

8.0 Appendix 3: West Midlands RSS Housing Options Impact Matrix

KEY:

COLUMN ONE – COLOUR INDICATES ORIGINAL SCREENING DECISION		COLUMN FOUR – COLOUR INDICATES EFFECT ON SITE INTEGRITY	
	No likely significant effect identified Site screened out		No adverse effect on site integrity
	Possible LSE		Cannot conclude that there is not an adverse effect on site integrity
	LSE and likely to be a key issue given site sensitivities		Adverse impact on site integrity

SACS

Brown Moss SAC

Name and location		Brown Moss SAC (SJ561394) Staffordshire	
Reason(s) for designation		Floating water-plantain <i>Luronium natans</i> (Annex II species), for which this site may hold a relict natural lowland population. Population of the species at this site is small.	
Conservation objectives		Maintain habitat for <i>Luronium natans</i> , with particular reference to open standing water	
Key factors affecting site integrity		Integrity depends on maintaining suitable open water habitat for floating water-plantain	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Brown Moss is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Whitchurch (pop 8,700), approximately 2km away. Site is within the Rural Regeneration Zone but no projects/actions have been identified near to the site. Market Drayton approx 10 km away is identified as a regeneration ‘spoke’ with c.1,500 sq m for development of an enterprise centre.			
Recreational pressure and disturbance	Options 3, 6 and 9 propose increased rural growth in western and north west areas (Shropshire and Staffordshire). All could result in increased recreational pressures on the site.	The North Shropshire Plan does not provide for development and would not result in pressures additional to that resulting from the RSS.	Scenarios 2 and 3 will have the most likely impact on this site as the increase in housing in Staffordshire and Telford could result in increased recreational pressure at this site. Scenario 1 which has the least housing provision in the local area will be the best alternative to reduce potential recreational pressure.
Water supply	Housing options 3 6 and 9 are most likely to have a significant demand on the water resources as housing may be located in the locality of the site. It may push the Staffordshire and East Shropshire water resource zone into deficit by the end of the plan period.		Site currently not affected by abstractions but maybe affected through additional abstractions with increased housing. The scenarios all bring an increase in 1,900 houses in the local area and therefore no one scenario can be preferred. An additional 1,900 houses in the vicinity (on top of the proposed 25,700 houses in Shropshire from the RSS Phase 2) will increase pressure on water resources.

<p>Air quality</p>	<p>Development in Whitchurch (North Shropshire, which will have 6,100 additional houses and 60ha of employment land across the district over the plan period) may increase traffic loads on roads around the town through the RSS phase 2 allocation. However, as Brown Moss is approximately 600m from the A41 it is not likely to be subject to local/ direct effects.</p>	<p>General increases in air pollution are possible, contributing to levels of diffuse pollution.</p>	<p>Consultees suggested that the site may be near enough to the A41 to be affected by increases in traffic.</p> <p>Diffuse air pollution exacerbating acidity of water habitat was identified as a possible impact at the screening stage. However the tolerance of floating water-plantain to a range of pH values from 3.6–8 means significant adverse effects are unlikely unless extreme acidification occurs.</p> <p>Scenario 1 which has the least housing provision in the local area will be the best alternative to reduce potential air quality issues.</p>
<p>Overall conclusions</p>		<p>Localised air pollution and increase in recreation have been identified as a possible impact at the screening stage. It has therefore been concluded that there may well be a significant adverse effect on the integrity of this site (due to the possible increase of traffic on the A41 and increase visitor levels).</p>	

