

Threats and Opportunities in the Landscape / Changes in Agricultural Land Management Practices

The historic role of governance of the drainage system was an important factor in shaping and reinforcing landscape characteristics over time. Throughout the Gwent Levels, it was the farmers working in partnership with the Caldicot and Wentlooge Internal Drainage Board who were responsible for maintaining the system of reens and ditches which makes the area habitable for people and wildlife. The Caldicot and Wentlooge Internal Drainage Board's responsibilities were transferred to NRW in 2015. NRW is now responsible for maintaining the c.64 km of main reens and c.137km of lesser reens within the new Caldicot and Wentlooge Internal Drainage District that covers the Gwent Levels. In addition, NRW maintain the main rivers - the embanked natural watercourses, such as Monksditch and Elver Pill Reen, whose banks are raised during periodic cleaning.

The earthworks associated with the embanked natural watercourses and artificial reens are major historic features within the landscape, and are vulnerable to damage. In places such as Monksditch near the Whitson sub-station and the north end of Blackwall in Magor, the reen sides are revetted by stone walls and timber facings, which are also vulnerable to change. The continued management of this system is critical to ensure that different types of historic features are protected for the future.

The remaining c.1200km of field ditches that criss-cross the Levels are maintained and funded by individual landowners. The extensive network of field drainage ditches and reens are one of the most distinctive landscape features of the Levels, and are also of high biodiversity value. These watercourses are vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. The lines of pollarded willows planted to strengthen the bank sides of reens are an important part of the historic landscape as well as of ecological importance, and are vulnerable from a lack of management and neglect.

Over the years, there has been a slow but significant shift from traditional farming practices to more intensive agricultural regimes. There has also been a fragmentation of farm businesses, which has given rise to the problem of dispersed or disconnected land holdings seeing pressure to infill ditches to allow for modern farming. There are also increasing numbers of smallholders with holdings typically less than 10ha whose main income is not farming, but who use the land for horses, other livestock or amenity reasons. Neither type of land owner fit well into current agri-environmental schemes.

Some local farmers and landowners have emphasised that local expertise and traditional water management practices are essential to sustain this unique landscape and its nationally important wetland habitats.

SSSI Condition

The Gwent Levels SSSI is under threat from scrub encroachment along the field ditch and reed edges, especially where it is present on both sides, which is shading out features of conservation interest such as aquatic plants. Traditionally, more of the ditches would have been kept open as wet fences to keep stock in, with occasional pollarded willows planted to help strengthen the banks. An increasing problem are the numbers of livestock brought into the area, rather than born and raised on the Levels. As a result they are unaware of wet fences and farmers change practices to protect them. A lack of responsibility of land owners to manage the field ditch edges threatens the whole area and may also exacerbate localised flood risk through scrub encroachment and ditch blocking by trees. The dominance of double hedged ditches and reens is increasingly threatening not only biodiversity, but also the ability of the drainage system to work and drain the land and protect it from localised flooding.

The field ditches maintained by individual landowners are vulnerable to loss as larger fields are created from several smaller ones. For example, in the remaining agricultural areas of the Caldicot Level, 18% of the boundaries that existed during 1886 have been lost, while in Wentlooge Level the figure is 40% (LCA, 2017). The lowest tier of the drainage hierarchy, surface ridging, is the most vulnerable of all. This consists of the “grips”, skilfully created by hand digging or ploughing. These slight and fragile earthworks are vulnerable in fields that are underdrained and ploughed.

According to the most recent SSSI condition assessment carried out by NRW, Newport Wetlands SSSI has the smallest proportion (33%) of double hedged ditches (category 2 and 2d) and largest proportion of wet open ditches (category 5) at 30%. Nash & Goldcliff and Whitson had the highest proportion of double hedged ditches at 68% and 70% respectively. The two Wentlooge Gwent Levels SSSIs had

a larger proportion of open and wet ditches than the 4 Caldicot Gwent Levels SSSIs. In some cases the double hedge had grown over a ditch completely forming a tunnel causing extreme shading.

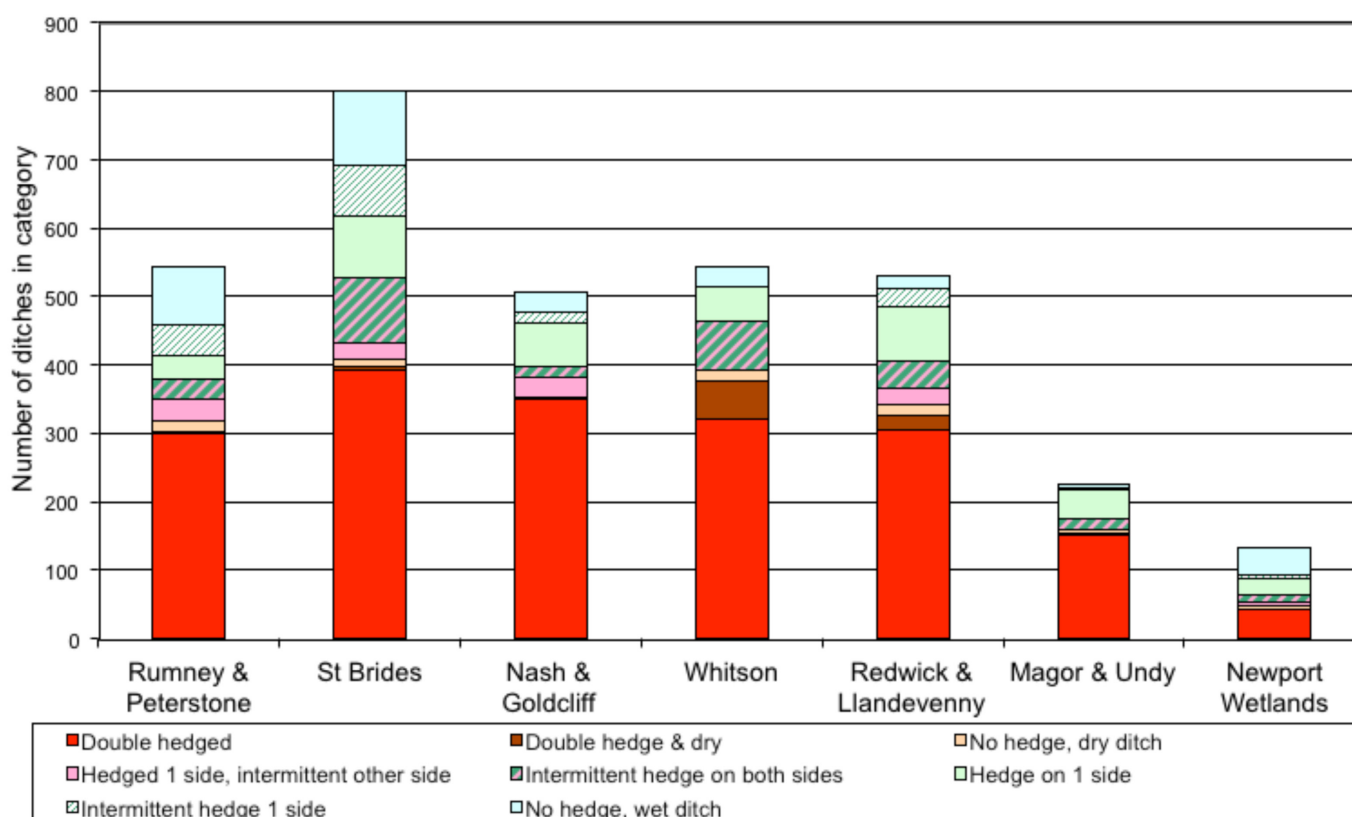
Overall at least 63% of the field ditches across the seven SSSIs of the Gwent Levels were heavily shaded ditches (category 2 2d and 4c), and therefore unlikely to be able to support the special flora interest of the SSSI, see table overleaf. At least 5% were dry (category 2d and 3), but as many of the double hedge (category 2) ditches were assessed by aerial images only its likely there are a higher percentage of dry ditches than recorded in the surveys.

