56	221	6	158	0	14	1	1	0	2	2	3	0	0	0	0	0	0	29.9	38
1100	543	69	274	0	185	1	5	0	1	0	4	2	2	0	0	0	0	0	0	28.6	36
1200	501	40	269	3	173	0	8	0	0	2	3	2	1	0	0	0	0	0	0	28.9	35.6
1300	513	31	289	0	182	1	3	3	1	0	1	1	1	0	0	0	0	0	0	28.1	34.4
1400	504	24	319	1	146	0	6	1	1	0	5	1	0	0	0	0	0	0	0	29.8	35.3
1500	563	19	409	1	132	0	1	0	0	0	1	0	0	0	0	0	0	0	0	30.6	35.1
1600	528	5	404	1	116	1	1	0	0	0	0	0	0	0	0	0	0	0	0	31.1	36
1700	336	2	243	1	87	0	1	2	0	0	0	0	0	0	0	0	0	0	0	32.1	37.4
1800	209	1	154	0	52	0	1	0	0	1	0	0	0	0	0	0	0	0	0	34.2	40.7
1900	121	2	71	0	48	0	0	0	0	0	0	0	0	1	0.8	0	0	0	0	34.5	40.7
2000	65	0	51	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33.7	39.6
2100	43	0	33	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	45.2
2200	31	0	26	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.1	41.2
2300	28	0	15	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.6	44.1
07-19	4525	318	2758	18	1325	6	49	10	6	3	16	9	7	0	0	0	0	0	0	30.2	36.9
06-22	4765	321	2916	18	1404	6	49	10	6	3	16	9	7	1	0	0	0	0	0	30.5	37.4
06-00	4824	321	2957	18	1422	6	49	10	6	3	16	9	7	1	0	0	0	0	0	30.6	37.4
00-00	4854	321	2977	18	1432	6	49	10	6	3	16	9	7	1	0	0	0	0	0	30.6	37.6

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	25	0	14	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.4	46.3
0100	14	0	9	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.5	44.1
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.7	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.4	-
0400	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.1	-
0500	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.8	-
0600	12	0	8	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.7	45.9
0700	25	2	13	0	9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	37.7	45.4
0800	41	4	21	2	12	0	1	1	0	0	0	0	0	0	0	0	0	0	0	36.4	47.2
0900	166	12	103	0	46	0	3	1	1	0	0	0	0	0	0	0	0	0	0	34.5	40.9
1000	358	20	185	3	139	1	6	0	0	1	1	1	1	0	0	0	0	0	0	31.2	37.6
1100	478	28	279	0	159	1	6	3	0	1	0	1	0	0	0	0	0	0	0	30	36.9
1200	569	28	340	1	191	0	8	0	0	0	1	0	0	0	0	0	0	0	0	29.6	35.1
1300	460	16	269	0	164	1	8	0	1	0	1	0	0	0	0	0	0	0	0	29.6	35.8
1400	411	24	248	1	131	1	5	1	0	0	0	0	0	0	0	0	0	0	0	31	36.2
1500	453	16	302	0	133	0	2	0	0	0	0	0	0	0	0	0	0	0	0	30.8	36
1600	483	13	348	0	121	0	0	0	1	0	0	0	0	0	0	0	0	0	0	31.3	36.5
1700	326	14	223	0	84	0	2	1	0	0	2	0	0	0	0	0	0	0	0	31.6	37.1
1800	256	0	185	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	39.8
1900	148	1	105	0	41	0	1	0	0	0	0	0	0	0	0	0	0	0	0	34.2	40
2000	75	3	56	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.2	41.4
2100	31	0	22	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.6	40.7
2200	16	0	14	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	44.5
2300	23	0	15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	42.5
07-19	4026	177	2516	7	1260	4	41	7	3	2	6	2	1	0	0	0	0	0	0	31	37.1
06-22	4292	181	2707	7	1330	4	42	7	3	2	6	2	1	0	0	0	0	0	0	31.3	37.4
06-00	4331	181	2736	7	1340	4	42	7	3	2	6	2	1	0	0	0	0	0	0	31.3	37.4
00-00	4379	181	2765	7	1359	4	42	7	3	2	6	2	1	0	0	0	0	0	0	31.4	37.6

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	23	0	13	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	45.6
0100	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.2	-
0200	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.7	-
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.3	-
0400	5	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.7	-
0500	6	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.6	-
0600	12	0	7	0	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	39.1	44.3
0700	38	5	22	0	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	36.9	45.6
0800	103	16	46	3	33	0	4	1	0	0	0	0	0	0	0	0	0	0	0	33.7	41.8
0900	333	33	182	2	102	0	9	0	2	1	1	1	0	0	0	0	0	0	0	31.6	39.1
1000	676	34	384	6	228	1	11	5	3	0	2	1	1	0	0	0	0	0	0	25.4	36
1100	775	39	499	3	218	0	4	3	4	1	4	0	0	0	0	0	0	0	14.7	22.8	
1200	799	29	526	6	220	2	9	3	0	0	4	0	0	0	0	0	0	0	0	13.6	22.1
1300	941	36	646	3	244	2	5	1	3	0	1	0	0	0	0	0	0	0	0	17.1	27.1
1400	815	30	598	2	173	1	8	0	2	0	1	0	0	0	0	0	0	0	0	19.8	28.6
1500	947	38	692	4	206	1	4	2	0	0	0	0	0	0	0	0	0	0	0	27	31.8
1600	1007	43	757	1	200	1	3	1	0	0	1	0	0	0	0	0	0	0	28	32.9	
1700	908	19	715	3	166	0	4	0	0	0	1	0	0	0	0	0	0	0	0	28.7	33.1
1800	653	15	512	0	123	0	3	0	0	0	0	0	0	0	0	0	0	0	0	29.7	34.4
1900	400	8	305	0	84	0	0	3	0	0	0	0	0	0	0	0	0	0	0	31.7	36.2
2000	131	2	95	1	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.9	38
2100	36	0	27	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.1	47.4
2200	11	0	8	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.1	45
2300	4	0	4	0	0	0	0	0	0	0	0	0	0	1	25	0	0	0	0	48.9	-
07-19	7995	337	5579	33	1921	10	65	16	14	2	15	2	1	0	0	0	0	0	23.3	32.7	
06-22	8574	347	6013	34	2050	10	65	20	15	2	15	2	1	0	0	0	0	0	23.9	33.1	
06-00	8589	347	6025	34	2053	10	65	20	15	2	15	2	1	1	0	0	0	0	24	33.1	
00-00	8631	347	6048	34	2072	10	65	20	15	2	15	2	1	1	0	0	0	0	24	33.3	



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.9	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.7	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.9	-
0300	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.6	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.5	-
0500	7	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.5	-
0600	22	0	9	0	10	0	0	0	3	0	0	0	0	0	0	0	0	0	0	39.8	43.8
0700	58	6	30	1	19	0	0	0	2	0	0	0	0	0	0	0	0	0	0	38.2	45.2
0800	90	3	41	0	44	0	0	0	2	0	0	0	0	0	0	0	0	0	0	39.1	45
0900	195	10	103	1	80	0	0	0	1	0	0	0	0	0	0	0	0	0	0	35.2	40
1000	399	22	235	4	131	1	4	2	0	0	0	0	0	0	0	0	0	0	0	32.4	38
1100	511	30	287	3	186	0	2	2	1	0	0	0	0	0	0	0	0	0	0	30.6	36.9
1200	479	34	271	2	165	0	6	0	1	0	0	0	0	0	0	0	0	0	0	30.3	36.5
1300	381	20	240	1	118	0	2	0	0	0	0	0	0	0	0	0	0	0	0	31.3	37.1
1400	441	15	308	1	113	0	2	1	1	0	0	0	0	0	0	0	0	0	0	30.7	35.8
1500	460	23	343	1	87	0	3	1	1	0	1	0	0	0	0	0	0	0	0	30.9	36.5
1600	440	18	317	1	100	0	3	0	1	0	0	0	0	0	0	0	0	0	0	31.5	36.5
1700	374	10	286	1	74	0	2	0	1	0	0	0	0	0	0	0	0	0	0	31.5	37.1
1800	258	18	179	0	58	0	1	2	0	0	0	0	0	0	0	0	0	0	0	32.8	40
1900	146	13	105	1	25	0	0	0	2	0	0	0	0	1	0.7	1	0.7	1	0.7	32.9	38.9
2000	96	0	77	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33.7	39.8
2100	22	0	19	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	43.4
2200	15	0	9	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.2	46.1
2300	10	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.2	-
07-19	4086	209	2640	16	1175	1	25	8	11	0	1	0	0	0	0	0	0	0	0	31.7	37.6
06-22	4372	222	2850	17	1232	1	25	8	16	0	1	0	0	1	0	1	0	1	0	31.8	37.8
06-00	4397	222	2865	17	1242	1	25	8	16	0	1	0	0	1	0	1	0	1	0	31.9	37.8
00-00	4409	222	2869	17	1250	1	25	8	16	0	1	0	0	1	0	1	0	1	0	31.9	37.8

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.6	-
0100	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.7	-
0200	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	5	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.1	-
0600	13	1	4	0	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36	42.1
0700	51	5	34	0	11	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36.6	42.5
0800	92	4	49	1	34	2	0	1	1	0	0	0	0	0	0	0	0	0	0	36.9	42.3
0900	163	8	96	1	55	0	2	1	0	0	0	0	0	0	0	0	0	0	0	35.1	41.8
1000	285	12	164	2	100	1	3	1	0	2	0	0	0	0	0	0	0	0	0	33.9	39.8
1100	389	7	231	2	143	2	3	0	0	1	0	0	0	0	0	0	0	0	0	31.9	36.7
1200	340	13	207	3	112	0	4	1	0	0	0	0	0	0	0	0	0	0	0	32.1	37.4
1300	283	22	168	1	85	0	5	1	1	0	0	0	0	0	0	0	0	0	0	31.9	37.4
1400	360	22	229	2	98	0	3	1	1	1	3	0	0	0	0	0	0	0	0	31.4	37.4
1500	383	13	286	0	79	0	2	0	2	0	1	0	0	0	0	0	0	0	0	32	36.5
1600	329	7	239	1	78	1	1	0	1	1	0	0	0	0	0	0	0	0	0	32.5	37.8
1700	235	5	172	0	50	0	5	3	0	0	0	0	0	0	0	0	0	0	0	33.7	39.4
1800	164	15	101	0	46	0	1	1	0	0	0	0	0	0	0	0	0	0	0	35.1	42.5
1900	86	11	59	0	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	34.9	42.9
2000	56	0	47	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	41.8
2100	25	0	14	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.9	41.8
2200	10	0	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.5	-
2300	10	0	7	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.6	-
07-19	3074	133	1976	13	891	6	29	10	7	5	4	0	0	0	0	0	0	0	0	32.8	38.5
06-22	3254	145	2100	13	933	6	30	10	8	5	4	0	0	0	0	0	0	0	0	33	38.7
06-00	3274	145	2116	13	937	6	30	10	8	5	4	0	0	0	0	0	0	0	0	33.1	38.7
00-00	3283	145	2120	13	942	6	30	10	8	5	4	0	0	0	0	0	0	0	0	33.1	38.9



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.7	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.1	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	5	0	1	0	4	0	0	0	0	0	0	0	0	1	20	0	0	0	0	35.2	-
0600	8	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	-
0700	45	5	19	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.8	46.5
0800	71	5	43	2	20	0	0	0	0	1	0	0	0	0	0	0	0	0	0	37	42.3
0900	170	6	102	2	59	0	0	0	0	1	0	0	0	0	0	0	0	0	0	37.2	42.7
1000	358	18	195	1	131	2	7	3	1	0	0	0	0	0	0	0	0	0	0	32.3	38.3
1100	441	24	261	1	151	1	2	0	0	0	0	1	0	0	0	0	0	0	0	30.1	36.9
1200	315	24	169	1	114	3	3	1	0	0	0	0	0	0	0	0	0	0	0	32.2	37.6
1300	302	18	177	4	101	0	1	0	0	1	0	0	0	0	0	0	0	0	0	31.8	38.5
1400	336	20	226	1	83	1	3	0	1	0	1	0	0	0	0	0	0	0	0	31.7	37.4
1500	377	12	278	0	83	0	2	1	1	0	0	0	0	0	0	0	0	0	0	32.3	37.6
1600	367	11	271	1	79	0	3	1	1	0	0	0	0	0	0	0	0	0	0	32.4	38.3
1700	233	11	153	0	68	0	0	1	0	0	0	0	0	0	0	0	0	0	0	32.9	38.7
1800	167	14	107	1	41	0	2	1	0	0	1	0	0	0	0	0	0	0	0	33.3	42.3
1900	101	15	50	0	28	0	2	1	1	0	1	1	2	0	0	0	0	0	0	33.1	41.4
2000	56	6	27	0	16	0	5	0	0	0	1	1	0	0	0	0	0	0	0	32.8	42.1
2100	32	1	23	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.4	46.1
2200	20	0	15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.2	44.1
2300	8	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	-
07-19	3182	168	2001	14	951	7	23	8	4	3	2	1	0	0	0	0	0	0	0	32.5	38.7
06-22	3379	190	2105	14	1007	7	30	9	5	3	4	3	2	0	0	0	0	0	0	32.6	39.1
06-00	3407	190	2124	14	1016	7	30	9	5	3	4	3	2	0	0	0	0	0	0	32.6	39.1
00-00	3418	190	2126	14	1025	7	30	9	5	3	4	3	2	1	0	0	0	0	0	32.6	39.4

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	10	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.5	-
0100	4	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.6	-
0200	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.9	-
0300	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.2	-
0400	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.1	-
0500	5	0	1	0	3	0	0	0	0	0	0	0	0	0	0	3.1	0	0	0	39	-
0600	13	0	6	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	39.1	45.4
0700	44	5	24	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.2	45.4
0800	84	8	43	2	28	1	1	0	1	0	0	0	0	0	0	0	0	0	0	36.2	43.4
0900	208	18	115	2	68	0	3	1	1	0	0	0	0	0	0	0	0	0	0	33.8	40.7
1000	415	26	225	4	147	1	7	2	1	0	1	1	1	0	0	0	0	0	0	30.5	38
1100	525	33	305	2	175	1	4	2	1	1	1	1	1	0	0	0	0	0	0	26.4	35.8
1200	501	29	295	2	165	1	6	1	0	0	1	0	0	0	0	0	0	0	0	26.5	35.3
1300	476	25	294	2	148	1	4	1	1	0	0	0	0	0	0	0	0	0	0	26.6	35.3
1400	474	22	318	2	123	0	5	1	1	0	1	0	0	0	0	0	0	0	0	28	35.3
1500	527	21	380	1	119	0	3	1	1	0	0	0	0	0	0	0	0	0	0	29.7	35.3
1600	526	17	389	1	115	0	2	0	1	0	0	0	0	0	0	0	0	0	0	30.5	35.8
1700	397	13	291	1	89	0	2	1	0	0	0	0	0	0	0	0	0	0	0	31	36.7
1800	282	11	202	0	66	0	1	1	0	0	0	0	0	0	0	0	0	0	0	32.7	39.6
1900	164	8	113	0	41	0	1	1	0	0	0	0	0	0	0.2	0	0.1	0	0.1	33.5	40
2000	82	2	60	0	18	0	1	0	0	0	0	0	0	0	0.2	0	0	0	0	34.3	41.2
2100	34	1	24	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.4	44.5
2200	19	0	15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.6	44.3
2300	14	0	9	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	0	39.4	46.8
07-19	4458	228	2881	19	1255	5	38	12	7	2	7	2	2	0	0	0	0	0	0	29.3	36.9
06-22	4751	239	3083	20	1330	5	40	13	9	2	7	2	2	0	0	0	0	0	0	29.6	37.1
06-00	4785	239	3108	20	1339	5	40	13	9	2	7	2	2	1	0	0	0	0	0	29.7	37.1
00-00	4808	239	3120	20	1350	5	40	13	9	2	7	2	2	1	0	0	0	0	0	29.7	37.4



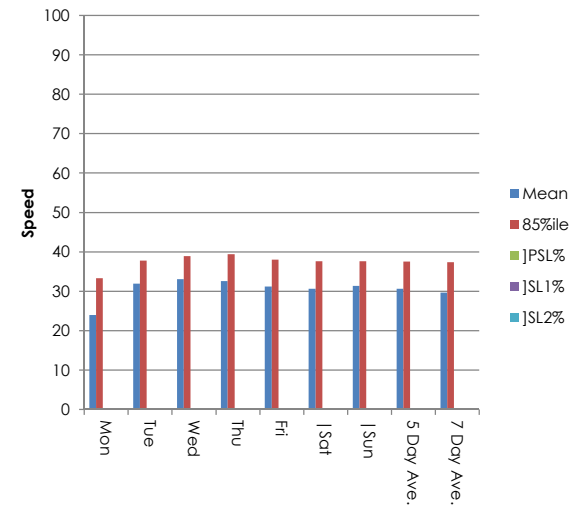
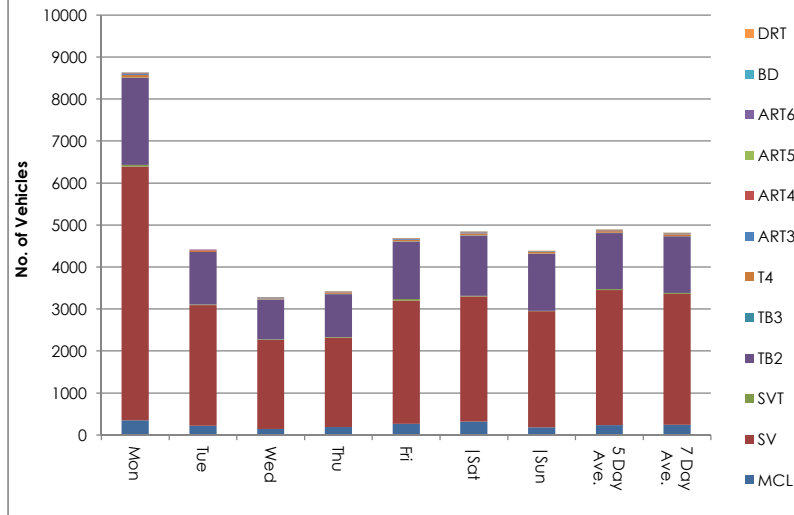
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 60	JPSL% 60	JSL1 68 ACPO	JSL1% 68 ACPO	JSL2 75 DfT	JSL2% 75 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	8631	347	6048	34	2072	10	65	20	15	2	15	2	1	1	0	0	0	0	24	33.3	
Tue	4409	222	2869	17	1250	1	25	8	16	0	1	0	0	1	0	1	0	1	31.9	37.8	
Wed	3283	145	2120	13	942	6	30	10	8	5	4	0	0	0	0	0	0	0	33.1	38.9	
Thu	3418	190	2126	14	1025	7	30	9	5	3	4	3	2	1	0	0	0	0	32.6	39.4	
Fri	4683	267	2934	36	1367	2	38	25	7	2	3	0	2	2	0	0	0	0	31.2	38	
Sat	4854	321	2977	18	1432	6	49	10	6	3	16	9	7	1	0	0	0	0	30.6	37.6	
Sun	4379	181	2765	7	1359	4	42	7	3	2	6	2	1	0	0	0	0	0	31.4	37.6	
5 Day Ave.	4885	234	3219	23	1331	5	38	14	10	2	5	1	1	1	0.0	0	0.0	0	30.6	37.5	
7 Day Ave.	4808	239	3120	20	1350	5	40	13	9	2	7	2	2	1	0.0	0	0.0	0	29.7	37.4	
--	33657	1673	21839	139	9447	36	279	89	60	17	49	16	13	6	0.0	1	0.0	1	29.7	37.4	

