



PONTCYSYLLTE Aqueduct & Canal

NOMINATION AS A WORLD HERITAGE SITE

Management Plan



Cover: Pontcysyllte Aqueduct © Ric Morris/Feather and Hay

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Management Plan

2007 – 2012



FOREWORD

PONTCYSYLLTE
AQUEDUCT
AND CANAL
WORLD HERITAGE
NOMINATION



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It gives us great pleasure, as the lead organisations supporting this proposal, that Pontcysyllte Aqueduct and Canal has been nominated as a World Heritage Site. The timing of the nomination is particularly appropriate. We began to put the proposal together in 2005, the bicentenary of the opening of Pontcysyllte Aqueduct (in November 1805). Furthermore, it was written and consulted upon during 2007, coinciding with celebrations to commemorate the 250th birthday of Thomas Telford; the nomination is therefore a fitting tribute to a master engineer.

That the canal is still in operation 200 years after its opening is a testimony to its original engineers, contractors and workforce and the many people who have been involved in its management since. All the key structures remain intact and we are committed to maintaining high standards of conservation. This Management Plan is an essential part of achieving this objective as well as ensuring that the Nominated Site is managed in a sustainable manner to deliver benefits to local communities.

The Llangollen Canal is one of the busiest stretches of canal in the United Kingdom, with some 15,000 boat movements per annum and over 200,000 visitors to its key sites and towing-path. Tourism businesses are dependent upon the continued maintenance of the canal and its corridor provides many local economic opportunities. This World Heritage Site Management Plan has a crucial role to play in ensuring that the objectives of conservation and regeneration are achieved in harmony. The majority of the Nominated Site is in the ownership of British Waterways, giving a much needed focus to the maintenance and conservation of the canal and its outstanding structures.

The local communities are very proud of their canal and their aqueduct. They have worked hard to support events and activities linked to the nomination and have participated in the twelve-week public consultation exercise. A 'Friends of Pontcysyllte' group is being established to continue the process of engagement and reflect their enthusiasm through volunteering, events and activities.

This Management Plan is being implemented with the help and support of many partner organisations and local people. It is heartening that the nomination has received strong support from the public (see page 34) and that all the member organisations of the Steering Group (listed on page 105) wholeheartedly support the management Vision and Principles set out in Section 5.



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Pontcysyllte Aqueduct and Canal World Heritage Site Steering Group

This bid is led by Wrexham County Borough Council, British Waterways and the Royal Commission on the Ancient and Historical Monuments of Wales.



Other organisations committed to the Pontcysyllte Aqueduct and Canal nomination for World Heritage Status are:



THE FUNCTION OF THE MANAGEMENT PLAN

This Management Plan has been developed to meet the future management needs of the Nominated Site and its Buffer Zone and to co-ordinate efforts from many bodies, groups and individuals. To be successful, management planning needs to follow an ongoing process of assessment, objective setting, consultation, monitoring and review. This ensures that it focuses on the significant issues for the Nominated Site and is continually updated in light of changing circumstances and positive actions delivered.

The process of developing this Plan has been led by British Waterways as the majority landowner and the public body with responsibility for the canal and its structures. However, the process has involved input from all members of the World Heritage Site Steering Group (the Steering Group) and from public consultation. Member Bodies on the Steering Group have varied purposes, objectives, plans and strategies to fulfil their core roles. The purpose of the *Management Plan for Pontcysyllte Aqueduct and Canal* is to focus and co-ordinate this activity on the issues relevant to the Nominated Site. The Steering Group has therefore drawn on the proposed Outstanding Universal Value and the assessment of the current condition, pressures and threats outlined in the Nomination Document.

The Management Plan is intended as a living document, separate from the Nomination Document. It therefore contains the information from the



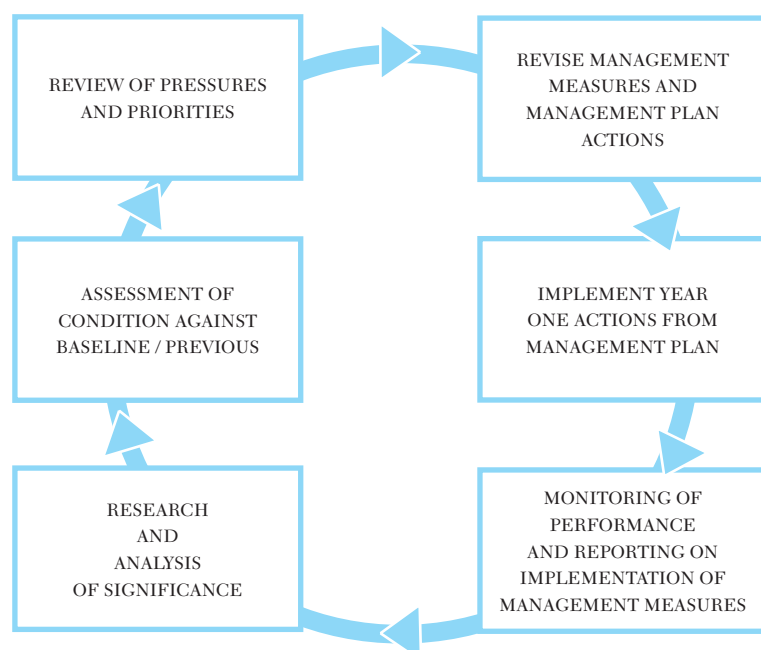
Nomination Document that is relevant to the assessment of the current needs of the Nominated Site in Sections 1, 2 and 3. In Section 4, actions are suggested to address the various pressures and opportunities. Common themes arise from the assessment of the pressures and opportunities, the obligations of inscription and best practice guidance. These have led to an agreed vision for future management of the Site and a set of management principles, set out in Section 5. The Management Plan then sets out a prioritised list of agreed action for a six-year period, with lead partners who will take responsibility for each action identified in Section 6.

This Action Plan will be subject to measurement and monitoring as set out in the Nomination Document. It will also be under regular review by the Steering Group and Friends of Pontcysyllte to ensure

Management requires a careful balance between conservation and the needs of local residents and visitors.

co-ordination of effort and alteration of actions to reflect any changes in the condition or needs of the Nominated Site. Details of implementation are discussed in Section 7 and monitoring in Section 8.

An ongoing cycle of analysis and research, and assessment of condition, pressures and performance of management measures, will be implemented by the Steering Group, and the Management Plan will be updated at regular intervals:



This first Management Plan focuses on the conservation of the physical assets, management of land uses and processes that contribute to the Outstanding Universal Value of the Nominated Site, its Buffer Zone and setting, and improvements in interpretation, access and facilities. The Action Plan covers the period 2007–2012, during which the nomination will be submitted and considered for inscription. Actions in the first years are geared towards information gathering and project development as well as strengthening some of the essential mechanisms for management: for instance, continued engagement of local communities and improvements in conservation management, interpretation and information availability.

The Management Plan acts as the framework for the Steering Group to co-ordinate site-specific actions and make effective use of other plans, policies and programmes that may cover the area of the Nominated Site. It has been produced in consultation with key stakeholders to ensure it can be effectively supported and implemented by the wide range of organisations and communities that have a responsibility for, and interest in, the Nominated Site.

The mayors and civic leaders representing the towns and local authorities along the course of the canal took part in the international conference to support the nomination in June 2007.



Opposite: Holiday Boat crossing Pontcysyllte Aqueduct.





DESCRIPTION, EXTENT, OWNERSHIP, BASELINE CONDITION, AND PARTNERS AND STAKEHOLDERS

1.a Site Description

Pontcysyllte Aqueduct and Canal consists of a continuous group of civil-engineering features from the heroic phase of transport improvement during the British Industrial Revolution. The canal brought water-borne transport from the English lowlands into the rugged terrain of the Welsh uplands, using innovative techniques to cross two major river valleys and the ridge between them. It was built between 1795 and 1808 by two outstanding figures in the development of civil engineering: Thomas Telford and William Jessop. Through their dynamic relationship the canal became

a testing-ground for new ideas that were carried forward into subsequent engineering practice internationally.

At the centre of the Nominated Site is Pontcysyllte Aqueduct, which crosses the Dee Valley on nineteen cast-iron spans at a height of 126 feet / 38.4 metres: a structure recognised internationally as a masterpiece of waterways engineering and a pioneering example of iron construction. The canal exemplifies the new approaches to engineering developed in Britain during the Industrial Revolution and taken up in subsequent waterway, railway and road construction throughout the world. The engineers intervened in the landscape with

An engraving looking across the canal at Froncysyllte towards Pontcysyllte Aqueduct, published in 1830 after a drawing by Henry Gastineau.





Top: Pontcysyllte Aqueduct recorded by John Ingleby soon after completion.

Above: Chirk Basin with the entrance to Chirk Tunnel in the background.

a new scale and intensity, challenged by the need to cut a waterway across the grain of the Welsh upland topography. At the time of its completion this length of canal was described as ‘composed of works more difficult of execution than can perhaps be found anywhere within an equal distance of canal navigation’. It combined vigour of engineering with a particular sensitivity to its impact on a valued landscape.

All of the features that were to become characteristic of highly-engineered transport routes can be seen in the Nominated Site, including tunnels, cuttings, aqueducts and embankments, many of them technically innovative or of monumental scale, together

with bridges, culverts, weirs and associated features. The whole Site has remained in use continuously for two hundred years - for some 130 years by traffic in coal, iron, slate, limestone and general goods, and in more recent times to carry pleasure boats and convey drinking water. It is widely valued for its historical importance, beautiful environment and breathtaking structures, and attracts some 200,000 visitors a year.

Pontcysyllte Aqueduct and Canal are outstanding monuments of the Canal Age in the United Kingdom, which flourished from the 1760s until the establishment of a network of locomotive railways from the 1830s. Canal-building reached its zenith after 1790, during the so-called ‘Canal Mania’ that saw 1,180 miles/1,900 kilometres of new waterway completed in just twenty years. The construction of a network of canals in Britain to provide transport for raw materials and goods represented a new phase in the history of inland navigation and was a fundamental factor in the Industrial Revolution, enabling and promoting rapid economic growth, regional specialisation and urbanisation. It contributed to wider developments in business organisation, capital mobilisation and engineering technology which were applied to construction projects all over the world.

The Nominated Site follows the route of the Ellesmere Canal, later known as the Welsh Arm of the Shropshire Union Canal or the Llangollen Canal. The Nominated Site is a continuous, linear property 11 miles / 18 kilometres long which includes all those areas and attributes that are direct and tangible expressions of its Outstanding Universal Value as a masterpiece of canal engineering and a representation of the improvement of transport during the Industrial Revolution. It contains the engineering features of the canal, remains associated with its construction and historical operation, and the immediate visual surroundings of key monuments. An extensive Buffer Zone ensures that the Nominated Site can be protected and appreciated in its landscape setting.

The main line of the canal traverses the edge of the hills from the beginning of the Nominated Site at Gledrid Bridge, in increasingly difficult terrain, clinging to steep slopes, cutting through rising ground and crossing deep valleys as far as Trevor, where it terminated. From here the Nominated Site extends westwards up the Llangollen Branch canal, which follows the River Dee at a continuous level as the valley floor gradually climbs to meet it at Horseshoe Falls, the canal system's water supply. Such rugged topography challenged the skill and ingenuity of the canal's designers and promoters. The route was planned before relief maps were available, and success depended entirely on the engineers' own explorations, levelling surveys and distance measurements. The demands of powerful landowning interests also provided challenges. The area was rich in graceful country estates and was frequently visited by British artists and members of the gentry undertaking the tour of Wales, especially during the period of the canal's construction when war with France (from 1793 to 1815) precluded the European 'Grand Tour'. Its mountain heights, rushing rivers, picturesque woods, ancient ruins and position as the gateway to the scenic beauty of North Wales brought appreciation of its physical attractions

and Romantic associations. Far from detracting from the landscape in the eyes of nineteenth-century visitors, the canal was seen to enhance its beauty. It continues to be one of the best-loved landscapes in the British Isles.

The 5 miles / 8 kilometres of the main line canal succeeded in maintaining a direct and level route without time-consuming diversions or water-hungry flights of locks, which crippled some canals of the period. It achieved this by an unprecedented sequence of major engineering features, culminating in Pontcysyllte Aqueduct itself. At its eastern boundary, the Nominated Site begins at Gledrid Bridge with the canal terraced against a steep hillside, where coal mines and limestone quarries fed wharves. There is a substantial earthwork of Chirk Bank Embankment as the canal enters the valley of the River Ceiriog. Rather than follow the contour up the Ceiriog Valley or cross it by an obstructive embankment, the canal utilises a ten-span aqueduct: a grand project that was considered a positive complement to the parkland of Chirk Castle. At its completion in 1801, Chirk Aqueduct was the highest such structure to have



Above: Chirk Aqueduct, completed in 1801, in front of the 1848 Chirk Railway Viaduct.



Left: An over-bridge on the Llangollen Branch of the canal.



Chirk Aqueduct and Railway Viaduct crossing the Ceiriog Valley, with the settlements of Chirk (right) and Chirk Bank (left) in view.

been built, and it remained so until the completion of Pontcysyllte Aqueduct four years later. The Site includes the immediate visual setting of the water meadows of the Ceiriog in both directions. It is bounded at the east by an embankment on the Holyhead Road, built by Thomas Telford as part of his later scheme for a high-speed route linking London to Dublin, and includes the viaduct for the railway that later connected the coalfield to its markets, allowing an informative comparison of transport developments over half a century. A group of canal workers' houses from the later nineteenth century stands on the huge embankments approaching the aqueduct, where a construction yard was used to prepare stone from an adjacent quarry.

Gledrid Bridge, at the start of the Nominated Site.



At the north end of Chirk Aqueduct a shelf cut into the hill provides space for a general trade wharf and a basin where boats could wait. The canal then enters the first of two tunnels and two long cuttings to the east of the medieval fortress of Chirk Castle. The castle lies within the Buffer Zone and the house and grounds are managed and conserved by the National Trust. The cuttings and tunnels enabled the canal to take a direct route through higher ground rather than a long detour to the east while satisfying the desire of the landowners to preserve the approaches to their estate. Chirk Tunnel is followed by Irish Bridge Cutting and then Whitehouses Tunnel. These major civil engineering works required vast quantities of spoil to be excavated by hand and moved by construction railway or boat to provide material for embankments further north.

After Irish Bridge Cutting the canal is terraced against the slopes of the Dee Valley. It crosses Offa's Dyke, the early medieval boundary between the Welsh princedoms and the Saxon kingdom of Mercia. Now designated as one of the National Trails, the strategic routes taking walkers through the United Kingdom's finest countryside, Offa's Dyke is among the most popular long-distance walking routes in Europe. The

Trail diverts onto the canal towing-path to Pontcysyllte Aqueduct. At Froncysyllte the canal continues in a terrace to a wharf and limekilns where limestone was brought to the canal. It is then carried out across the valley on a massive approach embankment towards the great aqueduct at Pontcysyllte.

The engineers had considered crossing the River Dee at a low level, on an aqueduct approached at either end by flights of locks. However, they made the daring choice to maintain the level - building an embankment that would be one of the world's most substantial earthen structures, and devising an aqueduct of such unprecedented scale that it necessitated a series of innovations in construction and design. The aqueduct was a waterway through the sky that amazed all who saw it. It still takes away the breath of visitors. The Nominated Site encompasses the immediate setting of the embankment and aqueduct. To the west it includes Cysylltau Bridge, a three-arched crossing of the River Dee, which is a principal viewing point and appears in many contemporary depictions of the aqueduct, including Telford's official portrait in the Institution of Civil Engineers.

The main line of the canal terminates on the north side of Pontcysyllte Aqueduct at Trevor Basin, where wharves, dry docks, bridges, canal houses and traces of early railways are part of the Nominated Site. During the construction of the aqueduct, this was the preparation area for the stone and ironwork. Components were carried out across the valley on temporary bridges which were raised successively with the piers until the full height was achieved. Once the canal was completed, the basin became a hub of activity, servicing trade and transshipping goods to and from the boats. The new transport infrastructure stimulated the growth of collieries and ironworks. Several settlements grew up to house industrial workers. The largest is Cefn Mawr, within the Buffer Zone, where houses, shops, public houses and chapels have been designated as a Conservation Area, and a Townscape Heritage Initiative has stimulated conservation projects.



Above: Boat crossing the central spans of Pontcysyllte Aqueduct.



Left: Dinas Brân Castle is managed by Denbighshire County Council.

The 6 mile / 10 kilometre Llangollen Branch extends to the west from Trevor Basin, along the north side of the Vale of Llangollen. Although proposed as early as 1791 it was begun under a separate Act of Parliament in 1804. Its purpose was to feed water to the Ellesmere Canal system, and also to serve the town of Llangollen and nearby slate and limestone quarries. It was narrower than the main canal, but was engineered skilfully to maintain a level route along the steep sides of the glacial valley.

The branch canal winds along slopes high above the river and offers panoramic views of the hills on either side and towards the eye-catching mountain-top ruins of Dinas Brân. This thirteenth-century Welsh castle, which was regarded during the Romantic period as a potent symbol of the ancient people of Wales, has been consolidated and interpreted for visitors by Denbighshire County Council. The canal takes a straighter line than the topography would suggest, crossing side valleys and bisecting spurs by embankments and cuttings. Nearing Llangollen the hills are even steeper and the canal is constructed on a narrow terrace, often with rock walls to the north and earthen embankments to the south.



Signpost for guide boats arriving at Trevor Basin.

The market town of Llangollen has been a centre for tourism since the late eighteenth century, stimulated initially by artists and writers who visited the area and recorded their impressions of it. The town lies in the Buffer Zone on the south bank of the River Dee and was served by a general goods wharf and warehouse on the canal. The multi-span bridge across the river is an impressive example of the achievements of bridge builders before the Industrial Revolution. On a hill above the town is Plas Newydd, the home between 1780 and 1829 of Lady Eleanor Butler and Miss Sara Ponsonby, 'the Ladies of Llangollen', whose fame drew numerous poets, writers, artists and people of note to the Vale. The house is a museum, managed by Denbighshire County Council. Other historical landmarks in the beautiful countryside rising towards Llantysilio mountain have traditionally drawn visitors, including two monuments in the care of the government heritage body, Cadw: the Pillar of Eliseg and the Cistercian monastery of Valle Crucis, painted by J.M.W. Turner. The Buffer Zone includes these significant attractions together with slate and limestone quarries served by the canal in the hills around Llangollen.

The canal is at its narrowest in its last section from Llangollen to Horseshoe Falls, where it was relatively little-used by boats. However, substantial engineering work

was still required, to cut a level shelf for the waterway and build a large masonry aqueduct over the River Eglwyseg and many culverts over streams flowing to the Dee. The last 0.2 miles / 0.3 kilometres is a rock-hewn watercourse from the elegantly-curved, cast-iron and masonry weir designed by Telford. The canal carries 11 million gallons / 50 million litres a day from this point to drinking-water reservoirs beyond the English border in Cheshire. The bowl of attractive parkland is included in the Nominated Site for its direct visual relationship with the weir. The river is a Special Area of Conservation, designated under the European Community Habitats Directive.

The picturesquely craggy and wooded aspect of this last section of the canal from Llangollen Wharf to Horseshoe Falls, running close to the rushing waters of the Dee, has made it popular among visitors for promenades and boat trips since the early nineteenth century. Among the groups who have used the canal regularly in the last sixty years have been hundreds of thousands of participants and visitors from around the world at the Llangollen International Musical Eisteddfod, established in 1947 and occupying a site near the bank of the canal. The stated aim of this music and dance festival has been to permit 'Welsh culture and a wider international movement in fostering the arts' to be 'happily reconciled for mutual enrichment.'

The Gazetteer (opposite) lists all the features of the Nominated Site in geographical order from east to west. Each is located by its National Grid Reference (NGR), relating to the official map base for the United Kingdom maintained by Ordnance Survey. The record number for each site is its National Principal Record Number (NPRN) in the National Monuments Record of Wales. Further information and images of each feature can be found on-line at www.coffein.gov.uk. The Gazetteer also shows ownership, protection and the current State of Conservation (SoC). A detailed explanation on the State of Conservation grading is given on page 27.



Competitors from the Llangollen International Musical Eisteddfod taking a boat trip on the canal in about 1960.

Gazetteer

Name	Record	Grid Reference	SoC	Ownership	Protection
1. Main line canal formation	NPRN 405725	SJ 29811 36854-SJ 27241 42464	Fair / Good	British Waterways	*Scheduled
2. Gledrid Bridge (19)	NPRN 405775	SJ 29811 36854	Poor	Shropshire CC	*In Setting
3. Chirk Bank Embankment (15)	NPRN 405776	SJ 29596 37031	Fair	British Waterways and private	*Scheduled
4. Remains of Quinta Bridge (20)	NPRN 406641	SJ 29467 37035	Fair	British Waterways	*Scheduled
5. Chirk Bank spoil tip	NPRN 406642	SJ 29326 37103	-	British Waterways and private	*In Setting
6. Quinta Colliery and Brickworks railway wharf	NPRN 406643	SJ 29279 37090	Poor	British Waterways and private	*In Setting
7. Chirk Bank public wharf	NPRN 406644	SJ 29230 37122	Fair	British Waterways	*Scheduled
8. Canal View Cottages	NPRN 405777	SJ 29225 37141	Fair	private	*In Setting
9. Chirk Bank Bridge (21)	NPRN 405778	SJ 29202 37119	Fair *	Shropshire CC	Listed
10. Chirk Bank Bridge wharf	NPRN 406662	SJ 29186 37133	Fair	British Waterways	*Scheduled
11. Remains of Woodlands Bridge (22)	NPRN 405779	SJ 29086 37155	Fair	British Waterways and private	*Scheduled
12. Chirk Aqueduct building-stone quarry	NPRN 406645	SJ 29021 37127	Fair	British Waterways and private	*In Setting
13. Cartref	NPRN 405781	SJ 28945 37145	Good	private	*In Setting
14. 4-5 Aqueduct Cottages	NPRN 406599	SJ 28830 37133	Fair	private	*In Setting
15. Chirk Aqueduct construction yard platform	NPRN 406663	SJ 2873 3714	Fair	British Waterways and private	*In Setting
16. Aqueduct Cottages maintenance depot hut	NPRN 405783	SJ 28814 37133	-	British Waterways	-
17. Chirk Bank West Cutting (23-24) and embankments (16-18)	NPRN 405780	SJ 28906 37130	Fair	British Waterways	*Scheduled
18. 2-3 Aqueduct Cottages, Chirk Bank	NPRN 405782	SJ 28784 37140	Fair	Private / British Waterways (No3)	*In Setting
19. 1 Aqueduct Cottages, Chirk Bank	NPRN 406598	SJ 28764-37157	Fair	private	*In Setting
20. Chirk Aqueduct	NPRN 344016	SJ 28700 37283	Fair*	British Waterways	*Scheduled Listed
21. Chirk Railway Viaduct	NPRN 87002	SJ 28669 37286	Good	Network Rail	Listed
22. Land to east and west of Chirk Aqueduct	-	SJ 28695 37364	-	private	*In Setting
23. Chirk Mill leat	NPRN 406646	SJ 28695 37364	Poor	British Waterways and private	*In Setting
24. Holyhead Road Embankment, Chirk	NPRN 406698	SJ 28950 37368	-	Wrexham CBC and private	*Scheduled
25. Chirk Basin and Cutting (25-6)	NPRN 405784	SJ 28657 37410	Fair	British Waterways	*Scheduled
26. Site of Chirk Basin wharf buildings	NPRN 406665	SJ 2867 3741	Fair	British Waterways	*Scheduled
27. Telford Lodge / Min-y-waen, Chirk	NPRN 406597	SJ 28599 37409	Poor	private	*In Setting
28. Chirk Tunnel	NPRN 405785	SJ 28522 37613	Fair	British Waterways	*Scheduled Listed
29. Canal Wood Cutting, Chirk	NPRN 405790	SJ 28241 38264	Fair	British Waterways	*Scheduled
30. Glyn Ceiriog Tramway wharf	NPRN 406666	SJ 28477 38822	Poor	British Waterways	*Scheduled