Part One – The Scheme Plan / Threats and Opportunities in the Landscape

Ditch category	% of ditches in the Gwent levels SSSIs and Newport Wetlands SSSI where category was recorded
1 Ditch hedged on 1 side	12
2. Ditch hedged both side	57
2d. Ditch double hedged and dry	3
3 No hedge but ditch is dry	2
4 Intermittent hedge *	2
4a intermittent on one side of ditch	5
4b intermittent hedge on both sides	6
4c Hedge along 1 side, intermittent hedging on opposite side	3
No hedge alongside but ditch is wet	10

*Category 4 was split to 4a, 4 b and 4c for ditch surveys from 2011 so only Whitson SSSI was surveyed in 2010 prior to the category split

Figure 12 – Field ditch categories of the Gwent Levels SSSIs



Part One – The Scheme Plan / Threats and Opportunities in the Landscape

Condition of Field Block Units – Field Ditch habitat performance indicators (PI)

Over each SSSI at least 60% of field block units should be in 'favourable condition' for the site to be considered in favourable condition for that PI. For a field block to be in favourable condition the target is that each Field Block unit must have no more than 50% ditches to be category 2, 2d, 3 or 4c i.e. no more than 50% shaded ditches.

	St Brides	Nash & Goldcliff	Redwick & Llandevenny	Whitson	Rumney & Peterstone	Magor & Undy	Newport Wetlands
% of field blocks having less than 50% Cat 2, 4c, 3	34	23	24	12.5	31	28	60
Result	Fail	Fail	Fail	Fail	Fail	Fail	Pass

This table show that currently only the Newport Wetlands SSSI is in favourable condition for the field ditch PI as it is the only one to meet the PI of 60% of field blocks being in favourable condition.

Condition of Reens

For an SSSI to pass PI for main reens, at least 60% of main reens will have had submerged flora (not Elodea) recorded at 60% survey points. For an SSSI to pass PI for the smaller IDD reens, at least 60% of IDD reens will have submerged plants (not Elodea) recorded at half of the points.

In terms of main reen condition, St Brides, Whitson and Redwick and Llandevenny SSSIs pass for condition of main reens and the other three SSSIs fail .

	Rumney & Peterstone	St Brides	Nash & Goldcliff	Whitson	Redwick & Llandevenny	Magor & Undy	Newport Wetlands
% of main reens which have at least 60% of channel points having submerged plants	33	60	33	80	71	0	No EA reens present
Result	Fail	Pass	Fail	Pass	Pass	Fail	

Part One – The Scheme Plan / Threats and Opportunities in the Landscape

IDD Reens

In terms of the PI for submerged flora in the channel of IDD watercourses, Rumney and Peterstone, St Brides, Whitson and Newport Wetlands SSSIs pass and the other 3 SSSIs fail.

	Rumney & Peterstone	St Brides	Nash & Goldcliff	Whitson	Redwick & Llandevenny	Magor & Undy	Newport Wetlands
IDB Channel % of reens which have at least 50% points with submerged flora	72	68	53	87.5	55	37.5	100
Result	Pass	Pass	Fail	Pass	Fail	Fail	Pass

None of the 7 SSSIs pass for the additional PI for IDD reens for 'vegetation type' in the channel and margin of field ditches. Main reens and IDD reens are the permissive power of NRW. Management of the reen network to maintain the water conveyance and attenuation capacity of the network is primarily undertaken by periodic desilting alongside more routine de-weeding/ flailing of bankside vegetation. The reen management also benefits agricultural practice.

The Caldicot and Wentlooge Internal Drainage District (IDD) within NRW manage a selection of Ordinary Watercourses deemed critical for water level management, whilst those designated as main rivers, are managed by NRW's Flood Operations.

Where main reens and IDD reens are in poor condition, work by NRW will be ongoing to address this including investigating factors of water levels, frequency and type of reen management and water quality. The reens of Gwent Levels - Redwick and Llandevenny have been monitored again this summer and water quality monitoring will be undertaken where reens are in poor condition to find out if that is where the problem lies. There is liaison between NRW Conservation and Biodiversity staff and colleagues undertaking reen management via the annual 'Maintenance Programme' consultation to ensure that the SSSI and broader wildlife interest features are maintained.

In terms of other features, whilst stone, brick, concrete and wooden bridges over the watercourses all survive, many are in decay or have collapsed and, as a result, the integrity of the public footpath network is affected in places – an important consideration for access proposals as well as the heritage potential of the surviving features of the drainage system.

In addition, slurry storage and management, and fly tipping are challenges for water quality improvements on the Levels. Fly grazing and overgrazing on the saltmarsh beyond the sea wall on the Wentlooge Level is having a negative effect on the botanical and ecological interest of the intertidal areas. Overgrazing is also an issue on common land within Wentlooge Level, such as Peterstone Great Wharf.

Field Underdrainage

Recently NRW has received more and more requests from farmers to underdrain. Field drainage on the levels was traditionally achieved by 'gripping'. At the time of notification, CCW considered that conserving the old grip system and discouraging any further underdrainage, was a key tool for managing the site to maintain water levels and the quality of water of the watercourses and therefore maintain the special features of the SSSI which are dependent on the water. Recently some farmers have stated that farming practices have moved on and that refusal to allow underdrainage significantly impacts on their ability to farm productively on the Levels. The Partners believe that underdrainage would lead to a general lowering of the water table in the fields with the likely consequence that the surrounding ditches and reens would need to be held at a lower level for the drainage to work.