Summary Graphs



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	13	0	0	0	0	2	1	2	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	47	0	0	0	2	2	1	9	11	14	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	105	0	0	1	4	5	6	20	29	28	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	193	0	1	4	6	6	14	63	66	28	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	368	0	0	2	18	20	44	111	131	38	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	536	0	24	38	44	83	126	134	71	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	502	0	2	17	34	39	116	200	83	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	454	0	1	10	28	37	91	179	86	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	449	0	0	12	24	47	127	150	70	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	505	0	0	12	35	90	163	151	45	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	526	0	0	12	25	59	139	188	79	14	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	370	0	0	4	22	25	79	128	85	19	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	266	0	0	0	8	9	32	73	88	41	12	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	149	0	0	0	1	6	10	34	61	28	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	92	0	0	0	2	2	8	26	27	17	6	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	49	0	0	0	0	0	3	9	20	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	33	0	0	0	0	3	0	5	15	5	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	18	0	0	0	0	0	3	3	4	4	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4321	0	28	112	250	422	938	1406	844	251	59	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4624	0	28	112	253	432	960	1477	955	312	75	14	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4675	0	28	112	253	435	963	1485	974	321	82	14	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4683	0	28	112	253	435	963	1487	975	323	83	15	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	15	0	0	0	0	0	2	2	6	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	7	0	0	0	0	0	0	0	2	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	11	0	0	1	0	0	0	2	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	47	0	0	0	8	4	1	4	21	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	83	0	1	2	8	9	1	17	20	18	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	234	0	0	4	30	31	16	54	59	29	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	464	0	2	13	45	91	50	119	98	39	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	543	0	0	18	74	86	99	155	85	22	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	501	2	3	26	44	60	104	169	75	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	513	2	11	21	42	57	142	171	52	12	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	504	1	1	14	31	44	143	182	65	14	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	563	0	0	3	19	40	183	229	69	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	528	0	1	1	3	38	187	201	68	24	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	336	0	0	0	6	21	90	121	69	23	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	209	0	0	0	5	16	31	56	61	30	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	121	0	0	1	3	6	26	24	36	15	7	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	65	0	0	0	0	4	18	19	15	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	43	0	0	0	1	1	1	7	15	10	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	31	0	0	0	0	0	1	10	13	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	28	0	0	0	0	0	0	8	8	8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4525	5	19	102	315	497	1047	1478	742	254	55	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4765	5	19	104	319	508	1092	1530	810	287	75	13	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4824	5	19	104	319	508	1093	1548	831	301	78	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4854	5	19	104	319	508	1095	1550	841	310	82	18	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	25	0	0	0	0	0	2	4	6	7	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	14	0	0	0	0	0	0	2	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	12	0	0	0	0	0	0	1	3	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	25	0	0	0	2	1	0	4	8	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	41	0	0	0	2	4	2	9	12	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	166	0	1	7	8	4	9	46	55	28	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	358	0	3	2	27	34	56	126	86	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	478	1	9	15	44	39	73	164	111	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	569	0	3	5	42	62	158	211	71	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	460	0	0	9	36	51	130	156	64	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	411	0	0	3	17	28	107	163	79	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	453	0	0	2	9	43	141	166	78	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	483	0	1	3	11	35	151	163	95	14	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	326	0	0	7	7	27	83	114	66	13	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	256	0	0	0	2	14	48	75	79	32	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	148	0	0	0	4	2	29	50	39	15	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	75	0	0	0	1	0	13	28	16	10	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	31	0	0	0	0	0	4	7	12	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	16	0	0	0	0	0	0	2	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	23	0	0	0	0	0	1	7	11	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4026	1	17	53	207	342	958	1397	804	189	52	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4292	1	17	53	212	344	1004	1483	874	225	66	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4331	1	17	53	212	344	1005	1492	893	231	69	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4379	1	17	53	212	344	1007	1500	906	245	77	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	23	0	0	0	1	1	1	4	5	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	5	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	6	0	0	0	0	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	12	0	0	0	0	0	1	2	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	38	0	0	1	5	1	0	1	16	5	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	103	0	0	2	15	5	3	22	33	14	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	333	0	0	6	38	24	50	77	97	37	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	676	7	72	75	64	76	82	161	114	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	775	30	216	204	158	78	49	31	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	799	21	272	256	103	63	69	10	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	941	17	185	248	175	123	128	49	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	815	9	105	166	113	169	163	73	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	947	0	5	19	71	187	414	193	43	12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	1007	0	0	13	58	201	371	289	57	15	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	908	0	0	17	29	121	377	293	59	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	653	0	1	2	17	89	225	235	67	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	400	0	0	1	6	21	146	126	77	15	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	131	0	0	1	8	8	30	40	31	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	36	0	0	0	0	0	0	7	8	10	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	11	0	0	0	0	0	0	0	7	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	4	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	7995	84	856	1009	846	1137	1931	1434	531	137	23	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	8574	84	856	1011	860	1166	2108	1609	651	175	43	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	8589	84	856	1011	860	1166	2108	1609	658	178	47	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	8631	84	856	1011	862	1167	2109	1616	670	188	54	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Tuesday 30 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	7	0	0	0	0	0	0	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	22	0	0	0	0	0	2	3	4	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	58	0	0	0	3	3	2	8	16	15	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	90	0	0	1	1	1	2	14	30	26	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	195	0	0	2	8	5	12	48	89	23	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	399	0	0	7	20	23	55	151	111	26	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	511	0	2	16	41	37	76	200	118	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	479	0	5	9	36	32	104	186	92	13	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	381	0	0	2	21	36	63	158	87	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	441	0	0	5	14	35	124	181	69	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	460	0	0	4	22	34	125	167	84	20	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	440	0	0	2	8	37	112	187	68	21	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	374	0	0	2	17	32	85	139	70	22	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	258	0	0	1	9	26	52	72	56	35	4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	146	0	0	1	5	10	33	44	36	11	4	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2000	96	0	0	0	0	5	22	31	24	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	22	0	0	0	0	0	3	4	7	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	15	0	0	0	0	0	0	4	3	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	10	0	0	0	1	0	2	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4086	0	7	51	200	301	812	1511	890	240	63	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4372	0	7	52	205	316	872	1593	961	276	74	11	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
06-00	4397	0	7	52	206	316	874	1598	966	283	78	12	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
00-00	4409	0	7	52	206	316	874	1599	971	286	81	12	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Wednesday 31 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	5	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	13	0	0	0	1	0	2	2	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	51	0	1	0	2	2	2	8	22	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	92	0	0	1	0	4	2	20	42	18	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	163	0	0	0	8	3	16	46	53	33	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	285	0	0	3	13	11	28	87	102	33	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	389	0	0	6	10	14	86	172	82	16	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	340	0	0	5	10	22	70	132	82	18	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	283	0	0	7	13	9	65	98	71	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	360	0	0	5	26	15	85	124	87	14	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	383	0	0	1	14	19	83	157	93	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	329	0	0	0	8	15	85	124	61	27	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	235	0	0	1	6	9	37	86	68	18	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	164	0	0	2	6	8	24	44	38	26	12	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	86	0	0	0	9	1	6	23	21	18	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	56	0	0	0	0	1	4	14	23	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	25	0	0	0	0	0	0	6	11	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	0	1	1	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	10	0	0	0	0	0	0	1	2	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	3074	0	1	31	116	131	583	1098	801	242	54	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	3254	0	1	31	126	133	595	1143	859	282	65	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	3274	0	1	31	126	133	596	1145	863	291	65	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	3283	0	1	31	126	133	597	1147	865	295	65	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions
 Thursday 01 September 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																														
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140			
0000	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0100	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0300	4	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0500	5	0	1	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0600	8	0	0	0	0	0	0	1	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0700	45	0	0	0	3	2	0	3	9	17	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0800	71	0	0	0	5	2	3	6	31	17	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0900	170	0	1	0	3	1	12	39	60	38	13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1000	358	0	0	1	26	24	60	118	95	25	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1100	441	1	1	17	44	27	87	150	89	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1200	315	0	1	5	18	16	43	135	66	22	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1300	302	0	1	4	15	21	60	108	64	23	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1400	336	0	0	4	13	21	80	127	66	20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1500	377	0	0	1	11	23	82	149	88	18	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1600	367	0	0	2	11	19	96	114	89	31	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1700	233	0	0	0	6	11	53	80	54	25	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1800	167	0	0	0	14	15	26	40	35	27	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1900	101	0	0	0	11	13	12	19	23	15	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2000	56	0	0	0	8	7	3	12	14	8	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2100	32	0	0	0	1	0	1	9	9	5	5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2200	20	0	0	0	0	0	0	5	4	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300	8	0	0	0	0	0	1	0	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	3182	1	4	34	169	182	602	1069	746	284	73	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	3379	1	4	34	189	202	618	1110	794	315	88	20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	3407	1	4	34	189	202	619	1115	800	329	89	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	3418	1	5	34	189	202	620	1117	803	332	89	21	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	10	0	0	0	0	0	1	1	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	4	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	5	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	13	0	0	0	0	0	1	2	3	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	44	0	0	0	4	2	1	5	15	10	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	84	0	0	1	5	4	3	15	28	18	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	208	0	0	3	14	11	18	53	68	31	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	415	1	11	15	30	40	54	125	105	30	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	525	5	36	45	59	52	85	144	81	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	501	3	41	46	41	42	95	149	68	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	476	3	28	43	47	48	97	131	63	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	474	1	15	30	34	51	118	143	65	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	527	0	1	6	26	62	170	173	71	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	526	0	0	5	18	58	163	181	74	21	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	397	0	0	4	13	35	115	137	67	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	282	0	0	1	9	25	63	85	61	29	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	164	0	0	0	6	8	37	46	42	17	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	82	0	0	0	3	4	14	24	21	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	34	0	0	0	0	0	2	7	12	8	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	19	0	0	0	0	0	0	4	7	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	14	0	0	0	0	0	1	3	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4458	13	133	199	300	430	982	1342	765	228	54	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4751	13	133	200	309	443	1036	1421	843	267	69	13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4785	13	133	200	309	443	1037	1427	855	276	73	15	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4808	13	133	200	310	444	1038	1431	862	283	76	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



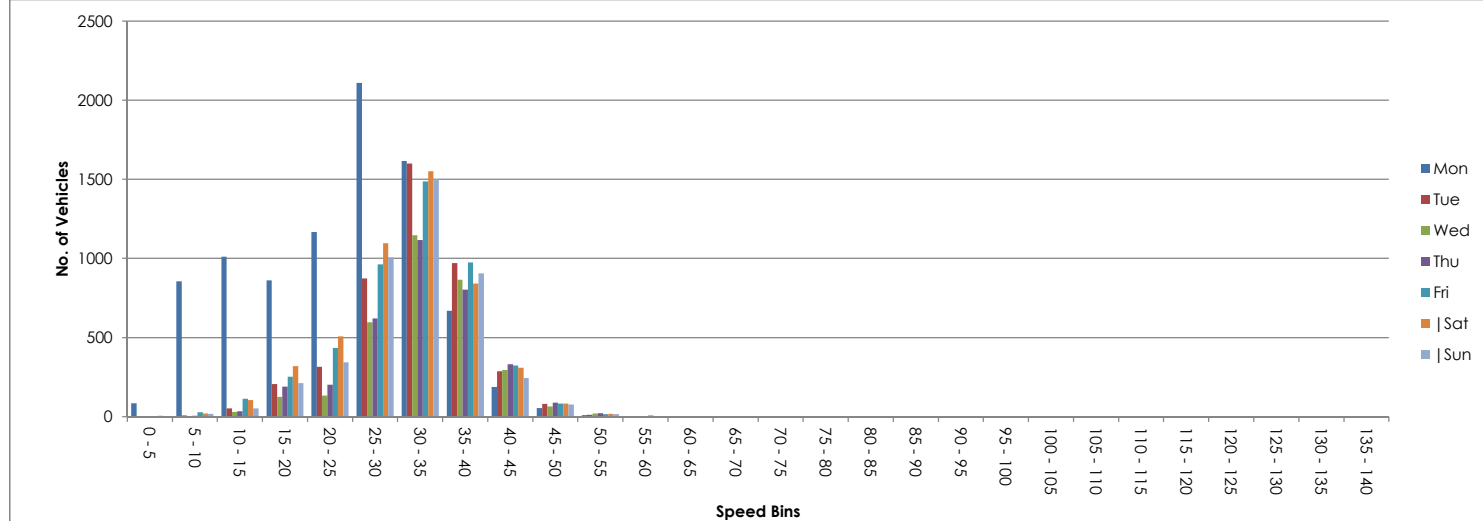
Site 4
 Location B6160 - Attached to sign - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count


Virtual Week (1)

Time	Total	Speed Bins (mph)																												
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140	
Mon	8631	84	856	1011	862	1167	2109	1616	670	188	54	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	4409	0	7	52	206	316	874	1599	971	286	81	12	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Wed	3283	0	1	31	126	133	597	1147	865	295	65	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thu	3418	1	5	34	189	202	620	1117	803	332	89	21	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fri	4683	0	28	112	253	435	963	1487	975	323	83	15	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sat	4854	5	19	104	319	508	1095	1550	841	310	82	18	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sun	4379	1	17	53	212	344	1007	1500	906	245	77	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	4885	17	179	248	327	451	1033	1393	857	285	74	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Day Ave.	4808	13	133	200	310	444	1038	1431	862	283	76	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--	33657	91	933	1397	2167	3105	7265	10016	6031	1979	531	111	25	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Summary Graphs





	Site / Location:	B6160 - Attached to telegraph pole - N53.98000, W1.89235	Project No:	6600	Photo No:	5	Drawn By:	RN
	Survey Date:	Thursday 25th August 2016 - Wednesday 31st August 2016		Project Name:	Bolton Abbey			
	Survey Times:	00:00 - 00:00 (24 Hour)		Title:	Site Photograph - looking southbound			



6600 / Bolton Abbey
Aug-16
Automatic Traffic Count

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
5	B6160 - Attached to telegraph pole - N53.98000, W1.89235	Northbound	30	Friday 26 August 2016	Thursday 01 September 2016	19281	2776	2754	2643	13.7	498	2.6	20	0.1	23.9	29.5
		Southbound	30	Friday 26 August 2016	Thursday 01 September 2016	19074	2761	2725	1656	8.7	264	1.4	4	0.0	23.6	28.4
		Both Directions	30	Friday 26 August 2016	Thursday 01 September 2016	38355	5537	5479	4299	11.2	762	2.0	24	0.1	23.7	29.1

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26.4	-	
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0500	6	0	4	0	2	0	0	0	0	0	0	0	0	2	33.3	2	33.3	0	29.3	-	
0600	16	0	10	0	6	0	0	0	0	0	0	0	0	5	31.3	2	12.5	0	28.8	34.4	
0700	46	3	36	0	7	0	0	0	0	0	0	0	0	23	50	1	2.2	0	29.4	32.7	
0800	101	4	75	0	20	2	0	0	0	0	0	0	0	35	34.7	10	9.9	0	28.3	33.6	
0900	177	4	137	1	31	0	3	0	0	0	1	0	0	45	25.4	8	4.5	1	27.3	31.1	
1000	308	17	248	0	37	1	4	0	0	0	1	0	0	46	14.9	2	0.6	0	25.4	29.8	
1100	451	12	387	1	39	1	9	0	1	1	0	0	0	52	11.5	4	0.9	0	24.7	29.3	
1200	400	16	327	0	50	4	2	0	0	0	1	0	0	61	15.3	4	1	0	24.1	30	
1300	297	10	250	3	29	5	0	0	0	0	0	0	0	27	9.1	4	1.3	0	24.6	28.6	
1400	244	10	200	4	20	8	0	0	2	0	0	0	0	34	13.9	6	2.5	0	24.6	29.8	
1500	187	9	150	2	18	6	1	0	0	1	0	0	0	31	16.6	8	4.3	1	25.5	30	
1600	140	10	109	3	13	3	2	0	0	0	0	0	0	24	17.1	4	2.9	1	25.3	30.2	
1700	150	4	120	2	19	4	0	0	0	1	0	0	0	31	20.7	5	3.3	0	25.8	30.9	
1800	134	5	99	1	24	3	1	0	1	0	0	0	0	48	35.8	10	7.5	0	27.7	32.7	
1900	86	6	69	1	10	0	0	0	0	0	0	0	0	19	22.1	8	9.3	2	27.4	32.4	
2000	38	2	32	0	4	0	0	0	0	0	0	0	0	15	39.5	8	21.1	0	29.3	35.3	
2100	23	0	18	0	5	0	0	0	0	0	0	0	0	7	30.4	1	4.3	0	27.6	32	
2200	17	0	17	0	0	0	0	0	0	0	0	0	0	9	52.9	3	17.6	0	29.9	33.6	
2300	10	0	8	0	2	0	0	0	0	0	0	0	0	5	50	3	30	0	29.5	-	
07-19	2635	104	2138	17	307	37	22	0	4	3	3	0	0	457	17.3	66	2.5	3	0.1	25.4	30.2
06-22	2798	112	2267	18	332	37	22	0	4	3	3	0	0	503	18	85	3	5	0.2	25.5	30.4
06-00	2825	112	2292	18	334	37	22	0	4	3	3	0	0	517	18.3	91	3.2	5	0.2	25.6	30.4
00-00	2833	112	2298	18	336	37	22	0	4	3	3	0	0	519	18.3	93	3.3	5	0.2	25.6	30.4

Site 5
 Location B61 60 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	5	0	1	0	0	0	0	0	0	0	0	5	83.3	2	33.3	0	0	34.4	-
0100	2	0	1	0	1	0	0	0	0	0	0	0	0	1	50	1	50	0	0	34.1	-
0200	3	0	1	1	1	0	0	0	0	0	0	0	0	2	66.7	2	66.7	0	0	33.3	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.4	-
0400	1	0	0	0	1	0	0	0	0	0	0	0	0	1	100	0	0	0	0	30.4	-
0500	5	0	3	0	2	0	0	0	0	0	0	0	0	1	20	1	20	0	0	28.4	-
0600	15	1	9	0	5	0	0	0	0	0	0	0	0	5	33.3	0	0	0	0	26.4	32.7
0700	42	8	31	0	2	0	0	1	0	0	0	0	0	11	26.2	5	11.9	0	0	28.1	33.8
0800	82	19	50	1	9	2	1	0	0	0	0	0	0	29	35.4	7	8.5	0	0	26.3	32.9
0900	195	27	131	1	24	2	7	0	0	1	0	2	0	47	24.1	8	4.1	0	0	26.4	31.1
1000	354	40	256	0	40	2	9	0	0	0	4	2	1	61	17.2	18	5.1	1	0.3	25.8	30.2
1100	421	28	336	0	51	1	4	0	0	0	0	0	1	30	7.1	7	1.7	0	0	23.9	28.2
1200	435	21	357	2	47	1	5	0	0	0	2	0	0	30	6.9	6	1.4	1	0.2	23.3	28
1300	409	8	350	3	43	2	1	0	1	0	1	0	0	42	10.3	6	1.5	1	0.2	24	28.4
1400	251	9	217	1	22	0	1	0	1	0	0	0	0	23	9.2	4	1.6	0	0	23.9	27.7
1500	195	1	167	0	24	3	0	0	0	0	0	0	0	12	6.2	1	0.5	0	0	23.5	28.2
1600	115	1	103	0	10	1	0	0	0	0	0	0	0	30	26.1	4	3.5	0	0	25.8	31.1
1700	105	2	93	0	8	2	0	0	0	0	0	0	0	12	11.4	2	1.9	0	0	24.7	29.1
1800	91	0	77	0	10	3	0	0	1	0	0	0	0	18	19.8	4	4.4	0	0	26.7	30.9
1900	66	0	52	0	13	1	0	0	0	0	0	0	0	12	18.2	1	1.5	0	0	25.9	30.6
2000	36	0	34	0	2	0	0	0	0	0	0	0	0	6	16.7	1	2.8	0	0	25.9	30
2100	17	0	14	0	2	1	0	0	0	0	0	0	0	6	35.3	3	17.6	0	0	28.5	34
2200	16	0	13	0	2	1	0	0	0	0	0	0	0	5	31.3	1	6.3	0	0	26.8	31.5
2300	19	0	15	0	4	0	0	0	0	0	0	0	0	5	26.3	2	10.5	0	0	27.6	32.4
07-19	2695	164	2168	8	290	19	28	1	3	1	7	4	2	345	12.8	72	2.7	3	0.1	24.6	29.5
06-22	2829	165	2277	8	312	21	28	1	3	1	7	4	2	374	13.2	77	2.7	3	0.1	24.6	29.5
06-00	2864	165	2305	8	318	22	28	1	3	1	7	4	2	384	13.4	80	2.8	3	0.1	24.7	29.5
00-00	2882	165	2316	9	324	22	28	1	3	1	7	4	2	394	13.7	86	3	3	0.1	24.7	29.5

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	15	0	11	0	4	0	0	0	0	0	0	0	0	11	73.3	4	26.7	0	0	31.3	36.9
0100	9	0	8	0	0	1	0	0	0	0	0	0	0	2	22.2	0	0	0	0	25.5	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	30.4	-
0500	3	0	2	0	1	0	0	0	0	0	0	0	0	1	33.3	0	0	0	0	28.7	-
0600	11	0	9	0	2	0	0	0	0	0	0	0	0	4	36.4	1	9.1	0	0	28.2	31.8
0700	35	2	29	0	3	0	1	0	0	0	0	0	0	9	25.7	2	5.7	0	0	25.5	31.5
0800	53	2	41	1	7	0	1	0	1	0	0	0	0	15	28.3	5	9.4	0	0	27.5	31.8
0900	159	10	127	1	14	2	3	0	0	1	1	0	0	28	17.6	6	3.8	0	0	25.8	30.4
1000	292	18	241	1	21	1	9	0	0	0	1	0	0	23	7.9	1	0.3	0	0	24.6	28.9
1100	366	17	304	0	37	1	4	0	1	1	1	0	0	27	7.4	3	0.8	0	0	23.7	28.4
1200	404	22	343	0	33	1	4	0	0	1	0	0	0	23	5.7	2	0.5	0	0	23.5	27.7
1300	312	9	266	0	34	0	3	0	0	0	0	0	0	19	6.1	1	0.3	0	0	23.5	27.7
1400	195	9	150	0	35	0	1	0	0	0	0	0	0	35	17.9	6	3.1	1	0.5	24.6	30.2
1500	197	6	166	0	23	1	1	0	0	0	0	0	0	10	5.1	2	1	0	0	23.2	26.8
1600	145	4	121	0	17	2	0	0	1	0	0	0	0	12	8.3	2	1.4	0	0	24.3	28.9
1700	107	6	82	0	17	1	1	0	0	0	0	0	0	27	25.2	7	6.5	3	2.8	26.4	32.4
1800	98	0	88	0	9	1	0	0	0	0	0	0	0	22	22.4	8	8.2	0	0	27.1	32.2
1900	61	1	54	0	4	2	0	0	0	0	0	0	0	14	23	5	8.2	0	0	26.5	32
2000	24	0	20	0	4	0	0	0	0	0	0	0	0	8	33.3	3	12.5	1	4.2	29.1	34
2100	15	0	15	0	0	0	0	0	0	0	0	0	0	4	26.7	0	0	0	0	27.9	32.9
2200	9	0	7	0	2	0	0	0	0	0	0	0	0	6	66.7	1	11.1	0	0	29.4	-
2300	8	0	8	0	0	0	0	0	0	0	0	0	0	8	100	2	25	0	0	33	-
07-19	2363	105	1958	3	250	10	28	0	3	2	3	1	0	250	10.6	45	1.9	4	0.2	24.3	28.9
06-22	2474	106	2056	3	260	12	28	0	3	2	3	1	0	280	11.3	54	2.2	5	0.2	24.5	29.1
06-00	2491	106	2071	3	262	12	28	0	3	2	3	1	0	294	11.8	57	2.3	5	0.2	24.5	29.3
00-00	2519	106	2093	3	267	13	28	0	3	2	3	1	0	309	12.3	61	2.4	5	0.2	24.6	29.3