Name	Record	Grid Reference	SoC	Ownership	Protection
31. Afon-Bradley feeder	NPRN 406667	SJ 28470-38843	-	British Waterways	*Scheduled
32. Black Park Collieries railway dock turning-basin	NPRN 405986	SJ 28479 38887	Fair	British Waterways	*Scheduled
33. Black Park Collieries railway dock	NPRN 405791	SJ 28505 38863	Fair	British Waterways and corporate	*Scheduled (part)
34. Afon-Bradley overflow, culvert (91), and sluice (10)	NPRN 405792	SJ 28509 38965	-	British Waterways	*Scheduled
35. Red Bridge Cutting (29-30)	NPRN 406695	SJ 28563 39241	Fair	British Waterways	*Scheduled
36. Red Bridge abutments (24)	NPRN 405793	SJ 28561 39144	Poor	British Waterways	*Scheduled
37. Afon-Bradley limekilns	NPRN 405795	SJ 28586 39335	Poor	British Waterways	*Scheduled
38. Afon-Bradley Farm Culvert (92)	NPRN 406721	SJ 28550 39486	Fair	British Waterways	*Scheduled
39. Whitehouses Tunnel south approach cutting	NPRN 406591	SJ 28634 39971- SJ 28628 39842	Fair*	British Waterways	*Scheduled
40. Whitehouses Tunnel (25)	NPRN 405796	SJ 28633 40059	Fair	British Waterways	*Scheduled *Listed
41. Whitehouses Tunnel north approach cutting	NPRN 406590	SJ 28613 40272- SJ 28631 40148	Fair*	British Waterways	*Scheduled
42. Pen-y-bryn Embankment and culvert (93)	NPRN 406722	SJ 28621 40242	Fair	British Waterways	*Scheduled
43. Pentre Embankment (19) and Bryn-yr-oes Culvert (94)	NPRN 406723	SJ 28596 40388	Fair / Poor	British Waterways	*Scheduled
44. Whitehouse Bridge (26)	NPRN 405797	SJ 28584 40455	Fair*	British Waterways	Listed
45. Irish Bridge Cutting (33-4)	NPRN 405993	SJ 28594 40657	Fair	British Waterways	*Scheduled
46. Irish Bridge (27)	NPRN 405798	SJ 28595 40764	Poor	Wrexham CBC	Listed
47. Irish Bridge Embankment (20)	NPRN 406696	SJ 28433 40838	Fair	British Waterways	*Scheduled
48. Pen-y-bont Brick and Tile Works wharf	NPRN 406701	SJ 28576 40811	Fair	British Waterways	*Scheduled
49. Cross Street Farm Cutting (36)	NPRN 406647	SJ 28169 40892	Fair	British Waterways	*Scheduled
50. Cross Street stop-plank grooves	NPRN 406648	SJ 27965 41001	Fair	British Waterways	*Scheduled
51. Cross Street Aqueduct and Embankment	NPRN 405799	SJ 27861 41038	Poor /Good	British Waterways	*Scheduled Listed
52. Fron Embankment (21)	NPRN 406649	SJ 27688 41157	Fair	British Waterways	*Scheduled
53. Froncysyllte east limekiln bank / Pen-y-Bryn wharf	NPRN 405808	SJ 27486 41180	Fair	private	*In Setting
54. Tŷ-uchaf culvert (95) and sluice (11)	NPRN 405811	SJ 27455 41228	Fair	British Waterways	*Scheduled
55. Froncysyllte limekilns dock	NPRN 406651	SJ 27423 41205	Fair	private	*Scheduled
56. Froncysyllte west limekiln bank and wharf	NPRN 405809	SJ 27373 41211	Fair	private	*In Setting
57. Fron footbridge	NPRN 406703	SJ 27151 41313	-	British Waterways	*In Setting
58. Fron Lift Bridge (28)	NPRN 405810	SJ 27146 41313	-	British Waterways	*In Setting
59. Froncysyllte canal cottage	NPRN 406526	SJ 27022 41365	Fair	private	*In Setting
60. Froncysyllte Basin culvert (96)	NPRN 406704	SJ 27063 41362	-	British Waterways	*Scheduled

Name	Record	Grid Reference	SoC	Ownership	Protection
61. Froncysyllte public wharf	NPRN 406706	SJ 27042 41370	Fair	British Waterways	*Scheduled
62. Froncysyllte Basin	NPRN 406708	SJ 27066 41364	Fair	British Waterways	*Scheduled
63. Froncysyllte mess and Old Institute	NPRN 406527/406528	SJ 27032 41388	Good	British Waterways	*In Setting
64. Pontcysyllte Aqueduct south embankment (23)	NPRN 405812	SJ 27012 41739	Fair	British Waterways	*Scheduled Conservation Area
65. Pontcysyllte Aqueduct	NPRN 34410	SJ 2705 4203	Good	British Waterways	Listed/Scheduled Conservation Area
66. Land to the west and east of Pontcysyllte Aqueduct		SJ 2705 4203	-	private / corporate	Conservation Area (part) *In Setting
67. Cysylltau road bridge over the River Dee	NPRN 23989	SJ 2681 4204	Fair	Wrexham CBC	Scheduled Listed
68. Trevor Basin	NPRN 402309	SJ 2714 4228	Fair	British Waterways	*Scheduled Conservation Area
69. Trevor Basin dry docks swing-bridge	NPRN 406627	SJ 27093 42207	-	British Waterways	Conservation Area
70. Trevor Basin dry docks	NPRN 405831/406530	SJ 27106 42199	Poor	British Waterways	Listed Conservation Area
71. Trevor Basin interpretation centre	NPRN 406713	SJ 27106 42183	Good	British Waterways	Conservation Area
72. Trevor Basin building platform retaining wall	NPRN 406652	SJ 27099 42159	Fair	British Waterways	*Scheduled Conservation Area
73. Trevor Basin dry dock manager's house	NPRN 406700	SJ 27133 42216	Good	British Waterways	Conservation Area
74. Trevor Basin waste-water weir and culvert	NPRN 406529	SJ 27077 42159	Fair *	British Waterways	*Scheduled Conservation Area
75. Trevor Basin warehouse	NPRN 405832	SJ 27093 42258	Fair *	British Waterways	Conservation Area
76. Trevor Basin footbridge	NPRN 406532	SJ 27121 42253	-	British Waterways	Conservation Area
77. Car park and toilets	-	SJ 27185 42269	-	Wrexham CBC	Conservation Area
78. Land to east of Trevor Basin	-	SJ 27196 42144	-	private	Conservation Area
79. Trevor Basin stores	NPRN 406654	SJ 27150 42253	Fair	British Waterways	Conservation Area
80. Ruabon Brook Railway branch at Trevor Basin	NPRN 406707	SJ 27141 42290	Fair	British Waterways	Conservation Area
81. Trevor Basin waste-water channel	NPRN 406714	SJ 27137 42064	Fair	British Waterways	Conservation Area
82. Scotch Hall / Telford Inn	NPRN 27905	SJ 2714 4232	Fair *	private	Listed Conservation Area
83. Scotch Hall account house outbuilding	NPRN 405996	SJ 27151 42319	Fair	private	Listed Conservation Area
84. Scotch Hall Bridge (29)	NPRN 34411	SJ 27173 42317	Fair *	Wrexham CBC	Listed Conservation Area
85. Trevor Basin culvert (1)	NPRN 406709	SJ 27181 42329	-	British Waterways	*Scheduled Conservation Area
86. Rose Cottage wharfinger's house	NPRN 406534	SJ 27165 42351	Fair	private	Conservation Area
87. Ruabon Brook Railway pier	NPRN 405833	SJ 27216 42425	Poor	British Waterways	*Scheduled Conservation Area
88. Ruabon Brook Railway buildings	NPRN 406653	SJ 27200 42478	Poor	British Waterways	Conservation Area
89. Plas Kynaston Canal Bridge (29A)	NPRN 406531	SJ 27255 42461	Poor	British Waterways	Conservation Area
90. Ruabon Brook Railway transfer dock	NPRN 406705	SJ 27241 42464	Poor	British Waterways	*Scheduled Conservation Area

Name	Record	Grid Reference	SoC	Ownership	Protection
91. Llangollen Branch formation	NPRN 405725	SJ 27056 42214-SJ 19588 43283	Fair * / Good	British Waterways	*Scheduled
92. Site of Rhôs-y-coed railway bridge (30)	NPRN 406699	SJ 27065 42212	Fair	British Waterways	*Scheduled Conservation Area
93. Rhôs-y-coed Bridge (31)	NPRN 405835	SJ 27056 42214	Fair	Wrexham CBC	Listed Conservation Area
94. Western construction yard for Pontcysyllte Aqueduct and site of Trevor Forge	NPRN 406689/406686-7	SJ 27032 42177	Fair	British Waterways and private	Conservation Area (part)
95. Bont Wood Cutting (37)	NPRN 406710	SJ 26991 42221	Fair	British Waterways	*Scheduled
96. Postles Roving Bridge (32)	NPRN 405868	SJ 26936 42217	Fair	British Waterways	*In Setting
97. Detached part of western construction yard for Pontcysyllte Aqueduct	NPRN 406702	SJ 26883 42224	Fair	British Waterways and private	
98. Wood Bank culvert (97) and embankment	NPRN 406535	SJ 26835 42191	Fair	British Waterways	*Scheduled
99. Wood Bank and malt kilns	NPRN 308392/405837	SJ 26814 42158	Fair	private	Listed
100. White Bridge footbridge (33)	NPRN 405867	SJ 26785 42171	Fair	British Waterways	*In Setting
101. Plas-yn-y-pentre Bridge (34)		SJ 26103 41522	Fair *	Denbighshire CC	Listed
102. Trevor Mill culvert (98) and Millars Embankment (24-25)	NPRN 405865	SJ 25960 41387	Fair	British Waterways	*Scheduled
103. Millars Bridge wharf	NPRN 406614	SJ 25885 41340	Fair	British Waterways	*Scheduled
104. Millars Bridge (35)	NPRN 405864	SJ 25868 41335	Fair *	Denbighshire CC	Listed
105. Bryn-ceirch Cutting (38), and embankment	NPRN 406613/406623	SJ 25389 41457	Fair	British Waterways	*Scheduled
106. Bryn-ceirch Bridge (36)	NPRN 405863	SJ 25506 41365	Fair	British Waterways	Listed
107. Plâs-isaf culvert (99)	NPRN 406679	SJ 25269 41505	Fair	British Waterways	*Scheduled
108. Plâs-isaf Bridge (37)	NPRN 405861	SJ 25257 41511	Fair	British Waterways	Listed
109. Trevor Limestone Railway wharf	NPRN 406607	SJ 25201 41553	Fair	British Waterways	*Scheduled
110. Plâs-isaf limekilns and wharf	NPRN 406611	SJ 25151 41562	Fair	British Waterways and private	*In Setting
111. Bryn-Howel boat-turning basin	NPRN 406606	SJ 25027 41684	Fair	British Waterways	*Scheduled
112. Bryn-Howel Cutting (39)	NPRN 406605	SJ 24969 41786	Fair	British Waterways	*Scheduled
113. Bryn-Howel Bridge (38)	NPRN 406021	SJ 24965 41769	Good	Denbighshire CC	Listed
114. Bryn-Howel boat-house	NPRN 85085	SJ 24942 41842	Fair	private	*In Setting
115. Bryn-Howel railway bridge (39)	NPRN 405862	SJ 24896 41927	-	private	*In Setting
116. Plâs-Ifan Limestone Railway wharf	NPRN 406675	SJ 24812 42020	Fair	British Waterways	*Scheduled
117. Plâs-Ifan outlet sluice (13)	NPRN 406677	SJ 24797 42030	Fair	British Waterways	*Scheduled
118. Plâs-Ifan Culvert (100)	NPRN 405860	SJ 24784 42007	Fair	British Waterways	*Scheduled
119. Plâs-Ifan Embankment	NPRN 406675	SJ 24633 42129	Fair	British Waterways	*Scheduled
120. Plâs-Ifan Bridge (40) and stop-plank shelter	NPRN 405859/406676	SJ 24719 42088	Good	Denbighshire CC British Waterways	Listed

Name	Record	Grid Reference	SoC	Ownership	Protection
121. Sun Trevor Embankment (26) and site of breach	NPRN 406674/406657	SJ 23821 42477	Fair	British Waterways	*Scheduled
122. Trevor / Plâs-Ifan railway wharf	NPRN 406716	SJ 24373 42277	Fair	British Waterways	*Scheduled
123. Sun Trevor limestone railway wharf	NPRN 406655-6	SJ 24082 42380	Fair	British Waterways	*Scheduled
124. Sun Trevor Bridge (41)	NPRN 34762	SJ 24061 42369	Good	British Waterways	Listed
125. Wenffrwd culvert (101) and embankment	NPRN 406537	SJ 23664 42539	Good	British Waterways	*Scheduled
126. Wenffrwd outlet sluice (14)	NPRN 406536	SJ 23655 42538	Fair *	British Waterways	*Scheduled
127. Wenffrwd Bridge (42)	NPRN 405858	SJ 23650 42550	-	Denbighshire CC	*In Setting
128. Llanddyn Cottage	NPRN 406538	SJ 23131 42583	Fair *	British Waterways	*In Setting
129. Llanddyn Bridge (43) and stop-plank store	NPRN 405857/406612	SJ 23115 42584	Good	Private British Waterways	Listed *Scheduled
130. Llanddyn Culvert (102)	NPRN 406544	SJ 23097 42584	Fair *	British Waterways	*Scheduled
131. Llanddyn Lift Bridge (44)	NPRN 405856	SJ 22777 42327	-	British Waterways	*In Setting
132. Wern-isaf Rock Walls Cutting and embankment and culvert (103)	NPRN 405855/406670-3	SJ 22308 42082	Fair	British Waterways	*Scheduled
133. Upper Dee Flannel Mills water intake	NPRN 406589	SJ 21801 42162	Fair	British Waterways	*Scheduled
134. Siambr-wen stream culvert (104)	NPRN 406669	SJ 21693 42190	Fair	British Waterways	*Scheduled Conservation Area
135. Wharf Cottage	NPRN 405852	SJ 21547 42247	Good	private	Listed Conservation Area
136. Siambr-wen Bridge (45)	NPRN 405850	SJ 21522 42274	-	private	Conservation Area
137. Llangollen Wharf and warehouse	NPRN 405851	SJ 21489 42268	Fair	British Waterways and private	Listed Conservation Area
138. Llangollen turning hole	NPRN 406587	SJ 21337 42391	Fair	British Waterways	*Scheduled
139. Pen-y-ddol Cutting (40) and embankment (27)	NPRN 406588	SJ 21124 42609	Fair	British Waterways	*Scheduled
140. Pen-y-ddol Bridge (46)	NPRN 405849	SJ 21077 42637	Fair	British Waterways	Listed
141. Penddol culvert	NPRN 406668	SJ 20976 42839	-	British Waterways	*Scheduled
142. Tower stream culvert (106)	NPRN 406545	SJ 20976 42843	Fair	British Waterways	*Scheduled
143. Tower Bridge (47)	NPRN 405845	SJ 20943 42989	-	Denbighshire CC	*In Setting
144. Tower Bridge Cutting (41)	NPRN 406659	SJ 20931 43053	Fair	British Waterways	*Scheduled
145. Pentrefelin Bridge (48)	NPRN 43125	SJ 20729 43601	Poor	private	Listed
146. Site of Pentrefelin Slate Mill railway bridge	NPRN 406658	SJ 20543 43635	Fair	British Waterways	*Scheduled
147. Afon Eglwyseg Aqueduct, Pentrefelin	NPRN 405843	SJ 20539 43639	Fair	British Waterways	*Scheduled Listed
148. Pentre-felin Corn Mill culvert (107)	NPRN 24892	SJ 20515 43635	-	British Waterways	*Scheduled
149. Pentre-felin outlet sluice (15)	NPRN 405840	SJ 20362 43558	Poor	British Waterways	*Scheduled
150. Tŷ Craig limekilns	NPRN 406586	SJ 20244 43500	Fair	private	*In Setting

Name	Record	Grid Reference	SoC	Ownership	Protection
151. Tŷ Craig stop-lock	NPRN 405842	SJ 20176 43479	Poor	British Waterways	*Scheduled
152. Feeder watercourse formation	NPRN 406724	SJ20176 43479-SJ19588 43283	Fair / Good	British Waterways	*Scheduled
153. Tŷ Craig limekiln-manager's house and kiln ramp	NPRN 406584	SJ 20183 43458	Fair	private	*In Setting
154. Tŷ Craig Bridge (48A)	NPRN 405841	SJ 20149 43454	Poor	Denbighshire CC	Listed
155. Canal Cottage, Llantysilio	NPRN 406583	SJ 20031 43393	Fair	British Waterways	*In Setting
156. Chain Bridge rock cutting and retaining wall	NPRN 405886	SJ 19862 43270	Fair	British Waterways	*Scheduled
157. Llantysilio Footbridge (49)	NPRN 406546	SJ 19897 43286	-	private	*In Setting
158. Chain Bridge Wharf	NPRN 406718/406719	SJ 19871 43260	Fair	British Waterways and private	*Scheduled (part)
159. Chain Bridge, Llantysilio	NPRN 24054	SJ 19868 43224	Fair*	private	*In Setting
160. Chain Bridge Hotel western footbridge	NPRN 406601	SJ19811 43232	Poor	private	*In Setting
161. King's Bridge Viaduct (49A)	NPRN 405839/43123	SJ 19772 43235	Fair	Denbighshire CC	Listed
162. Horseshoe Falls mess, maintenance hut and stop-plank shelter	NPRN 405730/406585	SJ 19622 43258	Fair	British Waterways	*In Setting
163. Horseshoe Falls meter house	NPRN 405729	SJ 19612 43279	-	British Waterways	*In Setting
164. Horseshoe Falls footbridge	NPRN 406717	SJ 19604 43280	-	private	*In Setting
165. Horseshoe Falls overflow sluice and bridge	NPRN 406610	SJ19593 43274	-	British Waterways	*Scheduled
166. Horseshoe Falls intake gate and footbridge	NPRN 406725	SJ19588 43283	-	British Waterways	*Scheduled
167. Horseshoe Falls weir	NPRN 403685	SJ 19560 43345	Fair	British Waterways	*Scheduled Listed
168. Land around Horseshoe Falls	-	SJ 19560 43345	-	private	In Setting



Cartref, a detached canal cottage at Chirk Bank, probably for a foreman.

1.b Extent of the Nominated Site, Buffer Zone and Setting

(See Map 1, page 24)

The **Nominated Site** contains 11 miles (18 kilometres) of navigable canal and feeder channel from Gledrid Bridge to Horseshoe Falls and additional land relating to important views of the key structures.

*This is an area where day-to-management **must** be directed to protect, enhance and promote the values of the Nominated Site and this will largely be achieved through the implementation of this Management Plan by the Site owners (mostly public bodies).*

Beyond this, a wider **Buffer Zone** has been defined by the Landscape Assessment and archaeological audit to include:

- a) associated features – tramways, industrial sites and settlements which relate to the Canal's construction and operation as defined by on-site assessments supported by a series of desk studies; and
- b) a wider landscape including the views into and out of the Nominated Site.

*This is an area where development or change of use **could** have an unacceptable impact on the Nominated Site, damaging or obscuring associated features and altering important views. However, as it is not generally under the direct management or ownership of the Steering Group, protection and enhancement of this area is dependent on the land-use planning and heritage protection regimes in place and others that will be developed.*

Beyond the defined Buffer Zone, United Kingdom legislation recognises a variable 'setting' that does not have a fixed boundary where major developments which could impact on designated structures within the Nominated Site will have to be assessed on a case-by-case basis.

See Maps 2, 3 and 4 (pages 25 and 26) showing detail around the Horseshoe Falls, Pontcysyllte Aqueduct and Chirk Aqueduct.

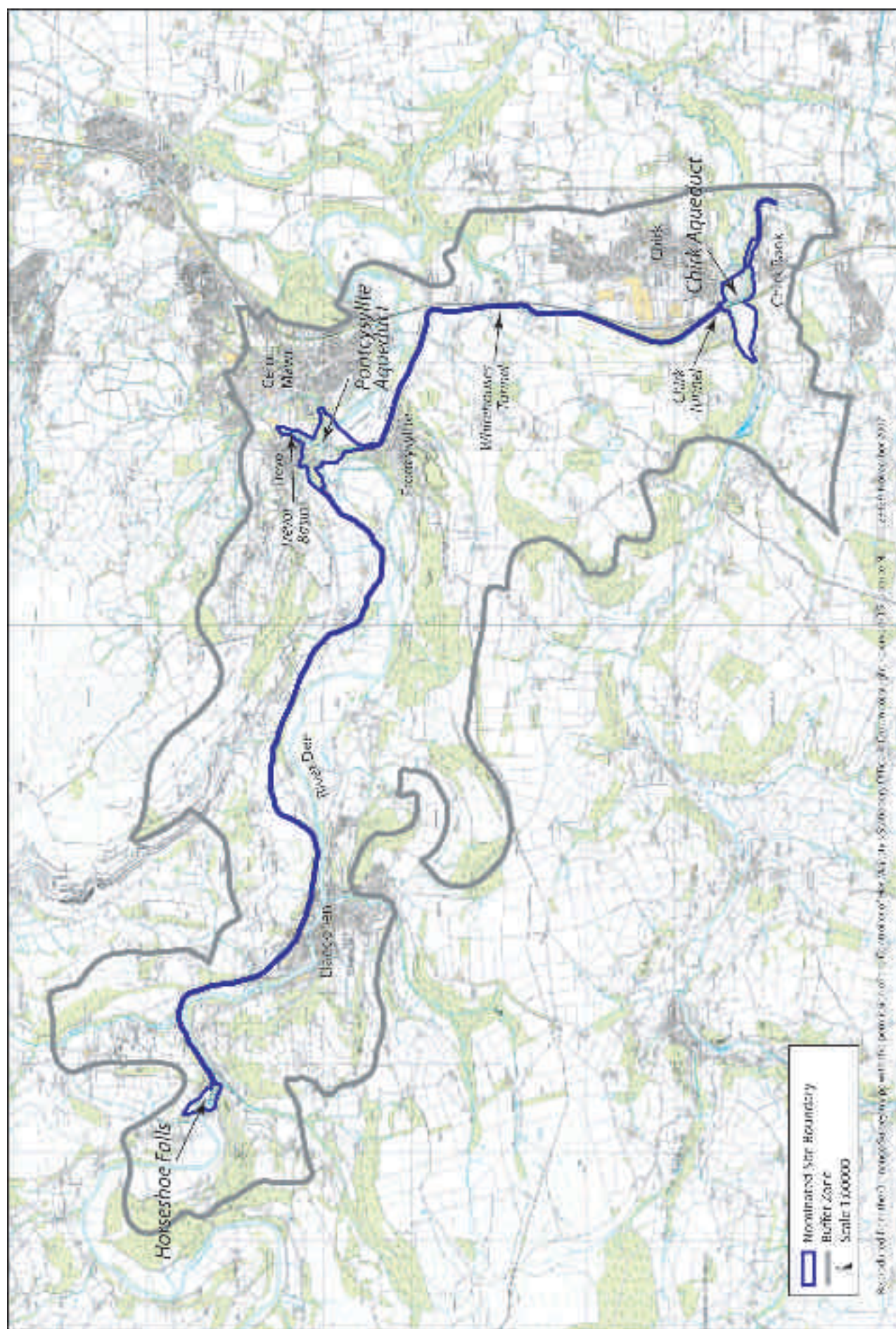
1.c Ownership

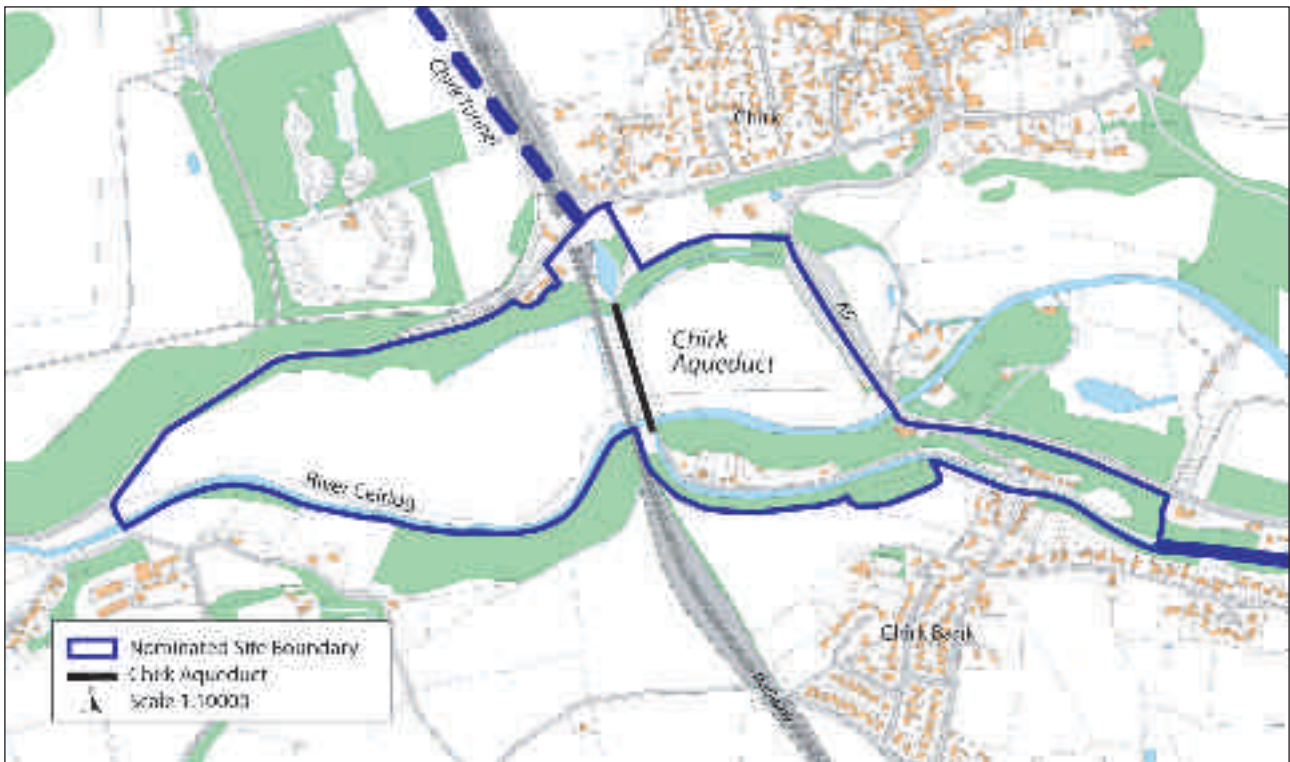
Ownership details for the Nominated Site are shown in the Gazetteer in Section 1.a. The canal, its retaining structures and overbridges (with the exception of certain road bridges) are controlled by British Waterways, a public corporation (company owned by the United Kingdom Government) responsible for the care and enhancement of the United Kingdom's 2,000 mile / 3,200 kilometre) network of canals and rivers, working in partnership with public, private and voluntary sector organisations to develop and improve waterways in a sustainable manner for the benefit of everyone. The areas of land included within the Nominated Site around Chirk Aqueduct, Pontcysyllte Aqueduct and Horseshoe Falls are mostly in private ownership.