Underdrainage can also lead to particular issues in relation to run-off rates and water quality:

Run-off rates

Rates of surface water runoff to surrounding ditches is increased by underdrainage and can become 'flashy'. This will potentially affect the features of the SSSI due to fluctuating water levels.

Water quality

Underdrainage usually goes hand in hand with increased fertiliser application. Any fertilisers/ herbicides applied to the land will run off into the adjacent field ditches via the drainage pipes. This could lead to increased eutrophication for the water, and consequent adverse impacts on the plant and invertebrate features of the SSSI.

Image Credit:
Gareth James



Farm Economics

The loss of the local cultural and economic drivers that have created and sustained the Gwent Levels over thousands of years is widely recognised by its farmers and farming communities. It is clear that current policy and land management practices are failing to ensure its sustainability for future generations. This has been raised at numerous individual ongoing consultations as part of the preparation of the second round application. Farmers, landowners and communities recognise the challenge but are currently unable to see a viable solution. This is evident in the proliferation of new management ideas from large solar farms to intensive dairy units which are a departure from the high nature value farming that has created this landscape and place at risk its landscape character and the designated features that make it special.

All of this is currently driven by European Agricultural policy and supported by public money in the form of basic payments from the EU. At present there is increasing pressure on budgets available to fund land

management, particularly in relation to biodiversity and wider environmental benefits. There has been a movement towards positive land management but policies are not currently in place to support this. Economic and social barriers exist that prevent farmers from managing the land in a way that supports sustainable management of natural resources. Payment for Ecosystem Services has been discussed for over 10 years but the tools and processes to develop PES and the policies to support them are still not in place. The budget available to fund environmental agreements locally in the Gwent Levels, such as Section 15 agreements through Natural Resources Wales is declining and under pressure to deliver an increasing number of objectives. Welsh Government funding for Environmental NGO's has also declined in recent years and finding a long term sustainable source of funding to replace that which has been lost is vital.

The current lack of understanding of the ecosystem services provided by the Levels landscape has led to difficulties in addressing proposed unsustainable development both on the Levels

and in the surrounding area which impact the Levels. Developments including the proposed M4 relief road and the Cardiff and Newport tidal lagoon proposals are likely to affect both the character of the landscape and its ability to provide ecosystem services.

Our imminent exit from the European Union provides an historic opportunity to reset the drivers of agriculture and reward farmers not just for food production but for creating and maintaining resilient ecosystems. It is inevitable that farming will continue to need financial support from government to remain viable. However, this support could be targeted at agricultural practices that are sustainable and provide public goods and services that local people want. Changes in agri-environmental schemes and agricultural subsidies are significant drivers with the potential to alter the balance and quality of land uses and sensitive landscape elements within the Gwent Levels' landscape, including fragmentation of ecological networks and damage to important historic landscape features.



Image Credit:
Nigel Pugh

New initiatives and models that seek to both secure sustainable natural resource management of the Gwent Levels and a stable and secure income for the regions' farmers is needed to ensure that the future ecological value of this unique landscape is not lost.

Changes in agricultural land management practices - key considerations

The LCA highlighted a series of key considerations for the long-term management of the Gwent Levels to maintain landscape distinctiveness and biodiversity value. Key long-term recommendations for the drainage system and agricultural land management practices include the desirability of:

- Conserving the traditional open mosaic character and wildlife value of field ditches and reens, and their associated historic grip surface drainage and headland features, aiming to increase their connectivity with core sites of ecological interest;
- Active management of scrub to reduce the dominance of double hedged ditches and reens;
- Increasing grassland strips along field drains and watercourses in areas of arable land to capture sediment and nutrients (NRW have been recording arable fields that lack buffer strips as part of this summer's SSSI survey);
- Working in partnership with farmers to encourage environmentally sensitive land management practices that harvest and conserve water, and prevent pollution of watercourses by creating buffer areas between points of potential diffuse fertiliser applications/nutrient inputs and sensitive riparian habitats;
- Protecting the pattern and function of field ditches and grips with reens, wetland habitats and meadows supporting large and characteristic populations of birds and invertebrates, and other biodiversity;
- Preserving for future interpretation the area's archaeological resources, historic features and geological interests from damage and loss, directly and by maintaining high ground-water levels reducing soil desiccation and further benefitting wetland ecology;
- Maintaining the strong sense of tranquillity, wildness and remoteness, traditional grazing and hay production, and distinctive skylines and big skies; with the predominantly undeveloped, pastoral landscape underpinned by a viable and vibrant agricultural community and economy;
- Promoting and maintaining extensive management of wetland habitats and grasslands to allow for greater floristic diversity and biodiversity, particularly alongside drains and ditches

Climate Change

The Sea wall/embankment and network of main rivers and reens are an important part of the existing flood defences within the study area as shown on Figure 10 A number of historic flood events on the Gwent Levels are embedded in local memories and in the fabric of many local buildings signalled by commemorative plaques.

Strategies for management of flood risk within the Gwent Levels have been developed by NRW in plans for the South East Valleys catchment (covering Wentlooge Level), the Usk catchment (covering Caldicot Level) and the Severn Vale catchment (covering Mathern Level). Together with the Severn Estuary Shoreline Management Plan, these plans recognise the outstanding historic landscape significance and high nature conservation value of the Gwent Levels, and the fundamental role that water management plays in sustaining these interests.

The effect of rising sea levels and a fixed sea wall is the loss of important intertidal habitats such as salt marsh, a phenomena known as 'coastal squeeze'. In the future, it may become increasingly necessary to manage and plan for a changing coastline by developing robust networks of semi-natural wetland habitats (intertidal habitat, marshes and inland lagoons) with the potential to reinforce landscape character, increase opportunities for biodiversity and making the coast more resilient to flooding from the sea.

The current Severn Estuary Shoreline Management Plan considered the feasibility of managed retreat along the Severn Estuary, but identified limited opportunities for such measures along the Gwent Levels coastline. In addition, peat deposits and wetland habitats, as well as the estuarine muds, soils and habitats, can store and sequester large quantities of carbon.

Seasonal and unseasonal flooding, affected by the changing climate, presents a challenge to the agricultural productivity of the area, to some of the species and habitats present and to some homes and livelihoods. Conversely, drought sometimes also challenges farming and wildlife that depends on presence of water.

Any disturbance of the alluvium, or lowering the water-table, threatens to alter the condition of the buried archaeology.