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	7	0	2	0	5	0	0	0	0	0	0	0	0	6	85.7	4	57.1	0	0	34.2	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.9	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	34.4	-
0400	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	33.4	-
0500	3	0	2	0	1	0	0	0	0	0	0	0	0	1	33.3	0	0	0	0	28.4	-
0600	16	0	12	0	1	1	0	0	2	0	0	0	0	4	25	1	6.3	0	0	27.7	33.3
0700	57	5	43	0	7	0	2	0	0	0	0	0	0	19	33.3	5	8.8	0	0	27.2	33.6
0800	100	13	70	1	10	2	3	0	0	0	0	0	1	32	32	9	9	0	0	26.4	32.4
0900	308	30	242	0	28	0	5	0	0	1	1	0	1	59	19.2	10	3.2	1	0.3	25.4	30.6
1000	690	29	583	4	59	0	8	2	0	2	1	1	1	45	6.5	3	0.4	0	0	22.4	28
1100	627	18	535	5	62	3	2	1	0	0	0	1	0	2	0.3	0	0	0	0	12.9	21.5
1200	708	17	601	2	81	0	3	1	1	0	1	1	0	2	0.3	0	0	0	0	13.5	20.4
1300	737	9	638	7	77	2	1	0	2	0	0	0	1	25	3.4	1	0.1	0	0	19.5	25.7
1400	519	17	451	0	46	3	2	0	0	0	0	0	0	18	3.5	6	1.2	1	0.2	22	26.4
1500	292	8	250	1	30	1	1	0	1	0	0	0	0	24	8.2	3	1	2	0.7	23.1	27.7
1600	173	7	138	0	24	1	2	0	0	0	0	1	0	12	6.9	2	1.2	1	0.6	22.9	27.1
1700	106	4	91	0	11	0	0	0	0	0	0	0	0	6	5.7	1	0.9	0	0	22.2	25.7
1800	93	5	74	0	12	0	2	0	0	0	0	0	0	15	16.1	3	3.2	1	1.1	24.6	30.2
1900	48	2	40	0	2	4	0	0	0	0	0	0	0	15	31.3	5	10.4	0	0	28.5	33.8
2000	22	0	16	0	6	0	0	0	0	0	0	0	0	4	18.2	0	0	0	0	27	31.1
2100	12	1	9	0	2	0	0	0	0	0	0	0	0	8	66.7	5	41.7	0	0	31.8	36.2
2200	6	0	6	0	0	0	0	0	0	0	0	0	0	2	33.3	1	16.7	0	0	29	-
2300	3	0	3	0	0	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	33.8	-
07-19	4410	162	3716	20	447	12	31	4	4	3	3	4	4	259	5.9	43	1	6	0.1	19.6	26.8
06-22	4508	165	3793	20	458	17	31	4	6	3	3	4	4	290	6.4	54	1.2	6	0.1	19.7	27.1
06-00	4517	165	3802	20	458	17	31	4	6	3	3	4	4	294	6.5	56	1.2	6	0.1	19.8	27.1
00-00	4534	165	3811	20	466	17	31	4	6	3	3	4	4	304	6.7	61	1.3	6	0.1	19.8	27.1

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	1	100	0	0	0	0	32.6	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	30.5	-
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	31.2	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	36.3	-
0500	4	0	1	0	3	0	0	0	0	0	0	0	0	1	25	1	25	0	0	29.5	-
0600	25	0	19	0	5	0	0	0	1	0	0	0	0	10	40	0	0	0	0	28.4	32.2
0700	51	2	41	1	6	0	0	0	1	0	0	0	0	20	39.2	6	11.8	0	0	28.1	33.1
0800	88	2	65	0	16	4	1	0	0	0	0	0	0	38	43.2	9	10.2	0	0	29.2	33.3
0900	202	9	165	1	24	0	2	0	1	0	0	0	0	43	21.3	4	2	0	0	26	30.9
1000	350	13	299	2	28	0	5	0	1	0	0	2	0	27	7.7	3	0.9	0	0	24.5	28.4
1100	425	13	373	0	32	4	3	0	0	0	0	0	0	32	7.5	3	0.7	0	0	23.9	28
1200	395	12	346	2	35	0	0	0	0	0	0	0	0	22	5.6	2	0.5	0	0	24	27.7
1300	268	9	218	1	38	1	1	0	0	0	0	0	0	34	12.7	5	1.9	0	0	25	29.3
1400	190	5	165	0	18	0	2	0	0	0	0	0	0	16	8.4	2	1.1	0	0	23.3	28.4
1500	162	8	135	1	15	0	1	0	1	0	0	1	0	19	11.7	2	1.2	0	0	24.1	28.9
1600	106	9	75	2	20	0	0	0	0	0	0	0	0	22	20.8	8	7.5	0	0	25.5	31.3
1700	91	4	66	1	18	1	1	0	0	0	0	0	0	26	28.6	4	4.4	0	0	27.6	31.5
1800	92	6	75	0	9	1	0	0	1	0	0	0	0	25	27.2	6	6.5	0	0	27	31.5
1900	44	5	32	0	6	0	1	0	0	0	0	0	0	12	27.3	2	4.5	0	0	26.2	31.1
2000	29	0	22	0	6	1	0	0	0	0	0	0	0	9	31	2	6.9	0	0	28.3	31.8
2100	8	0	7	0	1	0	0	0	0	0	0	0	0	5	62.5	2	25	0	0	31.6	-
2200	10	0	9	0	1	0	0	0	0	0	0	0	0	6	60	1	10	0	0	30.7	-
2300	4	0	3	0	1	0	0	0	0	0	0	0	0	2	50	0	0	0	0	30	-
07-19	2420	92	2023	11	259	11	16	0	5	0	0	3	0	324	13.4	54	2.2	0	0	24.9	29.5
06-22	2526	97	2103	11	277	12	17	0	6	0	0	3	0	360	14.3	60	2.4	0	0	25	29.8
06-00	2540	97	2115	11	279	12	17	0	6	0	0	3	0	368	14.5	61	2.4	0	0	25	29.8
00-00	2549	97	2120	11	283	12	17	0	6	0	0	3	0	373	14.6	63	2.5	0	0	25	29.8

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	-	
0100	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	24.6	-	
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.4	-	
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	
0500	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	28.9	-	
0600	17	0	11	0	5	0	0	0	1	0	0	0	0	2	11.8	2	11.8	0	26.5	28.9	
0700	60	6	45	1	7	0	1	0	0	0	0	0	0	20	33.3	5	8.3	0	27.9	33.6	
0800	77	0	63	1	6	6	1	0	0	0	0	0	0	28	36.4	4	5.2	0	28.3	32.4	
0900	124	3	97	0	20	3	1	0	0	0	0	0	0	36	29	4	3.2	0	27.6	31.3	
1000	239	9	198	1	27	1	2	0	0	0	1	0	0	43	18	11	4.6	0	25.9	30.6	
1100	304	3	272	0	25	1	0	1	0	1	0	1	0	39	12.8	5	1.6	0	24.7	29.3	
1200	256	8	212	2	34	0	0	0	0	0	0	0	0	32	12.5	3	1.2	0	25.1	29.1	
1300	167	11	130	1	22	1	1	0	0	0	1	0	0	29	17.4	5	3	0	25.1	30.4	
1400	207	11	167	1	21	2	0	0	1	1	3	0	0	24	11.6	2	1	0	24.5	28.9	
1500	128	7	110	1	10	0	0	0	0	0	0	0	0	17	13.3	1	0.8	0	25.3	29.5	
1600	87	4	65	2	15	0	0	0	0	1	0	0	0	20	23	4	4.6	0	25.9	31.3	
1700	86	4	68	2	11	1	0	0	0	0	0	0	0	26	30.2	3	3.5	0	27.6	32	
1800	86	8	67	0	10	1	0	0	0	0	0	0	0	25	29.1	4	4.7	0	26.7	31.8	
1900	51	4	41	0	6	0	0	0	0	0	0	0	0	23	45.1	8	15.7	0	28.4	34.4	
2000	25	0	22	0	3	0	0	0	0	0	0	0	0	9	36	1	4	0	28.3	33.1	
2100	13	0	10	0	3	0	0	0	0	0	0	0	0	7	53.8	0	0	0	28.9	31.8	
2200	4	0	4	0	0	0	0	0	0	0	0	0	0	1	25	0	0	0	28.6	-	
2300	8	0	8	0	0	0	0	0	0	0	0	0	0	6	75	3	37.5	0	32.4	-	
07-19	1821	74	1494	12	208	16	6	1	1	3	5	1	0	339	18.6	51	2.8	0	25.7	30.6	
06-22	1927	78	1578	12	225	16	6	1	2	3	5	1	0	380	19.7	62	3.2	0	25.8	30.9	
06-00	1939	78	1590	12	225	16	6	1	2	3	5	1	0	387	20	65	3.4	0	25.9	30.9	
00-00	1944	78	1593	12	227	16	6	1	2	3	5	1	0	387	19.9	65	3.3	0	25.9	30.9	

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	39.1	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28.1	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.9	-
0300	2	0	1	0	1	0	0	0	0	0	0	0	0	1	50	0	0	0	0	30.8	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	33.3	-
0500	2	0	0	0	2	0	0	0	0	0	0	0	0	1	50	1	50	0	0	33.2	-
0600	15	0	11	0	4	0	0	0	0	0	0	0	0	6	40	1	6.7	0	0	25.7	32.2
0700	50	3	33	0	13	1	0	0	0	0	0	0	0	23	46	9	18	0	0	29.6	35.6
0800	64	2	52	0	10	0	0	0	0	0	0	0	0	33	51.6	4	6.3	0	0	29.7	33.1
0900	143	3	115	0	20	3	1	0	1	0	0	0	0	32	22.4	5	3.5	0	0	27.4	30.9
1000	306	13	257	1	30	2	2	1	0	0	0	0	0	43	14.1	2	0.7	0	0	25.6	29.8
1100	349	18	305	0	24	0	2	0	0	0	0	0	0	28	8	3	0.9	0	0	24.2	28.4
1200	223	7	186	2	24	0	3	0	1	0	0	0	0	32	14.3	3	1.3	0	0	24.5	29.5
1300	184	6	146	0	31	0	1	0	0	0	0	0	0	19	10.3	7	3.8	0	0	25	28.9
1400	174	5	129	0	29	4	4	2	1	0	0	0	0	21	12.1	4	2.3	0	0	24	29.3
1500	126	2	101	1	21	1	0	0	0	0	0	0	0	20	15.9	3	2.4	0	0	26.2	30.2
1600	82	3	70	0	9	0	0	0	0	0	0	0	0	11	13.4	2	2.4	0	0	25.6	29.5
1700	72	2	58	0	8	3	0	0	0	1	0	0	0	19	26.4	5	6.9	0	0	27.3	32.4
1800	90	7	71	0	11	0	0	0	0	1	0	0	0	34	37.8	5	5.6	0	0	27.5	33.3
1900	74	9	50	1	7	1	2	0	0	0	1	1	2	19	25.7	12	16.2	1	1.4	26.9	36
2000	27	1	21	0	3	1	1	0	0	0	0	0	0	4	14.8	0	0	0	0	24.3	29.1
2100	17	0	14	0	3	0	0	0	0	0	0	0	0	3	17.6	2	11.8	0	0	28.3	29.8
2200	12	0	11	0	1	0	0	0	0	0	0	0	0	5	41.7	0	0	0	0	28.6	33.6
2300	4	0	4	0	0	0	0	0	0	0	0	0	0	1	25	0	0	0	0	25.6	-
07-19	1863	71	1523	4	230	14	13	3	3	2	0	0	0	315	16.9	52	2.8	0	0	25.6	30.4
06-22	1996	81	1619	5	247	16	16	3	3	2	1	1	2	347	17.4	67	3.4	1	0.1	25.6	30.4
06-00	2012	81	1634	5	248	16	16	3	3	2	1	1	2	353	17.5	67	3.3	1	0	25.7	30.4
00-00	2020	81	1637	5	253	16	16	3	3	2	1	1	2	357	17.7	69	3.4	1	0	25.7	30.4

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Virtual Day (7)

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	5	0	3	0	1	0	0	0	0	0	0	0	0	3	71.9	2	34.4	0	0	32.1	-
0100	2	0	1	0	1	0	0	0	0	0	0	0	0	1	26.7	0	6.7	0	0	27.2	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	0	37.5	0	25	0	0	27	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	42.9	0	0	0	0	30.2	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	85.7	0	28.6	0	0	32.9	-
0500	3	0	2	0	2	0	0	0	0	0	0	0	0	1	29.2	1	20.8	0	0	29.3	-
0600	16	0	12	0	4	0	0	0	1	0	0	0	0	5	31.3	1	6.1	0	0	27.4	32.7
0700	49	4	37	0	6	0	1	0	0	0	0	0	0	18	36.7	5	9.7	0	0	28	33.6
0800	81	6	59	1	11	2	1	0	0	0	0	0	0	30	37.2	7	8.5	0	0	27.9	33.1
0900	187	12	145	1	23	1	3	0	0	0	0	0	0	41	22.2	6	3.4	0	0.2	26.3	31.1
1000	363	20	297	1	35	1	6	0	0	0	1	1	0	41	11.3	6	1.6	0	0	24.5	29.3
1100	420	16	359	1	39	2	3	0	0	0	0	0	0	30	7.1	4	0.8	0	0	21.8	28
1200	403	15	339	1	43	1	2	0	0	0	1	0	0	29	7.2	3	0.7	0	0	21.3	28
1300	339	9	285	2	39	2	1	0	0	0	0	0	0	28	8.2	4	1.2	0	0	22.9	28.2
1400	254	9	211	1	27	2	1	0	1	0	0	0	0	24	9.6	4	1.7	0	0.1	23.5	28.2
1500	184	6	154	1	20	2	1	0	0	0	0	0	0	19	10.3	3	1.6	0	0.2	24.2	28.9
1600	121	5	97	1	15	1	1	0	0	0	0	0	0	19	15.4	4	3.1	0	0.2	24.8	30
1700	102	4	83	1	13	2	0	0	0	0	0	0	0	21	20.5	4	3.8	0	0.4	25.8	30.9
1800	98	4	79	0	12	1	0	0	0	0	0	0	0	27	27.3	6	5.8	0	0.1	26.8	32.2
1900	61	4	48	0	7	1	0	0	0	0	0	0	0	16	26.5	6	9.5	0	0.7	27.1	32.9
2000	29	0	24	0	4	0	0	0	0	0	0	0	0	8	27.4	2	7.5	0	0.5	27.5	32
2100	15	0	12	0	2	0	0	0	0	0	0	0	0	6	38.1	2	12.4	0	0	28.9	33.6
2200	11	0	10	0	1	0	0	0	0	0	0	0	0	5	45.9	1	9.5	0	0	28.9	33.6
2300	8	0	7	0	1	0	0	0	0	0	0	0	0	4	51.8	2	19.6	0	0	29.7	-
07-19	2601	110	2146	11	284	17	21	1	3	2	3	2	1	327	12.6	55	2.1	2	0.1	23.7	29.3
06-22	2723	115	2242	11	302	19	21	1	4	2	3	2	1	362	13.3	66	2.4	3	0.1	23.9	29.5
06-00	2741	115	2258	11	303	19	21	1	4	2	3	2	1	371	13.5	68	2.5	3	0.1	23.9	29.5
00-00	2754	115	2267	11	308	19	21	1	4	2	3	2	1	378	13.7	71	2.6	3	0.1	23.9	29.5

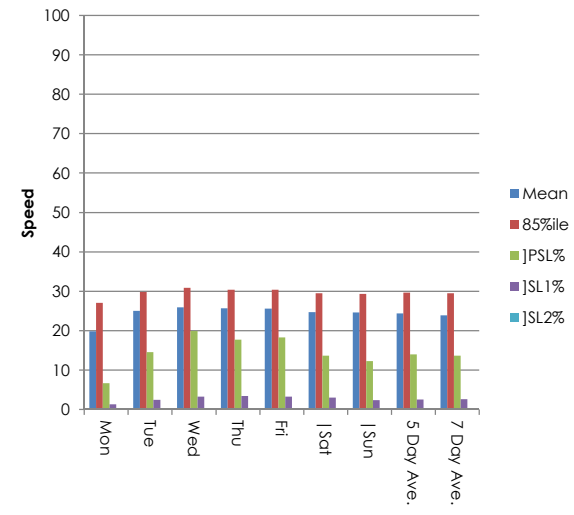
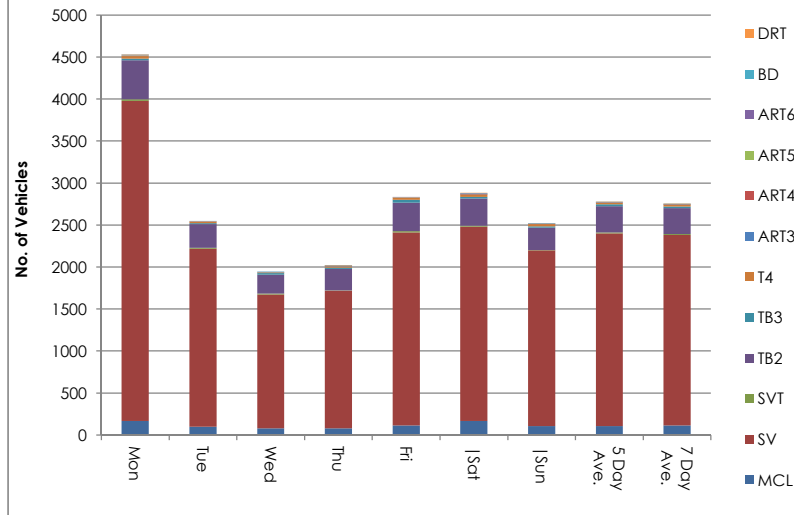
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	4534	165	3811	20	466	17	31	4	6	3	3	4	4	304	6.7	61	1.3	6	0.1	19.8	27.1
Tue	2549	97	2120	11	283	12	17	0	6	0	0	3	0	373	14.6	63	2.5	0	0	25	29.8
Wed	1944	78	1593	12	227	16	6	1	2	3	5	1	0	387	19.9	65	3.3	0	0	25.9	30.9
Thu	2020	81	1637	5	253	16	16	3	3	2	1	1	2	357	17.7	69	3.4	1	0	25.7	30.4
Fri	2833	112	2298	18	336	37	22	0	4	3	3	0	0	519	18.3	93	3.3	5	0.2	25.6	30.4
Sat	2882	165	2316	9	324	22	28	1	3	1	7	4	2	394	13.7	86	3	3	0.1	24.7	29.5
Sun	2519	106	2093	3	267	13	28	0	3	2	3	1	0	309	12.3	61	2.4	5	0.2	24.6	29.3
5 Day Ave.	2776	107	2292	13	313	20	18	2	4	2	2	2	1	388	14.0	70	2.5	2	0.1	24.4	29.7
7 Day Ave.	2754	115	2267	11	308	19	21	1	4	2	3	2	1	378	13.7	71	2.6	3	0.1	23.9	29.5
--	19281	804	15868	78	2156	133	148	9	27	14	22	14	8	2643	13.7	498	2.6	20	0.1	23.9	29.5