The Buffer Zone is devised primarily for protection of the landscape setting of the waterway and key structures, but also includes the many associated features of the past industrial use of the waterway. It is predominantly in private ownership.

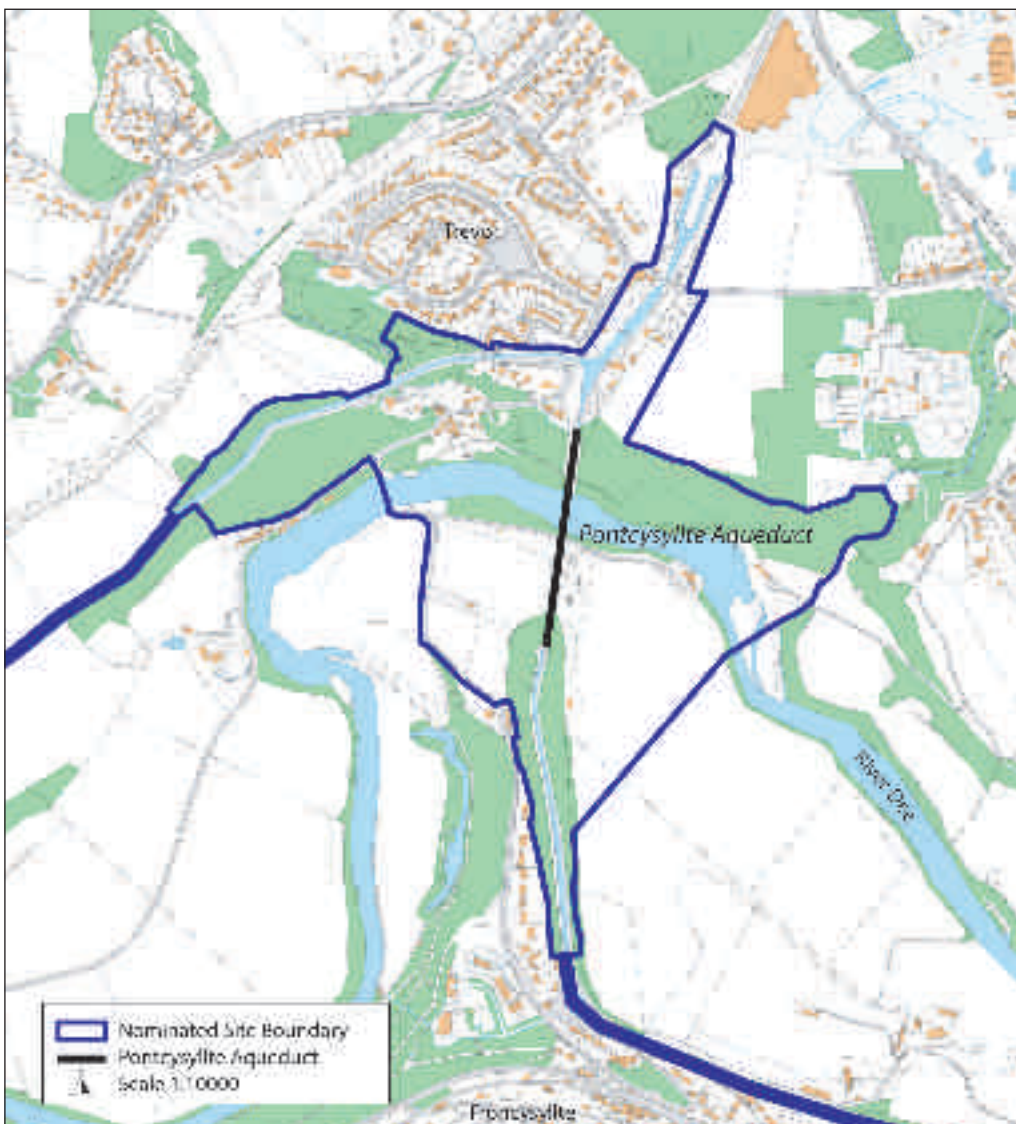
An aerial view of the head of the feeder at Horseshoe Falls.







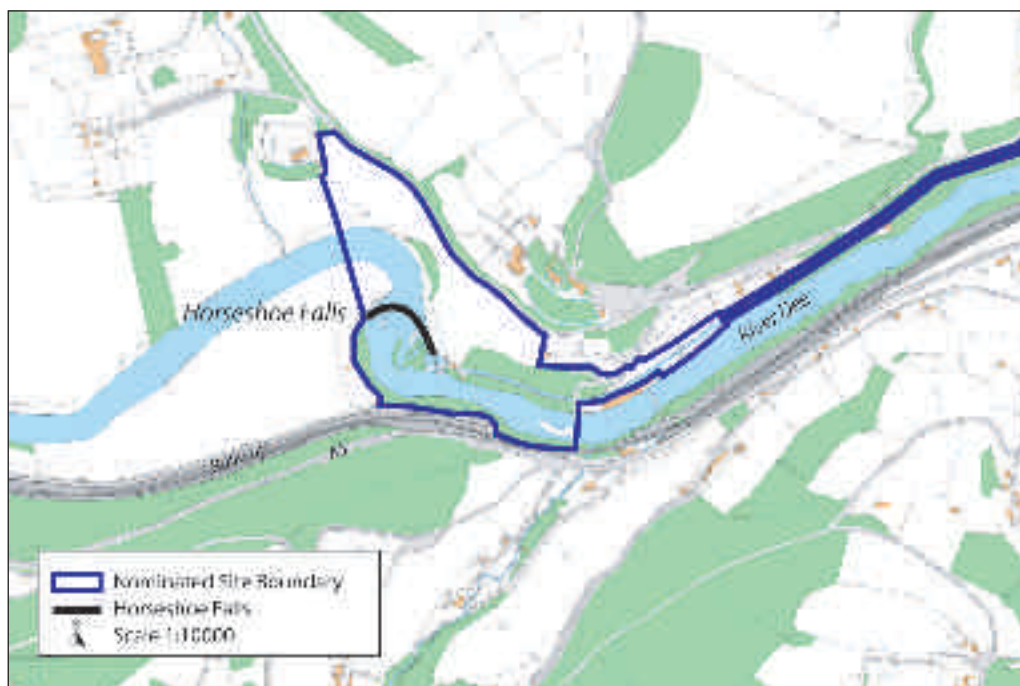
Opposite: Map 1. A map showing the boundaries of the Nominated Site and Buffer Zone.



Above: Map 2. A map detailing the Nominated Site boundary at Chirk Aqueduct.

Left: Map 3. A map detailing the Nominated Site boundary at Pontrysyllte Aqueduct.

Map 4. A map detailing the Nominated Site boundary at Horseshoe Falls.



1.d Baseline studies of current condition of the Nominated Site

1.d.1 British Waterways condition assessments

British Waterways has a system of routine inspection and engineering assessment which identifies general condition of structures, recognises significant changes in condition and feeds into maintenance and refurbishment programmes. The whole waterway is inspected monthly on a walk-

British Waterways' system of inspections feed into maintenance and refurbishment programmes.



over 'length Inspection' which identifies any significant new problems and raises notifications for short-term works. Most assets are subject to a rigorous 'Principal Inspection' by engineers every ten years which provides a thorough record of condition as a baseline for intermediate engineering inspections.

As well as identifying priority works, inspections grade the condition of structures on a scale of 'fitness for purpose', from excellent condition (A) through adequate (C) to poor (D) or bad, with significant repairs required in the short term (E). Where structures are D or E the works required are prioritised. British Waterways' maintenance programme is aimed at keeping the majority of structures at grade C or better, but a proportion of structures at any given time will be in categories D and E.

At the end of 2006, British Waterways' inspections classified 70 per cent of the structures which are regularly inspected within the Nominated Site as category A to C. Of the remaining 30 per cent, improvements are required for operational purposes, but this does not always indicate a need for works to improve the state of conservation, as discussed below.

1.d.2 The 2007 State of Conservation Report

British Waterways' inspections do not cover all the assets within the Nominated Site boundary nor do they currently take account of declines in historic fabric which do not affect the functioning of the structure (i.e. past repairs with inappropriate materials) and so an assessment of the historic fabric of the whole Nominated Site was commissioned in 2007 to establish a base line of the state of conservation of all features.

The **State of Conservation Report 2007** (see Supporting Information) extended the British Waterways' 'Fitness for Purpose' classification described above to all the structures and features of the Nominated Site. More importantly, it added grading of authenticity and integrity of the heritage fabric to give a 'State of Conservation' grade of Good, Fair, Fair* or Poor.

Good – the authenticity and integrity of the asset are intact and as close to its original state as is reasonable (allows for replacement on 'like for like' basis or historical changes).

Fair – the authenticity and integrity is largely intact. There may be minor alterations or inappropriate repairs but they do not significantly threaten the asset.

Fair* - for the majority of the structure overall the authenticity and integrity is largely intact but there are significant alterations, inappropriate repairs, deficiencies in maintenance or structural problems associated with limited areas that require remedial work.

Poor - the authenticity and integrity of the structure is significantly damaged and significant conservation work is required to renovate the asset to an acceptable condition.

This additional grading now allows future maintenance and conservation to be targeted at maintaining both operational condition and improving the integrity of the historic fabric throughout the Nominated Site and Buffer Zone.



The report divides the waterway into lengths so that the condition of the canal and its physical formation can be assessed together with individual structures.

Visually-sympathetic bank protection works have been used in the masonry quay walls at Trevor Basin.

Condition of Channel: Substantial sections of the waterway have been relined (some 45 per cent of the total length – typically with a new concrete lining installed) or had bank protection installed (sheet piling, concrete or timber walling, geotextile fabric – another 40 per cent of the total). These works have been in response to erosion of the banks, leakage and even breaches of the waterway where the original construction (typically clay lined dish) has been compromised by ground movement, leakage and erosion from water flow or boat traffic. These repairs have been essential to maintain the waterway itself in working order and without them the Canal would have been closed or converted to a water-supply pipe.

These necessary interventions have been taken into account by the Report when considering the State of Conservation of sections of the channel (termed 'Reaches' in the Report). Of the twenty seven reaches, two are assessed as Good; nineteen Fair; four Fair*; and two relatively short sections Poor.

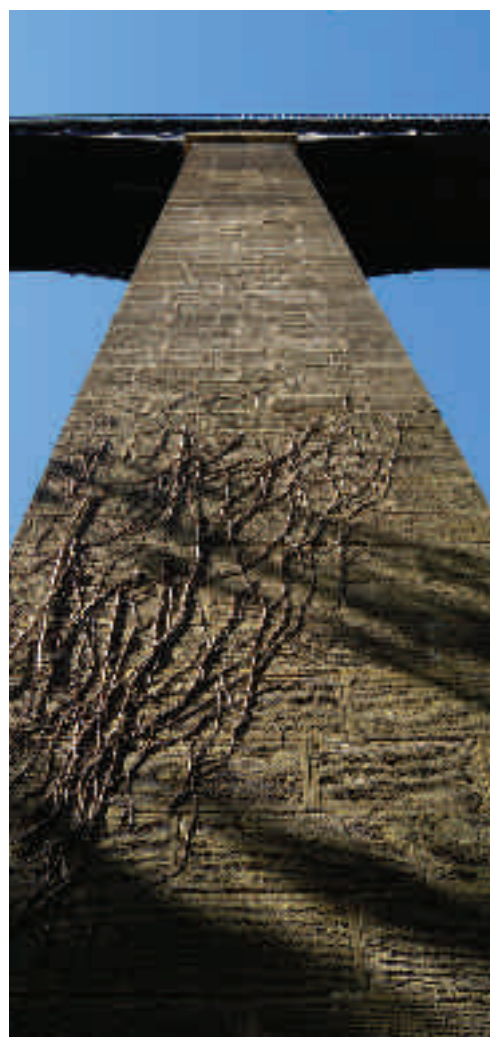
Condition of the major features:

The Fitness for Purpose and State of Conservation grading of the major structures within the Site is as follows:

Structure	Fitness for Purpose	State of Conservation
Horseshoe Falls	C	Fair
Pentrefelin Aqueduct	C	Fair
Llangollen Wharf buildings	C	Fair
Trevor Basin	C	Fair
Pontcysyllte Aqueduct	A	Good (following recent refurbishment detailed in Section 4.a.3; this sets the standard for future works within the Nominated Site)
Froncysyllte Embankment	A	Fair
Whitehouses Tunnel	C	Fair
Canal Wood Cutting	C	Fair
Chirk Tunnel	C	Fair
Chirk Aqueduct	C	Fair* (Vegetation, previous repairs)
Chirk Bank Embankment	C	Fair

This illustrates that the major structures are generally in acceptable condition and also shows the value of the separate 'State of Conservation' grading which sometimes provides a different result to the 'Fitness for Purpose' assessment.

Other Structures: as indicated above, 30 per cent of the structures assessed routinely by British Waterways within the Nominated Site are considered to be in poor condition from a 'Fitness for Purpose' assessment, requiring some works (this is a typical distribution for British Waterways' assets). Assessment of all assets within the Nominated Site however shows only 12 per cent of the total are 'Poor' from a State of Conservation view.



Litter and graffiti have to be managed and deterred.

Structures	Total No	State of Conservation				
		Good	Fair	Fair*	Poor	Not Assessed
Weirs	3		33%	33%		33%
Aqueducts	4	25%	25%	25%	25%	
Bridges	35	11%	23%	17%	17%	32%
Houses / Cottages (some as groups)	15	20%	53%	14%	13%	
Operational buildings eg warehouses etc	9	22%	33%	11%	11%	23%
Tunnels	2		100%			
Culverts, sluices and drainage channels	30	3%	50%	7%	10%	30%
Embankments	19	10%	90%			
Cuttings	16		87%	13%		
Wharves, docks and basins	21		81%		19%	
Other associated features	27	4%	70%		15%	11%
TOTALS	181	8%	58%	9%	12%	13%

There are some variations between Fitness for Purpose results and State of Conservation. A number of structures that are functionally satisfactory are identified as requiring works in the future to improve authenticity or integrity. Examples include:

- replacement of inappropriate materials used to repair over-bridges;
- removal of cement pointing and replacement with lime mortars;
- repairs to failing structures that are not considered 'principal assets' by British Waterways and therefore do not feature in the normal maintenance regime (e.g. boundary walls); and
- removal of graffiti.

This variation illustrates the need for both assessments to continue in order to inform decisions on prioritising works.

1.d.3 Landscape Assessment

As set out in the Description of the Nominated Site (Section 1.a above) and the Statement of Significance (Section 2.1 below), the landscape setting of the canal and its key features is essential to its proper presentation and enjoyment. The landscape provided the challenges to the engineers constructing the canal and stimulated the engineering features that create the Outstanding Universal Value of

the Property. In addition, the landscape provides the setting for viewing and appreciating these achievements.

A significant part of the landscape of the canal corridor is formed by the embankments, cuttings and immediate parts of the river valleys, which are within the Nominated Site. However, a much wider area provides the backdrop to the engineering features and needs management and protection. Some work has already been done on landscape characterisation in the area (see Section 2) but there was a need to define the area of valuable landscape for delineation of the Buffer Zone. A baseline character assessment was carried out by staff from Wrexham County Borough Council, British Waterways, Denbighshire County Council and Oswestry Borough Council in 2007 (*Landscape Assessment 2007*). This assessment helped to define the Buffer Zone and identify key views in and out of the Nominated Site. Its key findings were:

- assessment of the landscape character and key views was carried out in accordance with the joint Institute of Environmental Management and Assessment (IEMA) / Landscape Institute (LI) standards for assessing significance of impacts on landscape;
- important views to and from the Nominated Site and landscape setting

were identified, at Pontcysyllte and Chirk Aqueducts, Horseshoe Falls and the wider canal network;

- the immediate visual envelopes of Pontcysyllte and Chirk Aqueducts and Horseshoe Falls were recommended for inclusion within the Nominated Site to allow these large structures to be fully appreciated within the Nominated Site boundary. However, it was determined that a Buffer Zone based upon views would be intermittent and changeable over time, due to the extent of woodland within the study area;
- a Buffer Zone, adequate to support future planning decisions wishing to protect the landscape setting of the Nominated Site and key structures was therefore extended to the top of ridgelines defining the valleys around the canal, with variations to include areas of important historic association, identified within the Industrial Archaeology Audit; and
- outline recommendations were made for vegetation management both to open up important views and to provide appropriate screening. It was not considered desirable to reinstate every historic view, as this would reduce beneficial screening or have negative conservation impacts in some locations.

Whitehouses Tunnel, showing the path that permitted continuous towing by horses, now enjoyed by visitors.



1.d.4 Industrial archaeology audit

In 2007, the Steering Group commissioned a comprehensive industrial archaeology audit (*Industrial Archaeology Audit of the Area Around the Pontcysyllte Aqueduct Proposed World Heritage Site*), to include:

- features associated with the construction of the canal and principal structures such as Pontcysyllte and Chirk Aqueducts, Chirk and Whitehouses Tunnels; and
- the remains of industries which used the aqueduct and canal as means of transporting goods.

Local industries already present in the area prior to the construction of the aqueduct included stone quarrying, coal mining, iron ore extraction and slate quarrying. These were one of the main reasons for the construction of a canal to cross the River Dee in the vicinity of Pontcysyllte. Industries that developed and expanded, at least partly as a consequence of the construction of the aqueduct included the production of cast and wrought iron, engineering, chemicals, the manufacture of bricks, tiles and terracotta bricks, and burning lime in kilns. The aqueduct also led to the development of an extensive horse-worked railway system, most notably the Pontcysyllte Tramway, and the tramways around Cefn Mawr and Horseshoe Falls.

All of these activities are associated with the waterway and are part of the story of its construction and importance. Although outside the Nominated Site, they will form an important part of its future management and interpretation, and this baseline audit informs the Management Plan for future conservation and presentation of the Nominated Site. A summary of its findings is:

- The study examines the material and documentary evidence for the construction of the canal between Gledrid and Horseshoe Falls, the remains of the industries which used it and the evidence of settlement. The report considers the purpose and function of these features, their relevance to the Nominated Site, their

significance (whether local, regional, national or international), their condition, conservation issues, access and interpretation.

- It concludes that on present evidence the documentary and material evidence for the circumstances and methods of the aqueducts' and canal's construction provide an insight into the evolution of project management on a major public work at a crucial time in engineering history.
- It confirms that the major industries which called the canal into being were lime production, coal mining and iron processing; that of these, the archaeological and landscape survival of lime production within the study area is high, but that the archaeological and landscape survival of coal mining and iron processing is poor. Later industries associated with the canal include brick making, of which the landscape and archaeological survival is also poor. Recommendations are made in the report as to possible future study and interpretation of these industries.
- It confirms that the canal brought into being important feeder transport systems, including a branch canal and a network of early railways; that the early railways were designed and built by the canal's engineers and were linked to the conception of the canal as a system for moving goods. The report concludes that the archaeological and landscape survival of these features is moderate. Recommendations are made in the report as to possible future study and interpretation.
- It confirms that the canal lies within the immediate vicinity of two other important operational historic transport systems, namely Telford's post road to Holyhead and the Llangollen Railway. The report considers that these are exemplary systems and the close visual relationship of all three transport systems will be important in future interpretation and in regeneration strategy.



- It confirms that the canal lies within the vicinity of important industrial-period settlements such as Cefn Mawr as well as other settlements that contain industrial-period structures and dwellings. Recommendations are made in the report as to possible future study, conservation and interpretation.
- The report includes a supplementary list of sites of special interest as established by desk-top study and fieldwork. Recommendations are made in the report as to possible extension of statutory protection for these sites as appropriate.
- Recommendations were made in the report, and accepted, to include parts of Cefn Mawr within the Buffer Zone of the Nominated Site. These recommendations have already been implemented.

Top: White-on-brown highway sign to Pontcysyllte Aqueduct.

Above: Public artwork incorporating elements representing past and present local industries, Trevor Basin.

1.e Partners and major stakeholders in the Nominated Site

The Nomination and Management Plan have been developed by the World Heritage Site Steering Group. The Steering Group contains (as of October 2007) representatives of the following public bodies:

- British Waterways as the major landowner for the Nominated Site;
- the four Local Authorities (Wrexham County Borough Council, Denbighshire County Council, Oswestry Borough Council and Shropshire County Council) as controllers of the planning system for the Buffer Zone, as landowners and for their existing contributions to management of the property directly;
- relevant Welsh and English national bodies (Cadw, English Heritage, Environment Agency Wales, The Royal Commission on the Ancient and Historical Monuments of Wales, the Countryside Council for Wales) for their specific remits on heritage, environmental protection, landscape and wildlife; and
- UNESCO Cymru Wales.

Representatives of the partner bodies in the World Heritage Site Steering Group sign the concordat committing their support to Pontcysyllte Aqueduct and Canal, June 2007.

The Steering Group has overseen the production of the Nomination Bid and Management Plan, supported by a secretariat in Wrexham County Borough Council, and will continue to co-ordinate actions for the implementation of the Management Plan and the Vision. A concordat to this effect was signed in June 2007:

We, the representatives of the Welsh Ministers, British Waterways, Wrexham County Borough, Denbighshire County, Oswestry Borough and Shropshire County Councils, and the Royal Commission on the Ancient and Historical Monuments of Wales, state our support for the nomination of the Pontcysyllte Aqueduct and its canal as a World Heritage Site. We confirm that all parties are committed to working together to achieve recognition of the appropriate place for the Pontcysyllte Aqueduct and its canal in the cultural heritage of Wales and its wider international context. Further, all parties confirm that they will work together to improve the protection, management, presentation and interpretation of the Pontcysyllte Aqueduct and its canal to deliver sustainable development for the economic and social benefit of the communities that live alongside it.





Other bodies and landowners with interests within the Nominated Site or Buffer Zone will be encouraged to join the Concordat.

A Community Aqueduct group has already been established by the local communities in Froncysyllte, Pontcysyllte, Trevor and Garth to work with the Steering Group to ensure active involvement of the local communities in decision-making and management. This follows naturally from existing community involvement in the aqueduct's bicentenary celebrations, the strong local sense of ownership and high levels of support demonstrated by the recent public consultation.

A 'Friends of Pontcysyllte' Group will be established to engage all communities within the Nominated Site and Buffer Zone.

Examples of activities by the local community include:

- Froncysyllte Community Centre Committee serving cream teas to visitors and in so doing generating income to refurbish their Centre and its environs. This will enable them to welcome even more visitors and host events connected to the Aqueduct, increasing their direct involvement in the day-to-day management and presentation of the Nominated Site;
- Pontcysyllte featured strongly in the recent Visioning day exercise at Trevor Community Centre run by Northern Marches Cymru supported by Wrexham County Borough Council;



- August family fun day run by Wrexham County Borough Council and the Llangollen Rural Community Council and Community organisations – 5,000 visitors;
- Llangollen Tidy Town team – some twenty individuals regularly carry out litter sweeps in the town and along the canal; and

The history of the canal was promoted effectively at the Bicentenary celebrations in 2005.

- Chirk Community Forum - proposals for volunteer action at Chirk Aqueduct for vegetation management, access improvements and interpretation.

British Waterways and Wrexham County Borough Council are working to secure resources for a full-time Community Development project officer post to support the future programme of volunteering, events and activities.

Consultation process

The process of developing the World Heritage Site nomination has included a comprehensive twelve-week public consultation exercise undertaken to provide an opportunity for local residents, local businesses, organisations, visitors and others to comment on the nomination and management proposals for Pontcysyllte

Aqueduct and Canal. Every household in those Community Council areas within the Site and Buffer Zone (over 5,000 households) received a mailshot informing them of the consultation exercise and how to make their views known.

A public consultation document was produced which contained a summary of the proposals for nomination and management of the Nominated Site, highlighting the key issues, including potential benefits, threats, opportunities and restrictions. A consultation questionnaire accompanied the document, and both were made available in Welsh and English throughout the twelve-week period at ten public venues across the area. The consultation commenced on 2 July and ended on 14 September 2007. Copies of the documents were also made available on the website www.wrexham.gov.uk/aqueduct.

In addition, seven drop-in sessions were arranged throughout July and August 2007 to enable the public to speak to officers about the proposals. The overall response to the public consultation process totalled 200 completed questionnaires received. Of these 94 per cent were supportive on the nomination. The details of the consultation exercise and the responses received are provided in the supporting documentation accompanying the nomination.