Management of flooding and adapting to climate change – key considerations

Key long-term recommendations from the LCA associated with management of flooding and adapting to climate change in the Levels include the desirability of:

- Ensuring that flood risk and shoreline management plans continue to recognise the outstanding historic landscape significance and high nature conservation value of the Gwent Levels, and the fundamental role that water management plays in sustaining these interests.
- Working in partnership with all those with a stake in the long-term sustainability of the area to develop consensus around approaches to addressing the challenges of climate change, and its environmental and economic consequences.



Image Credit:
Jaggery

Invasive Non-native Species

INNS (invasive non-native species) are costing the Welsh Government approximately £125 million annually and rank as the second greatest threat to global biodiversity. Despite this, public awareness of the threat and cost of INNS is low, and those that are aware are often unsure what they can do to help.

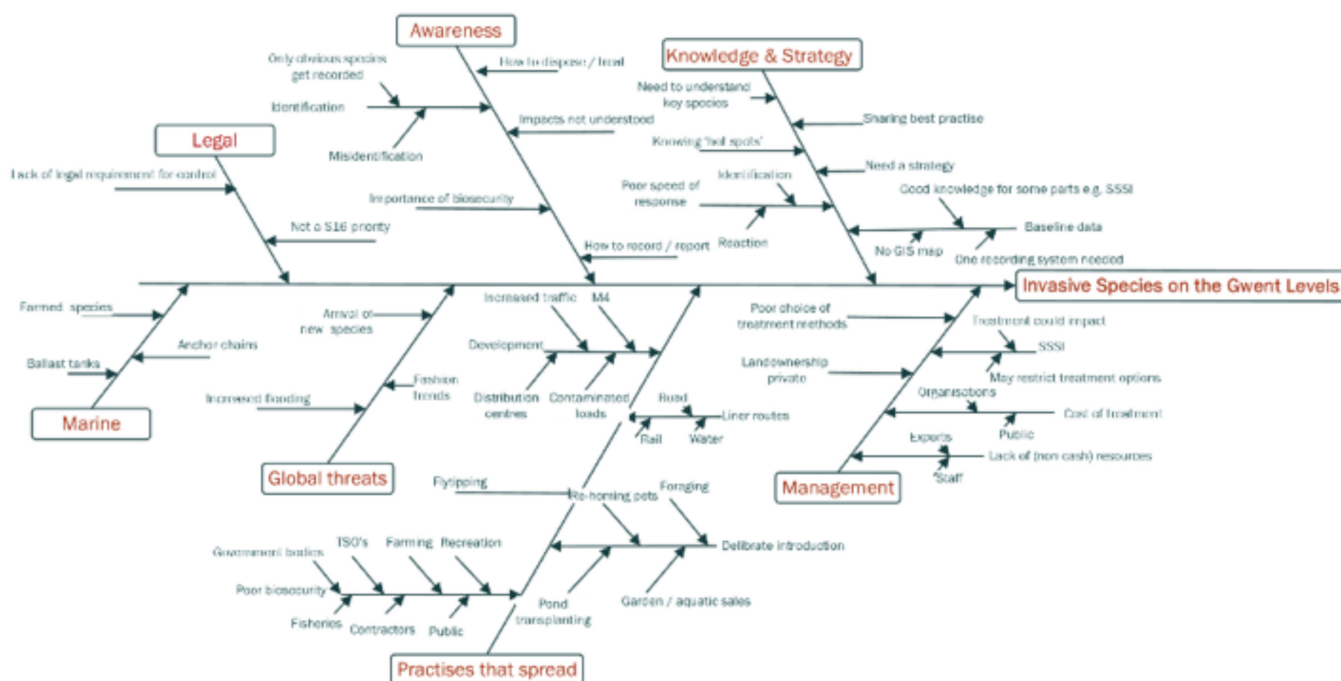
There are known invasive non-native species locations across the Gwent Levels. There is also the threat of invasion from new species not yet present in the landscape. Although there is some good information for parts of the landscape, the INNS picture is not complete and there is a lack of

accurate baseline data to scope the issue at landscape-scale. During the Development Phase, an INNS working group was set up to include attendees from organisations with an interest or responsibility for INNS control on the Gwent Levels, a local resident and retired ecologist with experience of invasive species work, and a Local Authority Invasive Plant Species Officer from outside the area (there are no such officers within the project area).

The group developed a 'root cause brainstorm' to define fully the INNS problem.

The lack of a good baseline for INNS in the Gwent Levels is a real problem. A large data gaps exist across the Gwent Levels with those records that are present often not accurate to field level. In addition, the data in their current format does not enable a map to be easily produced that distinguishes between the various INNS species. Other records may exist but have not been digitised. At present, confirmed INNS records are small in number (relative to other parts of Wales), however the high conservation value and inter-connectivity of the Gwent Levels ditch system makes the landscape vulnerable to invasion and the severity of INNS impact could be high.

Figure 14
Causes of INNS Wishbone diagram



INNS Group Brainstorm 8th November 2016

Fly-tipping

Fly-tipping and means of preventing it through bunds is apparent in parts of the Levels. Fly-tipping has been a problem on the Gwent Levels for as much as 20 years and local residents have identified it as a major concern for them. With the latest statistics showing that there was a 14% increase in fly-tipping in Wales during 2015/16 (Fly-tipping Action Wales, 2017), more needs to be done to combat this visual

crime. This has been brought up by residents at nearly every consultation and engagement event held throughout the Development Phase. As a result of the Good Levels/Bad Levels exercise with communities, fly-tipping was raised by 62 people as an example of 'Bad Levels' – the below gives some examples of the sorts things people were saying.

Theme: Fly-Tipping/Litter/Pollution

	Positive	Negative
Number of Comments Collected	1	62
	What People Said	What People Said
	Newport CC generally good at cleaning it (fly-tipping) within 48 hours	At every meeting fly-tipping is raised-we feel sorry for the Council and we clear our stretch ourselves of litter Police or Council? Both say it's 'their' (the other's) responsibility Wentloog end-scruffy and unloved-needs a cleanup Gradually being destroyed by FLY-TIPPING Not enough people reporting it-therefore it's always the same people so doesn't look like a problem Lots of obstacles in front of people wanting to dispose of rubbish CCTV needed, cameras at each end of the routes in Nothing gets enforced Private land owner's allowing dumping-blights to the landscape Came from Cardiff to get away from litter - moved into fly-tipping

Unless fly-tipping is greatly reduced there is a risk to the success of the scheme. A specific Fly-tipping Action Group has been set up to help tackle the issue on the Gwent Levels to identify the most suitable and effective measures to counter fly-tipping to be included in the LCAP. This group was set up to include as broad a cross section of people as possible, including Community Councillors, Police and Fire Services, and has been the vehicle for engagement around

the project. In order to map the incidences of fly-tipping on the Levels, key partners have been ensuring that all fly-tipping incidents are logged on to a new app-based system called FlyMapper. This is a system that has recently been developed to improve the recording and management of fly-tipping incidents. Throughout the Development Phase in 2017, partners have been gathering data on fly-tipping incidents using the FlyMapper system to ensure that

the LLLP has baseline data on the issue. The below map shows the current data set and key fly-tipping hotspots.