Summary Graphs



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	6	0	0	0	0	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0600	16	0	0	0	0	4	7	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0700	46	0	0	0	1	5	17	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0800	101	0	0	0	7	21	38	25	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0900	177	0	0	0	13	32	87	37	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1000	308	0	0	12	26	86	138	44	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1100	451	0	0	7	67	165	160	48	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1200	400	0	2	17	80	126	114	57	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1300	297	0	1	10	30	117	112	23	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400	244	0	1	8	41	76	84	28	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500	187	0	0	2	27	57	70	23	6	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1600	140	0	0	3	13	51	49	20	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700	150	0	0	3	17	45	54	26	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1800	134	0	0	0	17	20	49	38	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1900	86	0	0	0	6	25	36	11	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2000	38	0	0	0	1	6	16	7	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2100	23	0	0	0	1	5	10	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2200	17	0	0	0	1	3	4	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300	10	0	0	0	0	3	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	2635	0	4	62	339	801	972	391	57	6	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-22	2798	0	4	62	347	841	1041	418	70	10	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-00	2825	0	4	62	348	847	1047	426	76	10	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00-00	2833	0	4	62	348	849	1051	426	77	11	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	6	0	0	0	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	5	0	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	15	0	0	1	2	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	42	0	0	1	3	6	21	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	82	0	0	4	11	21	17	22	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	195	0	0	1	21	54	72	39	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	354	0	2	5	41	107	138	43	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	421	0	0	8	71	181	131	23	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	435	0	0	20	78	190	117	24	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	409	0	2	7	66	172	120	36	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	251	0	0	2	42	111	73	19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	195	0	0	9	31	72	71	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	115	0	0	2	13	42	28	26	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	105	0	0	3	14	35	41	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	91	0	0	0	6	28	39	14	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	66	0	0	0	6	26	22	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	36	0	0	0	5	10	15	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	17	0	0	0	2	2	7	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	16	0	0	0	2	4	5	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	19	0	0	0	1	5	8	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2695	0	4	62	397	1019	868	273	64	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2829	0	4	63	412	1060	916	297	68	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2864	0	4	63	415	1069	929	304	71	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2882	0	4	63	415	1071	935	308	75	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	15	0	0	1	1	0	2	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	9	0	0	0	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	11	0	0	0	1	3	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	35	0	0	0	8	10	8	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	53	0	0	1	3	14	20	10	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	159	0	0	4	22	38	67	22	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	292	0	0	6	36	115	112	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	366	0	4	13	72	113	137	24	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	404	0	0	11	68	182	120	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	312	0	3	8	55	122	105	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	195	0	1	6	20	90	43	29	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	197	0	0	6	30	99	52	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	145	0	0	5	21	55	52	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	107	0	0	2	13	32	33	20	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	98	0	0	0	5	26	45	14	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	61	0	0	0	7	12	28	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	24	0	0	0	0	6	10	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	15	0	0	0	1	2	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	9	0	0	0	1	1	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	8	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2363	0	8	62	353	896	794	205	33	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2474	0	8	62	362	919	843	226	40	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2491	0	8	62	363	920	844	237	43	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2519	0	8	63	366	923	850	248	46	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	7	0	0	0	0	1	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	3	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	16	0	0	0	1	3	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	57	0	0	0	10	10	18	14	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	100	0	0	1	20	17	30	23	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	308	0	0	6	47	81	115	49	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	690	1	45	13	144	242	200	42	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	627	37	246	104	107	114	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	708	26	255	104	205	95	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	737	0	59	118	196	218	121	24	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	519	1	6	38	108	222	126	12	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	292	0	0	8	78	119	63	21	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	173	0	1	11	40	59	50	10	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	106	0	1	4	26	55	14	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	93	0	0	4	15	36	23	12	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	48	0	0	0	0	11	22	10	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	22	0	0	0	1	4	13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	12	0	0	0	1	0	3	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	6	0	0	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	3	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4410	65	613	411	996	1268	798	216	32	5	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4508	65	613	411	999	1286	844	236	41	7	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4517	65	613	411	999	1287	848	238	42	8	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4534	65	613	411	1000	1289	852	243	45	10	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound
 Tuesday 30 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	25	0	0	0	1	3	11	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	51	0	0	0	6	8	17	14	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	88	0	0	0	4	12	34	29	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	202	0	0	5	26	42	86	39	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	350	0	0	7	48	117	151	24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	425	0	1	4	64	193	131	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	395	0	0	6	46	186	135	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	268	0	0	7	26	102	99	29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	190	0	3	7	33	85	46	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	162	0	0	2	32	56	53	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	106	0	0	5	15	30	34	14	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	91	0	0	1	1	22	41	22	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	92	0	0	1	5	24	37	19	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	44	0	0	0	5	14	13	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	29	0	0	0	2	3	15	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	8	0	0	0	0	2	1	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	1	3	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	4	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2420	0	4	45	306	877	864	270	50	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2526	0	4	45	314	899	904	300	54	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2540	0	4	45	314	900	909	307	55	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2549	0	4	45	314	901	912	310	57	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	17	0	0	0	2	4	9	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	60	0	0	1	6	7	26	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	77	0	0	0	4	9	36	24	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	124	0	0	0	7	26	55	32	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	239	0	0	4	32	54	106	32	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	304	0	2	5	37	105	116	34	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	256	0	0	1	32	90	101	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	167	0	0	6	25	50	57	24	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	207	0	2	3	26	80	72	22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	128	0	0	1	12	44	54	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	87	0	0	1	10	29	27	16	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	86	0	0	0	3	18	39	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	86	0	0	0	10	24	27	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	51	0	0	0	6	8	14	15	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	25	0	0	0	1	6	9	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	13	0	0	0	0	2	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	4	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	8	0	0	0	0	0	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1821	0	4	22	204	536	716	288	44	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1927	0	4	22	213	556	752	318	54	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1939	0	4	22	213	556	757	322	57	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1944	0	4	22	213	558	760	322	57	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	15	0	0	0	4	3	2	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	50	0	0	0	3	9	15	14	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	64	0	0	0	5	3	23	29	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	143	0	0	2	5	25	79	27	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	306	0	0	3	34	84	142	41	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	349	0	0	7	58	130	126	25	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	223	0	0	4	37	84	66	29	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	184	0	0	3	19	81	62	12	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	174	0	1	11	30	46	65	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	126	0	0	2	5	37	62	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	82	0	0	0	12	23	36	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	72	0	0	0	3	23	27	14	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	90	0	0	2	7	17	30	29	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	74	0	0	0	10	20	25	7	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	27	0	0	0	4	12	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	17	0	0	0	0	4	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	12	0	0	0	0	3	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	4	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1863	0	1	34	218	562	733	263	41	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1996	0	1	34	236	601	777	280	54	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2012	0	1	34	237	605	782	286	54	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2020	0	1	34	238	605	785	288	55	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	5	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	16	0	0	0	2	3	6	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	49	0	0	0	5	8	17	13	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	81	0	0	1	8	14	28	23	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	187	0	0	3	20	43	80	35	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	363	0	7	7	52	115	141	35	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	420	5	36	21	68	143	117	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	403	4	37	23	78	136	96	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	339	0	9	23	60	123	97	24	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	254	0	2	11	43	101	73	20	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	184	0	0	4	31	69	61	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	121	0	0	4	18	41	39	15	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	102	0	0	2	11	33	36	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	98	0	0	1	9	25	36	21	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	61	0	0	0	6	17	23	10	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	29	0	0	0	2	7	12	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	15	0	0	0	1	2	6	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	11	0	0	0	1	2	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	8	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2601	9	91	100	402	851	821	272	46	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2723	9	91	100	412	880	868	296	54	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2741	9	91	100	413	883	874	303	57	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2754	9	91	100	413	885	878	306	59	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



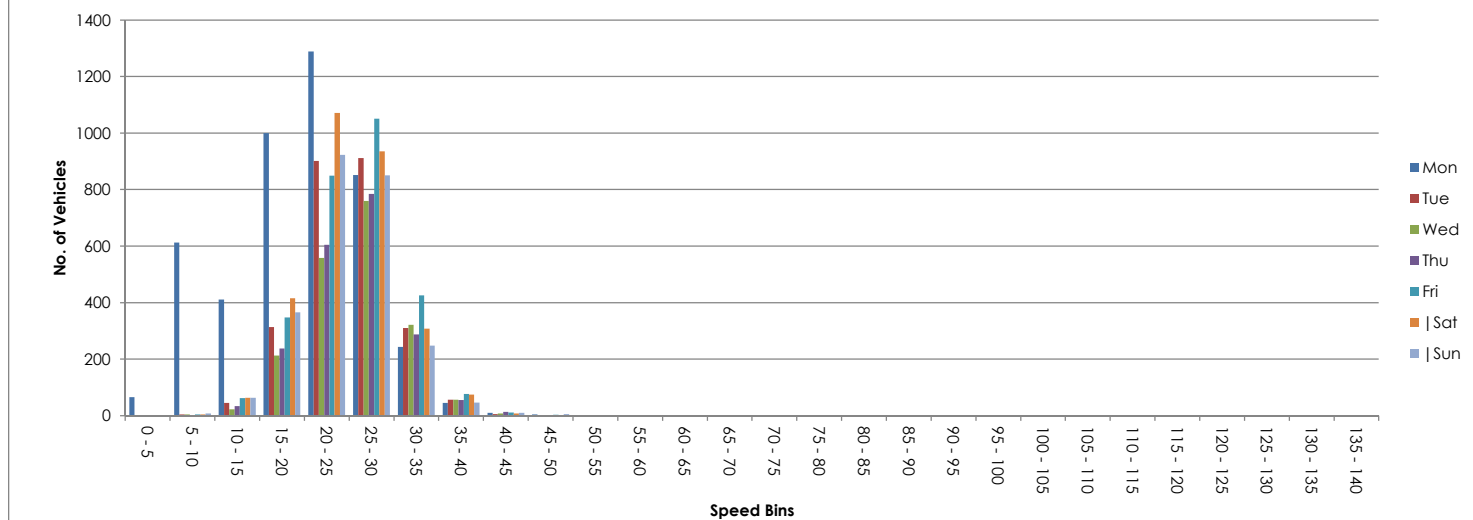
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Northbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
Mon	4534	65	613	411	1000	1289	852	243	45	10	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	2549	0	4	45	314	901	912	310	57	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wed	1944	0	4	22	213	558	760	322	57	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	2020	0	1	34	238	605	785	288	55	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	2833	0	4	62	348	849	1051	426	77	11	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	2882	0	4	63	415	1071	935	308	75	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	2519	0	8	63	366	923	850	248	46	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	2776	13	125	115	423	840	872	318	58	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	2754	9	91	100	413	885	878	306	59	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	19281	65	638	700	2894	6196	6145	2145	412	66	15	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	

Summary Graphs



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	4	0	4	0	0	0	0	0	0	0	0	0	0	3	75	1	25	1	25	33.1	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	31.2	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	39.1	-
0500	4	0	3	0	1	0	0	0	0	0	0	0	0	3	75	2	50	0	0	30	-
0600	6	0	6	0	0	0	0	0	0	0	0	0	0	2	33.3	1	16.7	0	0	27.2	-
0700	24	0	19	0	5	0	0	0	0	0	0	0	0	9	37.5	4	16.7	0	0	28.7	34.4
0800	41	3	33	0	5	0	0	0	0	0	0	0	0	18	43.9	1	2.4	0	0	28.3	33.1
0900	73	2	60	2	9	0	0	0	0	0	0	0	0	10	13.7	1	1.4	0	0	25.4	29.5
1000	112	6	88	2	16	0	0	0	0	0	0	0	0	14	12.5	1	0.9	0	0	24.8	29.5
1100	142	12	107	1	15	0	5	0	0	1	1	0	0	11	7.7	0	0	0	0	23.2	28
1200	159	16	129	1	10	0	2	0	0	0	1	0	0	9	5.7	1	0.6	0	0	23.3	27.7
1300	200	19	161	0	16	0	2	0	0	0	1	0	1	10	5	3	1.5	0	0	22.7	26.6
1400	265	8	236	0	20	0	0	0	0	0	1	0	0	13	4.9	2	0.8	0	0	23.6	27.5
1500	369	14	329	0	24	1	1	0	0	0	0	0	0	23	6.2	2	0.5	0	0	24.6	28
1600	443	15	398	1	27	0	2	0	0	0	0	0	0	25	5.6	4	0.9	0	0	23.4	27.5
1700	259	10	228	1	16	1	3	0	0	0	0	0	0	27	10.4	0	0	0	0	24.5	28.9
1800	165	6	142	1	15	0	0	1	0	0	0	0	0	29	17.6	3	1.8	0	0	26.1	30.2
1900	97	2	90	0	5	0	0	0	0	0	0	0	0	23	23.7	6	6.2	0	0	27.1	32
2000	69	5	54	0	8	0	1	0	0	0	1	0	0	19	27.5	3	4.3	0	0	26.8	31.8
2100	44	4	33	0	7	0	0	0	0	0	0	0	0	12	27.3	2	4.5	0	0	28.4	31.5
2200	38	0	36	0	2	0	0	0	0	0	0	0	0	11	28.9	3	7.9	0	0	27.5	31.5
2300	24	0	24	0	0	0	0	0	0	0	0	0	0	9	37.5	5	20.8	0	0	28.6	36.2
07-19	2252	111	1930	9	178	2	15	1	0	1	4	0	1	198	8.8	22	1	0	0	24.1	28.4
06-22	2468	122	2113	9	198	2	16	1	0	1	5	0	1	254	10.3	34	1.4	0	0	24.4	28.9
06-00	2530	122	2173	9	200	2	16	1	0	1	5	0	1	274	10.8	42	1.7	0	0	24.5	28.9
00-00	2540	122	2182	9	201	2	16	1	0	1	5	0	1	282	11.1	46	1.8	1	0	24.5	28.9

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	11	0	8	0	3	0	0	0	0	0	0	0	0	6	54.5	2	18.2	0	0	29.8	32.9
0100	8	0	7	0	1	0	0	0	0	0	0	0	0	5	62.5	1	12.5	0	0	31.5	-
0200	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.1	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	39.9	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	36.7	-
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0600	4	0	3	0	1	0	0	0	0	0	0	0	0	1	25	0	0	0	0	26.2	-
0700	19	3	14	0	2	0	0	0	0	0	0	0	0	8	42.1	2	10.5	0	0	27.3	33.3
0800	31	2	20	1	5	2	1	0	0	0	0	0	0	5	16.1	1	3.2	0	0	26.9	29.3
0900	74	10	52	0	10	0	1	0	0	1	0	0	0	17	23	3	4.1	0	0	25.9	30.6
1000	155	25	102	1	18	0	5	0	0	0	2	0	2	16	10.3	1	0.6	0	0	23.9	28.9
1100	177	33	122	1	15	0	1	0	0	0	2	3	0	8	4.5	1	0.6	0	0	23.4	27.3
1200	149	19	110	1	8	1	7	0	1	0	0	1	1	7	4.7	0	0	0	0	22.8	28
1300	193	22	149	0	19	0	2	0	0	0	1	0	0	6	3.1	1	0.5	0	0	22.8	26.8
1400	286	14	239	1	22	0	4	0	0	0	5	1	0	12	4.2	2	0.7	0	0	23.5	27.3
1500	409	14	360	1	30	1	3	0	0	0	0	0	0	7	1.7	1	0.2	0	0	22.7	26.4
1600	468	9	431	0	27	1	0	0	0	0	0	0	0	22	4.7	2	0.4	0	0	23.9	27.5
1700	304	2	271	2	29	0	0	0	0	0	0	0	0	20	6.6	0	0	0	0	24.4	28.2
1800	169	0	156	1	11	0	1	0	0	0	0	0	0	25	14.8	1	0.6	0	0	25.4	29.5
1900	101	1	90	0	10	0	0	0	0	0	0	0	0	15	14.9	1	1	0	0	25.8	29.8
2000	67	0	58	0	8	1	0	0	0	0	0	0	0	19	28.4	4	6	0	0	26.9	32.2
2100	44	0	41	0	3	0	0	0	0	0	0	0	0	13	29.5	2	4.5	0	0	26.5	31.8
2200	31	0	28	0	3	0	0	0	0	0	0	0	0	10	32.3	1	3.2	0	0	27	31.3
2300	39	0	37	0	2	0	0	0	0	0	0	0	0	6	15.4	2	5.1	0	0	25.6	29.1
07-19	2434	153	2026	9	196	5	25	0	1	1	10	5	3	153	6.3	15	0.6	0	0	23.8	27.7
06-22	2650	154	2218	9	218	6	25	0	1	1	10	5	3	201	7.6	22	0.8	0	0	24	28.2
06-00	2720	154	2283	9	223	6	25	0	1	1	10	5	3	217	8	25	0.9	0	0	24	28.2
00-00	2744	155	2302	9	227	6	25	0	1	1	10	5	3	230	8.4	30	1.1	0	0	24.1	28.2

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	29	0	24	0	5	0	0	0	0	0	0	0	0	9	31	1	3.4	0	0	27.2	32
0100	23	0	20	0	3	0	0	0	0	0	0	0	0	12	52.2	6	26.1	0	0	30	36.2
0200	4	0	4	0	0	0	0	0	0	0	0	0	0	4	100	1	25	0	0	34	-
0300	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	0	23.7	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.5	-
0500	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	30.8	-
0600	4	0	4	0	0	0	0	0	0	0	0	0	0	2	50	1	25	0	0	31.8	-
0700	5	0	5	0	0	0	0	0	0	0	0	0	0	1	20	0	0	0	0	22.9	-
0800	19	0	18	1	0	0	0	0	0	0	0	0	0	3	15.8	0	0	0	0	25.7	29.3
0900	61	2	51	1	6	0	1	0	0	0	0	0	0	9	14.8	1	1.6	0	0	24.9	29.8
1000	138	15	103	2	14	0	2	0	0	1	0	0	1	6	4.3	0	0	0	0	23.6	27.7
1100	209	21	176	0	7	0	4	0	0	1	0	0	0	13	6.2	0	0	0	0	23.6	28.4
1200	226	6	200	0	15	0	2	0	1	0	0	1	1	9	4	2	0.9	0	0	23.2	27.7
1300	159	5	136	0	10	0	4	0	1	0	3	0	0	14	8.8	3	1.9	0	0	24.2	28.6
1400	234	12	205	1	12	1	3	0	0	0	0	0	0	9	3.8	0	0	0	0	23.2	26.8
1500	316	10	278	0	26	0	1	0	0	0	1	0	0	15	4.7	4	1.3	0	0	23.6	27.1
1600	377	7	348	1	21	0	0	0	0	0	0	0	0	17	4.5	1	0.3	0	0	24.3	27.7
1700	249	6	219	2	20	0	0	1	0	0	1	0	0	23	9.2	2	0.8	0	0	24.7	28.4
1800	191	0	179	1	11	0	0	0	0	0	0	0	0	20	10.5	3	1.6	0	0	25.2	28.6
1900	128	0	119	0	9	0	0	0	0	0	0	0	0	30	23.4	4	3.1	0	0	26.2	30.6
2000	65	2	58	0	5	0	0	0	0	0	0	0	0	20	30.8	2	3.1	0	0	28.2	32.4
2100	26	0	25	0	1	0	0	0	0	0	0	0	0	5	19.2	0	0	0	0	26.6	30.4
2200	25	0	24	0	1	0	0	0	0	0	0	0	0	8	32	3	12	0	0	28.9	33.3
2300	33	0	31	0	2	0	0	0	0	0	0	0	0	12	36.4	4	12.1	0	0	28.9	32.9
07-19	2184	84	1918	9	142	1	17	1	2	2	5	1	2	139	6.4	16	0.7	0	0	24	28
06-22	2407	86	2124	9	157	1	17	1	2	2	5	1	2	196	8.1	23	1	0	0	24.3	28.4
06-00	2465	86	2179	9	160	1	17	1	2	2	5	1	2	216	8.8	30	1.2	0	0	24.4	28.6
00-00	2526	86	2232	9	168	1	17	1	2	2	5	1	2	243	9.6	38	1.5	0	0	24.5	28.6

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	21	0	17	0	4	0	0	0	0	0	0	0	0	10	47.6	1	4.8	1	4.8	30.3	33.6
0100	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	-
0200	5	0	4	0	1	0	0	0	0	0	0	0	0	4	80	2	40	0	0	33.2	-
0300	3	0	3	0	0	0	0	0	0	0	0	0	0	2	66.7	2	66.7	0	0	29.5	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	1	50	0	0	35.5	-
0500	3	0	3	0	0	0	0	0	0	0	0	0	0	3	100	2	66.7	0	0	35.3	-
0600	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.8	-
0700	13	0	11	0	1	1	0	0	0	0	0	0	0	4	30.8	2	15.4	0	0	27.2	33.1
0800	41	7	26	2	5	0	1	0	0	0	0	0	0	7	17.1	2	4.9	0	0	24.6	30.2
0900	86	8	65	0	9	0	2	0	2	0	0	0	0	10	11.6	2	2.3	0	0	24.7	28.9
1000	146	17	115	1	11	0	1	0	0	0	1	0	0	4	2.7	0	0	0	0	21.1	25.5
1100	230	25	190	2	10	1	1	0	0	0	1	0	0	1	0.4	0	0	0	0	18.8	23.9
1200	186	15	159	2	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	18.7	23
1300	310	17	271	1	12	1	5	0	0	2	1	0	0	3	1	1	0.3	0	0	20.5	24.6
1400	439	19	395	0	21	2	1	0	0	0	0	1	0	6	1.4	2	0.5	0	0	21.2	25.1
1500	697	22	619	4	46	3	1	1	0	0	1	0	0	4	0.6	0	0	0	0	20.2	24.4
1600	855	13	776	5	46	13	2	0	0	0	0	0	0	6	0.7	0	0	0	0	18	24.2
1700	834	15	746	3	55	7	4	0	0	0	3	1	0	2	0.2	0	0	0	0	18.5	24.2
1800	594	6	533	1	54	0	0	0	0	0	0	0	0	15	2.5	0	0	0	0	23.4	26.2
1900	371	7	334	3	25	0	2	0	0	0	0	0	0	22	5.9	2	0.5	0	0	24.8	28.2
2000	119	1	109	1	8	0	0	0	0	0	0	0	0	21	17.6	2	1.7	0	0	26.1	30.2
2100	33	0	30	0	3	0	0	0	0	0	0	0	0	14	42.4	2	6.1	0	0	27.9	32.2
2200	8	0	8	0	0	0	0	0	0	0	0	0	0	4	50	1	12.5	0	0	30.2	-
2300	12	0	12	0	0	0	0	0	0	0	0	0	0	7	58.3	5	41.7	1	8.3	33.4	40.5
07-19	4431	164	3906	21	278	28	20	1	2	2	7	2	0	62	1.4	9	0.2	0	0	20	25.1
06-22	4957	172	4382	25	314	28	22	1	2	2	7	2	0	119	2.4	15	0.3	0	0	20.6	25.7
06-00	4977	172	4402	25	314	28	22	1	2	2	7	2	0	130	2.6	21	0.4	1	0	20.6	25.7
00-00	5014	172	4434	25	319	28	22	1	2	2	7	2	0	151	3	29	0.6	2	0	20.7	25.7