For public bodies and organisations including Government Departments, a six-week consultation exercise was undertaken from 16 July to 31 August 2007. This generated twenty-nine responses and resulted in beneficial amendments to the proposals. The details are included in the supporting documentation.

All communities within the Nominated Site and Buffer Zone and slightly beyond have been consulted through their respective Community Councils. Officers made presentations to Llangollen Rural Community Council, Llangollen Town Council, Llantysilio Community Council, Chirk Town Council, Cefn Mawr Community Council, Glyn Traian Community Council, Glyn Ceiriog Community Council and Ceiriog Uchaf Community Council. All have given support.



Top: Traditional canal crafts on display at the Community Fun Day, August 2007.

Bottom: A birthday cake to celebrate the 250th Anniversary of the birth of Thomas Telford in August 2007.



Opposite: Thomas Telford's curving weir at Horseshoe Falls, which extracts water from the River Dee for the whole canal.





ANALYSIS OF SIGNIFICANCE, HERITAGE PROTECTION, LAND-USE PLANNING, DESIGNATIONS, PROTECTION AND EXISTING MANAGEMENT ARRANGEMENTS

2.a Analysis of significance

2.a.1 Statement of Outstanding Universal Value

The proposed statement of Outstanding Universal Value (Section 3.b of the Nomination) states:

Pontcysyllte Aqueduct and Canal in North Wales, built between 1795 and 1808, is a masterpiece of historic transport development and the greatest work of two outstanding figures in the history of civil engineering: Thomas Telford and William Jessop. Pontcysyllte Aqueduct crossed the Dee Valley by nineteen spans at a height of 126 feet / 38.4 metres). Its application of the new technology of cast iron to create the tallest and longest navigable aqueduct in the world was a daring and spectacular achievement. The associated 11 mile / 18 kilometre) section of navigable waterway is an outstanding example of advances in canal building in the Industrial Revolution, one of the fundamental turning points of human history. The Site exhibits important international interchanges of values in inland navigation, civil engineering and the application of iron to structural design.

Pontcysyllte Aqueduct was begun in 1795 to carry a navigable canal across the Dee Valley in North Wales. Its nineteen cast-iron spans carry the waterway 126 feet / 38.4 metres above the river, and it remained for two centuries the tallest navigable aqueduct in the world. The 11 mile / 18-kilometre

section of canal centred upon it utilised a concentrated series of great engineering features to negotiate a challenging upland landscape.

The Nominated Site exhibits the following qualities that demonstrate Outstanding Universal Value:

- it is a spectacular example of canal engineering in the late eighteenth and early nineteenth centuries;
- it is an architectural masterpiece in a dramatic landscape setting;
- it exemplifies improvements in transport during the Industrial Revolution; and
- it exhibits important international interchanges of values in inland navigation, civil engineering and the application of iron to structural design.

The extraordinary daring of Pontcysyllte had a world-wide influence in promoting the use of iron in construction: an engraving after a drawing by George Yates, c.1805.





Above: The portrait of Thomas Telford, his masterpiece behind him, at the Institution of Civil Engineers: by Samuel Lane, 1822.

Right: A portrait of William Jessop, by an unknown artist, c.1805.



At the time of its completion this length of canal was described as ‘composed of works more difficult of execution than can perhaps be found anywhere within an equal distance of canal navigation’. The engineers intervened in the landscape with a new scale and intensity, challenged by the need to cut a waterway across the grain of the Welsh upland topography. All of the features that were to become characteristic of highly-engineered transport routes can be seen in the Nominated Site, including tunnels, cuttings, aqueducts and embankments, many of them technically innovative or of monumental scale, together with bridges, culverts, weirs and associated features. The whole Nominated Site has remained in use continuously for two hundred years. It is widely valued for its historical importance, beautiful environment and breathtaking structures.

The Nominated Site is the masterpiece of two of the exceptional figures in the heroic phase of civil engineering in the late eighteenth and early nineteenth centuries. Thomas Telford (1757-1834) was an innovative and prolific design genius who had a permanent influence on civil engineering: Pontcysyllte Aqueduct was his earliest internationally-recognised achievement and the major work with which

he chose to be depicted in his portrait as first President of the Institution of Civil Engineers. William Jessop (1745-1814) was the most productive engineer of the Canal Age: Pontcysyllte Aqueduct was his greatest monument.

Pontcysyllte Aqueduct has been acknowledged by numerous authorities from the nineteenth century to the present day as a masterpiece that epitomises the courage and conviction of the Enlightenment era. It was recognised by contemporaries as among the world’s outstanding structures. Its virtuosity was understood by engineers and architects from many countries, and its extraordinary grace and daring were appreciated by artists, poets and other visitors. It represents a daringly creative application of new ideas combined with supreme skills in the handling of materials. Within its eighteenth-century context the aqueduct’s size alone is remarkable, but the confident application of a novel material is breathtaking. It was a canal structure of unprecedented lightness and elegance and achieved a crossing of a height and length that would have been impossible by existing methods. It remained the tallest navigable aqueduct in the world for two centuries. Both Pontcysyllte and Chirk Aqueducts may be seen as architectural masterpieces that



Pontcysyllte Aqueduct and Cysyllte Bridge in 1826 by G. Arnold.

were among the prominent early models of functional aesthetics. The canal as a whole has been recognised for its successful combination of rigorous engineering with sensitivity to a dramatic and highly-valued landscape.

The Nominated Site exhibits important international interchanges of values in inland navigation, civil engineering and the application of iron to structural design. The canals of the Industrial Revolution in Britain drew on the engineering achievements of France in the seventeenth century but represented a new phase in the history of inland navigation. The pivotal role of canal networks in British economic development was recognised and followed in early industrialising regions in Europe and North America. The Nominated Site exemplifies in particular the transition between transport routes that followed the landscape and ones that commanded it to serve more efficiently the needs of industrial economies. It was the greatest of a number of waterways built in the 1790s that were significantly more ambitious in design and investment than those of the previous decades. This principle was taken forward in later canals, railways and roads throughout the world.

Britain in the late eighteenth and early nineteenth centuries was the leading

centre of innovation in the manufacture and application of iron and pioneered new uses of the material in construction. Pontcysyllte Aqueduct was part of a sequence of innovations that led to the general acceptance of cast iron and then steel as construction materials and enabled ever-greater engineering achievements around the world. The Nominated Site was also a testing ground for many new practices that were carried forward into subsequent engineering and management practice internationally, including principles of contract management, the division of responsibility between specialists, cut-and-fill calculations to enable the efficient movement of spoil and the use of construction railways. Telford and Jessop participated directly in interchanges that influenced engineering in other countries, through their own work and its publication, protégés who worked overseas, and their key roles in the creation of early professional institutions. Pontcysyllte Aqueduct also exhibits an interchange of human values in conservation, as an iconic structure recognised in the pioneering works of industrial archaeology and the early industrial heritage movement.

The Nominated Site is an outstanding example of transport improvements in the

Industrial Revolution, which initiated the process of industrialisation that spread to Europe, North America and the entire globe. It bears witness to many of the defining characteristics of the Industrial Revolution, including improved means of transport, new technologies, the development of economic structures, increasing capitalisation, increased inter-regional trade, accelerating growth in output and the shift to fossil fuels. Inland waterways were the prime mode of industrial transport throughout the course of the British Industrial Revolution. They were vital in opening up the coalfields to economic exploitation and increased the efficiency of the whole economy. England and Wales were eventually served by some 5,340 miles / 8,600 kilometres of navigable inland waterways, over 1,180 miles / 1,900 kilometres of which was built in just two decades, from 1790 to 1810.

The Nominated Site has a high degree of integrity and authenticity. The whole of the intensively-engineered section of the waterway is within the Nominated Site boundary and no major features have been lost or damaged. Changes made to the formation of the waterway and its engineering features during its continuing working life as a navigation have been largely superficial. Its central structure, Pontcysyllte Aqueduct, has been protected as a Scheduled Ancient Monument of National Importance since 1958 and was recently the subject of an exemplary conservation programme. The Nominated Site and its extensive Buffer Zone are protected and managed by multiple designations and planning controls. The canal is in state ownership through the medium of British Waterways. A robust World Heritage Site Management Plan has been prepared by the local authorities, British Waterways and national heritage bodies, who have come together in a strategic partnership for the purposes of its identification, protection, conservation, presentation and transmission to future generations.

2.a.2 Justification for Inscription

The Justification for Inscription as set out in Section 3.a of the Nomination Document is as follows:

Pontcysyllte Aqueduct and Canal: i) is the masterpiece of two of the exceptional figures in the heroic phase of civil engineering in the late eighteenth and early nineteenth centuries; ii) exhibits important international interchanges of values in inland navigation, civil engineering and the application of iron to structural design; and iv) is an outstanding example of transport improvements in the Industrial Revolution, which initiated the process of industrialisation that spread to Europe, North America and the entire globe.

The following analysis sets out why the Nominated Site is of Outstanding Universal Value in relation to criteria i, ii and iv of the World Heritage Convention. It draws upon and summarises the detailed evidence in Section 2 and Section 3.c of the Nomination Document.

The nomination of Pontcysyllte Aqueduct and Canal is consistent with the need identified by the International Council on Monuments and Sites (ICOMOS) to balance the World Heritage list with regard to technological sites of the period from 1793 to 1914. ICOMOS and The International Committee for the Conservation of the Industrial Heritage (TICCIH), as international scientific committees that act as advisors to UNESCO, have examined the Nominated Site and concluded that it is of international significance in two Thematic Studies: *The International Canal Monuments List* (1996) and *Context for World Heritage Bridges* (1997). This evaluation has been endorsed by a series of expert papers and detailed studies and by an international conference in June 2007, the findings of which are incorporated throughout this Nomination Document.

Guidelines for the inscription of heritage canals are given in Annex 3 of the *Operational Guidelines for the Implementation of the World Heritage Convention*. These state that canals may be



significant on technological, economic, social and landscape grounds. They recognise the importance of canals in economic development as the first man-made routes for the effective carriage of bulk cargoes and identify significant areas of technology, including 'the engineering structures of the line with reference to comparative structural features in other areas of architecture and technology; the development of the sophistication of construction methods; and the transfer of technologies'.

Criterion i: 'represent a masterpiece of human creative genius'

Thomas Telford was an innovative and prolific design genius whose influence on civil engineering was manifold and permanent: his work in the Nominated Site was his first substantial engineering project and his first opportunity to show the innovatory powers of design and project leadership that were to make him world famous. Pontcysyllte Aqueduct became his earliest internationally-recognised achievement and the major work with which he chose to be depicted in his portrait as first President of the Institution of Civil Engineers. William Jessop was a more modest man who left no account of his achievements, but he was revered by his contemporaries and was the most productive engineer of the Canal Age:

Pontcysyllte Aqueduct was seen as his greatest monument.

Pontcysyllte Aqueduct has been acknowledged by numerous authorities from the nineteenth century to the present day as a masterpiece of the 'heroic' phase of ambitious and imaginative civil engineering at the end of the eighteenth century and a monument that epitomises the courage and conviction of the Enlightenment era. It was recognised by contemporaries as among the world's outstanding structures. Its virtuosity was understood by engineers and architects from many countries, and its extraordinary grace and daring were appreciated by artists, poets and other visitors. Among the words most often used to describe it were 'supreme', 'magnificent', 'beautiful', 'wonderful' and 'stupendous'. Promoters of the project and independent witnesses ranked it with the architectural masterpieces of antiquity: the German landscape architect Prince Hermann von Pückler-Muskau described it as 'a work which would have done honour to Rome'.

Pontcysyllte Aqueduct represents a daringly creative application of new ideas combined with supreme skills in the handling of materials. Within its eighteenth-century context the aqueduct's size alone is remarkable, but its confident early application of cast iron is breathtaking. Its designers investigated and tested the new technology of structural cast-iron,

Pontcysyllte Aqueduct attracts up to 200,000 visitors each year and recent events have drawn approximately 5,000 visitors per day.

drew together expert craftsmen and made successive innovations during the project's conception and development. They created a canal structure of unprecedented lightness and elegance and achieved a crossing of a height and length that would have been impossible by existing methods. It remained the tallest navigable aqueduct in the world for two centuries.

The French art historian Pierre Francastel wrote that Telford was among 'the real initiators of an intellectual revolution that led to the idea of functionalism, and started the whole complicated evolution of modern architecture.' Pontcysyllte and Chirk Aqueducts may be seen as among the prominent early models of functional aesthetics. New materials and methods released them from previous restrictions of proportion and produced new structural expressions. Their designers believed that form should follow function and spurned architectural embellishment while expressly intending to create serene and

noble structures, and both aqueducts were admired by commentators as objects of beauty. The French mathematician and engineer Charles Dupin called Pontcysyllte Aqueduct 'a supreme work of architecture, elegant and unadorned'.

The canal as a whole was recognised as having combined rigorous engineering with sensitivity to a valued landscape. A contemporary commentator declared that 'the Canal Works between the north bank of the River Dee and the south bank of the Ceiriog, consisting of two large Aqueducts, two Tunnels and a great extent of deep cutting, will gratify those who enjoy the effects of works of art, when executed on a large scale'. Another wrote after Telford's death, 'Mr Telford executed the difficult task so as not only to avoid injuring the natural charms of the spots he touched upon, but absolutely to enhance their attractions in a high degree.' The canal's extraordinary grace as a sensitive addition to the landscape was perceived by contemporaries and continues to be appreciated by visitors today.

Even while it was under construction, the unprecedented aqueduct at Pontcysyllte captured the imagination of artists: this painting by John Ingleby shows the trough being erected on top of the completed arches, with the construction decks still in place at the level below.





Criterion ii: ‘exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design’

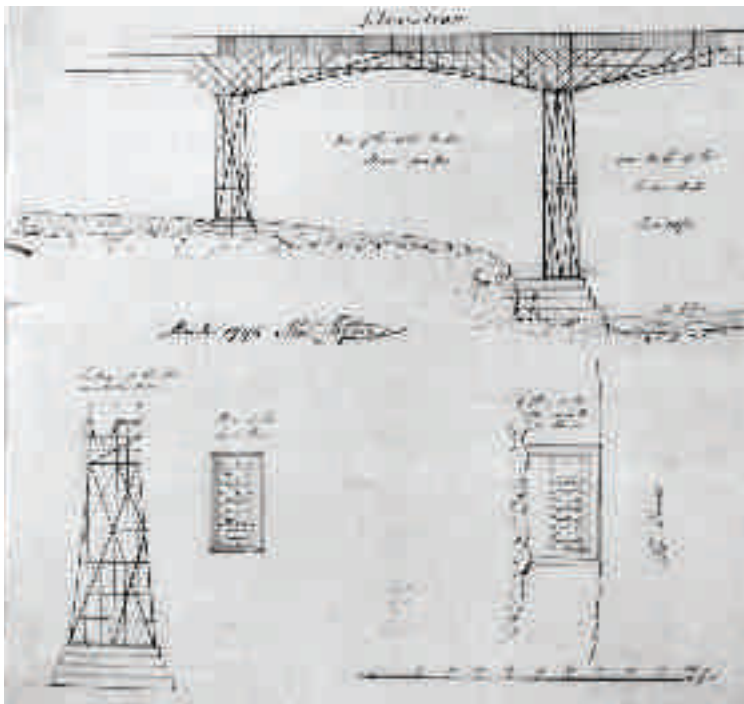
The Nominated Site bears testimony to an international interchange with regard to the technology and promotion of canals. The Ellesmere Canal and others of the Industrial Revolution in Britain drew on the engineering achievements of France in the seventeenth century; but they marked a new beginning in the promotion of increasingly sophisticated inland waterways for economic development, especially in coalfield areas. This model was subsequently pursued in other industrialising regions in Europe and North America. The continuing interchanges of values took place by several mechanisms: British canals were visited and studied by statesmen, promoters and engineers from other countries, accounts of the canals were widely published and circulated, British engineers advised on projects overseas, ideas were passed through successive generations of protégés and assistants, and professional engineering institutions promoted good practice. The important works within the Nominated Site figured strongly in such interchanges.

The Nominated Site exemplifies in particular the transition between transport

routes that followed the landscape and ones that commanded it to serve more efficiently the needs of industrial economies – a principle taken forward in later canals, railways and roads throughout the world. It was the greatest of a number of waterways built in the 1790s that were significantly more ambitious in design and investment than those of the previous decades. Telford wrote in 1805, ‘This division of the canal is composed of works more difficult of execution, than can perhaps any where be found within an equal distance upon Canal Navigation.’ It is understood as the first canal of the ‘heroic’ rather than the ‘pioneering’ phase of canal engineering, and the unprecedentedly ambitious crossing of the Dee Valley by embankment and aqueduct symbolises supremely the rigour and confidence of the new approach.

Pontcysyllte and Chirk Aqueducts proved emphatically, for a world-wide audience, the potential of iron in construction. They were conceived as a result of an international exchange of thinking with regard to the applications of iron in the 1790s, and their builders saw them as part of a conscious interchange of technology leading from ‘Mr Darby who erected the first Iron Bridge’ through the ideas of contemporary British, French and American designers and ironmasters to the next generation of iron structures around the world. The

Boat and walkers crossing Chirk Aqueduct and in so doing, crossing the Wales-England border.



Telford's sketch of March 1794 representing an idea for an all-iron aqueduct in a location that could be Pontcysyllte.

international fame of Pontcysyllte Aqueduct as a daring demonstration of what could be achieved with iron, promoted ongoing development of iron construction in bridges and buildings. Telford himself went on to be recognised as one of the greatest exponents of the iron road bridge. Metal aqueducts continued to be built in many countries. Iron, steel and then steel-reinforced concrete became the materials of choice for major structures worldwide.

The Nominated Site was a testing ground for many new practices developed through the creative dialogue between its two engineers that were carried forward into subsequent engineering and management internationally. In addition to intensively-engineered routes and iron construction, discussed above, the following were among the most important.

- Telford established the professional ethos of the engineer and principles of contract management that are still in use internationally.
- Telford and Jessop established clear lines of responsibility between specialists that permitted major projects to be achieved: this is evident in the Nominated Site in the houses for resident engineers.
- Telford developed cut-and-fill calculations, making possible the

ambitious scale of earthworks on the canal by ensuring the efficient movement of spoil. This proved critical for railway-building world-wide and is still used in modern engineering practice.

- The large-scale use of construction railways to move spoil and deliver materials was fundamental to the major works in the Nominated Site. Such techniques were further developed internationally.

Telford and Jessop were directly concerned with interchanges that influenced engineering in other countries. They undertook or advised on projects in Sweden, Ireland, the United States of America and Canada. They mentored and influenced younger engineers who worked in all parts of the world: for example Telford's surveyor Thomas Brassey went on to use project management methods learned from him in India, Canada, Australia, South America, Turkey, France, Spain, Italy, and Denmark. The work of Telford and Jessop was studied by engineers and commentators from many countries. Telford was recognised as one of the outstanding figures in the rise of civil engineering as a profession and his principles were incorporated into international practice. His work was extensively published and known internationally. The Institution of Civil Engineers, of which he was the first President, now has 80,000 members in 150 nations.

Pontcysyllte Aqueduct also exhibits an interchange of human values in conservation. It was recognised in the pioneering works of industrial archaeology and was one of the iconic structures of the early industrial heritage movement. In the 1940s it helped to inspire the formation of one of the earliest industrial conservation organisations, the Inland Waterways Association, which campaigned to save it from closure. It was among the earliest industrial structures to be designated a Scheduled Ancient Monument of National Importance, in 1958. In 1973 it was visited by the first ever international conference on the conservation of the industrial heritage.

Criterion iv: ‘be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates a significant stage in human history’

The Nominated Site is an outstanding material representation of the improvements in transport that stimulated and enabled the Industrial Revolution, one of the fundamental turning points of human history.

The process of industrialisation that began in Britain and spread to the rest of Europe, North America and the entire globe altered the economic and social basis of life. Pontcysyllte Aqueduct and Canal bears witness to many of the prime changes embodied by the Industrial Revolution.

- **Improved means of transport** are illustrated by the canal as a construction through a landscape not previously served by bulk transport.
- **New technologies** are illustrated by the successive technical solutions developed by Jessop and Telford during the course of the project.
- The development of **new economic structures** is exemplified by the construction of the canal by a joint stock company. British canals were among the first enterprises to raise capital through mass shareholding.
- **Increasing capitalisation** is illustrated by the canal as a technological ensemble designed to replace labour with capital through the creation of more efficient means of carriage. The canal at Pontcysyllte, with its sequence of challenging engineering works, was more highly capitalised per mile than any that preceded it.
- **Increased inter-regional trade** is illustrated by the physical connection made by the canal to external and world markets and by the installations for incoming and outgoing trade that grew up on its banks.
- **Accelerating growth in output** is reflected in the scale of waterway

planned by the canal’s promoters, based on their expectations of rapidly increasing trade, and the evidence for the canal’s subsequent use.

- **The shift to fossil fuels** is illustrated by the effort expended to carry the canal across the Dee Valley to the northern part of the coalfield. Coal was the major traffic on the canal throughout its working life.

Inland waterways were the prime mode of industrial transport throughout the course of the British Industrial Revolution. They were vital in opening up the coalfields to economic exploitation and increased the efficiency of the whole economy. England and Wales were eventually served by some 5,340 miles / 8,600 kilometres of navigable inland waterways, an industrial transport system that was not surpassed until the expansion of locomotive railways after 1830. The Nominated Site is an outstanding example of a technological ensemble that illustrates these changes.

Chirk Aqueduct with the railway viaduct of a generation later beyond.



2.b Heritage Protection

Several forms of designation and regulation already apply to the Nominated Site in part or whole (see Map 5 on page 48). The extension of designations is currently being reviewed (2007) and this would also strengthen protection of the Buffer Zone under the planning system (see 2.c below). The system of designation is likely to be enhanced by forthcoming changes in national legislation and guidance.

2.b.1 Sites of national importance

The United Kingdom has had a statutory system of legally protecting ancient monuments for over 120 years. Scheduling is the highest level of heritage designation for ancient monuments in the United Kingdom and is governed by the provisions of *The Ancient Monuments and Archaeological Areas Act 1979*. Scheduling designates the site of the monument and its component structures. English Heritage is the agency which delivers advice to the Department of Culture, Media and Sport on the inclusion of sites on the schedule and the granting of consents in England. Cadw is the Welsh Assembly Government's historic environment division and undertakes scheduling and grants consents on behalf of Welsh Ministers.

Pontcysyllte Aqueduct has been a Scheduled Ancient Monument since 1958. Cysylltau Bridge, within the Nominated Site to the west of the aqueduct, is also a Scheduled Ancient Monument. A further twelve monuments in the Buffer Zone are protected by Scheduling, including Castell Dinas Brân, Offa's Dyke, and Valle Crucis Abbey. Following recent survey work, Cadw and English Heritage are considering scheduling or other designation for the entire canal from the Horseshoe Falls to Gledrid bridge

2.b.2 Listed Buildings of special architectural or historic interest

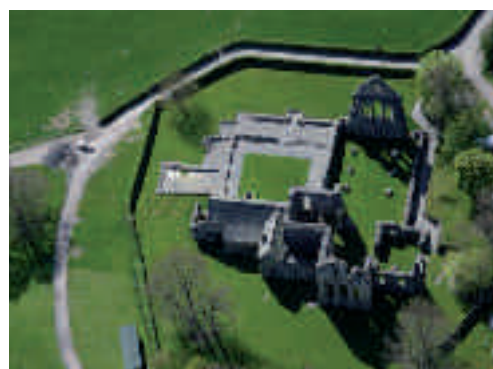
Listing is the highest level of heritage designation in the United Kingdom for buildings in use. Buildings and structures of 'special or architectural or historic interest' are designated as 'Listed Buildings' under the *Planning (Listed Buildings and Conservation Areas) Act 1990* by the Department of Culture, Media and Sport in England and Cadw in Wales.

As of September 2007 there were over thirty Listed structures within the Nominated Site and identified on the Gazetteer (see Section 1.a) and some 300 further Listed buildings in the Buffer Zone.

Below: Bryn Howel Bridge (bridge number 38).

Top right: Valle Crucis Abbey is in state care under Cadw, the heritage division of the Welsh Assembly Government.

Bottom right: Cysylltau Bridge lies upstream from Pontcysyllte Aqueduct. It is a Scheduled Ancient Monument.



2.b.3 Conservation Areas

Conservation Areas are designated under the *Planning (Listed Buildings and Conservation Areas) Act 1990* to protect:

areas of special architectural and historic interest, the character and appearance of which it is desirable to preserve or enhance.

Three Conservation Areas cover parts of the Nominated Site:

- Trevor Basin, including Pontcysyllte Aqueduct;
- Llangollen; and
- Trevor Mill / Plas yn Pentre.

An extension of the Trevor Basin Conservation Area is being considered to the area around the canal at Froncysyllte. Three further Conservation Areas cover parts of the Buffer Zone in close proximity to the Nominated Site:

- Llantysilio;
- Cefn Mawr; and
- Chirk.

All these Conservation Areas are supported by *Character Assessments*.