Responding to a question about measures to reduce fly-tipping, the majority of residents think that stronger enforcement would be the most effective way to reduce the fly-tipping on the levels and over a third specifically recommend the use of cameras.

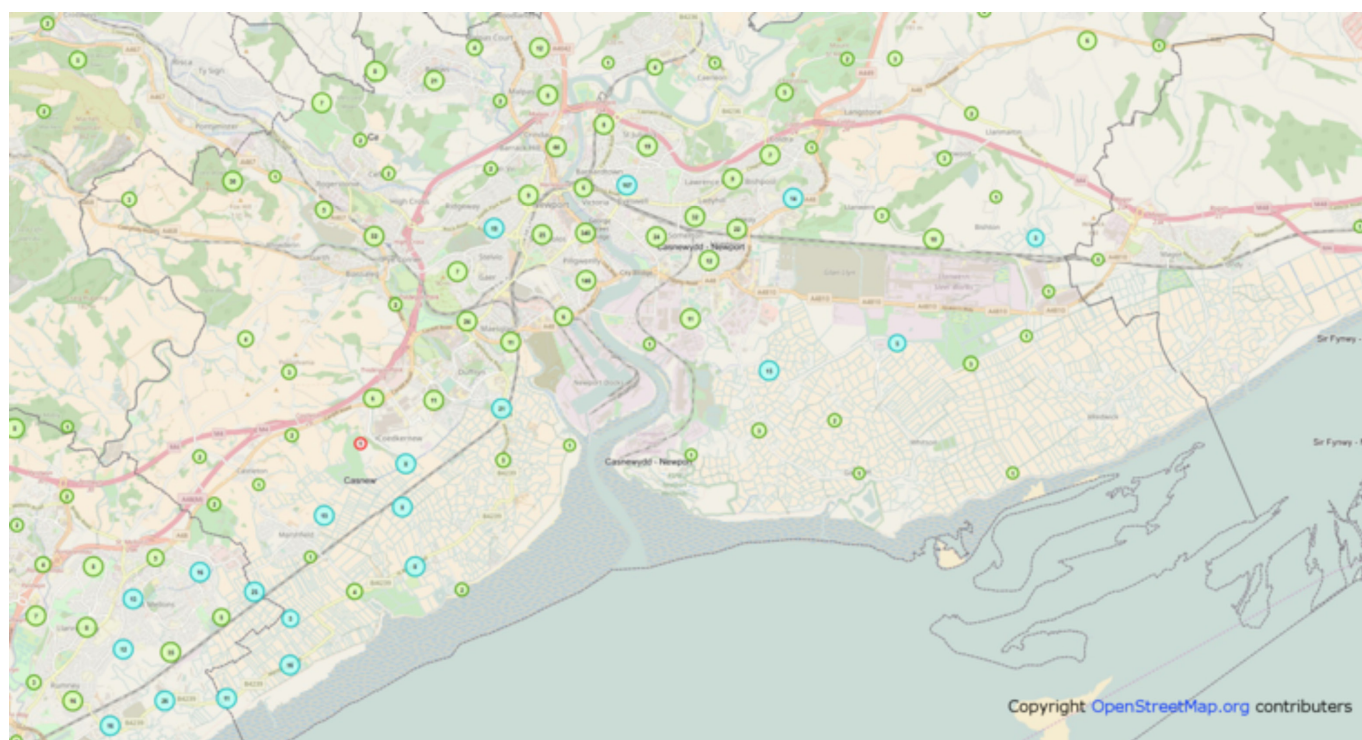


Figure 15 — Fly-tipping Hotspots Map

Disconnection with Heritage and Loss of Skills

Many skills are extremely specialist and are in danger of being lost, for example heritage fishing practices which make use of traditional willow weaving skills that use local resources. Gwent Wildlife Trust currently run an events programme but there is little covering any heritage aspects directly related to the Gwent Levels other than natural heritage training such as 'Otter Spotting', water vole surveys and currently only a few locals attend these training events. RSPB Cymru, National Trust and Keep Wales Tidy similarly run training courses but generally natural heritage subjects dominate. There is a need to develop training to meet the long-term management and monitoring needs of the landscape heritage and to support sustainable local businesses.

Through consultation undertaken throughout the area by the Community Engagement Officer during the Development Phase, it is evident that the history of the Levels is 'hidden' from the mind of the communities living within it, and therefore also from the wider public. Until the early 20th century, many of the landowners

and residents would have had a responsibility for the maintenance of a proportion of the c.1200km of ditches that network the area. More recently, the Caldicot and Wentlooge Drainage Board exerted significant influence over people living in the area and there was a strong moral obligation and sense of pride in keeping the water flowing. Despite the IDD still collecting drainage rates from approximately 400 households on the Levels, the community's knowledge and connection to the role of the drainage system is now restricted to a small number of individuals and landowners.

Increasingly, knowledge of the historic landscape is being confined to an ageing and disappearing expert field and there is much still to uncover. Knowledge and understanding of the origin of the Levels is particularly poor among younger generations and in communities on the edges of the historic landscape. Many Partners within the Living Levels Programme such as NCC, MCC, CC, GWT, and RSPB Cymru are currently delivering over 5000 learning sessions in this area to a predominantly primary school

audience. However, there is no coordinated curriculum-based learning and much of the learning resources are currently focused on each organisation's individual learning objectives. Currently, schools that visit the sites are mainly very local and this means that there are few schools targeted from deprived areas, despite the fact that these schools are less likely to have the space in their school to deliver outdoor learning.

According to the results of a schools questionnaire that was drawn up by the Learning Working Group in the Development Phase, the most useful Gwent Levels topics for educators would be farming and historic land use, wildlife, heritage skills and flooding – but to encourage sustainability and use by teachers, these must be linked to the Curriculum Cymraeg

Compounding this, the history of the Levels and the stories from these communities are currently largely absent from relevant collections held in the public domain (for example the local museums relevant for the area - the Cardiff Story Museum, Newport Museum and Monmouthshire museums).



Gwent Family History Society and the Chepstow Archaeological Society - all of whom have been approached by the Community Engagement Officer to discuss and promote the project during the Development Phase. The activities of these different groups have not been co-ordinated and areas of the Levels, particularly on Wentlooge Level, are unrepresented. The LLLP provides the opportunity to produce a comprehensive study of what is recognised as one of the most outstanding historic landscapes in Wales.