Site 5
 Location B61 60 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	2	100	0	0	38.1	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	30.6	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	30.4	-
0500	4	0	3	0	1	0	0	0	0	0	0	0	0	3	75	1	25	0	0	31	-
0600	10	0	6	0	2	0	0	0	2	0	0	0	0	4	40	0	0	0	0	26.7	-
0700	30	2	24	0	4	0	0	0	0	0	0	0	0	11	36.7	3	10	0	0	28	33.3
0800	52	2	35	0	12	2	0	0	1	0	0	0	0	23	44.2	3	5.8	0	0	27.7	32.4
0900	41	1	32	0	6	1	0	0	1	0	0	0	0	13	31.7	0	0	0	0	26.9	32.7
1000	102	3	84	1	13	1	0	0	0	0	0	0	0	9	8.8	0	0	0	0	23.6	27.7
1100	112	9	83	1	13	0	4	0	0	0	1	1	0	6	5.4	2	1.8	0	0	22.5	27.3
1200	119	17	85	1	11	0	3	0	0	0	2	0	0	5	4.2	1	0.8	0	0	23.5	27.1
1300	145	10	122	0	9	0	4	0	0	0	0	0	0	11	7.6	1	0.7	0	0	23.3	28
1400	273	5	242	2	23	0	1	0	0	0	0	0	0	10	3.7	1	0.4	0	0	24	27.3
1500	328	8	311	1	4	0	4	0	0	0	0	0	0	15	4.6	1	0.3	0	0	24	28
1600	376	10	334	1	25	0	5	0	1	0	0	0	0	16	4.3	1	0.3	0	0	23.5	28.2
1700	333	10	306	1	15	0	0	0	0	0	1	0	0	19	5.7	3	0.9	0	0	24.3	27.7
1800	219	8	195	1	13	0	1	1	0	0	0	0	0	30	13.7	5	2.3	0	0	26	29.3
1900	135	10	116	0	8	0	0	0	1	0	0	0	0	15	11.1	1	0.7	0	0	25.4	29.1
2000	92	0	87	0	4	1	0	0	0	0	0	0	0	14	15.2	2	2.2	0	0	27	29.8
2100	19	0	19	0	0	0	0	0	0	0	0	0	0	2	10.5	0	0	0	0	26.5	28.4
2200	10	0	10	0	0	0	0	0	0	0	0	0	0	4	40	1	10	0	0	29	-
2300	19	1	17	0	1	0	0	0	0	0	0	0	0	10	52.6	4	21.1	0	0	29.8	35.1
07-19	2130	85	1853	9	148	4	22	1	3	0	4	1	0	168	7.9	21	1	0	0	24.2	28.2
06-22	2386	95	2081	9	162	5	22	1	6	0	4	1	0	203	8.5	24	1	0	0	24.4	28.4
06-00	2415	96	2108	9	163	5	22	1	6	0	4	1	0	217	9	29	1.2	0	0	24.5	28.6
00-00	2424	96	2116	9	164	5	22	1	6	0	4	1	0	224	9.2	32	1.3	0	0	24.5	28.6

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	9	0	9	0	0	0	0	0	0	0	0	0	0	8	88.9	2	22.2	0	0	34.6	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	31.8	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	3	0	1	0	2	0	0	0	0	0	0	0	0	2	66.7	0	0	0	0	32.8	-
0600	8	0	6	0	2	0	0	0	0	0	0	0	0	3	37.5	0	0	0	0	26.7	-
0700	28	1	24	1	1	0	0	0	1	0	0	0	0	12	42.9	5	17.9	0	0	28.3	35.6
0800	51	3	38	2	7	1	0	0	0	0	0	0	0	20	39.2	5	9.8	0	0	28	33.3
0900	70	1	57	1	10	0	1	0	0	0	0	0	0	14	20	4	5.7	0	0	26.1	30.4
1000	96	1	82	2	9	1	0	1	0	0	0	0	0	13	13.5	2	2.1	0	0	25.6	29.8
1100	129	4	105	3	12	0	5	0	0	0	0	0	0	7	5.4	3	2.3	0	0	23	26.6
1200	123	10	102	1	9	0	1	0	0	0	0	0	0	15	12.2	1	0.8	0	0	23.9	28.9
1300	133	8	99	1	22	0	3	0	0	0	0	0	0	23	17.3	2	1.5	0	0	25.5	30.2
1400	208	9	174	1	21	1	2	0	0	0	0	0	0	14	6.7	1	0.5	0	0	23.5	27.5
1500	296	5	275	0	14	0	2	0	0	0	0	0	0	18	6.1	1	0.3	0	0	24.7	28
1600	272	4	252	1	14	1	0	0	0	0	0	0	0	38	14	2	0.7	0	0	25.5	29.3
1700	176	2	159	1	14	0	0	0	0	0	0	0	0	24	13.6	1	0.6	0	0	25.6	29.8
1800	114	5	99	0	6	1	1	1	0	0	0	1	0	21	18.4	4	3.5	0	0	25.7	30.9
1900	64	6	53	0	3	0	2	0	0	0	0	0	0	11	17.2	3	4.7	0	0	25.9	30
2000	50	1	48	0	1	0	0	0	0	0	0	0	0	10	20	1	2	0	0	26.8	30.6
2100	18	0	17	0	1	0	0	0	0	0	0	0	0	5	27.8	0	0	0	0	28	30.9
2200	10	0	10	0	0	0	0	0	0	0	0	0	0	4	40	1	10	0	0	28.7	-
2300	10	0	10	0	0	0	0	0	0	0	0	0	0	7	70	2	20	1	10	32	-
07-19	1696	53	1466	14	139	5	15	2	1	0	0	1	0	219	12.9	31	1.8	0	0	25	29.3
06-22	1836	60	1590	14	146	5	17	2	1	0	0	1	0	248	13.5	35	1.9	0	0	25.1	29.5
06-00	1856	60	1610	14	146	5	17	2	1	0	0	1	0	259	14	38	2	1	0.1	25.2	29.5
00-00	1871	60	1622	14	149	5	17	2	1	0	0	1	0	271	14.5	41	2.2	1	0.1	25.2	29.8

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	6	0	0	0	0	0	0	0	0	0	0	5	83.3	2	33.3	0	0	33.8	-
0100	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	1	50	0	0	35.3	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0300	2	0	1	0	1	0	0	0	0	0	0	0	0	1	50	1	50	0	0	30.6	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	2	0	1	0	1	0	0	0	0	0	0	0	0	2	100	0	0	0	0	33.5	-
0600	5	0	4	0	1	0	0	0	0	0	0	0	0	2	40	1	20	0	0	31.3	-
0700	33	1	23	0	8	1	0	0	0	0	0	0	0	13	39.4	5	15.2	0	0	27.5	34.7
0800	37	1	30	0	5	0	0	0	0	1	0	0	0	22	59.5	5	13.5	0	0	29.3	34
0900	65	1	51	2	10	0	0	0	0	1	0	0	0	19	29.2	3	4.6	0	0	27.2	31.8
1000	90	7	68	0	13	1	1	0	0	0	0	0	0	13	14.4	3	3.3	0	0	24.7	29.3
1100	117	8	99	0	7	0	3	0	0	0	0	0	0	16	13.7	3	2.6	0	0	24.4	29.3
1200	128	11	96	2	12	3	4	0	0	0	0	0	0	11	8.6	1	0.8	0	0	23.7	28.4
1300	159	10	131	1	15	0	2	0	0	0	0	0	0	12	7.5	2	1.3	0	0	23.7	28.4
1400	234	7	202	0	19	1	5	0	0	0	0	0	0	13	5.6	1	0.4	0	0	23.4	27.7
1500	295	10	267	0	18	0	0	0	0	0	0	0	0	12	4.1	0	0	0	0	23.9	28
1600	311	8	276	0	25	0	2	0	0	0	0	0	0	16	5.1	0	0	0	0	24	28
1700	192	6	177	1	7	0	1	0	0	0	0	0	0	29	15.1	1	0.5	0	0	26.1	30
1800	113	7	99	0	5	0	1	1	0	0	0	0	0	27	23.9	5	4.4	0	0	26.5	30.9
1900	73	6	62	1	4	0	0	0	0	0	0	0	0	16	21.9	4	5.5	0	0	26.2	31.8
2000	44	1	35	0	2	0	4	0	0	0	1	1	0	10	22.7	5	11.4	0	0	25.9	31.3
2100	20	1	18	0	1	0	0	0	0	0	0	0	0	4	20	0	0	0	0	26.8	30
2200	20	0	18	0	2	0	0	0	0	0	0	0	0	7	35	3	15	0	0	28	31.8
2300	7	0	6	0	1	0	0	0	0	0	0	0	0	3	42.9	2	28.6	0	0	29.4	-
07-19	1774	77	1519	6	144	6	19	1	0	2	0	0	0	203	11.4	29	1.6	0	0	24.6	29.1
06-22	1916	85	1638	7	152	6	23	1	0	2	1	1	0	235	12.3	39	2	0	0	24.7	29.3
06-00	1943	85	1662	7	155	6	23	1	0	2	1	1	0	245	12.6	44	2.3	0	0	24.8	29.3
00-00	1955	85	1672	7	157	6	23	1	0	2	1	1	0	255	13	48	2.5	0	0	24.8	29.5

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	12	0	10	0	2	0	0	0	0	0	0	0	0	6	52.4	2	13.4	0	2.4	30.2	34.7
0100	5	0	5	0	1	0	0	0	0	0	0	0	0	3	52.8	1	22.2	0	0	30.4	-
0200	3	0	2	0	0	0	0	0	0	0	0	0	0	2	66.7	1	22.2	0	0	30.7	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	1	55.6	1	44.4	0	0	29	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	83.3	0	50	0	0	34.4	-
0500	2	0	2	0	1	0	0	0	0	0	0	0	0	2	82.4	1	29.4	0	0	32.1	-
0600	6	0	5	0	1	0	0	0	0	0	0	0	0	2	35	0	7.5	0	0	27.6	-
0700	22	1	17	0	3	0	0	0	0	0	0	0	0	8	38.2	3	13.8	0	0	27.7	34.7
0800	39	3	29	1	6	1	0	0	0	0	0	0	0	14	36	2	6.3	0	0	27.4	32.9
0900	67	4	53	1	9	0	1	0	0	0	0	0	0	13	19.6	2	3	0	0	25.8	30.6
1000	120	11	92	1	13	0	1	0	0	0	0	0	0	11	8.9	1	0.8	0	0	23.7	28.2
1100	159	16	126	1	11	0	3	0	0	0	1	1	0	9	5.6	1	0.8	0	0	22.4	27.3
1200	156	13	126	1	10	1	3	0	0	0	0	0	0	8	5.1	1	0.6	0	0	22.6	27.5
1300	186	13	153	0	15	0	3	0	0	0	1	0	0	11	6.1	2	1	0	0	22.9	27.5
1400	277	11	242	1	20	1	2	0	0	0	1	0	0	11	4	1	0.5	0	0	23	27.1
1500	387	12	348	1	23	1	2	0	0	0	0	0	0	13	3.5	1	0.3	0	0	22.9	27.1
1600	443	9	402	1	26	2	2	0	0	0	0	0	0	20	4.5	1	0.3	0	0	22.4	27.3
1700	335	7	301	2	22	1	1	0	0	0	1	0	0	21	6.1	1	0.3	0	0	22.6	27.7
1800	224	5	200	1	16	0	1	1	0	0	0	0	0	24	10.7	3	1.3	0	0	24.9	28.9
1900	138	5	123	1	9	0	1	0	0	0	0	0	0	19	13.6	3	2.2	0	0	25.6	29.5
2000	72	1	64	0	5	0	1	0	0	0	0	0	0	16	22.3	3	3.8	0	0	26.8	30.9
2100	29	1	26	0	2	0	0	0	0	0	0	0	0	8	27	1	2.9	0	0	27.3	31.5
2200	20	0	19	0	1	0	0	0	0	0	0	0	0	7	33.8	2	9.2	0	0	28.1	32.2
2300	21	0	20	0	1	0	0	0	0	0	0	0	0	8	37.5	3	16.7	0	1.4	28.7	35.3
07-19	2414	104	2088	11	175	7	19	1	1	1	4	1	1	163	6.8	20	0.8	0	0	23.1	27.7
06-22	2660	111	2307	12	192	8	20	1	2	1	5	2	1	208	7.8	27	1	0	0	23.4	28.2
06-00	2701	111	2345	12	194	8	20	1	2	1	5	2	1	223	8.2	33	1.2	0	0	23.5	28.2
00-00	2725	111	2366	12	198	8	20	1	2	1	5	2	1	237	8.7	38	1.4	1	0	23.6	28.4



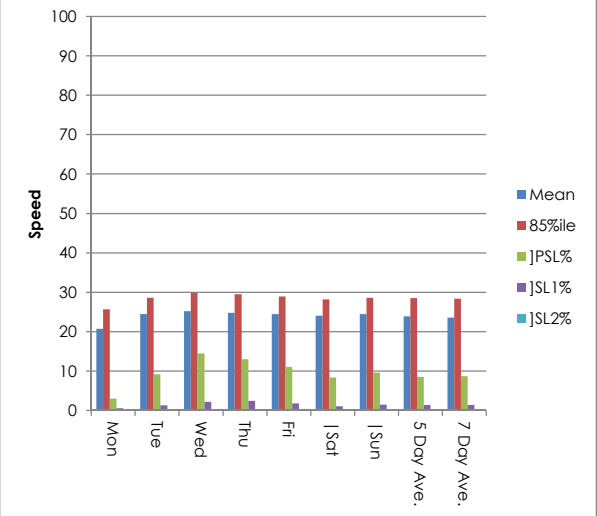
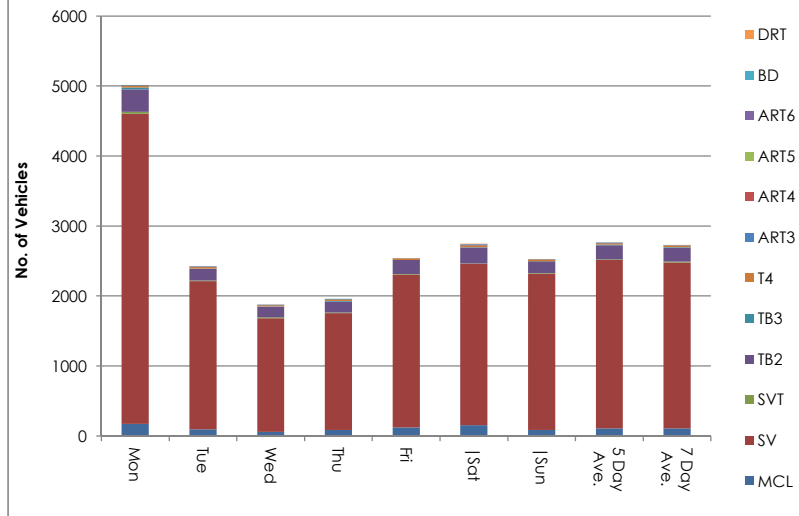
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	5014	172	4434	25	319	28	22	1	2	2	7	2	0	151	3	29	0.6	2	0	20.7	25.7
Tue	2424	96	2116	9	164	5	22	1	6	0	4	1	0	224	9.2	32	1.3	0	0	24.5	28.6
Wed	1871	60	1622	14	149	5	17	2	1	0	0	1	0	271	14.5	41	2.2	1	0.1	25.2	29.8
Thu	1955	85	1672	7	157	6	23	1	0	2	1	1	0	255	13	48	2.5	0	0	24.8	29.5
Fri	2540	122	2182	9	201	2	16	1	0	1	5	0	1	282	11.1	46	1.8	1	0	24.5	28.9
Sat	2744	155	2302	9	227	6	25	0	1	1	10	5	3	230	8.4	30	1.1	0	0	24.1	28.2
Sun	2526	86	2232	9	168	1	17	1	2	2	5	1	2	243	9.6	38	1.5	0	0	24.5	28.6
5 Day Ave.	2761	107	2405	13	198	9	20	1	2	1	3	1	0	237	8.6	39	1.4	1	0.0	23.9	28.5
7 Day Ave.	2725	111	2366	12	198	8	20	1	2	1	5	2	1	237	8.7	38	1.4	1	0.0	23.6	28.4
--	19074	776	16560	82	1385	53	142	7	12	8	32	11	6	1656	8.7	264	1.4	4	0.0	23.6	28.4

Summary Graphs



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	4	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	6	0	0	1	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	24	0	0	1	1	5	8	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	41	0	0	1	3	4	15	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	73	0	0	1	3	30	29	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	112	0	0	3	11	43	41	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	142	0	1	7	22	58	43	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	159	0	0	3	35	66	46	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	200	0	0	7	44	88	51	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	265	1	0	9	42	112	88	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	369	0	1	4	43	147	151	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	443	3	6	14	59	189	147	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	259	0	3	3	30	101	95	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	165	0	0	2	12	53	69	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	97	0	0	1	9	15	49	17	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	69	0	0	0	7	19	24	16	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	44	0	0	0	0	6	26	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	38	0	0	1	4	5	17	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	24	0	0	0	1	7	7	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2252	4	11	55	305	896	783	176	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2468	4	11	57	321	937	884	220	30	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2530	4	11	58	326	949	908	232	36	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2540	4	11	58	327	950	908	236	39	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Saturday 27 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	11	0	0	0	0	1	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	8	0	0	0	0	0	3	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	4	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	19	0	1	0	3	1	6	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	31	0	0	0	1	9	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	74	0	0	3	7	19	28	14	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	155	0	1	4	29	57	48	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	177	0	1	4	28	85	51	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	149	0	1	10	32	49	50	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	193	0	1	6	45	86	49	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	286	0	0	3	54	123	94	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	409	0	3	18	68	195	118	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	468	0	6	7	45	227	161	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	304	0	2	7	30	130	115	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	169	0	0	2	8	68	66	24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	101	0	0	2	7	36	41	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	67	0	0	0	2	27	19	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	44	0	0	1	3	14	13	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	31	0	0	0	2	7	12	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	39	0	0	0	3	17	13	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2434	0	16	64	350	1049	802	138	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2650	0	16	67	363	1126	877	179	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2720	0	16	67	368	1150	902	192	23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2744	0	16	67	370	1151	910	200	27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	29	0	0	0	2	8	10	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	23	0	0	0	1	3	7	6	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	4	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	4	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	5	0	0	0	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	19	0	0	1	2	3	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	61	0	0	3	9	16	24	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	138	0	1	6	16	53	56	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	209	0	1	6	39	79	71	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	226	0	0	17	36	83	81	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	159	0	0	3	19	69	54	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	234	0	1	9	37	104	74	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	316	0	0	19	30	153	99	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	377	0	0	6	40	159	155	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	249	0	0	0	36	86	104	21	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	191	0	0	5	13	63	90	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	128	0	0	3	10	36	49	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	65	0	0	1	0	9	35	18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	26	0	0	0	1	9	11	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	25	0	0	0	1	2	14	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	33	0	0	0	0	8	13	8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2184	0	3	75	280	868	819	123	13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2407	0	3	79	291	922	916	173	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2465	0	3	79	292	932	943	186	24	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2526	0	3	79	296	944	961	205	31	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	21	0	0	0	0	2	9	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	5	0	0	0	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	3	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	13	0	0	0	3	1	5	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	41	0	1	2	6	10	15	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	86	0	0	3	6	36	31	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	146	1	1	14	39	62	25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	230	8	3	35	94	67	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	186	8	2	24	63	76	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	310	0	3	30	110	126	38	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	439	2	1	23	125	217	65	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	697	0	20	86	196	311	80	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	855	1	65	242	209	244	88	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	834	0	62	193	182	307	88	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	594	0	0	6	90	306	177	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	371	0	0	7	23	157	162	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	119	0	0	0	7	42	49	19	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	33	0	0	1	3	4	11	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	8	0	0	0	0	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	12	0	0	0	0	1	4	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4431	20	158	658	1123	1763	647	53	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4957	20	158	666	1156	1968	870	104	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4977	20	158	666	1156	1970	877	109	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	5014	20	158	667	1156	1973	889	122	22	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	10	0	0	0	2	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	30	0	0	0	2	8	9	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	52	0	0	0	6	7	16	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	41	0	0	2	3	7	16	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	102	0	0	6	15	33	39	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	112	0	0	10	25	41	30	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	119	0	0	0	25	57	32	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	145	0	0	7	35	44	48	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	273	0	0	2	38	117	106	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	328	0	1	6	41	140	125	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	376	0	9	16	52	136	147	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	333	0	0	6	30	159	119	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	219	0	0	1	12	70	106	25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	135	0	0	3	13	42	62	14	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	92	0	0	0	6	17	55	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	19	0	0	0	0	6	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	2	4	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	19	0	0	0	1	3	5	6	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2130	0	10	56	284	819	793	147	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2386	0	10	59	305	885	924	179	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2415	0	10	59	306	890	933	188	24	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2424	0	10	59	306	891	934	192	27	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	9	0	0	0	0	0	1	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	3	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	8	0	0	0	2	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	28	0	0	0	5	2	9	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	51	0	0	0	6	8	17	15	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	70	0	0	1	12	11	32	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	96	0	0	3	8	28	44	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	129	0	0	9	22	61	30	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	123	0	0	7	17	47	37	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	133	1	0	2	12	47	48	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	208	0	2	11	31	77	73	13	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	296	0	0	2	21	133	122	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	272	0	0	1	17	112	104	36	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	176	0	0	1	7	78	66	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	114	0	1	5	8	33	46	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	64	0	0	1	12	11	29	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	50	0	0	2	2	8	28	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	18	0	0	0	0	3	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	10	0	0	0	0	2	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	10	0	0	0	0	2	1	5	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1696	1	3	42	166	637	628	188	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1836	1	3	45	182	659	698	213	31	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1856	1	3	45	182	663	703	221	33	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1871	1	3	45	182	663	706	230	34	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Thursday 01 September 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	6	0	0	0	0	1	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	5	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	33	0	0	0	6	6	8	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	37	0	0	0	5	3	7	17	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	65	0	0	0	3	19	24	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	90	0	1	1	12	33	30	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	117	0	0	5	14	50	32	13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	128	0	0	3	22	62	30	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	159	0	1	12	23	53	58	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	234	0	2	7	33	103	76	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	295	0	2	11	35	108	127	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	311	0	1	2	44	136	112	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	192	0	0	3	13	47	100	28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	113	0	1	0	6	28	51	22	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	73	0	0	3	7	16	31	12	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	44	0	0	1	7	11	15	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	20	0	0	0	1	6	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	20	0	0	1	1	4	7	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	7	0	0	0	0	3	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1774	0	8	44	216	648	655	174	27	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	1916	0	8	48	231	681	713	196	36	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	1943	0	8	49	232	688	721	201	40	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	1955	0	8	49	232	689	722	207	42	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Speed Bins (mph)																										
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135
0000	12	0	0	0	0	2	3	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	5	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	6	0	0	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	22	0	0	0	3	3	7	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	39	0	0	1	4	6	14	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	67	0	0	2	6	20	26	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	120	0	1	5	19	44	40	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	159	1	1	11	35	63	40	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	156	1	0	9	33	63	41	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	186	0	1	10	41	73	49	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	277	0	1	9	51	122	82	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	387	0	4	21	62	170	117	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	443	1	12	41	67	172	131	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	335	0	10	30	47	130	98	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	224	0	0	3	21	89	86	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	138	0	0	3	12	45	60	16	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	72	0	0	1	4	19	32	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	29	0	0	0	1	7	13	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	20	0	0	0	1	3	9	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	21	0	0	0	1	6	6	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	2414	4	30	142	389	954	732	143	19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	2660	4	30	146	407	1025	840	181	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	2701	4	30	146	409	1035	855	190	28	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	2725	4	30	146	410	1037	861	199	32	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