2.b.4 World Heritage Sites – the Heritage Protection Review

In March 2007, the United Kingdom Government announced proposals for a major reform of the protection of the heritage in England and Wales. In both countries, a new unified register of historic assets is proposed, to incorporate all Scheduled Ancient Monuments, Listed Buildings, Historic Parks and Gardens, Battlefields and World Heritage Sites.



Aerial view of Trevor Basin and part of the Conservation Area.

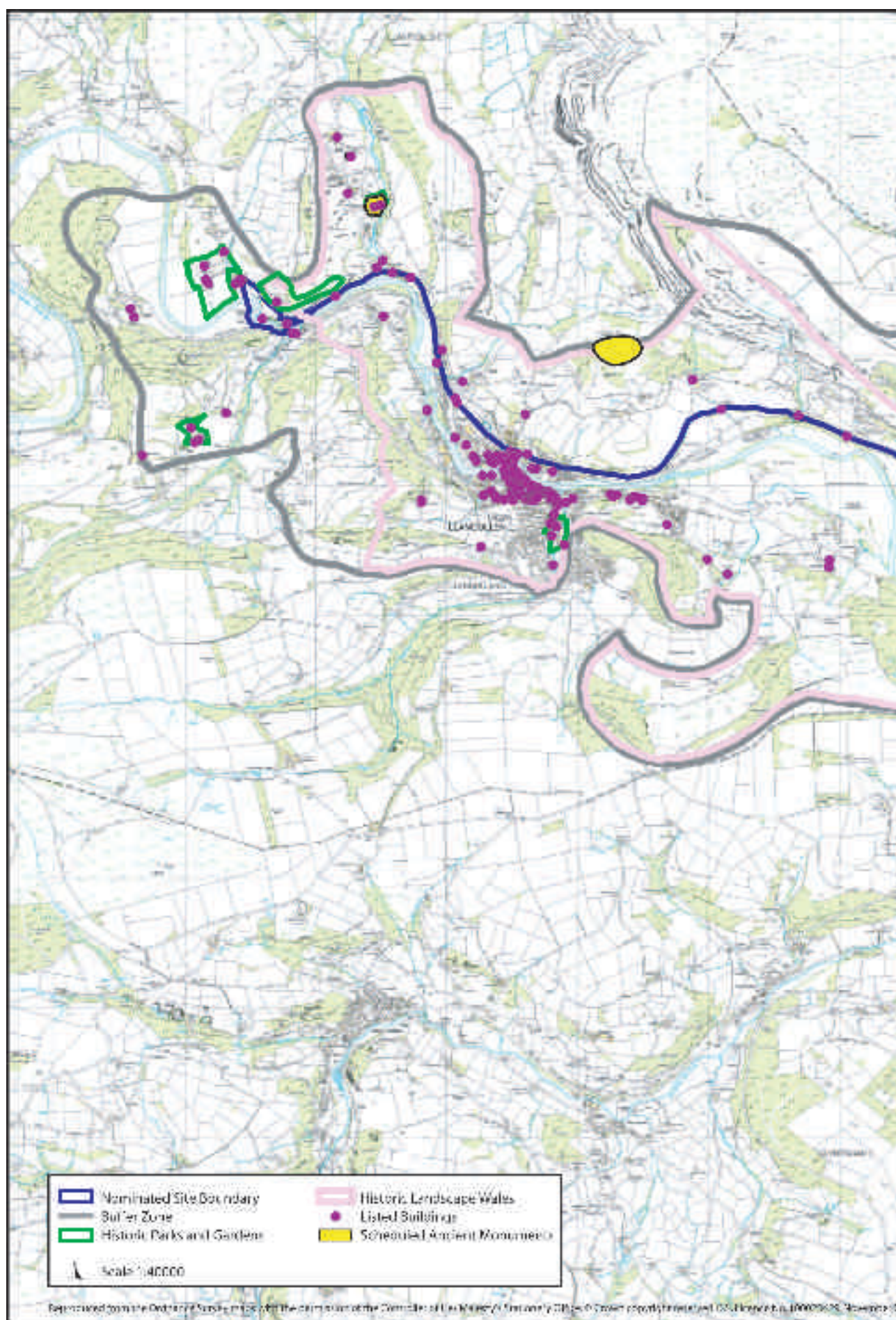
This will give separate and enhanced statutory recognition to World Heritage Sites when legislation comes into effect, probably in 2010. In the interim, World Heritage Sites are recognised as a key material consideration when determining development proposals under the terms of *Planning Policy Guidance (PPG15)* and *Welsh Office Circular 61/96* and policies adopted in local authority development plans (see Section 2.c below).

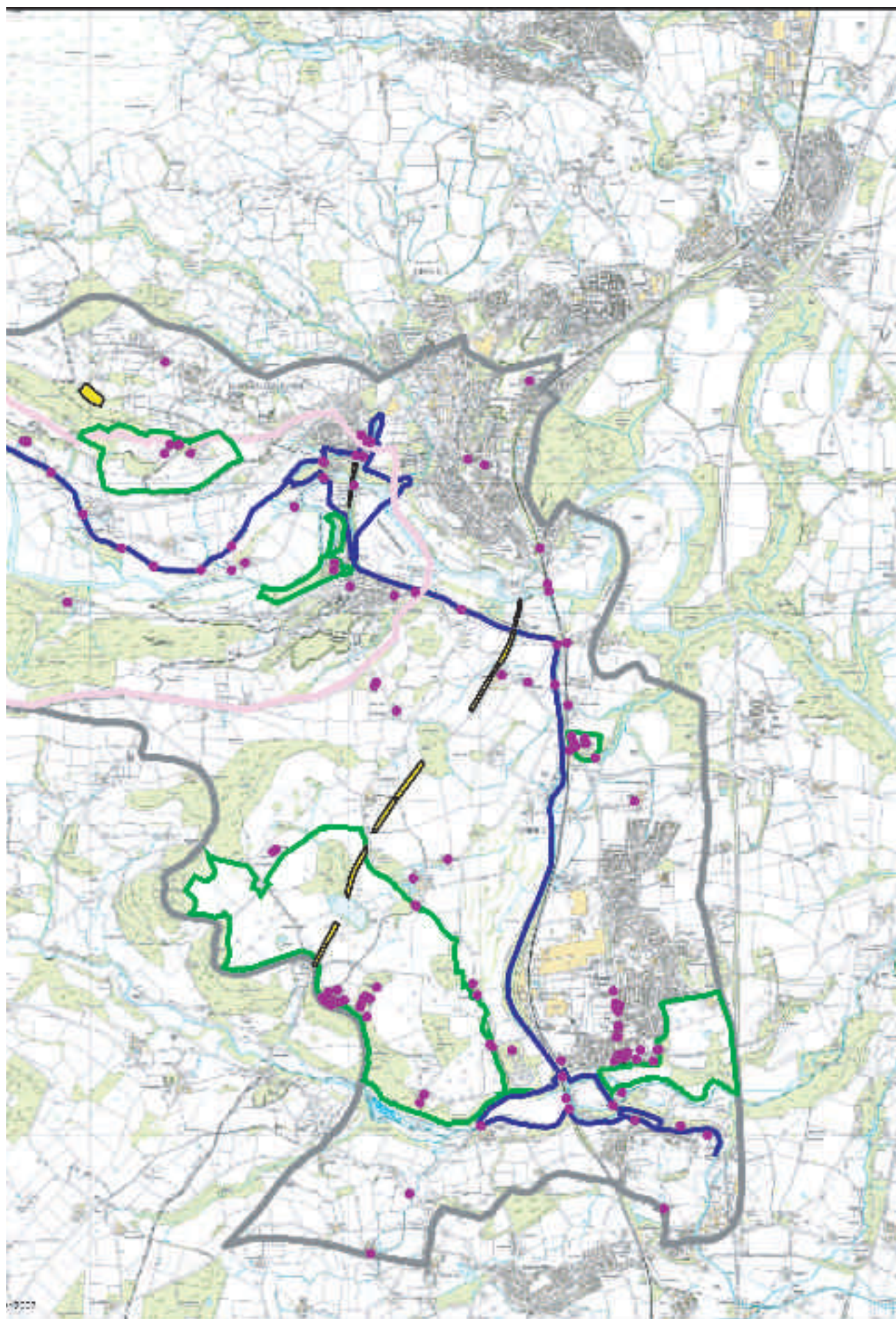
The principal changes are designed to ensure, through the regulations for call-in of planning applications for decision by Ministers, that proposals likely to have a significant impact on World Heritage Sites will be decided nationally rather than locally. Also more control may be exerted over small-scale changes that over time may have an adverse impact on the Outstanding Universal Value of a World Heritage Site. This will be achieved by including World Heritage Sites in Article 1(5) of the General Permitted Development Order (GPDO). Consideration of World Heritage Sites within the planning system will also be strengthened by the issue of a planning circular:

which will further recognise in national policy the need to protect World Heritage Sites as sites of Outstanding Universal Value, and will make more prominent the need to create a management plan for each WHS, including, where needed, the delineation of a Buffer Zone around it.

Left: Wood Bank at Trevor, believed to have been the drawing office for the construction of Pontcysyllte Aqueduct, is a Listed Building.

Over: Map 5. Heritage Designations in the Nominated Site and Buffer Zone.





2.c Land-use Planning

This Section provides details of the development control and planning system covering the Nominated Site and Buffer Zone. Existing plans and policies support the heritage protection system outlined in 2.b above and provide for the protection of the landscape and wider setting (see Map 6). Local Plans and Frameworks are currently being revised and so present opportunities for new specific policies to be introduced. The Steering Group, including the local authority partners with responsibility for planning, is committed to the full and effective use of existing policies for the protection, conservation and presentation of the Nominated Site while the new planning policies are being developed and implemented.

England and Wales have had a system for control of development based on statute law for around sixty years. The statutory Planning system controls development through spatial planning setting out policies for development control. Much of the detail of this system of development control and spatial planning is exercised through government guidance to the Local Authorities responsible for spatial planning and development control (for instance Planning Policy Wales and the Wales Spatial Plan both produced by Welsh Assembly Government), through Regional Spatial Strategies (in England), and through development plans / frameworks prepared



Pentrefelin Bridge in its picturesque setting.



by the Local Authorities. This overall spatial planning system is linked to the designation of specific assets such as ancient monuments, historic buildings or other sites of conservation interest (see Section 2.b above) as protection of many of these assets is also achieved through policies in local plans.

Such development plans have statutory backing and legal status. Departure from them can lay a Local Authority open to judicial action. While they are being replaced over the next few years by a modified system of Local Development Plans (Frameworks in England) with subsidiary documents, the statutory backing for Local Authority planning policies will remain central to the whole UK system of development control.

Planning Policy Wales (2002) sets out the Government's land-use planning policies as they apply in Wales, guidance on the preparation and content of development plans and advice on development control decisions and appeals. Section 6 sets out policy guidance of specific relevance to the historic environment.

Government guidance is published in a series of Planning Policy Guidance Notes (PPGs) or, in Wales, Technical Advisory Notes (TANs). PPGs / TANs are partly an explanation of the law and partly a setting-out of national policy from which Local Authorities may depart only in exceptional and justified circumstances. They therefore have considerable force in directing the use of local authorities' planning powers both in dealing with individual cases and in drawing up development plans.

In Wales, TANs have not been issued for matters relating to the historic environment. Existing guidance set out in *Welsh Office Circular 60/96 - Planning and Historic Environment: Archaeology*, and *Welsh Office Circular 61/96 - Planning and the Historic Environment; Historic Buildings and Conservation Areas*, still stands. Together they provide the appropriate guidance and should be taken into account by local planning authorities in the preparation of development plans. The



combined guidance may be material to decisions on planning proposals.

For England, advice is given in *PPS1*, *PPG15 (Historic Buildings and Conservation Areas)* and *PPG16 (Archaeology)*.

As a general rule there is a presumption against any development which would harm the historic environment, not only sites or buildings themselves but also their settings and this is borne out in the existing local policies detailed below which will provide protection to the Buffer Zone and the setting of the Nominated Site. Again, as a general rule, planning permission would not normally be granted until appropriate prior consent had been granted under other legislation in respect of Listed Buildings, Conservation Areas and Scheduled Ancient Monuments.



2.c.1 World Heritage Sites and Planning

While World Heritage Sites are not yet included in designations established under primary legislation, they are recognised under the terms of *PPG15 / Welsh Office Circular 61/96* as significant material considerations in planning decisions and direction is given that Inscribed World Heritage Sites should be the subject of specific policies adopted in Local Authority development plans. *PPG 15 / Circular 61/96* says:

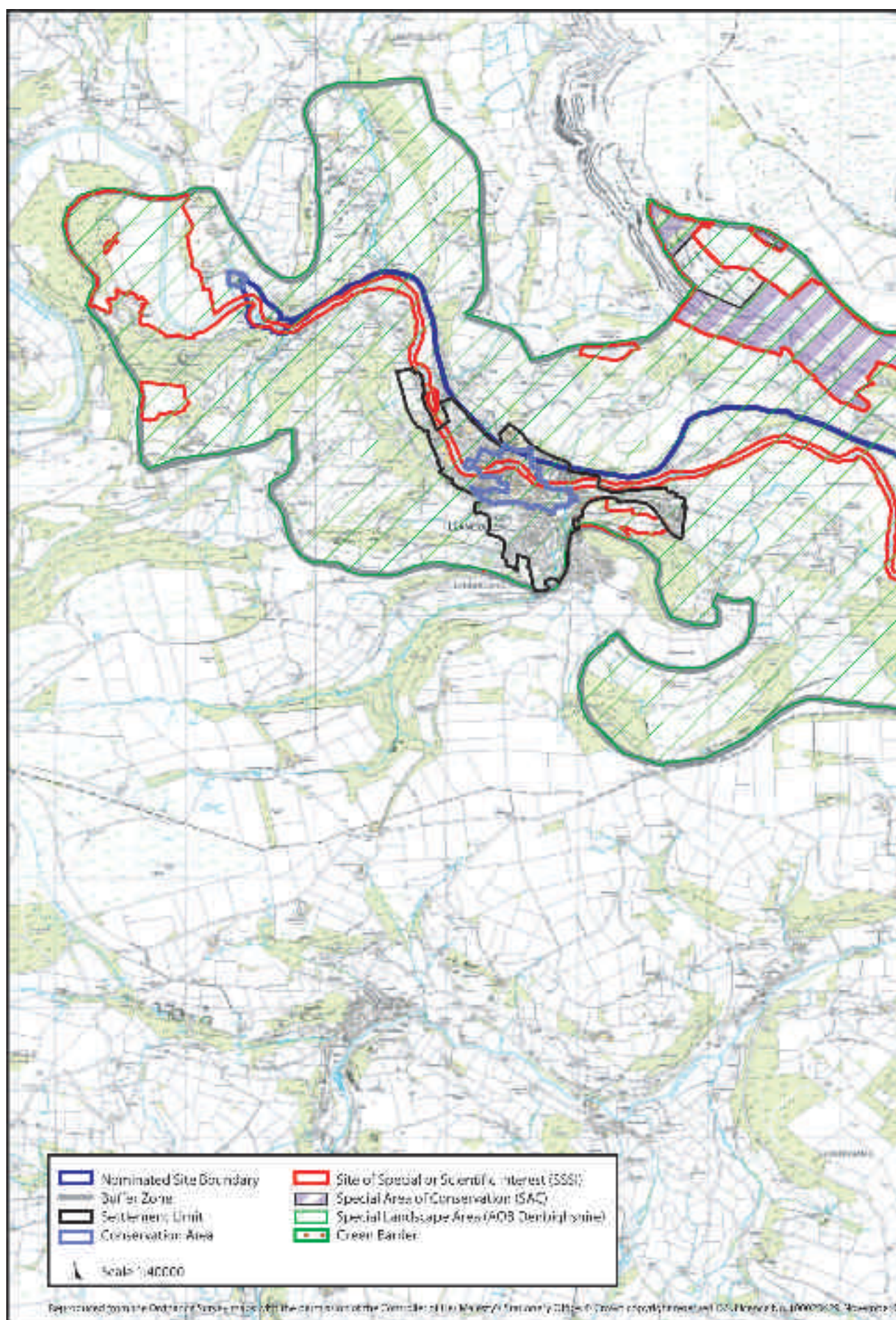
No additional statutory controls follow from the inclusion of a Site in the World Heritage list. Inclusion does, however, highlight the outstanding international importance of the Site as a key material consideration to be taken into account by local planning authorities in determining planning and Listed Building consent applications, and by the Secretary of State in determining cases on appeal or following call-in.

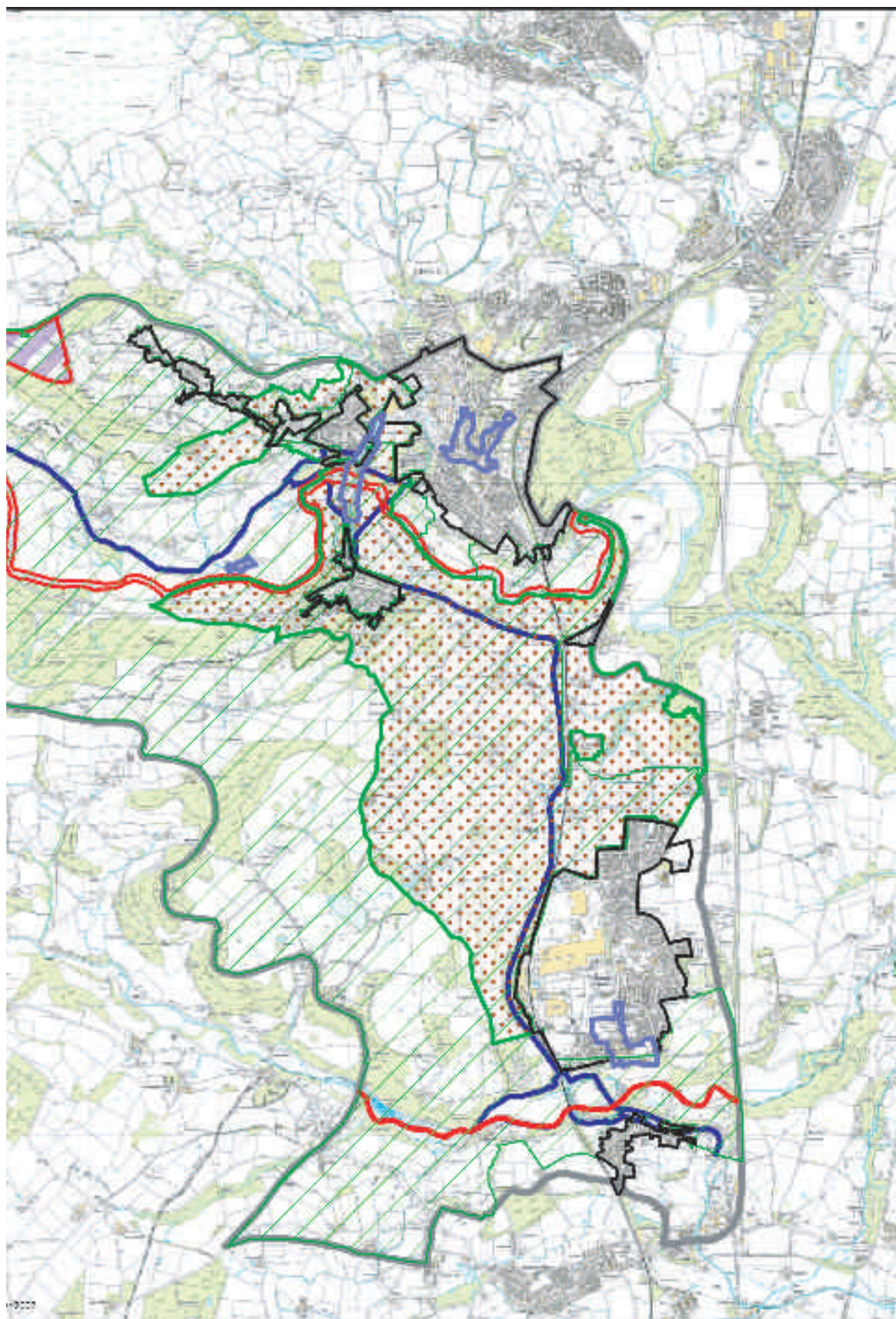
Each local authority concerned, taking account of World Heritage Site designation and other relevant statutory designations, should formulate specific planning policies for protecting these sites and include these policies in their development plans. Policies should reflect the fact that all these sites have been designated for their Outstanding Universal Value, and they should place great weight on the need to protect them for the benefit of future generations as well as our own. Development proposals affecting these sites or their setting may be compatible with this objective, but should always be carefully scrutinised for their likely effect on the Nominated Site or its setting in the longer term. Significant development proposals affecting World Heritage Sites will generally require formal environmental assessment, to ensure that their immediate impact and their implications for the longer term are fully evaluated.

Left: Tŷ Mawr Country Park, an extensive area in the Dee Valley, is owned by Wrexham County Borough Council.

Left: Detail from stained-glass window, Ebenezer Chapel, Cefn Mawr.

Over: Map 6. Planning Designations that enhance protection through the development control system from inappropriate development.





Applicants for planning permission for major proposals are asked to provide an Environmental Impact Statement setting out how the proposals will affect the World Heritage Site or its setting. Applications must show mitigation measures for any unfavourable impact. All applications for development proposals must include a design and access statement which demonstrates how the proposals respect the values of the World Heritage Site or respect its setting and conform to the policies of the Local Plan

2.c.2 Relevant local plans

The current Local Plans of Denbighshire County Council, Wrexham County Borough Council and Oswestry Borough Council do not make specific reference to the proposed World Heritage Site but do contain significant protection to prevent inappropriate development adversely affecting the Nominated Site. No part of the Nominated Site or the Buffer Zone is 'white land' (land without some form of designation in development plans). The entire area therefore enjoys protection under the development control system. Most areas of currently undeveloped land are subject of local designations for

protection of landscape or green-space, for example as Green Barriers and Special Landscape Areas. Relevant designations are shown on Map 6 (page 52-53). In summary, there are Local Plan policies relating to:

- General location of development within defined settlement limits/employment areas.
- General character of development (must not materially detrimentally affect countryside / landscape / townscape character, open space, or the quality of the natural environment.
- New development should ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the Nominated Site and makes a positive contribution to the appearance of the nearby locality.
- Definition of 'Green Barriers' and other zones restricting development, for instance in open space areas around the canal corridor.
- Preventing the loss of good quality agricultural land to development.
- Presumption in favour of retaining woodland not planted for forestry (e.g. wooded hillsides around the canal).

Crossing Pontcysyllte in the treetops far above the tumbling River Dee has thrilled visitors for two centuries: 'so little separates water from air. Weight becomes weightless.'



- Special Landscape Area protection policies apply throughout the Dee valley – the work carried out for the nomination on the landscape character will help inform the implementation of this policy in such a way as to protect the landscape values of the proposed World Heritage Site.
- Specific policies protecting designated heritage sites and their settings (again the landscape work carried out for the Nomination will inform this policy).
- Support for the proposal to extend the Clwydian Range Area of Outstanding Natural Beauty (AONB) to include the Dee Valley and incorporating the Nominated Site Buffer Zone.

2.c.3 Local Plan Review

Denbighshire County Council, Oswestry Borough Council and Wrexham County Borough Council are all in the process of preparing new Local Development Plans (Framework in England) to replace the existing Local Plans. All three authorities are following broadly similar processes and timetables to achieve this and are developing consistent policies for the specific protection and presentation of the Nominated Site.

A Core Strategy, Site Allocations and Development Control Policies are currently being produced and these will include specific World Heritage Site policies, for the Nominated Site, Buffer Zone and setting. The Core Strategy will establish the overarching planning strategy and will provide the strategic policy base for decision making. The Site Allocations document will identify and allocate housing, employment and other land to meet development requirements and other objectives. The Development Control Policies document will set out topic related policies for the control of development.

These documents still have a number of formal plan-making stages to go through before they are adopted, including extensive public consultation and independent examination. They are due to be formally adopted in 2009-2010.

2.d Other designations and protection

2.d.1 Statutory duties of British Waterways

British Waterways, the majority landowner within the Nominated Site, is a Statutory Undertaker, that is its powers and duties are established by Statute and by supporting guidance from the UK Government. British Waterways is able to carry out its statutory duties independent of some of the land-use planning controls that might affect others, but is subject to statutory requirements which include the proper maintenance of the canal and its structures and the conservation of built and natural heritage as described below.

British Waterways also operates under a comprehensive Heritage Policy (appended in Section 11.a) which sets out a series of general and practical principles which are to be applied to all works affecting the waterways. This states that:

Our aim is for the heritage of the waterways to be treasured as a valued national asset. The careful protection and management of that heritage is an essential part of the ongoing work to achieve our vision.

This Management Plan has therefore been written in the context of British Waterways' duties, aims and purpose as set out by the enabling Acts and Government directions.

British Waterways was established in its current form in 1962 and its primary responsibilities are set out in the 1962 and 1968 Transport Acts:

- to maintain commercial and cruising waterways in suitable condition for use by commercial and cruising craft respectively;
- to deal with the remaining waterways in the most economical manner consistent in the case of retention with public health, safety and preservation of amenity by retention management, development, elimination or disposal;
- to deal with assets other than waterways



Horse-drawn boat rides enable visitors of all ages to enjoy the canal.

or harbours not required in connection with the provision of services and facilities so as to secure best possible financial return by exploitation, development or disposal;

- to act as a body engaged in a commercial enterprise.