More important than the gathering and analysis of these sources of data about the Gwent Levels is the opportunity it offers to inform and excite those who live in the area about the co-operative effort involved in sustaining the traditional management of the drainage system over centuries.

Engaging new residents in their unique history will create advocates for sustaining and restoring this landscape for generations to come. Up-skilling them with the training required to maintain important heritage assets which support the local economy will ensure a sustainable legacy.

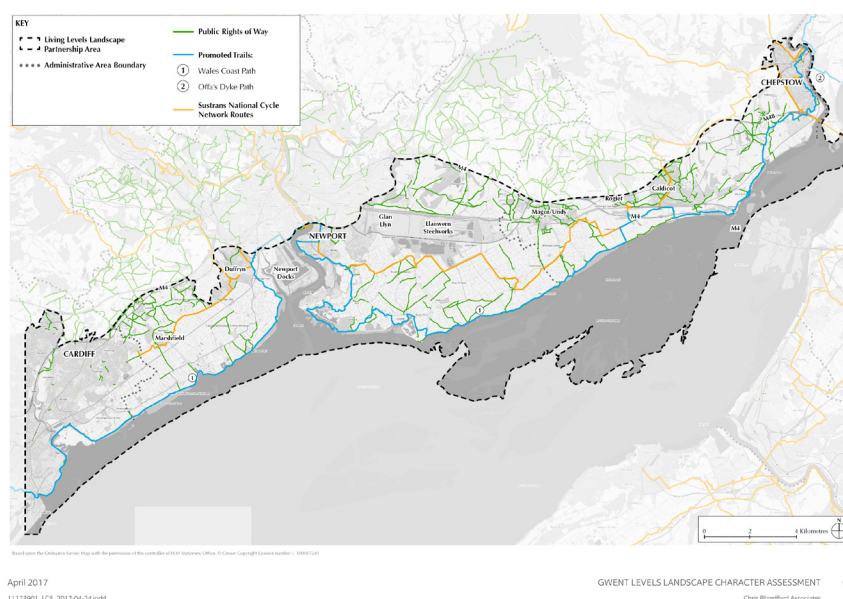
The only systematic study of the history and development of the Gwent Levels was that published by Stephen Rippon (Stephen Rippon, *Gwent Levels: the Evolution of a Wetland Landscape* (York, 1996). Using tracings of the Commissioners of Sewers Maps of 1830/31, he was able to characterise the different parts of the historic landscape of the Levels and identify the sequence and potential date of the different episodes of reclamation. This pioneering and highly influential study looked at the macro-scale and did not realise the full potential of the Sewers Maps or make any attempt to interrogate the thousands of other documents relating to the Commissioners' work in Gwent Archives. This material is catalogued, but not calendared, nor any key documents transcribed. None are available on-line.

There have been 30 years of intensive and often spectacular archaeological investigations on the Gwent Levels foreshore and in advance of development on

the reclaimed areas. The regional Historic Environment Record (HER) provides a comprehensive summary of this archaeological work but does not attempt to capture data on the individual and linear elements which make up the characteristic Gwent Levels drainage system. A new statutory requirement on the HERs is to extend their scope to cover these aspects of the historic landscape. The Sewers Maps and the slightly later ones do not include fieldnames in their apportionments. This has left a major gap in the collection of such names undertaken as part of the Cynefin project, which could be filled by the LLLP. There has been no study of the vernacular architecture of the Levels - much of which is in decay, ruin or under the threat of demolition.

There are a number of historical and archaeological societies whose interests cover different parts or aspects of the Gwent Levels. Examples include the Caldicot and District Historical and Archaeological Society, the

Figure 11
Access and
Recreation



Development of Tourism, Leisure and Recreational Facilities

The existing access and recreation facilities within the study area are shown on Figure 11. There is currently no co-ordinated welcome to the Levels. There are a range of opportunities to develop improved facilities for access and recreation for encouraging people to access, appreciate and enjoy the Gwent Levels' landscape, history and nature. Footpaths, cycleways and interpretation signage need to be sensitively designed, but can be accommodated in all the landscapes within the LLLP area.

Many of the current issues identified with the current visitor experience in the Gwent Levels relate to lack of physical access, lack of information, a poor experience and poor signage. Following consultation with a range of public and other organisations and the three stakeholder workshops held during the Development Phase, the current situation is summarised below:

- The long-distance walk routes, including Wales Coast Path together with the network of cycle routes, create an

alternative metro-like access structure across the majority of the area, with the main substantive gap being the Cardiff to Newport off (main) road cycle route;

- From the late 19th century the main line London railway has been a barrier between the Levels and communities lying to the north, for example at Bishton, and more widely across the Wentlooge Level including Marshfield in Newport, St Mellons and Rumney in Cardiff ;
- Finding walks information for the area is difficult, requiring visits to each of the local authority websites as there is no recognition of the Levels as a whole although each authority has promoted routes in the area;
- There is no information structure across the area – including no information/ orientation panels at key points of arrival, and little leaflet racking (whilst there are leaflets produced re walks in the Levels, it is a challenge to pick them up in many locations across the area);
- The bus connectivity to the east is relatively serviceable with the Newport to Chepstow route serving the majority of the towns/villages. However, the bus connectivity to the west is restricted to the A48 (albeit with frequent services). There is a 'call in advance' service to Lighthouse Inn and other communities in the west of the project area but this is very poorly promoted and not visible when using services such as Travel Line Cymru;
- Brown and White Highways signage is limited to the major tourism facilities such as Tredegar House, the Sports Village, Caldicot Castle and the Wetlands Centre;
- Whilst there is a perception that there are few facilities across the Levels, there are in fact more tourism businesses and services than many perceive – see Appendix 4 of the Destination Management Plan for a full list. However, these are often not linked to the main attractions and linear/circular routes.



- Car parking is unsigned and can be difficult to find. Public and business comment has indicated that at key times (e.g. Sunday lunchtime) some pub car parks are too busy to allow non-customer use, even with a charge;
- Cycle rack provision could be improved in most areas, in particular to allow the cyclists to keep their bikes in sight whilst they have a refreshment break;
- Due to long standing landowner objections there are some short but significant gaps preventing rights of way linking onto the Wales Coast Path. Other 'possible routes' run through very wet fields or are so poorly surfaced they are not even walkable;
- The rights of way and green lane network are also patchy, though improving access to green lanes especially for equestrian access is a high priority for Local Authority investment currently;
- The access routes to the Wales Coast Path are not signed for visitors arriving by car, and where parking is remote from the path, there is no signage to take the visitor to the Wales Coast Path/Sea wall;
- Fly-tipping is an issue especially in the west, and there are also some areas where the environment can be seen as intimidating, which does not present a positive experience for the visitor;
- The budget and staffing resource available to maintain footpaths, interpretation and information installations is extremely limited, and continually under pressure;
- The foreshore is internationally designated for birds and is sensitive to disturbance. Working with NRW as partners, proposals need to ensure the bird interest is not adversely affected, or disturbance caused by creating new access and/or encouraging more visitor numbers or a wider range of user groups including cyclists to use existing routes;
- The train links to the east Levels provides opportunities and there will/may be near- future rail links to the new Llanwern developments and to St Mellons as part of the Cardiff Capital Region Metro proposals;
- Baseline data across the whole area must be put in place and new activity must build in more consistent and robust visitor feedback channels.