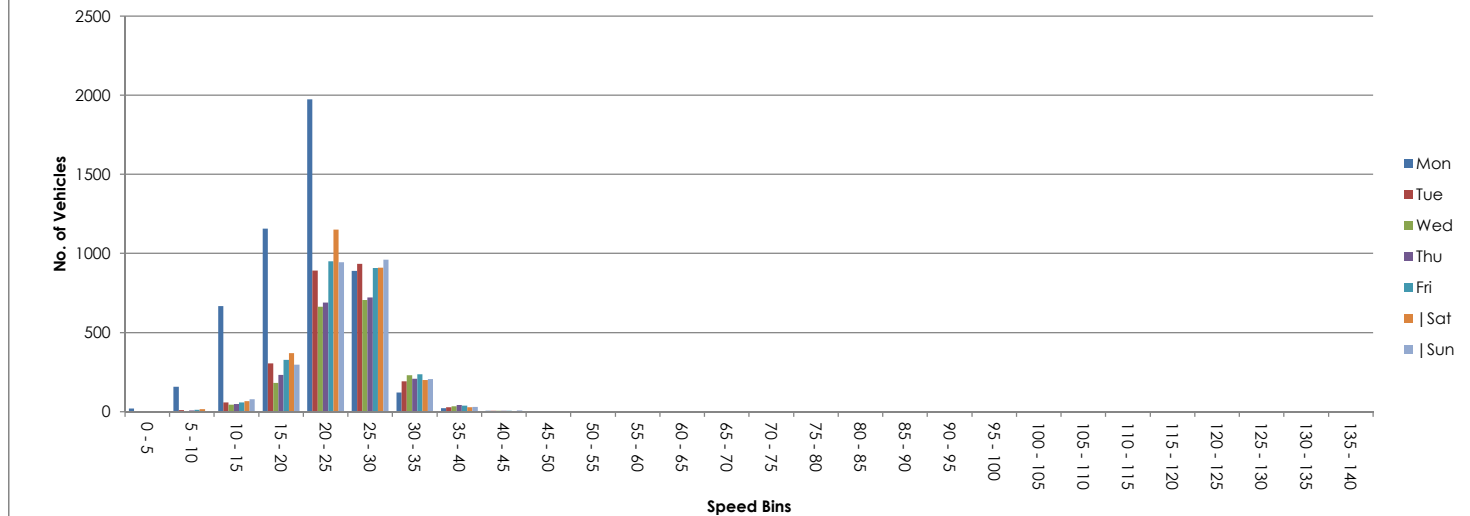
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Southbound

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
Mon	5014	20	158	667	1156	1973	889	122	22	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	2424	0	10	59	306	891	934	192	27	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wed	1871	1	3	45	182	663	706	230	34	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	1955	0	8	49	232	689	722	207	42	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	2540	4	11	58	327	950	908	236	39	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	2744	0	16	67	370	1151	910	200	27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	2526	0	3	79	296	944	961	205	31	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	2761	5	38	176	441	1033	832	197	33	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	2725	4	30	146	410	1037	861	199	32	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	19074	25	209	1024	2869	7261	6030	1392	222	38	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Summary Graphs



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	6	0	6	0	0	0	0	0	0	0	0	0	0	3	50	1	16.7	1	16.7	30.9	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0200	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	31.2	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	1	100	0	0	39.1	-
0500	10	0	7	0	3	0	0	0	0	0	0	0	0	5	50	4	40	0	0	29.6	-
0600	22	0	16	0	6	0	0	0	0	0	0	0	0	7	31.8	3	13.6	0	0	28.3	34.7
0700	70	3	55	0	12	0	0	0	0	0	0	0	0	32	45.7	5	7.1	0	0	29.2	33.6
0800	142	7	108	0	25	2	0	0	0	0	0	0	0	53	37.3	11	7.7	0	0	28.3	33.6
0900	250	6	197	3	40	0	3	0	0	0	1	0	0	55	22	9	3.6	1	0.4	26.7	30.9
1000	420	23	336	2	53	1	4	0	0	0	1	0	0	60	14.3	3	0.7	0	0	25.3	29.8
1100	593	24	494	2	54	1	14	0	1	2	1	0	0	63	10.6	4	0.7	0	0	24.3	29.1
1200	559	32	456	1	60	4	4	0	0	0	2	0	0	70	12.5	5	0.9	0	0	23.9	29.1
1300	497	29	411	3	45	5	2	0	0	0	1	0	1	37	7.4	7	1.4	0	0	23.8	28
1400	509	18	436	4	40	8	0	0	2	0	1	0	0	47	9.2	8	1.6	0	0	24.1	28.6
1500	556	23	479	2	42	7	2	0	0	1	0	0	0	54	9.7	10	1.8	1	0.2	24.9	28.6
1600	583	25	507	4	40	3	4	0	0	0	0	0	0	49	8.4	8	1.4	1	0.2	23.9	28.2
1700	409	14	348	3	35	5	3	0	0	1	0	0	0	58	14.2	5	1.2	0	0	25	29.3
1800	299	11	241	2	39	3	1	1	1	0	0	0	0	77	25.8	13	4.3	0	0	26.8	31.5
1900	183	8	159	1	15	0	0	0	0	0	0	0	0	42	23	14	7.7	2	1.1	27.3	32.4
2000	107	7	86	0	12	0	1	0	0	0	1	0	0	34	31.8	11	10.3	0	0	27.7	32.7
2100	67	4	51	0	12	0	0	0	0	0	0	0	0	19	28.4	3	4.5	0	0	28.1	32
2200	55	0	53	0	2	0	0	0	0	0	0	0	0	20	36.4	6	10.9	0	0	28.2	33.6
2300	34	0	32	0	2	0	0	0	0	0	0	0	0	14	41.2	8	23.5	0	0	28.9	36
07-19	4887	215	4068	26	485	39	37	1	4	4	7	0	1	655	13.4	88	1.8	3	0.1	24.8	29.5
06-22	5266	234	4380	27	530	39	38	1	4	4	8	0	1	757	14.4	119	2.3	5	0.1	25	29.8
06-00	5355	234	4465	27	534	39	38	1	4	4	8	0	1	791	14.8	133	2.5	5	0.1	25.1	29.8
00-00	5373	234	4480	27	537	39	38	1	4	4	8	0	1	801	14.9	139	2.6	6	0.1	25.1	29.8

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Saturday 27 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	17	0	13	0	4	0	0	0	0	0	0	0	0	11	64.7	4	23.5	0	0	31.5	35.3
0100	10	0	8	0	2	0	0	0	0	0	0	0	0	6	60	2	20	0	0	32	-
0200	6	1	3	1	1	0	0	0	0	0	0	0	0	2	33.3	2	33.3	0	0	27.2	-
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	1	50	0	0	31.6	-
0400	2	0	1	0	1	0	0	0	0	0	0	0	0	2	100	1	50	0	0	33.6	-
0500	5	0	3	0	2	0	0	0	0	0	0	0	0	1	20	1	20	0	0	28.4	-
0600	19	1	12	0	6	0	0	0	0	0	0	0	0	6	31.6	0	0	0	0	26.3	32.4
0700	61	11	45	0	4	0	0	1	0	0	0	0	0	19	31.1	7	11.5	0	0	27.9	33.8
0800	113	21	70	2	14	4	2	0	0	0	0	0	0	34	30.1	8	7.1	0	0	26.4	32.2
0900	269	37	183	1	34	2	8	0	0	2	0	2	0	64	23.8	11	4.1	0	0	26.2	31.1
1000	509	65	358	1	58	2	14	0	0	0	6	2	3	77	15.1	19	3.7	1	0.2	25.2	30
1100	598	61	458	1	66	1	5	0	0	0	2	3	1	38	6.4	8	1.3	0	0	23.7	27.7
1200	584	40	467	3	55	2	12	0	1	0	2	1	1	37	6.3	6	1	1	0.2	23.2	28
1300	602	30	499	3	62	2	3	0	1	0	2	0	0	48	8	7	1.2	1	0.2	23.6	28
1400	537	23	456	2	44	0	5	0	1	0	5	1	0	35	6.5	6	1.1	0	0	23.7	27.5
1500	604	15	527	1	54	4	3	0	0	0	0	0	0	19	3.1	2	0.3	0	0	23	26.8
1600	583	10	534	0	37	2	0	0	0	0	0	0	0	52	8.9	6	1	0	0	24.3	28.2
1700	409	4	364	2	37	2	0	0	0	0	0	0	0	32	7.8	2	0.5	0	0	24.5	28.6
1800	260	0	233	1	21	3	1	0	1	0	0	0	0	43	16.5	5	1.9	0	0	25.9	30.2
1900	167	1	142	0	23	1	0	0	0	0	0	0	0	27	16.2	2	1.2	0	0	25.8	30.4
2000	103	0	92	0	10	1	0	0	0	0	0	0	0	25	24.3	5	4.9	0	0	26.6	30.9
2100	61	0	55	0	5	1	0	0	0	0	0	0	0	19	31.1	5	8.2	0	0	27.1	32.2
2200	47	0	41	0	5	1	0	0	0	0	0	0	0	15	31.9	2	4.3	0	0	27	31.5
2300	58	0	52	0	6	0	0	0	0	0	0	0	0	11	19	4	6.9	0	0	26.3	31.1
07-19	5129	317	4194	17	486	24	53	1	4	2	17	9	5	498	9.7	87	1.7	3	0.1	24.2	28.6
06-22	5479	319	4495	17	530	27	53	1	4	2	17	9	5	575	10.5	99	1.8	3	0.1	24.3	28.9
06-00	5584	319	4588	17	541	28	53	1	4	2	17	9	5	601	10.8	105	1.9	3	0.1	24.4	29.1
00-00	5626	320	4618	18	551	28	53	1	4	2	17	9	5	624	11.1	116	2.1	3	0.1	24.4	29.1



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	44	0	35	0	9	0	0	0	0	0	0	0	0	20	45.5	5	11.4	0	0	28.6	34
0100	32	0	28	0	3	1	0	0	0	0	0	0	0	14	43.8	6	18.8	0	0	28.7	35.3
0200	4	0	4	0	0	0	0	0	0	0	0	0	0	4	100	1	25	0	0	34	-
0300	3	0	3	0	0	0	0	0	0	0	0	0	0	1	33.3	0	0	0	0	23.7	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	29.9	-
0500	4	0	3	0	1	0	0	0	0	0	0	0	0	2	50	0	0	0	0	29.2	-
0600	15	0	13	0	2	0	0	0	0	0	0	0	0	6	40	2	13.3	0	0	29.2	32.2
0700	40	2	34	0	3	0	1	0	0	0	0	0	0	10	25	2	5	0	0	25.2	31.5
0800	72	2	59	2	7	0	1	0	1	0	0	0	0	18	25	5	6.9	0	0	27.1	31.5
0900	220	12	178	2	20	2	4	0	0	0	1	1	0	37	16.8	7	3.2	0	0	25.5	30.2
1000	430	33	344	3	35	1	11	0	0	1	1	0	1	29	6.7	1	0.2	0	0	24.3	28.4
1100	575	38	480	0	44	1	8	0	1	2	1	0	0	40	7	3	0.5	0	0	23.6	28.4
1200	630	28	543	0	48	1	6	0	1	1	0	1	1	32	5.1	4	0.6	0	0	23.4	27.7
1300	471	14	402	0	44	0	7	0	1	0	3	0	0	33	7	4	0.8	0	0	23.8	28.2
1400	429	21	355	1	47	1	4	0	0	0	0	0	0	44	10.3	6	1.4	1	0.2	23.9	28
1500	513	16	444	0	49	1	2	0	0	0	1	0	0	25	4.9	6	1.2	0	0	23.4	26.8
1600	522	11	469	1	38	2	0	0	1	0	0	0	0	29	5.6	3	0.6	0	0	24.3	28
1700	356	12	301	2	37	1	1	1	0	0	1	0	0	50	14	9	2.5	3	0.8	25.2	29.5
1800	289	0	267	1	20	1	0	0	0	0	0	0	0	42	14.5	11	3.8	0	0	25.8	29.8
1900	189	1	173	0	13	2	0	0	0	0	0	0	0	44	23.3	9	4.8	0	0	26.3	31.1
2000	89	2	78	0	9	0	0	0	0	0	0	0	0	28	31.5	5	5.6	1	1.1	28.5	33.1
2100	41	0	40	0	1	0	0	0	0	0	0	0	0	9	22	0	0	0	0	27.1	31.8
2200	34	0	31	0	3	0	0	0	0	0	0	0	0	14	41.2	4	11.8	0	0	29.1	33.3
2300	41	0	39	0	2	0	0	0	0	0	0	0	0	20	48.8	6	14.6	0	0	29.7	34.4
07-19	4547	189	3876	12	392	11	45	1	5	4	8	2	2	389	8.6	61	1.3	4	0.1	24.2	28.6
06-22	4881	192	4180	12	417	13	45	1	5	4	8	2	2	476	9.8	77	1.6	5	0.1	24.4	28.6
06-00	4956	192	4250	12	422	13	45	1	5	4	8	2	2	510	10.3	87	1.8	5	0.1	24.4	28.9
00-00	5045	192	4325	12	435	14	45	1	5	4	8	2	2	552	10.9	99	2	5	0.1	24.5	28.9

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Monday 29 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	28	0	19	0	9	0	0	0	0	0	0	0	0	16	57.1	5	17.9	1	3.6	31.3	36
0100	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	-
0200	8	0	6	0	2	0	0	0	0	0	0	0	0	4	50	2	25	0	0	29.3	-
0300	4	0	4	0	0	0	0	0	0	0	0	0	0	3	75	2	50	0	0	30.7	-
0400	5	0	4	0	1	0	0	0	0	0	0	0	0	4	80	2	40	0	0	34.2	-
0500	6	0	5	0	1	0	0	0	0	0	0	0	0	4	66.7	2	33.3	0	0	31.8	-
0600	19	0	15	0	1	1	0	0	2	0	0	0	0	4	21.1	1	5.3	0	0	27.1	30
0700	70	5	54	0	8	1	2	0	0	0	0	0	0	23	32.9	7	10	0	0	27.2	33.6
0800	141	20	96	3	15	2	4	0	0	0	0	0	1	39	27.7	11	7.8	0	0	25.9	32.2
0900	394	38	307	0	37	0	7	0	2	1	1	0	1	69	17.5	12	3	1	0.3	25.2	30.4
1000	836	46	698	5	70	0	9	2	0	2	2	1	1	49	5.9	3	0.4	0	0	22.2	27.5
1100	857	43	725	7	72	4	3	1	0	0	1	1	0	3	0.4	0	0	0	0	14.5	21.9
1200	894	32	760	4	89	0	5	1	1	0	1	1	0	2	0.2	0	0	0	0	14.6	21.5
1300	1047	26	909	8	89	3	6	0	2	2	1	0	1	28	2.7	2	0.2	0	0	19.8	25.3
1400	958	36	846	0	67	5	3	0	0	0	0	1	0	24	2.5	8	0.8	1	0.1	21.7	25.7
1500	989	30	869	5	76	4	2	1	1	0	1	0	0	28	2.8	3	0.3	2	0.2	21	25.3
1600	1028	20	914	5	70	14	4	0	0	0	0	1	0	18	1.8	2	0.2	1	0.1	18.8	24.8
1700	940	19	837	3	66	7	4	0	0	0	3	1	0	8	0.9	1	0.1	0	0	18.9	24.4
1800	687	11	607	1	66	0	2	0	0	0	0	0	0	30	4.4	3	0.4	1	0.1	23.5	26.6
1900	419	9	374	3	27	4	2	0	0	0	0	0	0	37	8.8	7	1.7	0	0	25.3	28.4
2000	141	1	125	1	14	0	0	0	0	0	0	0	0	25	17.7	2	1.4	0	0	26.3	30.4
2100	45	1	39	0	5	0	0	0	0	0	0	0	0	22	48.9	7	15.6	0	0	29	33.8
2200	14	0	14	0	0	0	0	0	0	0	0	0	0	6	42.9	2	14.3	0	0	29.7	32.4
2300	15	0	15	0	0	0	0	0	0	0	0	0	0	9	60	6	40	1	6.7	33.5	41.8
07-19	8841	326	7622	41	725	40	51	5	6	5	10	6	4	321	3.6	52	0.6	6	0.1	19.8	25.7
06-22	9465	337	8175	45	772	45	53	5	8	5	10	6	4	409	4.3	69	0.7	6	0.1	20.2	26.2
06-00	9494	337	8204	45	772	45	53	5	8	5	10	6	4	424	4.5	77	0.8	7	0.1	20.2	26.2
00-00	9548	337	8245	45	785	45	53	5	8	5	10	6	4	455	4.8	90	0.9	8	0.1	20.3	26.4



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Tuesday 30 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	2	100	0	0	38.1	-
0100	1	0	0	0	1	0	0	0	0	0	0	0	0	1	100	0	0	0	0	32.6	-
0200	3	0	3	0	0	0	0	0	0	0	0	0	0	2	66.7	0	0	0	0	30.6	-
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	31.2	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	2	100	1	50	0	0	33.4	-
0500	8	0	4	0	4	0	0	0	0	0	0	0	0	4	50	2	25	0	0	30.3	-
0600	35	0	25	0	7	0	0	0	3	0	0	0	0	14	40	0	0	0	0	27.9	32
0700	81	4	65	1	10	0	0	0	1	0	0	0	0	31	38.3	9	11.1	0	0	28.1	33.3
0800	140	4	100	0	28	6	1	0	1	0	0	0	0	61	43.6	12	8.6	0	0	28.6	33.3
0900	243	10	197	1	30	1	2	0	2	0	0	0	0	56	23	4	1.6	0	0	26.1	31.1
1000	452	16	383	3	41	1	5	0	1	0	0	2	0	36	8	3	0.7	0	0	24.3	28.4
1100	537	22	456	1	45	4	7	0	0	0	1	1	0	38	7.1	5	0.9	0	0	23.6	28
1200	514	29	431	3	46	0	3	0	0	0	2	0	0	27	5.3	3	0.6	0	0	23.9	27.7
1300	413	19	340	1	47	1	5	0	0	0	0	0	0	45	10.9	6	1.5	0	0	24.4	28.6
1400	463	10	407	2	41	0	3	0	0	0	0	0	0	26	5.6	3	0.6	0	0	23.7	27.5
1500	490	16	446	2	19	0	5	0	1	0	0	1	0	34	6.9	3	0.6	0	0	24	28.2
1600	482	19	409	3	45	0	5	0	1	0	0	0	0	38	7.9	9	1.9	0	0	24	28.9
1700	424	14	372	2	33	1	1	0	0	0	1	0	0	45	10.6	7	1.7	0	0	25	29.1
1800	311	14	270	1	22	1	1	1	1	0	0	0	0	55	17.7	11	3.5	0	0	26.3	30.4
1900	179	15	148	0	14	0	1	0	1	0	0	0	0	27	15.1	3	1.7	0	0	25.6	29.8
2000	121	0	109	0	10	2	0	0	0	0	0	0	0	23	19	4	3.3	0	0	27.3	30.9
2100	27	0	26	0	1	0	0	0	0	0	0	0	0	7	25.9	2	7.4	0	0	28.1	32.9
2200	20	0	19	0	1	0	0	0	0	0	0	0	0	10	50	2	10	0	0	29.8	33.3
2300	23	1	20	0	2	0	0	0	0	0	0	0	0	12	52.2	4	17.4	0	0	29.9	35.1
07-19	4550	177	3876	20	407	15	38	1	8	0	4	4	0	492	10.8	75	1.6	0	0	24.6	29.1
06-22	4912	192	4184	20	439	17	39	1	12	0	4	4	0	563	11.5	84	1.7	0	0	24.7	29.1
06-00	4955	193	4223	20	442	17	39	1	12	0	4	4	0	585	11.8	90	1.8	0	0	24.8	29.3
00-00	4973	193	4236	20	447	17	39	1	12	0	4	4	0	597	12	95	1.9	0	0	24.8	29.3