These basic duties were modified by the *British Waterways Act 1995*:

Under Section 22 subsection (1) British Waterways is obliged when formulating or considering any proposals in relation to its functions:

- a) so far as may be consistent with the purposes of any enactment relating to those functions, so to exercise any power conferred on them with respect to the proposals as to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest;
- b) to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest; and
- c) to take into account any effect which the proposals would have on the beauty or amenity of any rural or urban area or on any such flora, fauna, features, buildings, sites or objects.

Under subsection (2), and subject to obligations set in subsection (1) British Waterways is also obliged when formulating or considering any proposals relating to its functions:

- a) to have regard to the desirability of preserving for the public any freedom of access to towing-paths and open land and especially places of natural beauty;
- b) to have regard to the desirability of maintaining the availability to the public of any facility for visiting or inspecting any building, site or object of archaeological, architectural, engineering or historic interest;
- c) to take into account any effect which the proposals would have on any such freedom of access or on the availability of any such facility;
- d) to take into account the desirability of protecting for future use as cruising waterways, or as areas appropriate for other public recreational use, remainder waterways with potential for such use.

British Waterways has received further instruction from the United Kingdom Government in the form of a *Framework Agreement* issued in 1999 setting out the following aims and purpose:

Britain's inland waterways, comprising canals and navigable rivers, are an important national asset for future generations to enjoy. The Government is keen to see them maintained and developed in a sustainable manner so that they fulfil their full economic, social and environmental potential. British Waterways has responsibility for over 2,000 miles/3,200 kilometres of canals and rivers, including statutory navigation and safety functions. The Government looks to British Waterways to carry out these statutory responsibilities within a wider context whereby, subject to economic and environmental appraisal, it aims to:

- promote and accommodate conservation and regeneration;

- maintain and enhance leisure, recreation, tourism and educational opportunities for the general public; and
- facilitate waterway transport.

In order to secure and conserve the waterways' heritage and environment for the future, British Waterways should work in partnership with:

- local authorities and other public sector organisations, including the Regional Development Agencies;
- the water industry and other private sector bodies; and
- the voluntary sector including local groups.

In order to:

- maximise the quality of the waterways and the surrounding amenities;
- secure additional investment; and
- advance the management and operation of the waterways.

It should seek ways to enable the maximum public enjoyment of its facilities and to increase income without damaging the environment and heritage of the assets. It should also raise the profile of the waterways in general and the organisation in particular, enhance its national status, and improve its relationships with its existing and future customers and potential partners.

British Waterways has unrivalled expertise in the management, enhancement and conservation of navigation on inland waterways. It should take the lead in consulting and co-ordinating with other UK navigation authorities to offer the benefit of its expertise and to seek harmonious and rationalised policies and systems of operation, as far as possible, for the good of Britain's inland waterways and their users.

2.d.2 Other designations

Vale of Llangollen Historic Landscape

The Vale of Llangollen and Eglwyseg is one of twenty two landscapes included in the *Register of Landscapes of Special Historic Interest in Wales*, issued in 2001 by Cadw, the Countryside Council for Wales and ICOMOS UK. This covers the whole of the western half of the Buffer Zone and Nominated Site, including Pontcysyllte Aqueduct and its environs. In practice, given the topography of the Nominated Site and the formation of the canal, it protects all those areas where extensive views of and from the Nominated Site are of importance. Inclusion on the Register highlights the area as one of the best historic landscapes in Wales and this strengthens consideration of landscape issues (vital for protection of the Buffer Zone) in planning decisions.



Register of Parks and Gardens.

Cadw has undertaken a comprehensive survey of historic parks and gardens in Wales. Parks and gardens thought to be of national importance have been included on the Cadw/ICOMOS *Register of Parks and Gardens of Special Historic Interest in Wales*. The Register is non-statutory but aids the informed conservation of historic parks and gardens by owners, local planning authorities, developers, statutory bodies and all concerned with them. The following sites within the Buffer Zone are on the Register and shown on Map 5 (page 48).

Chirk Castle and parkland.

Site	National Grid Reference	Evaluation	Proximity to Site (all are within Buffer Zone)
Argoed Hall	SJ 268 414	Grade II	Immediate vicinity
Brynkinalt	SJ 304 378	Grade II*	Within area
Bryntysilio	SJ 196 435	Grade II	Immediate vicinity
Chirk Castle	SJ 268 380	Grade I	Immediate vicinity
Llantysilio Hall	SJ 192 436	Grade II	Within area
Plas Newydd	SJ 218 417	Grade II*	Within area
Trevor Hall	SJ 257 424	Grade II*	Within area
Valle Crucis	SJ 205 443	Grade II	Within area
Vivod	SJ 191 423	Grade II	Within area
Whitehurst	SJ 288 400	Grade II*	Immediate vicinity

River Dee and Bala Lake Special Area for Conservation (SAC) and River Dee Sites of Special Scientific Interest (SSSI)

The Nominated Site includes sections of the River Dee and Bala Lake Special Area of Conservation at Horseshoe Falls, Pontcysyllte and Chirk Aqueduct and is in close proximity to it for a significant part of its length. Special Areas of Conservation (SACs) are designated under the European Community Habitats Directive as part of a European network of high-quality sites that will make a significant contribution to conserving the 189 habitat types and 788 species most in need at a European level (excluding birds). They are protected in the UK by the *Conservation (natural habitats) Regulations 1994*. Habitats and species for which this Site is designated are:

- Water courses of plain to montane levels with *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation
- Atlantic salmon *Salmo salar*
- Floating water-plantain *Luronium natans*
- Sea lamprey *Petromyzon marinus*
- Brook lamprey *Lampetra planeri*
- River lamprey *Lampetra fluviatilis*
- Bullhead *Cottus gobio*
- Otter *Lutra lutra*.

The Rivers Dee and Ceiriog are also covered by separate English and Welsh designations as Sites of Special Scientific Interest. This is a United Kingdom nature conservation designation under the *Wildlife and Countryside Act, 1981*. It is designated for the features above and for aquatic and shingle-dwelling invertebrates, a further three habitat types, saltmarsh transition habitats, three vascular plants and geological features.

Otters and Brook lamprey are among the species for which the River Dee is recognised as a Special Area for Conservation.





Clwydian Range Area of Outstanding Natural Beauty (AONB)

This national landscape designation under the *National Parks and Access to the Countryside Act of 1949* currently covers areas to the north of the Nominated Site. An extension currently being considered would include the whole western part of the Nominated Site and the Buffer Zone as far as Pontcysyllte Aqueduct. Designation of the extension is expected in 2010.



Offa's Dyke National Trail

This prestigious long-distance trail utilises the canal towing-path for part of its length and crosses the River Dee by Pontcysyllte Aqueduct and Cysylltau Bridge within the Nominated Site. As an important national route it brings thousands of visitors into the Nominated Site and demonstrates the importance of linkages between the waterway and other assets. It is designated under the *National Parks and Access to the Countryside Act 1949 (amended)* and is referenced by other protective systems such as planning.

2.e Existing management arrangements

The members of the Steering Group and other bodies undertake many activities within the Nominated Site as part of their existing duties. One function of the Management Plan is to co-ordinate these existing efforts to focus on the priorities for the proposed World Heritage Site. Existing areas of activity are discussed here.

2.e.1 British Waterways

The vast majority of the waterway structures within the Nominated Site are owned by British Waterways. Its routine operations are largely exempt from land-use planning but are not exempt from heritage protection controls. British Waterways operates to publicly available standards to comply with the statutory powers and duties and government guidance set out in Section 2.e. These standards are applied through a system of asset management and corporate policies including a *Heritage Policy* (detailed below). Works by third parties are subject to an approval procedure set out in the *Code of Practice for Works Affecting British Waterways*. Commercial operators on the canal are managed through Licences and Agreements. Individual boats must obtain a licence for navigation and boaters are required to comply with British Waterways Byelaws. The towing-path and associated land are generally open to public access on a permissive basis – made available by British Waterways as part of its public access objectives. British Waterways maintains a presence seven days a week at Pontcysyllte Aqueduct and Llangollen moorings from Easter to October, and key operational sites (such as Horseshoe Falls and the flood weirs) are visited daily throughout the year. The allocation of resources to the Nominated Site is discussed in Section 7.

Asset management

British Waterways has a system of routine inspection and engineering assessment detailed in Section 1.d.1 which identifies the

Top: The River Dee at Horseshoe Falls.

Bottom: The Nominated Site and Buffer Zone are popular with walkers.

general condition of structures, recognises significant changes in condition and feeds into maintenance and refurbishment programmes. Routine maintenance is delivered by a locally-based team of direct staff, with contractor support as necessary. Routine works are based on maintaining target standards for public navigation and access and maintaining the asset base in generally fair condition. Where assets are not in 'Fair' condition, works are identified in a national investment programme for asset improvement. These works are prioritised based on a range of public duty and user impact criteria. Available funds are allocated every year to the highest priority structures.

British Waterways' Heritage Policy

British Waterways recognises conservation of waterways heritage as an integral part of its function. Its full heritage Policy and Principles are appended in Section 11.a. These set out a series of general and practical principles which are to be applied to all works affecting the waterways heritage:

Our heritage principles provide the framework within which British Waterways manages the waterway heritage. The principles establish best practice in the maintenance and repair of historic structures, the management of historic man-made landscapes, the relationship with new development, the importance of archaeology and the use of interpretation and public events. We will monitor our activities and outputs through an annual 'State of the Waterways Heritage' report. We will promote best practice amongst our employees, contractors, suppliers, customers and partners. We will seek suppliers, contractors and partners with standards consistent with our own.

Under a programme of 'Heritage Action' begun in 2005, British Waterways is achieving and maintaining high standards of management, maintenance and repair of the historic fabric in its care.

2.e.2 Local and national authorities

Local authority members of the Steering Group own some of the historic bridges over the canal, other parts of the infrastructure associated with the Nominated Site and key features and land areas within the Buffer Zone. They are also responsible for administering the land-use planning and parts of the heritage protection system relating to Listed Buildings and Conservation Areas. As such, they have control over the activities of British Waterways and other property owners where works require planning permission or affect a designated structure / area. The planning system is the main existing management tool for protection of the Buffer Zone through existing Development Plan policies. Local Authorities also provide tourism infrastructure, economic initiatives, marketing and education.

Local Authority owned bridges

Local Authority owned bridges are inspected in accordance with relevant Codes of Practice and work required, when identified they are funded from maintenance budgets, usually prioritised based on the seriousness of the defects found. Where authority owned structures are Listed or otherwise designated, works will be subject to formal consent.

Other local/national authority management

Offa's Dyke National Trail uses the canal towing-path within the Nominated Site and crosses the River Dee by means of the Pontcysyllte Aqueduct or Cysylltau Bridge, both within the Nominated Site. This prestigious flagship of the Wales public rights of way network is managed by the Local Authorities with grant aid assistance from Countryside Council for Wales. The towing-path between Llangollen and Llantysilio is also part of the regional Dee Valley Way maintained by Denbighshire County Council. The local authorities are also responsible for designation and maintenance of the public footpath network which provides a number of points of access and connections between the key structures



Local community participants at the Llangollen Rural Community visioning day held in 2007. The Community expressed great pride in their aqueduct and canal.

of the Nominated Site and the wider associated features and landscape within the Buffer Zone.

Land and historic properties in the Buffer Zone are owned and managed for public benefit. For example, Cadw is responsible for the management of two sites in state care in the Buffer Zone, Valle Crucis Abbey and Eliseg's Pillar, the Chirk Castle estate and other land is owned by the National Trust, and Denbighshire County Council owns Dinas Brân Castle and Plas Newydd. Denbighshire and Wrexham Councils operate public car parks and toilets that provide access to the Nominated Site and the Buffer Zone – notably at Trevor Basin, Llangollen, Tŷ Mawr and Llantysilio.

Network Rail owns and maintain Chirk railway viaduct. This is maintained to the highest standards given its function in carrying a live railway and is subject to rigorous and regular examination. Network Rail owns numerous historic structures throughout the United Kingdom and is committed to their proper management within the Listed Building Consent process.

2.e.3 Private owners

At present, works by other owners are subject to control by the Local Authorities through the planning system, or the heritage regulators where they affect designated structures / buildings as detailed above, or by British Waterways where they impact on the canal or other structures owned by British Waterways.

2.e.4 Presentation and education

Presentation, interpretation and promotion of the Nominated Site is currently a collaborative effort between British Waterways and the Local Authorities. British Waterways has produced educational aids to Pontcysyllte Aqueduct (through the Wild Over Waterways programme) and work with Wrexham and Denbighshire Councils on events on, and linked to, the canal (for instance the recent bicentenary programme at Pontcysyllte). The 'Friends of Pontcysyllte' group will work with the Steering Group to ensure active involvement of the local communities.

Community Fun Day held at Trevor Basin.





Above: Members of the World Heritage Site Steering Group: from left Dr Peter Wakelin of the Royal Commission, Dr Dawn Roberts of Wrexham County Borough Council and Peter Birch of British Waterways.

Top right: Public artwork at Trevor Basin.

Bottom right: Delegates to the conference about the international significance of Pontcysyllte Aqueduct, June 2007, on a study visit to the Site.

Opposite: Pontcysyllte translates from the Welsh as 'the bridge that joins'; an apt description for a structure that is 1,007 feet/307 metres long and straddles a valley.

2.e.5 World Heritage Site Steering Group

The Steering Group's purpose and composition is outlined in Section 1.e above. It meets monthly, with a secretariat provided by Wrexham County Borough Council, and has overseen the production of the Nomination Bid and Management Plan. It will continue to meet at agreed intervals to co-ordinate actions for the implementation of the Management Plan and the agreed Vision. Task-and-finish subgroups have been formed for specific actions or objectives with the full Steering Group maintaining an overview. Key tasks include:

- securing the continued allocation of resources for the conservation, presentation and improvement of the Nominated Site;
- overseeing the implementation of specific Management Plan actions;
- engaging with the local communities, through the 'Friends of Pontcysyllte' group, to ensure community involvement in decision making, management and events within the Nominated Site;
- co-ordinating promotion and presentation of the Nominated Site;
- collating monitoring data (see Section 8); and
- carrying out the annual review of this Management Plan.







PRESSURES ON / THREATS TO THE NOMINATED SITE AND OPPORTUNITIES FOR IMPROVEMENTS

The Steering Group has considered the potential pressures, threats and opportunities for improvements at the Nominated Site under a series of headings developed from the UNESCO Operational Guidelines:

- Conservation and maintenance
- Development
- Presentation - Visitor/tourism pressures, education and learning
- Environmental pressures
- Disasters and risk preparedness

Material developed by the Steering Group was then subject to consultation with ICOMOS UK, experts and the general public (see Section 1.e) to produce the revised lists presented below.

3.a Pressures

There are no substantial current threats to the state of conservation of the Nominated Site. However, a range of issues is considered in the Management Plan to ensure that adequate controls are developed and maintained. The following list of pressures is not confined to those that apply within the Nominated Site and Buffer Zone at present but includes others that may have applied in the past or may arise in future.

	PRESSURE	SIGNIFICANCE
Conservation and Maintenance		
P1	Prevention of decay – need for ongoing maintenance	Critical to maintaining Outstanding Universal Value
P2	Inappropriate methods or materials for repairs through lack of understanding, skills or materials, or changing modern standards	Essential for maintaining authenticity
P3	Prioritisation and allocation of resources	Essential to levels of maintenance and repair
P4	Vegetation growth in the Nominated Site itself and the Buffer Zone affecting views in and out	Essential to presentation
P5	Maintenance of management arrangements across partners to ensure effective implementation	Essential to long-term management
P6	Maintenance of effective protection of the Nominated Site and Buffer Zone through designations and planning policies	Necessary to long-term protection
P7	Effects of previous inappropriate repairs or alterations	Repair needed to maintain authenticity

	PRESSURE	SIGNIFICANCE
Development		
P8	Potential alterations or additions to properties within or immediately adjacent to the Nominated Site, if not adequately controlled	Impacts on the value and presentation of the Nominated Site
P9	Need for economic activities in the Nominated Site to generate income to reinvest in maintenance and management	Impacts on the value and presentation of the Nominated Site
P10	Expansion of development boundaries in the Buffer Zone (e.g. at Cefn Mawr and Llangollen) (see Nomination Document 4.b.2)	Potential impact on the setting of the Nominated Site
P11	Changes to land use within the Buffer Zone and views in and out, including forestry or redevelopment	Impact on the setting of the Nominated Site
P12	Loss of undesignated features in the Buffer Zone to development / land-use change	Impact on the presentation of the Nominated Site
Presentation - Visitor/tourism pressures, education and learning		
P13	Need to develop the presentation of the Outstanding Universal Value – how to get the story across	Critical UNESCO objective
P14	Need to continue engaging the local community to support the Nominated Site	Essential UNESCO objective and critical to long-term management
P15	Need to maintain health and safety for visitors without compromising the historic fabric	Essential for presentation and protection
P16	Need to ensure long-term sustainable access without erosion, damage or over-crowding	Essential to protecting the fabric of the Nominated Site
P17	Need to improve physical and non-physical accessibility to the Nominated Site	Important for presentation and visitor management
P18	Need for enhanced visitor facilities	Important for promotion and presentation
P19	Anti-social behaviour, resulting in litter and graffiti	Important for presentation and quality of visitor experience
Environmental pressures		
P20	Climate change impacts (1) – drier, hotter summers, pressure on water supply	Critical to maintaining an operational waterway
P21	Climate change impacts (2) - wetter winters, increased intensity of rainfall, increased likelihood of flooding	Potential for impacts on structures
P22	Need to protect the Rivers Dee and Ceiriog within the designated wildlife sites (SAC/SSSI) protected species and general biodiversity in the Nominated Site	Potential constraint on other activities
Disasters and risk preparedness		
P23	Flooding or breach of canal	Localised significant impact on fabric
P24	Visitor incidents	Impact on presentation and fabric
P25	Pollution events affecting canal and adjacent rivers	Impact on presentation and biodiversity adjoining watercourses
P26	Storm damage and tree fall	Impact on fabric or presentation
P27	Impact of potential major incident at Flexsys or Kronospan as major industrial sites nearby	Impact on presentation and visitor access

3.b Opportunities for improvement

The following opportunities have been identified by the Steering Group and partners to enhance the conservation and presentation of the Nominated Site. The priority column in the table indicates whether implementation is in progress or will be carried out at the earliest opportunity, in the short term (years two and three of the Action Plan) or in the longer term.

	OPPORTUNITY	PRIORITY
THROUGHOUT THE NOMINATED SITE		
01	Extend the Conservation Management Plan for Pontcysyllte to the whole Site, building on this Management Plan, to identify works to improve the state of conservation of structures and to set standards of materials, methods, etc., for all future repairs and maintenance	In progress
02	Develop an Audience Development Plan examining who we are not reaching and how else can we present the Nominated Site	In progress
03	Develop a Landscape Plan from the existing Landscape Assessment to set out a strategy for managing views and visual access, to improve the landscape setting by vegetation management and inform land-use planning decisions in the Buffer Zone	At earliest opportunity
04	Review heritage protection designation to update Listing and consider Scheduling of the whole Nominated Site	In progress
05	Engage the community further by developing the Friends of Pontcysyllte Aqueduct and Canal to include all communities within the Nominated Site and creating an ongoing programme of volunteering, activities and events	In progress
06	Develop physical access within the Nominated Site and between the Nominated Site and the Buffer Zone, promoting the benefits of the Nominated Site as a level linear park accessible to users with different physical abilities	Short term
07	With reference to other World Heritage Sites, widen existing educational support to cover the whole Site's Outstanding Universal Value and develop a programme to increase access, understanding and support	Short term
08	With support from Local Authority World Heritage Forum develop new planning policies for protection and presentation of the Nominated Site, consistent across all authorities, taking advantage of expected changes in the Heritage Protection Review	In progress
09	Develop an interpretation style and strategy to ensure consistency of signage and mobile interpretation across the Nominated Site and to prevent clutter	Short term
010	Develop off-site marketing and pre-visit information through websites, Tourist Information Centres, collaboration with wider regional initiatives across to encourage more visitors and extend awareness of the Site	Short to long term
011	Develop and implement a Site-wide programme of improvements to boundaries, signage and facilities	Short to long term
012	Develop and implement a Site-wide programme for managing and presenting the biodiversity value of the Nominated Site	Long term
013	Develop a programme of interpreting associated features in the Buffer Zone	Long term

	OPPORTUNITY	PRIORITY
SPECIFIC LOCATIONS		
014	Improve viewpoints from the River Dee and A5 at Pontcysyllte	Short term
015	Improve facilities and water-space management at Trevor and Froncysyllte, for example car parking, refreshments, activities, children's play area and picnic site	Short to long term
016	Improve access at Gledrid Bridge, building on existing facilities	Short to long term
017	Improve facilities and interpretation at Horseshoe Falls, for example Llantysilio Green car park, footpaths, Chain Bridge Hotel, bridge and wharf	Short to long term
018	Improve the interface between Llangollen Wharf and the town	Short to long term
019	Car parking and interpretation linked to existing access at Chirk	Short to long term
020	Improve viewpoints, interpretation and facilities at Chirk Aqueduct with the assistance and involvement of the local community	Short term
021	Carry out towing-path improvements from Llangollen to Trevor	Long term
022	Support the extension of the Clwydian Range Area of Outstanding Natural Beauty (AONB) to the Dee Valley	In progress
023	Extend Trevor Conservation Area southwards to include the canal at Froncysyllte	In progress
024	Create better links between Pontcysyllte and Cefn Mawr Townscape Heritage Initiative area and open up associated features to public access	Short to long term
025	Provide informal car parking at Pentre	Short to long term
026	Reduce the visual impact of the Dŵr Cymru sewage works at Pontcysyllte and work towards its removal or relocation	In progress

Pontcysyllte Aqueduct and Trevor Basin are popular with visitors throughout the year.

Opposite: Holiday boats moored at Trevor Basin.







DEALING WITH THE ISSUES

4.a Proposed Actions

This Section presents actions in response to each of the pressures identified in Section 3.a for inclusion in the Action Plan. Some actions also relate to opportunities from Sections 3.b. As in Section 3, the priority column indicates whether implementation is in progress or will be carried out at the earliest opportunity, in the short term (years two and three of the Action Plan) or in the longer term.

	ISSUE	PROPOSED ACTIONS	PRIORITY
Conservation and Maintenance			
P1	Prevention of decay – need for ongoing maintenance	Continued maintenance by British Waterways and other property owners to defined standards (see also P2 below)	In progress
		Continue to assess routinely heritage condition / conservation status of all Features (as defined by the gazetteer) and plan improvement / maintenance works accordingly	In progress
		Assess the maintenance requirements of features whose State of Conservation is Fair* or Poor to identify priority works to improve the overall SoC of the Nominated Site	In progress through Conservation Management Plan (P2)
P2	Inappropriate methods or materials for repairs through lack of understanding, skills or materials, or changing modern standards	01 - Extend the Conservation Management Plan for Pontcysyllte to the whole Site, building on this Management Plan, to identify works to improve the state of conservation of structures and to set standards of materials, methods, etc., for all future repairs and maintenance	In progress
		Continue to use appropriate materials and methods, consistently with recent practice and the <i>British Waterways Heritage Policy and Principles</i> (2005)	In progress
		Future maintenance and other works to be based on the Conservation Management Plan specifications	Implement in the short term
		Develop a Training Plan based on works within the Nominated Site to ensure partner staff, contractors and volunteers develop and maintain appropriate skills	Implement in the short term
P3	Prioritisation and allocation of resources	Prioritisation of Management Plan commitments agreed and resourced by Steering Group on at least an annual basis	In progress
		Steering Group to seek funding jointly where necessary to achieve the objectives of the Management Plan	In progress

	ISSUE	PROPOSED ACTIONS	PRIORITY
P4	Vegetation growth in the Nominated Site itself and the Buffer Zone affecting views in and out	03 - Develop a Landscape Plan from the existing Landscape Assessment to set out a strategy for managing views and visual access, to improve the landscape setting by vegetation management and inform land-use planning decisions in the Buffer Zone	Implement at earliest opportunity
		Carry out vegetation management based on the Landscape Plan to enhance the views and setting	Implement in the short term
P5	Maintenance of management arrangements across partners to ensure effective implementation	Steering Group to be maintained as the co-ordinating body for all agencies and stakeholder groups	In progress
P6	Maintenance of effective protection of the Nominated Site and Buffer Zone through designations and planning policies	04 - Review heritage protection designation to update Listing and consider Scheduling of the whole Nominated Site	In progress
		08 - With support from Local Authority World Heritage Forum develop new planning policies for protection and presentation of the Nominated Site, consistent across all authorities, taking advantage of expected changes within the Heritage Protection Review	In progress
		022 - Support the extension of the Clwydian Range Area of Outstanding Natural Beauty (AONB) to the Dee Valley	In progress
		023 - Extend Trevor Conservation Area southwards to include the canal at Froncysyllte	In progress
P7	Effects of previous inappropriate repairs or alterations	01 - Extend the Conservation Management Plan for Pontcysyllte to the whole Site, building on this Management Plan, to identify works to improve the state of conservation of structures and to set standards of materials, methods, etc., for all future repairs and maintenance	In progress
		Subject to other repair requirements, include improvement works in the maintenance programmes of property owners	In progress
		Develop a Training Plan based on works within the Nominated Site to ensure partner staff, contractors and volunteers develop and maintain appropriate skills	Implement in the short term

The major conservation works in progress at Pontcysyllte Aqueduct in 2003-4.