SWOT Analysis of Visitor Appeal

Visitor's needs and demands can generally be defined in terms of the following 5 A's

- Attraction, Activities, Access, Accommodation and Amenities

Potentially strong (albeit not widely recognised) with regard to Attractions, Activities and Access, the LLLP area currently struggles in respect of its Accommodation and Amenities.

As an emergent product and with limited resources to impact on a wider market place under its own "banner" the success of Gwent Levels product promotion and an increase in both awareness and visits to the area will rest on the successful presentation and mainstreaming of Levels product within partner activity.



The Destination Management Plan and engagement activities have concluded that the Gwent Levels area is not a recognised tourism destination area. Nor is it likely to gain ground in a landscape of many that do exist (both destination and organisation) in the area. Also, another (new) primary destination brand may not be recognised and used effectively by partners (quite apart from the issues regarding the levels of sustained activity and resources required to establish a primary brand in the marketplace). Instead, it will be important to harness the wider area's visitor base and potential latent demand (including Cardiff) to ensure that the Levels is presented as an easily identifiable product/suite of products. Consistency in referencing the Levels is needed throughout partners' promotional materials – a

"toolkit" of messages and imagery could assist in this. This would help to unify and provide an umbrella for presenting the "Levels" many individual assets.

Development of tourism, leisure and recreational facilities – key considerations

In addition to these recommendations from the Destination Management Plan, key long-term recommendations from the LCA include the desirability of:

- Sensitive routing of footpaths and bridleways to minimise disturbance in relation to habitats of high biodiversity value for birds;
- Seeking opportunities to develop local circular walks and viewpoints, which reduce

the perceived scale of the landscape and provide local destinations on the doorsteps of urban communities within the countryside close to where people live;

- Providing new or managing existing small car parks at known starting points for walks to encourage their use, avoiding the erosion of verges as a result of casual car parking on narrow roads and minimising large-scale car parks and leisure facilities within areas that could diminish the special qualities of the distinctive landscape;
- Seeking opportunities for permissive access, particularly in areas that are close to settlements, public rights of way, viewpoints or heritage features, including archaeological sites.

Image Credit:
Nigel Pugh



Historic expansion of settlements

Land Use

With the exception of national infrastructure projects that are subject to the policies and decision-making of the Welsh Government, the Monmouthshire, Newport and Cardiff Local Development Plans set out policies for guiding development and land use change within the study area in accordance with the national Planning Policy for Wales.

Extensive urban land uses have encroached onto the Gwent Levels during the 19th and 20th centuries and there remains continued pressure for residential, industrial and commercial development around the edges of the Levels – all key components in driving a buoyant local economy but sometimes at odds with conservation objectives.

The cumulative impacts of both large-scale infrastructure projects and small-scale developments was highlighted as a key concern for stakeholders who contributed to the Landscape Character workshops and residents consulted as part of our engagement programme, particularly regarding

housing allocations/settlement extensions around the Levels and small-scale unplanned or permitted development e.g. from agricultural structures, farm yards becoming haulage firms, caravans, and equine paddocks. This has been a particular concern among older residents who have lived through some dramatic changes to the Levels over the past century.

The LCA highlights the following pressures in addition:

- Settlement expansion pressures from strategic housing sites around Undy and Magor, Rogiet, Caldicot and Marshfield - ribbon, infill and non-vernacular development pressures.
- In the Wentlooge Level, intensification of existing land uses, such as golf courses, fishing lakes etc.
- Newport's expansion eastward - including both industrial, retail and residential units including the Queensway Meadows and Traston Road developments, and to the West of Newport the Duffryn Housing Estate, school and retail units.

- Cardiff's expansion eastward - including the St Mellons development, the Rover Way development and the Newton and Wentloog Corporate Park which have created a large number of new industrial units and housing which are out of character with the local landscape and in many places poorly connected to the historic landscape and green spaces.

The LCA notes that there is a need to identify enhanced connectivity between the districts and their respective open space provision, and Wentlooge Level. There are significant barriers including both the Lamby Way Landfill Site and the railway line at present but development opportunities arising from the Metro scheme and closure of Lamby Way present significant opportunities for improvements.



Image Credit:
Nigel Pugh

Renewable energy generation

Wind turbines are also a distinctive, frequent and highly visible form of renewable energy infrastructure on the Levels. Because of the windy and exposed nature of the Levels landscape, there is a significant potential for further wind energy generation. The LCA states that “single/small scale development of wind turbines are generally out of scale and form with the existing landscape” and “vertical elements can have a significant detrimental visual impact on the coastal levels and adjacent estuary edge”. Furthermore, “proposals for large-scale photovoltaic arrays in ‘solar farms’ can also have potentially significant landscape and visual effects where poorly designed or sited. “Quite a few residents and stakeholders also raised the issue of some of the proposed renewable energy generation projects as a concern, mostly for reasons of visual impact but also regarding water quality and quantity in relation to runoff from solar in to the reën and ditch network and habitat loss for priority species.

Currently, there is a pre-application for a 49.9MW solar farm scheme that covers 345 acres (139 ha) and is spread over 6 parcels of land within 2 SSSIs in the Gwent Levels (Nash and Goldcliff SSSI and Whitson SSSI). The proposal falls within the new Developments of National Significance (DNS) regime. At the time of writing, the proposal was at a pre-application stage and no decision had been made.

Proposed Cardiff and Newport Tidal Lagoons

Nationally significant infrastructure projects also include two proposals for tidal lagoon schemes, which would present significant changes to the existing seascape character of the Severn Estuary within the LLLP area. If approved, the proposed offshore Tidal lagoon electricity generating station with a potential generating capacity of up to a possible 2800 MW would be installed between Cardiff Bay and the mouth of the River Usk. A seawall would be built and attached to the foreshore. At its western extent it would be approximately 2 km from the entrance to Cardiff Bay, and at its eastern extent approximately

2km from the mouth of the River Usk. However, the recent Hendry review recommended build completion of the approved Swansea Tidal Lagoon prior to approving planning permission for the Cardiff project and at the time of writing no planning applications for either the proposed lagoon schemes at Cardiff or Newport had been submitted to the Planning Inspectorate.