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	10	0	10	0	0	0	0	0	0	0	0	0	0	8	80	2	20	0	0	33.3	-
0100	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24.6	-
0200	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	31.8	-
0300	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.4	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
0500	4	0	1	0	3	0	0	0	0	0	0	0	0	2	50	0	0	0	0	31.8	-
0600	25	0	17	0	7	0	0	0	1	0	0	0	0	5	20	2	8	0	0	26.6	30.6
0700	88	7	69	2	8	0	1	0	1	0	0	0	0	32	36.4	10	11.4	0	0	28	34
0800	128	3	101	3	13	7	1	0	0	0	0	0	0	48	37.5	9	7	0	0	28.2	32.9
0900	194	4	154	1	30	3	2	0	0	0	0	0	0	50	25.8	8	4.1	0	0	27.1	31.3
1000	335	10	280	3	36	2	2	1	0	0	1	0	0	56	16.7	13	3.9	0	0	25.8	30.2
1100	433	7	377	3	37	1	5	1	0	1	0	1	0	46	10.6	8	1.8	0	0	24.2	28.6
1200	379	18	314	3	43	0	1	0	0	0	0	0	0	47	12.4	4	1.1	0	0	24.7	29.1
1300	300	19	229	2	44	1	4	0	0	0	1	0	0	52	17.3	7	2.3	0	0	25.3	30.4
1400	415	20	341	2	42	3	2	0	1	1	3	0	0	38	9.2	3	0.7	0	0	24	28.2
1500	424	12	385	1	24	0	2	0	0	0	0	0	0	35	8.3	2	0.5	0	0	24.9	28.4
1600	359	8	317	3	29	1	0	0	0	1	0	0	0	58	16.2	6	1.7	0	0	25.6	30
1700	262	6	227	3	25	1	0	0	0	0	0	0	0	50	19.1	4	1.5	0	0	26.3	30.6
1800	200	13	166	0	16	2	1	1	0	0	0	1	0	46	23	8	4	0	0	26.1	31.5
1900	115	10	94	0	9	0	2	0	0	0	0	0	0	34	29.6	11	9.6	0	0	27	33.3
2000	75	1	70	0	4	0	0	0	0	0	0	0	0	19	25.3	2	2.7	0	0	27.3	31.3
2100	31	0	27	0	4	0	0	0	0	0	0	0	0	12	38.7	0	0	0	0	28.4	31.3
2200	14	0	14	0	0	0	0	0	0	0	0	0	0	5	35.7	1	7.1	0	0	28.7	31.5
2300	18	0	18	0	0	0	0	0	0	0	0	0	0	13	72.2	5	27.8	1	5.6	32.2	35.6
07-19	3517	127	2960	26	347	21	21	3	2	3	5	2	0	558	15.9	82	2.3	0	0	25.4	30
06-22	3763	138	3168	26	371	21	23	3	3	3	5	2	0	628	16.7	97	2.6	0	0	25.5	30.2
06-00	3795	138	3200	26	371	21	23	3	3	3	5	2	0	646	17	103	2.7	1	0	25.5	30.4
00-00	3815	138	3215	26	376	21	23	3	3	3	5	2	0	658	17.2	106	2.8	1	0	25.6	30.4

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Thursday 01 September 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	7	0	7	0	0	0	0	0	0	0	0	0	0	6	85.7	3	42.9	0	0	34.6	-
0100	3	0	2	0	1	0	0	0	0	0	0	0	0	2	66.7	1	33.3	0	0	32.9	-
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.9	-
0300	4	0	2	0	2	0	0	0	0	0	0	0	0	2	50	1	25	0	0	30.7	-
0400	1	0	1	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	33.3	-
0500	4	0	1	0	3	0	0	0	0	0	0	0	0	3	75	1	25	0	0	33.4	-
0600	20	0	15	0	5	0	0	0	0	0	0	0	0	8	40	2	10	0	0	27.1	33.1
0700	83	4	56	0	21	2	0	0	0	0	0	0	0	36	43.4	14	16.9	0	0	28.8	35.6
0800	101	3	82	0	15	0	0	0	0	1	0	0	0	55	54.5	9	8.9	0	0	29.5	33.6
0900	208	4	166	2	30	3	1	0	1	1	0	0	0	51	24.5	8	3.8	0	0	27.4	31.3
1000	396	20	325	1	43	3	3	1	0	0	0	0	0	56	14.1	5	1.3	0	0	25.4	29.8
1100	466	26	404	0	31	0	5	0	0	0	0	0	0	44	9.4	6	1.3	0	0	24.2	28.6
1200	351	18	282	4	36	3	7	0	1	0	0	0	0	43	12.3	4	1.1	0	0	24.2	28.9
1300	343	16	277	1	46	0	3	0	0	0	0	0	0	31	9	9	2.6	0	0	24.4	28.6
1400	408	12	331	0	48	5	9	2	1	0	0	0	0	34	8.3	5	1.2	0	0	23.7	28.4
1500	421	12	368	1	39	1	0	0	0	0	0	0	0	32	7.6	3	0.7	0	0	24.6	28.6
1600	393	11	346	0	34	0	2	0	0	0	0	0	0	27	6.9	2	0.5	0	0	24.4	28.4
1700	264	8	235	1	15	3	1	0	0	1	0	0	0	48	18.2	6	2.3	0	0	26.4	30.6
1800	203	14	170	0	16	0	1	1	0	1	0	0	0	61	30	10	4.9	0	0	27	32.2
1900	147	15	112	2	11	1	2	0	0	0	1	1	2	35	23.8	16	10.9	1	0.7	26.5	32.9
2000	71	2	56	0	5	1	5	0	0	0	1	1	0	14	19.7	5	7	0	0	25.3	30.2
2100	37	1	32	0	4	0	0	0	0	0	0	0	0	7	18.9	2	5.4	0	0	27.5	30
2200	32	0	29	0	3	0	0	0	0	0	0	0	0	12	37.5	3	9.4	0	0	28.2	33.6
2300	11	0	10	0	1	0	0	0	0	0	0	0	0	4	36.4	2	18.2	0	0	28	32.4
07-19	3637	148	3042	10	374	20	32	4	3	4	0	0	0	518	14.2	81	2.2	0	0	25.1	29.8
06-22	3912	166	3257	12	399	22	39	4	3	4	2	2	2	582	14.9	106	2.7	1	0	25.2	29.8
06-00	3955	166	3296	12	403	22	39	4	3	4	2	2	2	598	15.1	111	2.8	1	0	25.2	30
00-00	3975	166	3309	12	410	22	39	4	3	4	2	2	2	612	15.4	117	2.9	1	0	25.3	30

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	16	0	13	0	3	0	0	0	0	0	0	0	0	9	57.9	3	19.3	0	1.8	30.7	36.7
0100	7	0	6	0	1	0	0	0	0	0	0	0	0	3	45.1	1	17.6	0	0	29.4	-
0200	4	0	3	0	1	0	0	0	0	0	0	0	0	2	57.7	1	23.1	0	0	29.6	-
0300	2	0	2	0	0	0	0	0	0	0	0	0	0	1	50	1	25	0	0	29.5	-
0400	2	0	2	0	0	0	0	0	0	0	0	0	0	2	84.6	1	38.5	0	0	33.6	-
0500	6	0	3	0	2	0	0	0	0	0	0	0	0	3	51.2	1	24.4	0	0	30.5	-
0600	22	0	16	0	5	0	0	0	1	0	0	0	0	7	32.3	1	6.5	0	0	27.5	32.7
0700	70	5	54	0	9	0	1	0	0	0	0	0	0	26	37.1	8	11	0	0	28	33.8
0800	120	9	88	1	17	3	1	0	0	0	0	0	0	44	36.8	9	7.8	0	0	27.7	33.1
0900	254	16	197	1	32	2	4	0	1	1	0	0	0	55	21.5	8	3.3	0	0.1	26.2	30.9
1000	483	30	389	3	48	1	7	1	0	0	2	1	1	52	10.7	7	1.4	0	0	24.3	29.1
1100	580	32	485	2	50	2	7	0	0	1	1	1	0	39	6.7	5	0.8	0	0	21.9	27.7
1200	559	28	465	3	54	1	5	0	1	0	1	0	0	37	6.6	4	0.7	0	0	21.7	27.7
1300	525	22	438	3	54	2	4	0	1	0	1	0	0	39	7.5	6	1.1	0	0	22.9	28
1400	531	20	453	2	47	3	4	0	1	0	1	0	0	35	6.7	6	1	0	0.1	23.3	27.5
1500	571	18	503	2	43	2	2	0	0	0	0	0	0	32	5.7	4	0.7	0	0.1	23.3	27.5
1600	564	15	499	2	42	3	2	0	0	0	0	0	0	39	6.9	5	0.9	0	0.1	22.9	28
1700	438	11	383	2	35	3	1	0	0	0	1	0	0	42	9.5	5	1.1	0	0.1	23.3	28.6
1800	321	9	279	1	29	1	1	1	0	0	0	0	0	51	15.7	9	2.7	0	0	25.5	30.2
1900	200	8	172	1	16	1	1	0	0	0	0	0	0	35	17.6	9	4.4	0	0.2	26	30.6
2000	101	2	88	0	9	1	1	0	0	0	0	0	0	24	23.8	5	4.8	0	0.1	27	31.3
2100	44	1	39	0	5	0	0	0	0	0	0	0	0	14	30.7	3	6.1	0	0	27.8	32.2
2200	31	0	29	0	2	0	0	0	0	0	0	0	0	12	38	3	9.3	0	0	28.4	33.3
2300	29	0	27	0	2	0	0	0	0	0	0	0	0	12	41.5	5	17.5	0	1	29	35.6
07-19	5015	214	4234	22	459	24	40	2	5	3	7	3	2	490	9.8	75	1.5	2	0	23.4	28.6
06-22	5383	225	4548	23	494	26	41	2	6	3	8	4	2	570	10.6	93	1.7	3	0.1	23.6	28.9
06-00	5442	226	4604	23	498	26	41	2	6	3	8	4	2	594	10.9	101	1.9	3	0.1	23.7	28.9
00-00	5479	226	4633	23	506	27	41	2	6	3	8	4	2	614	11.2	109	2	3	0.1	23.7	29.1



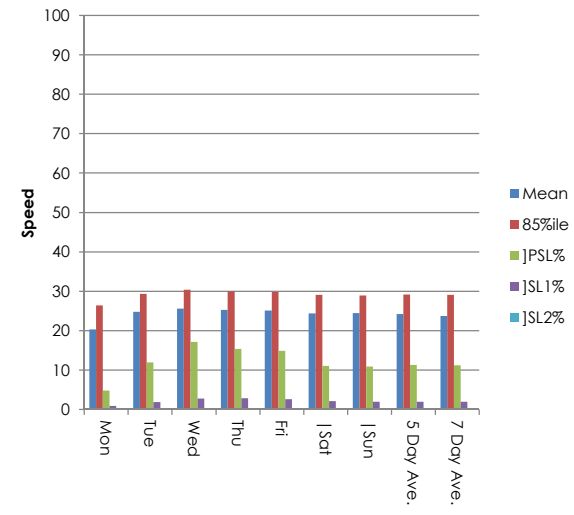
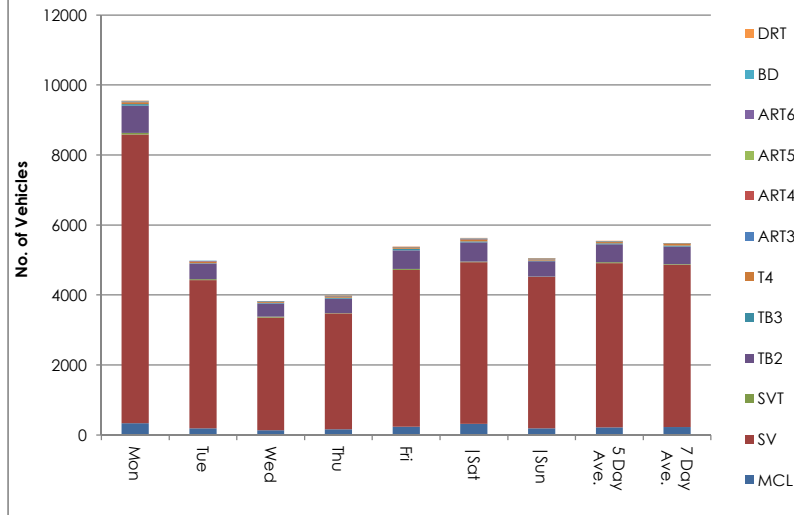
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

Time	Total	Classification												JPSL 30	JPSL% 30	JSL1 35 ACPO	JSL1% 35 ACPO	JSL2 45 DfT	JSL2% 45 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
Mon	9548	337	8245	45	785	45	53	5	8	5	10	6	4	455	4.8	90	0.9	8	0.1	20.3	26.4
Tue	4973	193	4236	20	447	17	39	1	12	0	4	4	0	597	12	95	1.9	0	0	24.8	29.3
Wed	3815	138	3215	26	376	21	23	3	3	3	5	2	0	658	17.2	106	2.8	1	0	25.6	30.4
Thu	3975	166	3309	12	410	22	39	4	3	4	2	2	2	612	15.4	117	2.9	1	0	25.3	30
Fri	5373	234	4480	27	537	39	38	1	4	4	8	0	1	801	14.9	139	2.6	6	0.1	25.1	29.8
Sat	5626	320	4618	18	551	28	53	1	4	2	17	9	5	624	11.1	116	2.1	3	0.1	24.4	29.1
Sun	5045	192	4325	12	435	14	45	1	5	4	8	2	2	552	10.9	99	2	5	0.1	24.5	28.9
5 Day Ave.	5537	214	4697	26	511	29	38	3	6	3	6	3	1	625	11.3	109	2.0	3	0.1	24.2	29.2
7 Day Ave.	5479	226	4633	23	506	27	41	2	6	3	8	4	2	614	11.2	109	2.0	3	0.1	23.7	29.1
--	38355	1580	32428	160	3541	186	290	16	39	22	54	25	14	4299	11.2	762	2.0	24	0.1	23.7	29.1

Summary Graphs



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Friday 26 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	6	0	0	0	0	1	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	10	0	0	0	1	2	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	22	0	0	1	0	5	9	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	70	0	0	1	2	10	25	27	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	142	0	0	1	10	25	53	42	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	250	0	0	1	16	62	116	46	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	420	0	0	15	37	129	179	57	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	593	0	1	14	89	223	203	59	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	559	0	2	20	115	192	160	65	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	497	0	1	17	74	205	163	30	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	509	1	1	17	83	188	172	39	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	556	0	1	6	70	204	221	44	8	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	583	3	6	17	72	240	196	41	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	409	0	3	6	47	146	149	53	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	299	0	0	2	29	73	118	64	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	183	0	0	1	15	40	85	28	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	107	0	0	0	8	25	40	23	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	67	0	0	0	1	11	36	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	55	0	0	1	5	8	21	14	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	34	0	0	0	1	10	9	6	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4887	4	15	117	644	1697	1755	567	77	8	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	5266	4	15	119	668	1778	1925	638	100	14	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	5355	4	15	120	674	1796	1955	658	112	16	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	5373	4	15	120	675	1799	1959	662	116	17	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Saturday 27 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	17	0	0	0	0	1	5	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	10	0	0	0	0	0	4	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	6	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	5	0	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	19	0	0	1	3	3	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	61	0	1	1	6	7	27	12	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	113	0	0	4	12	30	33	26	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	269	0	0	4	28	73	100	53	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	509	0	3	9	70	164	186	58	16	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	598	0	1	12	99	266	182	30	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	584	0	1	30	110	239	167	31	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	602	0	3	13	111	258	169	41	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	537	0	0	5	96	234	167	29	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	604	0	3	27	99	267	189	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	583	0	6	9	58	269	189	46	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	409	0	2	10	44	165	156	30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	260	0	0	2	14	96	105	38	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	167	0	0	2	13	62	63	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	103	0	0	0	7	37	34	20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	61	0	0	1	5	16	20	14	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	47	0	0	0	4	11	17	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	58	0	0	0	4	22	21	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	5129	0	20	126	747	2068	1670	411	78	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	5479	0	20	130	775	2186	1793	476	89	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	5584	0	20	130	783	2219	1831	496	94	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	5626	0	20	130	785	2222	1845	508	102	11	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Sunday 28 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	44	0	0	1	3	8	12	15	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	32	0	0	0	3	6	9	8	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	4	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	15	0	0	0	1	3	5	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	40	0	0	0	11	10	9	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	72	0	0	2	5	17	30	13	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	220	0	0	7	31	54	91	30	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	430	0	1	12	52	168	28	28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	575	0	5	19	111	192	208	37	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	630	0	0	28	104	265	201	28	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	471	0	3	11	74	191	159	29	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	429	0	2	15	57	194	117	38	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	513	0	0	25	60	252	151	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	522	0	0	11	61	214	207	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	356	0	0	2	49	118	137	41	5	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	289	0	0	5	18	89	135	31	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	189	0	0	3	17	48	77	35	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	89	0	0	1	0	15	45	23	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	41	0	0	0	2	11	19	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	34	0	0	0	2	3	15	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	41	0	0	0	0	8	13	14	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4547	0	11	137	633	1764	1613	328	46	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4881	0	11	141	653	1841	1759	399	60	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4956	0	11	141	655	1852	1787	423	67	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	5045	0	11	142	662	1867	1811	453	77	17	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Monday 29 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	28	0	0	0	0	3	9	11	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	8	0	0	0	1	2	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	4	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	5	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	6	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	19	0	0	0	1	5	9	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	70	0	0	0	13	11	23	16	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	141	0	1	3	26	27	45	28	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	394	0	0	9	53	117	146	57	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	836	2	46	27	183	304	225	46	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	857	45	249	139	201	181	39	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	894	34	257	128	268	171	34	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	1047	0	62	148	306	344	159	26	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	958	3	7	61	233	439	191	16	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	989	0	20	94	274	430	143	25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	1028	1	66	253	249	303	138	16	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	940	0	63	197	208	362	102	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	687	0	0	10	105	342	200	27	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	419	0	0	7	23	168	184	30	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	141	0	0	0	8	46	62	23	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	45	0	0	1	4	4	14	15	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	14	0	0	0	0	2	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	15	0	0	0	0	1	5	3	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	8841	85	771	1069	2119	3031	1445	269	40	6	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	9465	85	771	1077	2155	3254	1714	340	54	9	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	9494	85	771	1077	2155	3257	1725	347	58	12	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	9548	85	771	1078	2156	3262	1741	365	67	15	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Tuesday 30 August 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	8	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	35	0	0	0	3	4	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	81	0	0	0	8	16	26	22	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	140	0	0	0	10	19	50	49	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	243	0	0	7	29	49	102	52	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	452	0	0	13	63	150	190	33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	537	0	1	14	89	234	161	33	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	514	0	0	6	71	243	167	24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	413	0	0	14	61	146	147	39	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	463	0	3	9	71	202	152	23	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	490	0	1	8	73	196	178	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	482	0	9	21	67	166	181	29	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	424	0	0	7	31	181	160	38	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	311	0	0	2	17	94	143	44	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	179	0	0	3	18	56	75	24	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	121	0	0	0	8	20	70	19	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	27	0	0	0	0	8	12	5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	20	0	0	0	0	3	7	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	23	0	0	0	1	3	7	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	4550	0	14	101	590	1696	1657	417	70	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	4912	0	14	104	619	1784	1828	479	75	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	4955	0	14	104	620	1790	1842	495	79	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	4973	0	14	104	620	1792	1846	502	84	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Wednesday 31 August 2016

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	10	0	0	0	0	1	1	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	25	0	0	0	4	4	12	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	88	0	0	1	11	9	35	22	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	128	0	0	0	10	17	53	39	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	194	0	0	1	19	37	87	42	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	335	0	0	7	40	82	150	43	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	433	0	2	14	59	166	146	38	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	379	0	0	8	49	137	138	43	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	300	1	0	8	37	97	105	45	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	415	0	4	14	57	157	145	35	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	424	0	0	3	33	177	176	33	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	359	0	0	2	27	141	131	52	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	262	0	0	1	10	96	105	46	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	200	0	1	5	18	57	73	38	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	115	0	0	1	18	19	43	23	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	75	0	0	2	3	14	37	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	31	0	0	0	0	5	14	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	14	0	0	0	0	2	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	18	0	0	0	0	2	3	8	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	3517	1	7	64	370	1173	1344	476	72	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	3763	1	7	67	395	1215	1450	531	85	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	3795	1	7	67	395	1219	1460	543	90	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	3815	1	7	67	395	1221	1466	552	91	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions
 Thursday 01 September 2016