	ISSUE	PROPOSED ACTION	PRIORITY
Development			
P8	Potential alterations or additions to properties within or immediately adjacent to the Nominated Site, if not adequately controlled	O8 - With support from Local Authority World Heritage Forum develop new planning policies for protection and presentation of the Nominated Site, consistent across all authorities, taking advantage of expected changes within the Heritage Protection Review	In progress
		O1 - Extend the Conservation Management Plan for Pontcysyllte to the whole Site, building on this Management Plan, to identify works to improve the state of conservation of structures and to set standards of materials, methods, etc., for all future repairs and maintenance	In progress
		Develop specific awareness of and advice literature for adjoining property owners	Implement in the short to long term
P9	Need for economic activities in the Nominated Site to generate income to reinvest in maintenance and management.	Agreement by the Steering Group of appropriate opportunities for economic activity, based on the British Waterways Destination Management Plan, the Audience Development Plan and stakeholder input (see also P18 for outline proposals already considered)	Implement in the short term
		Future planning policies to support the principle of such appropriate development where consistent with the Management Plan	Implement in the short to long term
P10	Expansion of development boundaries in the Buffer Zone (e.g. at Cefn Mawr and Llangollen) (see Nomination Document 4.b.2)	The new local development plans / frameworks potentially allowing expansion of development boundaries will need to include appropriate arrangements for protection of the Nominated Site and Buffer Zone, especially with reference to the Landscape Assessment / Plan (see O3)	Implement in the short term
		Potential development at Cefn Mawr (and other areas) is an opportunity to carry out further archaeological assessment of industrial history through planning conditions	Implement in the short term
P11	Changes to land use within the Buffer Zone and views in and out, including forestry or redevelopment	O3 - Develop a Landscape Plan from the existing Landscape Assessment to set out a strategy for managing views and visual access, to improve the landscape setting by vegetation management and inform land-use planning decisions in the Buffer Zone	Implement at the earliest opportunity
		Seek characterisation appraisals and guidance on character decisions	
		Future planning policies to have regard to the Landscape Plan	Implement in the short term
		O22 - Support the extension of the Clwydian Range Area of Outstanding Natural Beauty (AONB) to the Dee Valley	In progress
		O26 - Reduce the visual impact of the Dŵr Cymru sewage works at Pontcysyllte and work towards its removal or relocation	In progress
P12	Loss of undesignated features in the Buffer Zone to development / land-use change	Review designations and seek future planning policies giving regard to the Archaeological Audit as a material consideration	Implement in the short to long term

	ISSUE	PROPOSED ACTION	PRIORITY
Presentation – Visitor / tourism pressures, education and learning			
P13	Need to develop the presentation of the Outstanding Universal Value – how to get the story across	O2 - Develop an Audience Development Plan examining who we are not reaching and how else can we present the Nominated Site	In progress
		Integrate recommendations into future revisions of the Management Plan	Implement in the short term
		O9 - Develop an interpretation style and strategy to ensure consistency of signage and mobile interpretation across the Nominated Site and to prevent clutter	Implement in the short term
		O10 - Develop off-site marketing and pre-visit information through websites, Tourist Information Centres, collaboration with wider regional initiatives across to encourage more visitors and extend awareness of the Site	Implement in the short to long term
P14	Need to continue engaging the local community to support the Nominated Site	O5 - Engage the community further by developing the Friends of Pontcysyllte Aqueduct and Canal to include all communities within the Nominated Site and creating an ongoing programme of volunteering, activities and events	In progress
		O7 - With reference to other World Heritage Sites, widen existing educational support to cover the whole Site's Outstanding Universal Value and develop a programme to increase access, understanding and support	Implement in the short term
P15	Need to maintain health and safety for visitors without compromising the historic fabric	Conservation Management Plan (see P2 above) to incorporate safety requirements identified by property owners	Implement in the short term
P16	Need to ensure long-term sustainable access without erosion, damage or over-crowding	Audience Development Plan (see P13) to spread visitor numbers and improve infrastructure at popular areas such as Pontcysyllte and Llangollen (see P17 and P18 below)	In progress
P17	Need to improve physical and non-physical accessibility to the Nominated Site	O6 - Develop physical access within the Nominated Site and between the Nominated Site and the Buffer Zone, promoting the benefits of the Site as a level linear park accessible to users with different physical abilities	Implement in the short term
		Promote connections with other routes such as Offa's Dyke National Trail	Implement in the short to long term
		O14 - Improve viewpoints from the River Dee and A5 at Pontcysyllte	Implement in the short term
		O18 - Improve the interface between Llangollen Wharf and the town	Implement in the short to long term
		O19 – Improve car parking and interpretation linked to existing access at Chirk	Implement in the short to long term
		O21 - Carry out towing-path improvements from Llangollen to Trevor	Implement in the long term
		O25 - Provide informal car parking at Pentre	Implement in the short to long term

	ISSUE	PROPOSED ACTION	PRIORITY
P18	Need for enhanced visitor facilities	O11 - Develop and implement a Site-wide programme of improvements to boundaries, signage and facilities	Implement in the short to long term
		O15 - Improve facilities and water-space management at Trevor and Froncysyllte, for example car parking, refreshments, activities, children's play area and picnic site	Implement in the short to long term
		O16 - Improve access at Gledrid Bridge, building on existing facilities	Implement in the short to long term
		O17 - Improve facilities and interpretation at Horseshoe Falls, for example Llantysilio Green car park, footpaths, Chain Bridge Hotel, bridge and wharf	Implement in the short to long term
		O20 - Improve viewpoints, interpretation and facilities at Chirk Aqueduct with the assistance and involvement of the local community	Implement in the short term
		O24 - Create better links between Pontcysyllte and Cefn Mawr Townscape Heritage Initiative area and open up associated features to public access	Implement in the short to long term
		Secure additional land to implement these improvements through Compulsory Purchase powers if necessary	Implement in the short to long term
P19	Anti-social behaviour, resulting in litter and graffiti	Community engagement (see P14) to help education, deterrent and remediation	Implement in the short to long term
		Standards of maintenance to be agreed by the Steering Group and implemented by property owners	Implement in the short term



Local businesses have benefited by association with Pontcysyllte Aqueduct and its builders.

Scotch Hall at Trevor Basin.

	ISSUE	PROPOSED ACTION	
Environment			
P20	Climate change impacts (1) – drier, hotter summers, pressure on water supply	Water supply from River Dee regulated by control of headwater reservoirs	In progress
		Leakage reduction works where required through British Waterways' maintenance programmes	In progress
P21	Climate change impacts (2) - wetter winters, increased intensity of rainfall, increased likelihood of flooding	Water levels controlled by flood weirs and manually operated sluices by British Waterways	In progress
		Incidence of flooding in the rivers Dee and Ceiriog and potential for damage to aqueducts, piers to be reviewed with the Environment Agency through their Catchment Flood Management Plans	In progress
		British Waterways to review the capacity of existing flood protection projects under the revised Catchment Flood Management Plans	Implement in the short term
P22	Need to protect the Rivers Dee and Ceiriog within the designated wildlife sites (SAC/SSSI), protected species and general biodiversity in the Nominated Site	Existing regulatory controls and Biodiversity Action Plans of Steering Group members to be observed	In progress
		O12 - Develop and implement a Site-wide programme for managing and presenting the biodiversity value of the Nominated Site	Implement in the long term
Disasters and risk preparedness			
P23	Flooding or breach of canal	Continue British Waterways' existing water management and emergency response provisions	In progress
P24	Flooding or breach of canal visitor incidents	Review British Waterways' and other landowners' provisions and incorporate them in local authority incident plans	Implement in the short term
P25	Pollution events within the Nominated Site	Continue British Waterways' existing water management and emergency response provisions	In progress
		Publicise 'The Green Blue' environmental advice to canal boat users	In progress
		Publicise Environment Agency pollution control advice to adjoining landowners and businesses	Implement in the short to long term
P26	Storm damage and tree fall	Continue British Waterways' existing rapid response provisions	In progress
P27	Impact of potential major incident at Flexsys or Kronospan as major industrial sites nearby	Maintain existing site emergency arrangements between operators, Wrexham County Borough Council and the emergency services; review and revise in light of changes in access and levels of use in the Site	In progress

Opposite: Aerial view of the Dee Valley and three bridges representing different modes of transport; Pontcysyllte Aqueduct (foreground), Newbridge Railway Viaduct (middle) and the new A483 (T) road bridge. Cefn Mawr is to the left.





LONG-TERM VISION

The Steering Group has agreed a joint vision of how the Nominated Site should be managed in the future. This will direct the implementation and future revision of the Management Plan.

5.a Management Vision

- To manage the Nominated Site and Buffer Zone in a sustainable manner to conserve, enhance and present the Outstanding Universal Value of the Nominated Site locally and internationally.
- To balance the needs of protection, conservation and access, the interests of the local community and the achievement of sustainable economic growth.
- To engage with and deliver benefits to the local communities around the Nominated Site.
- To attract visitors to the area.
- To develop opportunities for education and learning.
- To generate income that adds value to the local economy or is reinvested in the running of the Nominated Site.

5.b Management Principles

The management of the proposed Nominated Site must combine a number of strands of activity within an ongoing cycle of study, planning, action, monitoring and

review focused on achieving the Vision. The Steering Group has identified a number of Management Principles to focus the Action Plan and future reviews. The actions identified in Sections 3 and 4 have been grouped under these principles in the following Action Plan.

Identification

- to undertake further research and surveys as necessary to improve our understanding of all the features of the Nominated Site and associated remains in the Buffer Zone.

Protection

- to review the designations afforded to the Nominated Site and Buffer Zone; and
- to use existing controls and maintain a consistent framework for future control to ensure the adequate protection of the Outstanding Universal Value of the Nominated Site and the landscape and associated archaeological features of the Buffer Zone.

Conservation

- to implement a common system of assessment and monitoring of the state of conservation of the Nominated Site and Buffer Zone;
- to prioritise and carry out maintenance works to ensure an appropriate state of conservation of the Nominated Site, securing additional resources where necessary; and

- to develop and implement effective management measures for all identified environmental pressures, disasters and risks to the Nominated Site.

Presentation

- to implement sustainable visitor management to improve the attractiveness of the Nominated Site and features of the Buffer Zone to visitors without detriment to its Outstanding Universal Value; and
- to carry out interpretation to develop wide understanding of the Nominated Site and present its values to a range of audiences.

Transmission to future generations

- to engage the local communities in the understanding of the Nominated Site, decision making and management to protect it for future generations.

Management

- to maintain co-ordination of efforts of all stakeholders within the Nominated Site towards achieving the Vision; and
- to review progress regularly and report on the condition of the Nominated Site, its Buffer Zone and wider setting in respect of its Outstanding Universal Value and delivery of the Vision.



Visitor facilities at Trevor Basin include the visitor centre (above), interpretation panels (page 68) and public artworks.



Opposite: Even the shadow of Pontcysyllte Aqueduct is a spectacle.





STRATEGIC ACTION PLAN FOR THE FIRST SIX YEARS

The six year horizon for the Strategic Action Plan is based on the reporting cycle to UNESCO. This Section organises the various actions identified by the Steering Group and through the public and expert consultation process into a timescale under the categories determined by the Management Principles in Section 5. The Plan contains those actions identified as necessary in 2007 to achieve the proper future management of the Nominated Site and deliver the agreed Vision. Details are subject to revision based on further evidence, consultation or experience.

	ACTION	TIMESCALE
	IDENTIFICATION	
Id 1	Steering Group to commission or carry out a programme of further documentary and archaeological research to develop our understanding of the Nominated Site where necessary.	Identify current requirements in year 1, then ongoing
Id 2 (07)	Steering Group to establish a single catalogue of documentation and references to ensure as complete a record as possible of the historical context of the construction and operation of the Canal and the Nominated Site.	Completed for Nomination Bid. Ongoing
Id 3	Potential development at Cefn Mawr (and other areas) is an opportunity to carry out further archaeological assessment of industrial history. – To be covered by local planning conditions.	As opportunities arise
	PROTECTION	
Pro 1 (04)	Review heritage protection designation – update Listing and consider Scheduling of the whole Nominated Site.	Already underway
Pro 2 (08)	With support from Local Authority World Heritage Forum, develop new planning policies for protection and presentation of the Nominated Site, consistent across all authorities, taking advantage of expected changes within the Heritage Protection Review.	Year 1 (2007) to Year 4 (2010)
Pro 3 (022)	Support the extension of the Clwydian Range Area of Outstanding Natural Beauty (AONB) to include the Dee Valley part of the Nominated Site and Buffer Zone.	Year 1+
Pro 4 (023)	Extension of Trevor Conservation Area – extend southwards to include canal at Froncysyllte.	Already underway
Pro 5	The new Local Development Plans / Frameworks potentially allowing expansion of development boundaries within the Buffer Zone will also need to include appropriate arrangements for protection of the Nominated Site, the Buffer Zone and its wider setting, especially with reference to the landscape assessment / Plan (see 03).	Year 1 (2007) to Year 4 (2010)
Pro 6	Future planning policies to have regard to the Landscape Plan (03).	Year 1 (2007) to Year 4 (2010)
Pro 7 (026)	Reduce impact of Dŵr Cymru sewage works at Pontcysyllte and work towards eventual removal / relocation.	Already underway
Pro 8	Some 'associated features' may be covered by proposed review of designations. In addition, future planning policies to have regard to the results of the Archaeological Audit as a material consideration.	Year 1 (2007) to Year 4 (2010)

	ACTION	TIMESCALE
	CONSERVATION	
Con 1 (O1 and P1)	Develop a Nominated Site-wide Conservation Management Plan (building on the existing CMP for Pontcysyllte Aqueduct) to identify works required to improve the state of conservation of structures and to set standards for all future repairs and maintenance (materials, methods etc.).	Already underway
Con 2	Future maintenance and other works for all structures in the Nominated Site to be based on the Conservation Management Plan specifications.	Years 2+
Con 3 (P1)	Continued maintenance by British Waterways and other property owners, to defined standards based on use and value.	Ongoing
Con 4 (P1)	Continue to assess routinely heritage condition / conservation status of all Features (as defined by the gazetteer) and plan improvement / maintenance works accordingly.	Ongoing
Con 5	Develop a Training Plan based on works within the Nominated Site to ensure partner staff, contractors and volunteers develop and maintain the appropriate skills necessary for maintenance into the future.	Develop in Year 1 / 2 (associated with HLF bid) then implementation is ongoing
Con 6 (O3)	Develop a Landscape Plan from the existing Landscape Assessment to set out a strategy for managing views and visual access, to improve the landscape setting by vegetation management / planting within the Nominated Site itself and inform land-use planning decisions on potential impacts in the Buffer Zone.	Existing Landscape Assessment and Conservation Area Character Assessments and LANDMAP are the basis – develop unified wider Statement and Plan in Years 1 and 2
Con 7	Carry out vegetation management within the Nominated Site based on the Landscape Plan to enhance the views and setting.	Year 2 +
Con 8 (P7)	Works required to undo previous inappropriate repairs or alterations within the Nominated Site to be identified by Conservation Management Plan.	Year 1
Con 9	Subject to funding or other repair requirements, improvements to be included in future maintenance programmes by property owners. Opportunity for volunteer etc involvement through Training Plan (see above).	Years 2+
Con 10 (P19)	Managing anti-social side effects of public access such as litter and graffiti. Community engagement works to help control (through education, deterrent and remediation).	Ongoing
Con 11	Standards of maintenance to be agreed by Steering Group and implemented by property owners.	Year 1 then ongoing
Con 12 (P20)	Climate change (1) – drier, hotter summers, therefore pressure on water supply - Water supply from River Dee is regulated by control of headwater reservoirs. This control should continue to consider the needs of the canal / proposed World Heritage Site. (Members of Steering Group such as British Waterways are on the Statutory Dee Consultative Committee, which exists to advise the Environment Agency regarding the management rules for the River Dee system. EA Wales also a member of the Steering Group).	Ongoing
Con 13	Leakage reduction works where required to be included in British Waterways' maintenance programmes.	Ongoing
Con 14 (P21)	Dealing with the impacts of climate change (2) - wetter winters; increased intensity of rainfall, therefore increased likelihood of flooding - Water levels within the Nominated Site are controlled by flood weirs and manually operated sluices managed by British Waterways.	Ongoing
Con 15	Incidence of flooding in Rivers Dee and Ceiriog (and therefore likely impact of long-term damage to the Aqueducts' piers) to be reviewed with the Environment Agency through their Catchment Flood Management Plans (currently being reviewed). Environment Agency Wales is a member of the Steering Group.	Already underway

	ACTION	TIMESCALE
Con 16	British Waterways to review the capacity of existing flood protection against flow projects to be provided by the revised Catchment Flood Management Plans.	Years 1 and 2
Con 17 (P22)	Need to protect the Rivers Dee and Ceiriog within the designated wildlife sites (SAC/SSSI) as well as statutory protected species and general biodiversity within the Nominated Site - The existing regulatory controls to be observed. Countryside Council for Wales (regulator) is already a member of the Steering Group. Many Steering Group members are party to existing Biodiversity Action Plans (BAPs) which will relate to their actions within the Site.	Ongoing
Con 18 (O12)	Develop and implement a Site-wide programme for managing and presenting the biodiversity value of the Nominated Site.	Year 2
Con 19 (P23)	Continue to implement British Waterways' existing water management and emergency response provisions.	Ongoing
Con 20 (P25)	Continue to implement British Waterways' existing water management and emergency response provisions.	Ongoing
Con 21 (P25)	Publicise 'The Green Blue' environmental advice to canal boat users within the Nominated Site.	Already underway
Con 22 (P25)	Publicise Environment Agency pollution control advice to adjoining landowners and businesses.	Years 1 and 2
Con 23 (P26)	Recovery from storm damage – tree fall. Continue to implement British Waterways' existing rapid response provisions.	Ongoing
Con 24 (P27)	Maintain existing site emergency arrangements between operators, Wrexham County Borough Council and the emergency services. Review and revise in light of changes in access and levels of use within the Nominated Site.	Ongoing
Con 25	Ongoing programme of major works by British Waterways to maintain the overall condition profile of their assets within the Nominated Site at no worse than that in 2007.	Major works currently planned for 2007/08 to 2010/11: Leak repairs on Pentrefelin section of feeder. Repairs to retaining wall at Llangollen. Improvements to Llantysilio feeder intake



Continued maintenance by British Waterways is to defined standards.

	ACTION	TIMESCALE
	PRESENTATION	
Pres 1 (02)	Develop a Site-wide Audience Development Plan (ADP) – who are we not reaching, how else can we present the Nominated Site?	Already underway – HLF funding secured
Pres 2 (09)	Develop a Site-wide signage and interpretation style and strategy to ensure consistency across the Nominated Site and to prevent signage ‘overload’ within the Nominated Site.	Years 1 and 2
Pres 3	Develop mobile interpretation (through guidebooks, mobile phones e-trail etc.).	Year 2+
Pres 4 (010)	Develop off-site marketing and pre-visit information through existing and potential new routes i.e. through websites, Tourist Information Centres, collaboration with wider initiatives across NE Wales and the West Midlands, etc. to encourage more visitors and extend awareness of the Site.	Year 2
Pres 5	3-d model and animation to show construction sequence.	Complete
Pres 6	Updated guidebook / Posterplan of the Nominated Site and its features.	Year 1
Pres 7 (07)	With reference to other World Heritage Sites, widen existing educational support to cover the whole Nominated Site’s Outstanding Universal Value and historical development. Develop a programme of education opportunities to increase access and understanding and support.	Year 2
Pres 8	Conservation Management Plan (see Con 1 above) to incorporate user safety requirements as identified by property owners.	Already underway
Pres 9	Address issue of spreading visitor numbers and infrastructure improvements where necessary to improve carrying capacity of key areas.	Years 1 and 2
Pres 10 (06)	Develop physical access to and within the Nominated Site and between the Nominated Site and the Buffer Zone. Promote the benefits of the Nominated Site as a level linear park accessible to users with all physical abilities.	Ongoing
Pres 11	Promote connections with other routes and accesses such as Offa’s Dyke National Trail.	Ongoing
Pres 12 (014)	Improve viewpoints from River Dee and A5 at Pontcysyllte.	Year 2+
Pres 13 (018)	Improve interface between Llangollen Wharf and the Town.	Year 2+
Pres 14 (017)	Improve facilities and interpretation at Horseshoe Falls. Include improvements to access from Llantysilio Green car park (e.g. permissive footpath avoiding use of road).	Year 2+
Pres 15 (019)	Car parking and interpretation linked to existing accesses at Chirk.	Year 2+
Pres 16 (021)	Carry out towing-path improvements Llangollen – Trevor.	Year 2+

	ACTION	TIMESCALE
Pres 17 (O25)	Provision of informal car parking at Pentre.	Year 2+
Pres 18 (O11)	Develop a Site-wide programme of improvements to boundaries, signage and facilities.	Years 1 and 2 then ongoing
Pres 19 (O15)	Improve facilities and waterspace management at Trevor and Froncysyllte – e.g. increase car park provision, improve refreshment offer, develop activities, children's play area / picnic site.	Year 1+
Pres 20 (O16)	Create new access to the Nominated Site at Gledrid Bridge, building on existing facilities.	Year 2+
Pres 21 (O17)	Improve facilities and interpretation at Horseshoe Falls. Include improvements to access from Llantysilio Green car park (e.g. permissive footpath avoiding use of road).	Year 2+
Pres 22 (O20)	Improve viewpoints, interpretation and facilities at Chirk Aqueduct with assistance / involvement of local community.	Year 1+
Pres 23 (O24)	Create better links between Pontcysyllte and Cefn Mawr Townscape Heritage Initiative area and open up associated features to public access.	Year 2+
Pres 24 (P24)	Manage foreseeable visitor incidents - British Waterways' (and other landowners) existing provisions to be reviewed / incorporated with Local Authority incident plans.	After inscription (Year 2)



The Visitor's Book, Froncysyllte Community Centre, signed by visitors from across the World.

View from Froncysyllte looking towards Trevor Basin. The Landscape Plan will set out a strategy for managing views into and out from the Site.

	ACTION	TIMESCALE
	TRANSMISSION TO FUTURE GENERATIONS	
TFG 1 (O5)	Ongoing community engagement – Develop the 'Friends of Pontcysyllte Aqueduct and Canal Group' to include all communities within the Nominated Site. Develop with them an ongoing programme of volunteering, activities and events.	Already underway and ongoing
TFG 2	Comprehensive Gazetteer of Site features, information publicly available through COFLEIN.	Complete
TFG 3	Ongoing involvement of public in decision making, e.g. involvement of Friends of Pontcysyllte Aqueduct and Canal Group; Public consultation for the World Heritage Site Nomination bid; future public consultations (e.g. on revised planning policies where necessary).	Ongoing
TFG 4	Develop specific awareness / advisory literature for adjoining property owners on the values of the Nominated Site and how they can help through the management of their property.	Implement after inscription (Year 2)
	MANAGEMENT	
Man 1 (P5)	World Heritage Site Nomination Steering Group to be maintained long term as co-ordinating body for all agencies and stakeholder groups.	Already agreed
Man 2 (P3)	Prioritisation of Management Plan commitments to be agreed (and resourced) by Steering Group on at least an annual basis.	Ongoing
Man 3	Steering Group to identify potential sources of funding external to partner organisations and to work together to attract such funding where necessary to help achieve the objectives of the Management Plan.	Already underway
Man 4	Based on British Waterways' Destination Management Plan for the waterway elements of the Nominated Site, recommendations from the Audience Development Plan and stakeholder input, Steering Group to agree appropriate opportunities for economic activity based on / around the waterway and key structures.	Years 1 and 2
Man 5	Future planning policies to support the principle of such appropriate development, perhaps subject to inclusion within this Management Plan (and later revisions).	Year 1 (2007) to Year 4 (2010)
Man 6	Integrate recommendations of the ADP into future revisions of the Management Plan.	Years 2+ ongoing
Man 7	Secure additional land as necessary to implement these improvements (a number of Steering Group bodies have Compulsory Purchase powers if necessary).	Year 1+



The Concordat signed in June 2007 by representatives for the seven main partner organisations.

Opposite: Chirk Tunnel, one of the first British canal tunnels with a towing-path.





MEANS OF IMPLEMENTATION

7.a World Heritage Site Steering Group

The primary means of implementation for this Management Plan is through the operations, regulation and influence of the Steering Group, described in Section 1.e above. The Management Plan contains two types of actions – those already within the work programmes and jurisdiction of Steering Group members and those that will require a change in operations or additional resources. The Steering Group will encourage and co-ordinate these changes and monitor implementation of the actions agreed.

Any public body, landowner or authority with responsibility for part of the Nominated Site or jurisdiction over relevant activities within the Buffer Zone will be encouraged to be active within the Steering Group. The main landowners and authorities are already members and their commitment to delivering the actions within this Management Plan were signalled by the signing of the Concordat in July 2007.