M4 Corridor around Newport Scheme

On 21 June 2016, Ken Skates - the Cabinet Secretary for Economy and Infrastructure – announced that a public inquiry will be held on the M4 Corridor around Newport ('the Scheme'). The Scheme for the M4 Corridor around Newport consists of:

The construction of a new section of 3-lane motorway mainly following the protected TR111 'Black Route', between Junctions 23 and 29 (Magor to Castleton), including a new crossing of the River Usk south of Newport; and Complementary measures;

Reclassification of the existing motorway between Magor and Castleton;

A connection between the M4, M48 and B4245;

Promoting the use of cycling - as an alternative to the car for journeys of up to three miles by providing new infrastructure or improving existing infrastructure;

Promoting the use of walking - as an alternative to the car for journeys of up to three miles by providing new or improving existing infrastructure.

Through this process a Planning Inspector and an Assistant Inspector will consider the cases for and against the Scheme and alternative routes. The Inquiry started in February 2017 and at the time of writing this LCAP was ongoing and likely to continue into the Autumn with a decision unlikely now until late 2018. The Inspectors will then need to prepare a report setting out the evidence submitted to the Inquiry and their recommendations (based on that evidence) to the Welsh Ministers on whether the development should proceed. Ultimately, it is the Welsh Ministers' decision whether to proceed with the M4 Diversion, but Cabinet Secretary Ken Skates has said that the Welsh Ministers will abide by the Inspectors' recommendations.



Impact of the M4 Scheme

If the scheme is approved and does go ahead construction would coincide with delivery of the LLLP (currently Welsh Government lists the possible start date as April 2018 but the public inquiry has lasted several months longer than originally anticipated so it is likely that this date will slip if approved). Construction would take three years to complete. The proposed new M4 would deliver 23km of six lane motorway of which 8km will cut through four Gwent Levels SSSIs (Redwick and Llandeveyney, Whitson, Nash and Goldcliff and St Brides) and will include parts of the Magor Marsh Nature Reserve. In addition, 125ha of SSSI habitats, 2.5kms of main reen and 9km of field ditches will be removed to make way for the scheme with new drainage channels to be created adjacent to the motorway. Associated with this plan, there are a number of concerns about the potential for ecological disturbance from the habitat destruction and pollution of the reen network from runoff which could be potentially devastating for the nationally important wildlife. There are also

habitat and wildlife impacts cited in the EIA, notably the impact to the Shril Carder bee populations north of the motorway (currently 40% of the population could be cut off leading to die off). It would likely lead to the permanent displacement of the recently established breeding cranes as the motorway crosses their nesting and foraging site. In terms of visual and sensory impact there are concerns over the noise disturbance impacting on key peace and tranquillity aspects of Gwent Levels sense of place and visual impact of the raised structure.

While a key component in helping sustain the national economy, the Welsh Government's proposals for the M4 around Newport are likely to exacerbate feelings of community fragmentation and isolation and present a significant challenge for protecting the integrity of the historic landscape, biodiversity and sense of tranquillity – a key part of the identity of the area at present. There were mixed views within the partnership and amongst the community on the impact of the proposed M4 motorway. There

was also a great deal of concern over the potential for ribbon development as a result of the new M4 and the possible impact on community cohesion, particularly if the area becomes even more of a commuter belt when the Severn Bridge tolls are removed at the end of 2018. There was also concern over the potential for fragmentation of habitats north of the road.

It was also acknowledged by some that the M4 may offer an opportunity for robust planning to conserve the Gwent Levels in future, especially if the new M4 were to become a 'development line' which could be held to preserve the historic landscape with subsequent compensatory funding allocated to its conservation in the long-term. However, this was not the majority view which prevailed amongst the communities we have spoken to. There was also some scepticism about the likelihood of the allocated funding being adequate to achieve this.

Partnership response

Organisations on the LLLP Board are either opposed, in favour or hold an impartial view on matters related to the relief road. The LLLP has had no direct contact with consortiums involved in developing proposals for the M4 Scheme. Whilst the inquiry is ongoing the Partnership has agreed to keep a close watch over developments and review this stance in light of any further developments. All capital projects and assets produced as part of the HLF grant will occur outside of the proposed route. Partners have also considered the potential impact of access roads and the wider footprint and have concentrated plans away from affected sites.

The Partnership has agreed that it will not engage in political lobbying in regards to any existing, planned or future development and planning issues in the Gwent Levels, including the proposed M4 motorway diversion, and will remain neutral on these matters in all external communications under the Living Levels Partnership name. However, there is a collective desire to pursue a more coordinated and strategic approach to development which will minimise the impact on the historic environment and communities and avoid the piecemeal approach which has taken place to date which has left many of the communities we have spoken to with the impression that the landscape is suffering from a 'death by 1000 cuts' attitude towards the Levels and that it is a 'forgotten landscape'.

Expansion of settlements and new built development - key considerations

Key considerations from the LCA associated with settlement expansion and integrating existing and new infrastructure into the landscape in terms of its relationship to the landscape setting of the Gwent Levels include the long-term desirability of:

- Identifying and conserving any existing remnant historic landscape features on the fringes of settlements, such as smaller pastures, open field ditches/reens, orchards and green lanes, and incorporating these within proposed green infrastructure networks ;
- Seeking opportunities to create grassland habitats on existing road verges, bare ground and newly constructed embankments, to provide valuable ecological corridors for pollinators and invertebrates through an intensively farmed landscape;
- Carefully-sited tree planting using locally appropriate native species alongside new or altered roads in places to reduce the perceived scale of road developments, integrate with the existing network of rectilinear boundaries and add variety to local views;
- The creation of new and improved connections between Cardiff City and Wentlooge Level as part of the Cardiff Strategic Development Site H, including the provision of access across the railway line. Such opportunities may link with, or be identified through, the Hendre Lake Management Plan. In addition, once it has ceased to be operational the restoration of the Lamby Way Landfill Site provides an opportunity to develop a country park to act as a western gateway to the coast and the Gwent Levels.
- Enhancing connectivity between the western part of Caldicot Level/the eastern part of Wentlooge Level and local communities/greenspaces in Newport. Other opportunities include linking the wetland park created as part of the Glan Llyn development with Caldicot Level and promoting enhanced access to the Newport Wetlands National Nature Reserve and the Great Traston Meadows Nature Reserve.
- Promoting enhanced access to the Magor Marsh Nature Reserve and the Wales Coastal Path for residents of the Monmouthshire Severnside Settlements