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	7	0	0	0	0	1	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	3	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	4	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	20	0	0	0	4	3	5	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	83	0	0	0	9	15	23	22	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	101	0	0	0	10	6	30	46	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	208	0	0	2	8	44	103	43	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	396	0	1	4	46	117	172	51	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	466	0	0	12	72	180	158	38	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	351	0	0	7	59	146	96	39	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	343	0	1	15	42	134	120	22	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	408	0	3	18	63	149	141	29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	421	0	2	13	40	145	189	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	393	0	1	2	56	159	148	25	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	264	0	0	3	16	70	127	42	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	203	0	1	2	13	45	81	51	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	147	0	0	3	17	36	56	19	13	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	71	0	0	1	11	23	22	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	37	0	0	0	1	10	19	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	32	0	0	1	1	7	11	9	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	11	0	0	0	1	4	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	3637	0	9	78	434	1210	1388	437	68	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	3912	0	9	82	467	1282	1490	476	90	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	3955	0	9	83	469	1293	1503	487	94	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	3975	0	9	83	470	1294	1507	495	97	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Day (7)

Time	Total	Speed Bins (mph)																											
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140
0000	16	0	0	0	0	2	4	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100	7	0	0	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200	4	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	2	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500	6	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600	22	0	0	0	2	4	9	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700	70	0	0	0	9	11	24	18	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800	120	0	0	1	12	20	42	35	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900	254	0	0	4	26	62	106	46	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	483	0	7	12	70	159	181	45	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	580	6	37	32	103	206	157	34	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200	559	5	37	32	111	199	138	33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300	525	0	10	32	101	196	146	33	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400	531	1	3	20	94	223	155	30	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	571	0	4	25	93	239	178	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600	564	1	13	45	84	213	170	34	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	438	0	10	32	58	163	134	37	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	321	0	0	4	31	114	122	42	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	200	0	0	3	17	61	83	26	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	101	0	0	1	6	26	44	19	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	44	0	0	0	2	9	19	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200	31	0	0	0	2	5	12	9	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	29	0	0	0	1	7	9	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	5015	13	121	242	791	1806	1553	415	64	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-22	5383	13	121	246	819	1906	1708	477	79	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-00	5442	13	121	246	822	1918	1729	493	85	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-00	5479	13	121	246	823	1922	1739	505	91	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



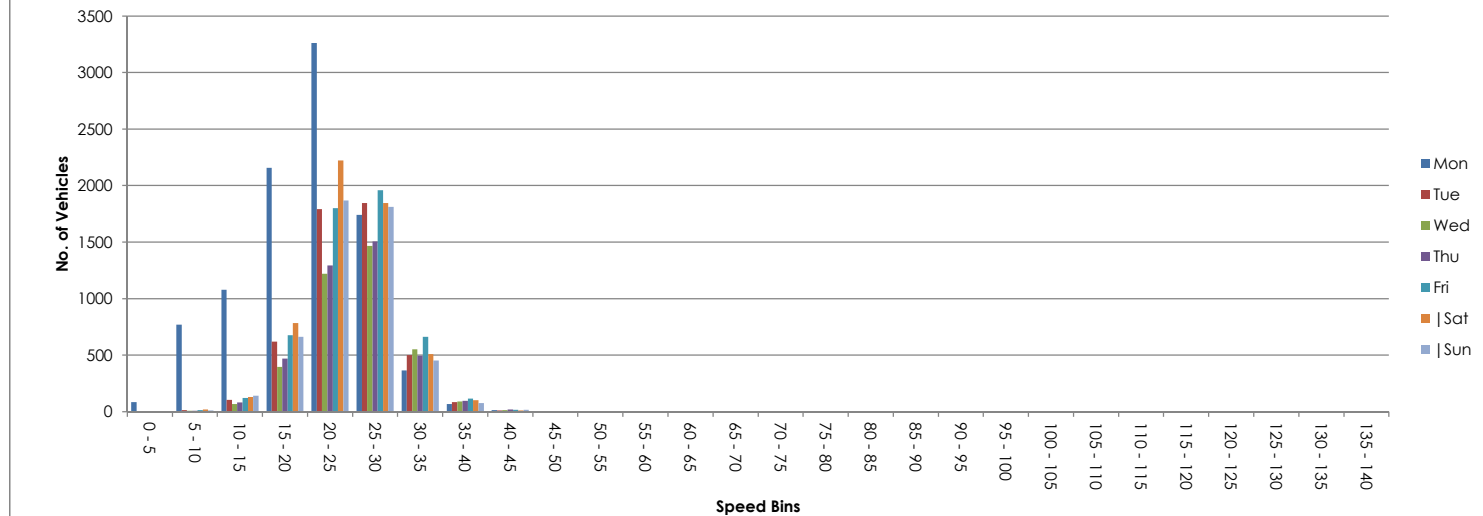
Site 5
 Location B6160 - Attached to telegraph pole - N53.98000, W1.89235
 Direction Both Directions

6600 / Bolton Abbey
 Aug-16
 Automatic Traffic Count

Virtual Week (1)

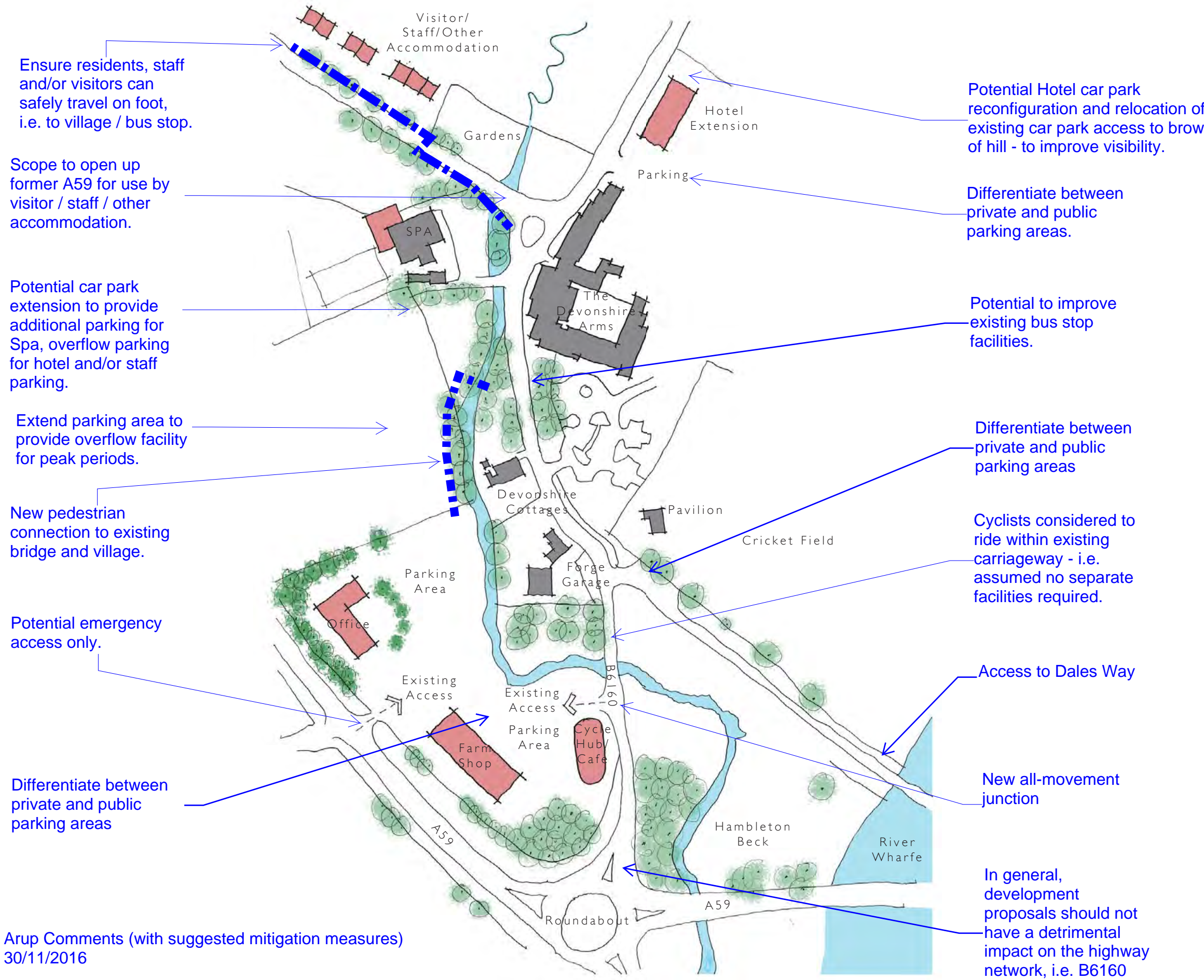
Time	Total	Speed Bins (mph)																												
		0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 100	100 - 105	105 - 110	110 - 115	115 - 120	120 - 125	125 - 130	130 - 135	135 - 140	
Mon	9548	85	771	1078	2156	3262	1741	365	67	15	6	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	4973	0	14	104	620	1792	1846	502	84	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wed	3815	1	7	67	395	1221	1466	552	91	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thu	3975	0	9	83	470	1294	1507	495	97	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fri	5373	4	15	120	675	1799	1959	662	116	17	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sat	5626	0	20	130	785	2222	1845	508	102	11	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sun	5045	0	11	142	662	1867	1811	453	77	17	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5 Day Ave.	5537	18	163	290	863	1874	1704	515	91	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Day Ave.	5479	13	121	246	823	1922	1739	505	91	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
--	38355	90	847	1724	5763	13457	12175	3537	634	104	19	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	

Summary Graphs



Appendix D

Transport Measures and Access Options Sketch



Ensure residents, staff and/or visitors can safely travel on foot, i.e. to village / bus stop.

Scope to open up former A59 for use by visitor / staff / other accommodation.

Potential car park extension to provide additional parking for Spa, overflow parking for hotel and/or staff parking.

Extend parking area to provide overflow facility for peak periods.

New pedestrian connection to existing bridge and village.

Potential emergency access only.

Differentiate between private and public parking areas

Arup Comments (with suggested mitigation measures)
30/11/2016

Potential Hotel car park reconfiguration and relocation of existing car park access to brow of hill - to improve visibility.

Differentiate between private and public parking areas.

Potential to improve existing bus stop facilities.

Differentiate between private and public parking areas

Cyclists considered to ride within existing carriageway - i.e. assumed no separate facilities required.

Access to Dales Way

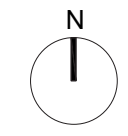
New all-movement junction

In general, development proposals should not have a detrimental impact on the highway network, i.e. B6160 and A59.

- KEY**
- Existing Buildings
 - Existing Trees
 - Proposed Buildings
 - Proposed Trees

■ Pedestrian access

General Comments:
- show existing footways and paths;
- show bus stops.



Canalside House, Brewery Lane, Skipton, North Yorkshire, BD23 1DR
tel: 01756 797501
e-mail: info@ruralsolutions.co.uk
web: www.ruralsolutions.co.uk

Client
Chatsworth Estates

Project
Bolton Abbey Development Options Appraisal Study

Title
Option 4 - Detailed Plan of Bolton Bridge Proposals

Scale Date
NTS 01-07-16

Drawn Checked
AGF MB

Drawing Number Revision
GA_I005 A

DO NOT SCALE FROM THIS DRAWING
© Rural Solution Ltd

Preferred Option Details (Bolton Bridge)

Existing access to serve proposed accommodation (show access).

Ensure residents, staff and/or visitors can travel safely on foot.

No new access to new accommodation - use Village Hall access.

Two-way access to Village Hall car park, visitor/staff accommodation and one-way access to public car park.

Ticket booth can be shut down temporarily during busy periods (and newly installed ticket machines used). This will help to reduce queuing on the B6160.

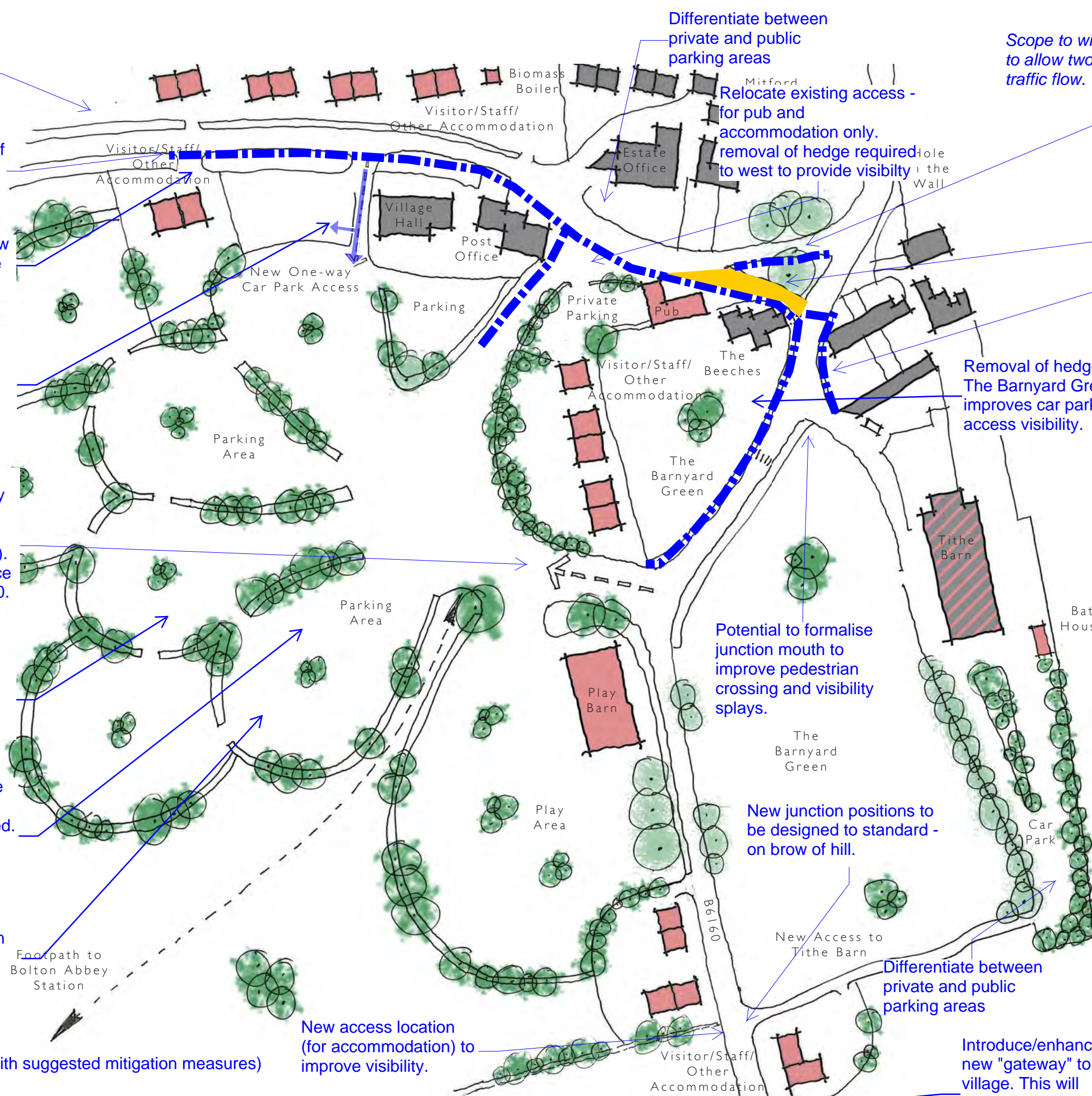
Car park needs to be legible to drivers - consider a more rationalised layout.

Quantify approximate no. of car parking spaces to be achieved. Layout to be developed further at later stage of design.

Differentiate between private and public parking areas

Arup Comments (with suggested mitigation measures) 30/11/2016

Preferred Option Details (Bolton Abbey Village)



Differentiate between private and public parking areas

Relocate existing access - for pub and accommodation only. removal of hedge required to west to provide visibility

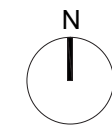
Scope to widen carriageway to allow two-way vehicular traffic flow.

Scope for existing carriageway reconfigured to public space/spill out area (area shown in orange). Scope for new cycle parking facilities and improvements to bus stop facilities.

Scope to re-align existing carriageway (B6160) to provide a 1.5m footway along its eastern edge.

- KEY**
- Existing Buildings
 - Existing Trees
 - Proposed Buildings
 - Proposed Trees
 - Proposed Refurbishments

General Comments:
- show existing footways and paths;
- show bus stops.



Pedestrian access

Potential to formalise junction mouth to improve pedestrian crossing and visibility splays.

New junction positions to be designed to standard - on brow of hill.

Differentiate between private and public parking areas

Introduce/enhance new "gateway" to village. This will highlight a change in street function to drivers.



Canalside House, Brewery Lane, Skipton, North Yorkshire, BD23 1DR
tel: 01756 797501
e-mail: info@ruralsolutions.co.uk
web: www.ruralsolutions.co.uk

Client: Chatsworth Estates

Project: Bolton Abbey Development Options Appraisal Study

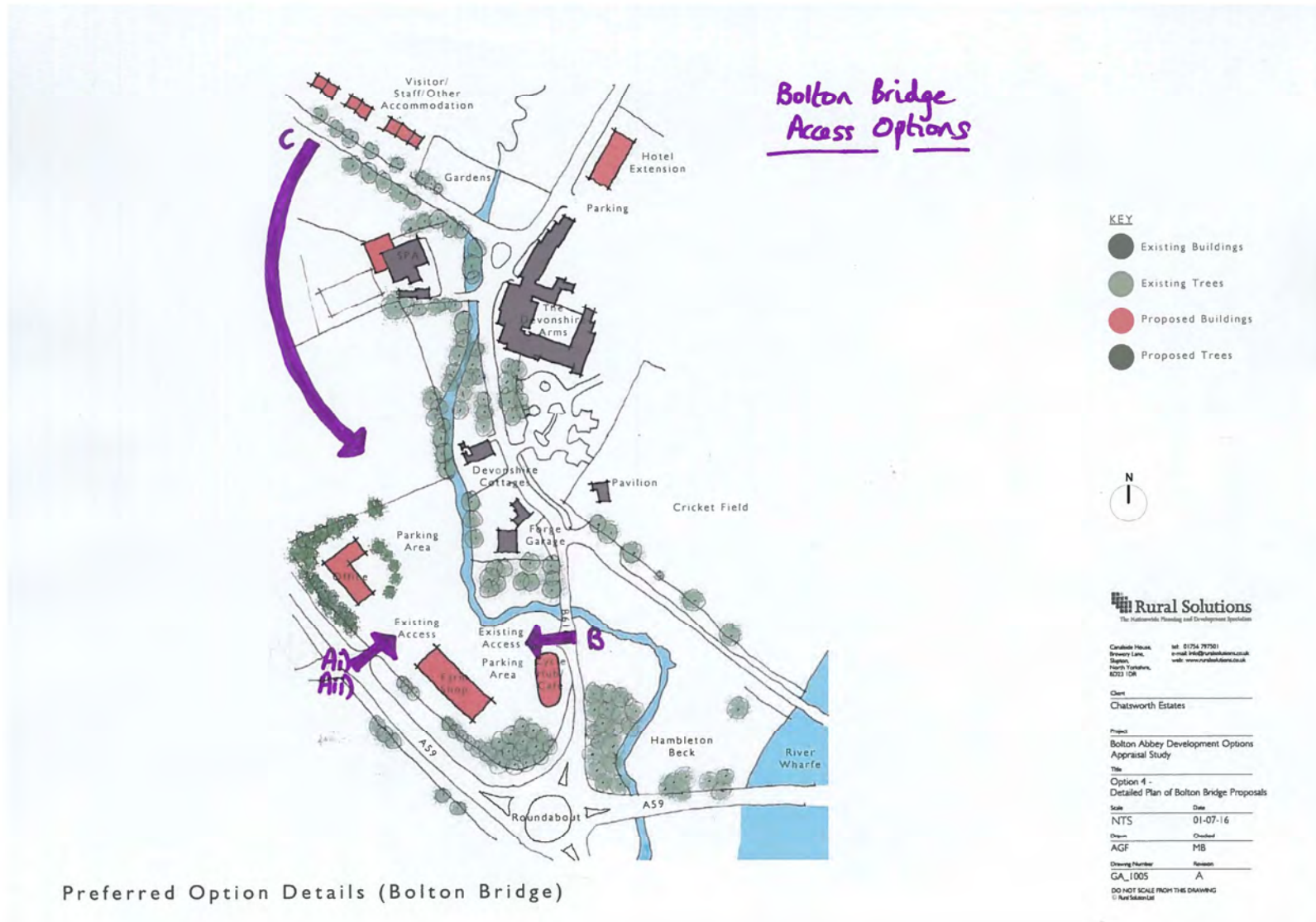
Title: Option 4 - Detailed Plan of Bolton Abbey Proposals

Scale: NTS Date: 01-07-16

Drawn: AGF Checked: MB

Drawing Number: GA_I006 Revision: A

DO NOT SCALE FROM THIS DRAWING © Rural Solution Ltd



Bristol
0117 403 1980
bristol@lichfields.uk

Cardiff
029 2043 5880
cardiff@lichfields.uk

Edinburgh
0131 285 0670
edinburgh@lichfields.uk

Leeds
0113 397 1397
leeds@lichfields.uk

London
020 7837 4477
london@lichfields.uk

Manchester
0161 837 6130
manchester@lichfields.uk

Newcastle
0191 261 5685
newcastle@lichfields.uk

Thames Valley
0118 334 1920
thamesvalley@lichfields.uk