The Steering Group meets regularly to review progress against the Management Plan; to co-ordinate partner inputs (for example identifying where actions within the Plan overlap with other strategies, plans and programmes being implemented by members of the Group); and to identify where additional resources are required. It will also act as a multi-agency panel to ensure that the Nominated Site and its values are properly taken into account in

wider decisions that may affect it. The Management Plan will be formally updated at least annually.

Where Management Plan actions require the allocation of resources beyond those currently available to the Steering Group, the Steering Group will co-ordinate action to seek them. Bids to several funders have been successful in the past for refurbishment of Pontcysyllte Aqueduct and background studies necessary for the Nomination. Further bids are being prepared based on this Management Plan.

7.b Key management actions

The first year's plan of action is detailed in Section 9 below, but several major initiatives are outlined here:

Under its 'Heritage Action' programme, British Waterways is already committed to many of the improvements in conservation management contained within the Management Plan. British Waterways has received funding from Heritage Lottery Fund for development of the Conservation Management Plan and Audience Development Plan (actions ref Con1 and Pres 1 in the Strategic Action Plan detailed in Section 6). In addition, British Waterways and the local authority members of the Steering Group will work together on a Marketing Plan to address sustainable visitor management.

Actions by other landowners are largely regulated by the three local authorities

through the land-use planning system. The Plans at the heart of this system are currently under review in all three authority areas and all three authorities have undertaken to review the protection they offer to the Nominated Site through that process, so that new policies and procedures will be in place shortly after Inscription if the nomination is successful.

Finally, the heritage protection regulators (Cadw and English Heritage) are already undertaking a review of existing designations. Any further designation will also strengthen the extent of existing planning policies.

7.c Existing allocation of resources

Staff and financial resources currently available (2007) are detailed in Section 5 of the Nomination Document.

British Waterways' current business plan allocates over £150,000 per annum to the routine maintenance and management of the waterway from Chirk Bank to Horseshoe Falls (2007/8 figures) and a further £10,000 specifically to heritage actions. The British Waterways major works budget is allocated across the whole of the United Kingdom waterways based on national priorities. The following works are proposed to structures in the Site during the period 2007/8 to 2010/11:

- Leak repairs on Pentrefelin section of feeder, approximately £400,000.
- Repairs to retaining wall at Llangollen, approximately £50,000.
- Improvements to Llantysilio feeder intakes, approximately £40,000.
- Repairs to Bridge 46 under 'Buildings at Risk' programme, approximately £13,000.

Other Steering Group bodies (primarily the local authorities) currently maintain various car parks, toilets, public footpaths, Tourist information Centres and other facilities that support the Nominated Site, and

are responsible for the upkeep of certain public road bridges within the Nominated Site. These are maintained to locally and nationally agreed standards.

Strategic plans for improvements will require additional resources from outside the Steering Group. British Waterways has already been successful in securing funding from Heritage Lottery Fund (HLF) in support of work for the Conservation Management Plan and Audience Development Plan, and this will lead to a further bid for capital funding for improvement works.

British Waterways and Wrexham County Borough Council are also currently bidding for funds to support the community development programme.

The Steering Group has also been successful in influencing other organisations with activities within the Nominated Site and Buffer Zone – for instance Dŵr Cymru have agreed to consider the screening or removal of the sewage treatment works at Pontcysyllte within their next capital funding programme.



Right: The Site is popular for a variety of activities.

Opposite: Pen-y-ddol Bridge.





In accordance with Article 29 of the World Heritage Convention, the Department for Culture, Media and Sport, on behalf of the United Kingdom Government, must produce periodic reports on the legislative and administrative provisions and state of conservation of a World Heritage Site every six years. To assist in this process, key indicators for measuring quantitatively and qualitatively the state of conservation have been established in the Management Plan for Pontcysyllte Aqueduct and Canal. They will be undertaken within the six-year time scale of the World Heritage Convention periodic reporting exercise and guided by best practice. The results will be used to assess the implementation of the Strategic Action Plans detailed earlier in this Management Plan.

8.a Key Indicators for measuring state of conservation

The Steering Group will be responsible for ensuring the collection of monitoring data and for its periodic reporting. Individual bodies will be charged as detailed below with collecting data against individual indicators.

Indicator	Periodicity	Location of Records
State of Conservation of assets in the Nominated Site graded Good, Fair and Poor	Baseline in State of Conservation Report 2007, reviewed every six years	British Waterways
Fitness for Purpose of assets in the Nominated Site graded A (Excellent) to E (Bad)	Monthly, annual and ten-yearly Asset Inspection Programme	British Waterways
Maintenance of operation of the cruising waterway for appropriate navigation	Annual Customer Service Inspection and annual closure/maintenance records	British Waterways
Number of Listed Buildings and Scheduled Ancient Monuments in the Nominated Site	Baseline 2006, reviewed every six years	Cadw English Heritage
Number of Listed Buildings and Scheduled Ancient Monuments in the Buffer Zone	Baseline 2006, reviewed every six years	Cadw English Heritage
Condition of Scheduled Ancient Monuments in the Nominated Site and Buffer Zone	Cadw and English Heritage Field Monument Warden condition reports based on field visits and aerial monitoring	Cadw Royal Commission English Heritage
Number of buildings in the Nominated Site and Buffer Zone on the Buildings at Risk Registers	Baseline 2006, reviewed every six years	Wrexham CBC Denbighshire CC Oswestry BC
State of conservation of the Historic Landscape and Parks and Gardens in the Nominated Site and Buffer Zone	Baseline Landscape Character Assessment 2007, reviewed every six years	Wrexham CBC Denbighshire CC Oswestry BC
Enhancement or maintenance of Significant Views from and into the Nominated Site	Baseline Landscape Plan 2007 reviewed by fixed point photography every six years	British Waterways Wrexham CBC Denbighshire CC Oswestry BC

8.a.1 Scheduled and non-Scheduled Ancient Monuments

The Nominated Site currently contains two Scheduled Ancient Monuments, Pontcysyllte Aqueduct and the nearby Cysylltau Bridge, and the canal in its entirety is currently being surveyed with a view to extending statutory protection.

Field Monument Wardens employed by Cadw and English Heritage visit all monuments scheduled under the *Ancient Monuments and Archaeological Areas Act 1979* and, on each visit, record their condition in the form of a textual description, drawings and photographs. Cadw also takes into account monitoring of Scheduled Ancient Monuments from the air, undertaken on its behalf by the Royal Commission on the Ancient and Historical Monuments of Wales since 1984. The wardens are part of the Cadw and English Heritage Inspectorates' teams of professional staff that undertake a range of duties with regard to the identification and protection of historic assets. The regional Inspectors of Ancient Monuments are responsible for dealing with any problems identified in these reports as well as monitoring all works to protected monuments, subject to the statutory consent regime. Descriptions and aerial and ground photographs of all features were produced by Cadw and the Royal Commission on the Ancient and Historical Monuments of Wales as a baseline record to enable effective monitoring of future deterioration or enhancement.

8.a.2 Listed Buildings

The Nominated Site includes thirty two Listed Buildings, including the canal bridges and buildings associated with the construction and operation of the canal. The Buffer Zone includes a further 299 listed buildings. Wrexham County Borough Council, Denbighshire County Council and Oswestry Borough Council have compiled Buildings at Risk Registers, subject to periodic review, which list all historic buildings deemed to be at risk of deterioration through neglect. Their Conservation Officers seek to negotiate a secure future for such buildings, scrutinise all

applications for works that may affect them or their setting and advise private owners of best conservation practice. The number of Listed Buildings on the Buildings at Risk Registers will be reported to the World Heritage Site Steering Group every six years.

8.a.3 British Waterways' inspections

British Waterways' assets form part of a working structure used by the general public for leisure activities, boat journeys and walking. Accordingly they have to meet stringent engineering requirements to ensure the safety of users. British Waterways undertakes monthly asset inspections, an annual engineering inspection and a ten-yearly principal inspection to identify necessary works which are then prioritised and executed after appropriate consultation with Cadw or English Heritage.

These inspections also assign a 'Condition Grade' to major assets such as bridges, sluices, embankments and aqueducts ranging from A 'excellent' to E 'bad'. As part of the preparation for the Nomination Bid, British Waterways has carried out a 'State of Conservation' report (see Section 1.d) on assets within the Site to provide additional guidance to their inspectors and ensure that inspections take full account of conservation issues. Change in British Waterways' reported Condition Grades for major assets will be one of the measures of conservation for the Nominated Site.

During the recent major conservation project at Pontcysyllte Aqueduct, British Waterways compiled a Conservation Management Plan (October 2004) to guide best practice for future conservation. Conservation Plans approved by Cadw or English Heritage for all features and stretches of the canal will be drawn up to guide conservation projects. British Waterways owns extensive heritage assets nationally and is acutely aware of its responsibilities as guardian of these historic properties. Accordingly it has appointed a team of heritage advisors. Its philosophy is to ensure historic assets are understood, conserved to the highest standards and accessible for public enjoyment.

Opposite: Firework celebrations in November 2005 to mark the bicentenary of the opening of Pontcysyllte Aqueduct.





PLAN FOR YEAR ONE (2007)

The actions below, identified as necessary in 2007, are taken from the Strategic Action Plan for the first six years (page 83). The action numbers are extracted from the Strategic Action Plan and are not, therefore, always consecutive.

	ACTIONS	TIMESCALE	RESPONSIBILITY
	Identification		
Id 1	Steering Group to carry out a programme of further documentary and archaeological research to develop understanding of the Nominated Site.	Identify current requirements Year 1, then ongoing.	Royal Commission to lead
Id 2 (07)	Steering Group to establish a single catalogue of documentation and references to ensure as complete a record as possible of the historical context of the construction and operation of the Canal and the Nominated Site.	Completed for Nomination Bid. Ongoing	Royal Commission to lead
	Protection		
Pro 1 (04)	Review heritage protection designation – update Listing and consider Scheduling of the whole Nominated Site.	Already underway	Cadw and English Heritage
Pro 2 (08)	With support from Local Authority World Heritage Forum develop new planning policies for protection and presentation of the Nominated Site, consistent across all authorities, taking advantage of expected changes within the Heritage Protection Review.	Year 1 (2007) to Year 4 (2010)	Local Authorities
Pro 3 (022)	Support the extension of the Clwydian Range Area of Outstanding Natural Beauty (AONB) to include the Dee Valley part of the Nominated Site and Buffer Zone.	Year 1+	CCW / Denbighshire and Wrexham Councils
Pro 4 (023)	Extension of Trevor Conservation Area – extend southwards to include canal at Froncysyllte.	Already underway	Wrexham County Borough Council
Pro 5	The new local development plans / frameworks potentially allowing expansion of development boundaries within the Buffer Zone will also need to include appropriate arrangements for protection of the Nominated Site, the Buffer Zone and its wider setting, especially with reference to the landscape assessment / Plan (see 03).	Year 1 (2007) to Year 4 (2010)	Local Authorities
Pro 6	Future planning policies to have regard to the Landscape Plan (03).	Year 1 (2007) to Year 4 (2010)	Local Authorities
Pro 7 (026)	Reduce impact of Dŵr Cymru sewage works at Pontcysyllte and work towards eventual removal / relocation.	Already underway	Wrexham County Borough Council and Dŵr Cymru
Pro 8	Some 'associated features' may be covered by proposed review of designations. In addition, future planning policies to have regard to the results of the Archaeological Audit as a material consideration.	Year 1 (2007) to Year 4 (2010)	Cadw, English Heritage and Local Authorities

	ACTIONS	TIMESCALE	RESPONSIBILITY
	Conservation		
Con 1 (O1 and P1)	Develop a Nominated Site-wide Conservation Management Plan (building on the existing CMP for Pontcysyllte Aqueduct) to identify works required to improve the state of conservation of structures and to set standards for all future repairs and maintenance (materials, methods etc.).	Already underway – HLF funding secured	British Waterways
Con 3 (P1)	Continued maintenance by British Waterways and other property owners, to defined standards based on use and value.	Ongoing	British Waterways and other owners
Con 4 (P1)	Continue to assess routinely heritage condition / conservation status of all Features (as defined by the Gazetteer) and plan improvement / maintenance works accordingly.	Ongoing	All property owners within Nominated Site
Con 5	Develop a Training Plan based on works within the Nominated Site to ensure partner staff, contractors and volunteers develop and maintain the appropriate skills necessary for maintenance into the future.	Year 1 and ongoing	British Waterways to lead on development of plan initially
Con 6 (O3)	Develop a Landscape Plan from the existing Landscape Assessment to set out a strategy for managing views and visual access, to improve the landscape setting by vegetation management / planting within the Nominated Site itself and inform land-use planning decisions on potential impacts in the Buffer Zone.	Years 1 and 2	British Waterways and Local Authorities
Con 8 (P7)	Works required to undo previous inappropriate repairs or alterations within the Nominated Site to be identified by Conservation Management Plan.	Year 1	British Waterways
Con 10 (P19)	Managing anti-social side effects of public access such as litter and graffiti. Community engagement works to help control (through education, deterrent and remediation).	Ongoing	British Waterways, Local Authorities, other property owners within Nominated Site
Con 11	Standards of maintenance to be agreed by Steering Group and implemented by property owners.	Year 1 then ongoing	Steering Group
Con 12 (P20)	Climate change (1) – drier, hotter summers, therefore pressure on water supply - Water supply from River Dee is regulated by control of headwater reservoirs. This control should continue to consider the needs of the canal / proposed World Heritage Site.	Ongoing	Environment Agency Wales
Con 13	Leakage reduction works where required to be included in British Waterways' maintenance programmes.	Ongoing	British Waterways
Con 14 (P21)	Dealing with the impacts of climate change (2) - wetter winters; increased intensity of rainfall, therefore increased likelihood of flooding.	Ongoing	British Waterways
Con 15	Incidence of flooding in Rivers Dee and Ceiriog (and therefore likely impact of long-term damage to the Aqueducts' piers) to be reviewed.	Already underway	Environment Agency Wales
Con 16	British Waterways to review the capacity of existing flood protection against flow projects to be provided by the revised Catchment Flood Management Plans.	Years 1 and 2	British Waterways

	ACTIONS	TIMESCALE	RESPONSIBILITY
Con 17 (P22)	Need to protect the Rivers Dee and Ceiriog within the designated wildlife sites (SAC/SSSI) as well as statutory protected species and general biodiversity within the Nominated Site.	Ongoing	CCW as regulator plus all members of Steering Group
Con 19 (P23)	Continue to implement British Waterways' existing water management and emergency response provisions	Ongoing	British Waterways
Con 20 (P25)	Continue to implement British Waterways' existing water management and emergency response provisions.	Ongoing	British Waterways
Con 21 (P25)	Publicise 'The Green Blue' environmental advice to canal boat users within the Nominated Site.	Already underway	British Waterways
Con 22 (P25)	Publicise Environment Agency pollution control advice to adjoining landowners and businesses.	Years 1 and 2	Environment Agency Wales
Con 23 (P26)	Recovery from storm damage – tree fall, Continue to implement British Waterways' existing rapid response provisions.	Ongoing	British Waterways
Con 24 (P27)	Maintain existing site emergency arrangements between operators, Wrexham County Borough Council and the emergency services. Review and revise in light of changes in access and levels of use within the Nominated Site.	Ongoing	Wrexham County Borough Council
Presentation			
Pres 1 (O2)	Develop a Site-wide Audience Development Plan (ADP) – who are we not reaching, how else can we present the Nominated Site?	Already underway – HLF funding secured	British Waterways to lead (HLF funding)
Pres 2 (O9)	Develop a Site-wide signage and interpretation style and strategy to ensure consistency across the Nominated Site and to prevent signage 'overload' within the Nominated Site.	Years 1 and 2	British Waterways and Local Authorities
Pres 6	Updated guidebook / Posterplan of the Nominated Site and its features.	Year 1	Steering Group
Pres 8	Conservation Management Plan (see Con 1 above) to incorporate user safety requirements as identified by property owners.	Already underway	British Waterways
Pres 9	Address issue of spreading visitor numbers and infrastructure improvements where necessary to improve carrying capacity of key areas.	Years 1 and 2	Steering Group
Pres 10 (O6)	Develop physical access to and within the Nominated Site and between the Nominated Site and the Buffer Zone. Promote the benefits of the Nominated Site as a level linear park accessible to users with all physical abilities.	Ongoing	All owners
Pres 11	Promote connections with other routes and accesses such as Offa's Dyke National Trail.	Ongoing	British Waterways and Local Authorities
Pres 18 (O11)	Develop a Site-wide programme of improvements to boundaries, signage and facilities.	Years 1 and 2 then ongoing	Steering Group
Pres 19 (O15)	Improve facilities and waterspace management at Trevor and Froncysyllte – e.g. increase car park provision, improve refreshment offer, develop activities, children's play area / picnic site.	Year 1+	British Waterways and Wrexham County Borough Council
Pres 22 (O20)	Improve viewpoints, interpretation and facilities at Chirk Aqueduct with assistance / involvement of local community.	Year 1+	British Waterways, Wrexham County Borough Council and Oswestry Borough Council

	ACTIONS	TIMESCALE	RESPONSIBILITY
	Transmission to Future Generations		
TFG 1 (O5)	Ongoing community engagement – Develop a ‘Friends of Pontcysyllte Aqueduct and Canal Group’ to include all communities within the Nominated Site. Develop with them an ongoing programme of volunteering, activities and events.	Already underway and ongoing	Local Authorities and British Waterways
TFG 3	Ongoing Involvement of public in decision making, e.g. involvement of Friends of Pontcysyllte Aqueduct and Canal Group; Public consultation for the World Heritage Site Nomination bid; future public consultations (e.g. on revised planning policies where necessary).	Ongoing	Steering Group
	Management		
Man 2 (P3)	Prioritisation of Management Plan commitments to be agreed (and resourced) by Steering Group on at least an annual basis.	Ongoing	Steering Group
Man 3	Steering Group to identify potential sources of funding external to partner organisations and to work together to attract such funding where necessary to help achieve the objectives of the Management Plan.	Already underway	Steering Group
Man 4	Based on British Waterways’ Destination Management Plan for the waterway elements of the Nominated Site, recommendations from the Audience Development Plan and stakeholder input, Steering Group to agree appropriate opportunities for economic activity based on / around the waterway and key structures.	Years 1 and 2	Steering Group, once produced by British Waterways



Fron Male Voice Choir has developed an international profile.

Opposite: A bird's-eye view of the Aqueduct enjoyed by balloonists on a summer's evening.





We would like to thank the three lead organisations for their tremendous work, resource allocation and commitment to this Management Plan which is in support of the World Heritage Site nomination for Pontcysyllte Aqueduct and Canal:

British Waterways

The Royal Commission on the Ancient and Historical Monuments of Wales

Wrexham County Borough Council

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Llantysilio Community Council
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Other Organisations:

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Inland Waterways Association.
Institution of Civil Engineers
Tourism Partnership North Wales
Visit Wales
The National Library of Wales

We apologise if we have missed naming you as a contributor.

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Opposite:
Pontcysyllte Aqueduct
towering above a winter
landscape.





11.a British Waterways Heritage Policy and Principles

Heritage Policy

1. Purpose

1.1 Our aim is for the heritage of the waterways to be treasured as a valued national asset. The careful protection and management of that heritage is an essential part of the ongoing work to achieve our vision.

2. Definition

2.1 British Waterways' heritage assets consist of its historic canals and river navigations, and their built heritage, archaeology and historic man-made landscapes. The wider historic environment includes assets that are not directly managed by British Waterways but are nevertheless important to the appeal and use of our waterways.

3. A working, living inland waterway network

3.1 British Waterways' waterways are used for navigation and recreation. We seek to integrate the needs of those who visit and use the network with a sustainable approach to effective management of the waterway heritage.

3.2 In line with our vision, British Waterways seeks to become the acknowledged expert in achieving sustainable integration of the competing needs and uses of the waterways.

Compliance with legislation and regulation is a minimum requirement. We will aim to exceed this requirement by continually improving our performance and delivering appropriate good practice.

3.3 Where balances and judgements have to be made between competing resources and activities, we will take a long term and strategic view that assumes a presumption in favour of preserving the waterway heritage.

4. Heritage principles

4.1 Our heritage principles provide the framework within which British Waterways manages the waterway heritage. The principles establish best practice in the maintenance and repair of historic structures, the management of historic man-made landscapes, the relationship with new development, the importance of archaeology and the use of interpretation and public events. We will monitor our activities and outputs through an annual 'State of the Waterways Heritage' report.

4.2 We will promote best practice amongst our employees, contractors, suppliers, customers and partners. We will seek suppliers, contractors and partners with standards consistent with our own.

4.3 This policy is available to all British Waterways' employees and members of the public.

General

1. British Waterways will seek to manage the physical impact of human activities in order to protect the waterway heritage.
2. British Waterways will seek, through national and local planning policies, to encourage adjacent land uses and development which will not conflict with historic environment of the waterways.
3. British Waterways will seek to become increasingly self-regulating in its management of the waterway heritage through the use of Heritage Partnership Agreements.

Understanding significance

4. Before works to a historic building, structure or historic site take place, research should be undertaken to determine its significance. This research will establish heritage value and will help to guide the planning and execution of works.
5. Regard should be had for the historic functionality of waterways; e.g gauge of track, turnover bridge configuration, positioning of bollards, strapping posts and rope hooks. The heritage value of these 'functional traditions' is significant and should be secured.

Historic buildings and structures

6. All major projects and general works should demonstrate a respect for waterway heritage, and an approach based on minimum physical intervention involving minimum loss of existing fabric should be undertaken.
7. Interventions should be reversible wherever possible.
8. Regard should be had for the contributions of different periods of work in an historic structure. The heritage value and significance of such contributions must be judged within the context to which their host structure belongs.

9. The patina of age and use forms part of the value of a historic building or structure and its removal should only be considered when it is essential to the protection of historic fabric. Falsification of patina should be avoided.

10. Most repairs and alterations should be carried out in materials that match the historic fabric. Interventions involving replacement of missing parts should be discreetly datemarked to differentiate new from old.

11. Historic materials, fixtures and fittings are valuable and wherever possible should remain in situ. Where such items cannot be left in situ they should be carefully salvaged and stored for re-use in an appropriate context.

Historic man-made landscapes

12. Major projects and general works will be planned and designed so as to minimise their impact on the historic man-made landscape.
13. Consideration of landscape character and local distinctiveness will influence the design and planning of waterside development.

New development

14. New development can be acceptable in an historic setting provided it maintains an appropriate visual context of form, scale, and materials and does not reduce the significance and value of heritage assets.
15. Sustainable and compatible new uses which respect the equilibrium of the waterway heritage will be encouraged.

Archaeological recording

16. Where development or major works that affect heritage assets are taking place, physical features should be archaeologically recorded.
17. Archaeological records should be placed in local Historic Environment Records (HERS) and made publicly available.

Interpretation

18. Heritage interpretation should exploit the local distinctiveness, landscape, archaeology and cultural associations of individual historic waterways.

19. Interpretive signage should be carefully designed and integrated into historic sites with minimum intrusion.

Volunteers

20. Volunteers will be encouraged to participate in a range of heritage activities including research, heritage recording exercises, and restoration projects.

Competent people

21. All British Waterways' personnel will attain a specific heritage competency that is assigned to their role and responsibilities.

22. All British Waterways' personnel and contractors working on historic buildings and structures or archaeological sites will have sufficient competence and expertise.

September 2005

11.b Bibliography

List of documents referenced within the Management Plan:

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- British Waterways Act 1995 (part relevant to conservation duty)
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- Llangollen;
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- Cefn Mawr; and
- Chirk

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- British Waterways' *Byelaws*
- British Waterways' *Emergency Procedures Manual*
- British Waterways' *Framework Agreement with the UK Government*

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www.wrexham.gov.uk/aqueduct



An aerial photograph of a lush, green forested hillside. In the upper left, several small houses are visible, some with red roofs. In the lower right, a small, dark-roofed building sits on a grassy patch. The forest is dense and covers most of the hillside, with some open grassy areas visible in the foreground and middle ground.

This Management Plan represents an agreed vision and commitment to action by the key partners supporting the World Heritage Site nomination for Pontcysyllte Aqueduct and Canal, for the period 2007-2012. It has been produced by the World Heritage Site Steering Group which comprises representatives from British Waterways, the four local authorities of Wrexham County Borough Council, Denbighshire County Council, Oswestry Borough Council and Shropshire County Council, government agencies and public bodies including Cadw, English Heritage, the Royal Commission on the Ancient and Historical Monuments of Wales, the Countryside Council for Wales, Natural England, UNESCO Cymru Wales, Visit Wales and Tourism Partnership North Wales, and the voluntary sector represented by the Inland Waterways Association. Crucially, the Management Plan also embraces the hard work, support and aspirations of the local communities along the 11 mile/18 kilometre Nominated Site; without their support this initiative would not be possible.

The Management Plan is by its very nature, a 'living' document, requiring constant update as actions are completed and new needs arise. This current document, produced for the World Heritage Site nomination, represents a snapshot in the on-going task of managing an amazing and complex site, and balancing the needs of conservation of the built and natural environment, with those of visitors and local communities.