Cannock Chase SAC

Name and location		Cannock Chase SAC (SJ982188) Staffordshire	
Reason(s) for designation		European Dry Heaths (Annex I habitat) Northern Atlantic Wet Heaths with <i>Erica tetralix</i> (supporting Annex I habitat)	
Conservation objectives		Maintain, in favourable condition, European dry heaths with particular reference to the H8 <i>Calluna vulgaris-Ulex gaolie</i> and H9 <i>Calluna vulgaris - Deschampsia flexuosa</i> communities. Maintain, in favourable condition, North Atlantic wet heaths with <i>Erica tetralix</i> , with particular reference to the M10 <i>Carex dioica - Pinguicula vulgaris</i> mire and M16 <i>Erica tetralix - Sphagnum compactum</i> wet heath communities.	
Key factors affecting site integrity		Integrity depends on maintaining dry heath, wet heath and mire communities in favourable condition. This requires site management to limit invasion by alien species, and to maintain suitable vegetation composition and structure. Suitable air and soil quality also important.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The boundaries of Cannock Chase are within approximately 2km of Rugeley (identified under UR2 as a local regeneration area), 3km of Cannock (identified under UR3 and PA11 as a Tier 4 Strategic Centre), and 2km of Stafford (identified under CF3 as an area of significant development taking 7,000 additional houses, UR2 as a local regeneration area and under UR3 and PA11 as a Tier 4 Strategic Centre).			
Recreational pressure and disturbance	Housing will grow under policy CF3 in Stafford (10,100 across the district including 7,000 within Stafford town) and Cannock Chase (5,800 additional houses). Population increase in these areas may result in increased recreational pressure or disturbance in this area and within Cannock Chase itself. Components of Options 6, 7, 8, 9 will all have major implications as these options all have medium to large urban extensions close to Cannock (1.5-5k increase in housing).	The Stafford Local Plan and Cannock Chase Local Plan will not result in any additional pressures over those resulting from the RSS. The RES envisages improvements to the West Coast Mainline (running close to the north of the site), which may increase noise and disturbance. It also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, which may increase recreational pressure. The Visitor Economy Strategy and the Cultural Strategy may increase use of the AONBs for tourism and recreation leading to increased visitor pressure in Cannock Chase AONB.	The three potential scenarios will not result in any further housing allocations within the Cannock area. Scenario 3 has the largest increase in housing within Stafford (3,000 increase) which is the nearest area to the site, followed by scenario 2 which has a 1,500 increase. Therefore potential Scenario 1 would have the least impact on this site. Suitable Accessible Natural Green Space (SANGS) is the name given to green space that

			<p>is of a quality and type suitable to be used as mitigation when there is potential impact of residential development on a SAC/SPA site by preventing an increase in visitor pressure on the SAC/SPA.</p> <p>This mitigation would be relevant in respect of trying to reduce the potential increase in visitor pressure on Cannock Chase from the RSS Phase 2 housing allocation. Further housing in the region from Scenario 2 and 3 would add to this need.</p>
<p>Air pollution</p>	<p>Acid and Nitrogen deposition at the site exceed critical thresholds, so air pollution is already having an adverse effect on the integrity of the site</p> <p>The western edge of Cannock Chase runs approximately 200m from the A34, the northern edge is alongside the A513, and the southern boundary is alongside the A460. Traffic on these roads is likely to increase local air pollution at some parts of the site and so should be avoided.</p> <p>Regeneration and further development within the region will contribute to increases in both local / direct air pollution and background air pollution due to increases in emissions associated with transport, homes and businesses.</p> <p>Components of Option 6, 7, 8, 9 will all have major implications as urban extensions close to Cannock Chase</p>	<p>The Staffordshire LTP expects congestion on the A34 and the A460 to worsen from 2011 onwards. The Staffordshire LTP aims to reduce traffic levels on the A460. It does not include any schemes that have direct implications for the A34 or A513 around the site.</p> <p>The Visitor Economy Strategy and the Cultural Strategy may increase use of the AONBs for tourism and recreation, leading to increased traffic within the AONB and further reducing air quality. The RES may also increase transport around Cannock Chase.</p> <p>The North West Adopted Plan (September 2008) proposes development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. It also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through the West Midlands and affecting background air quality. Increased tourism in Nantwich and rural Cheshire generally will also increase traffic on the M6.</p> <p>The Proposed Changes to the South East Plan (July</p>	<p>Acid deposition is 18 times above the critical load. Consultees confirmed that air pollution is currently an issue.</p> <p>An increase in levels of deposition of pollutants is likely in the future if traffic levels and congestion go up on roads adjacent to the site.</p> <p>Further changes in the composition and viability of lowland heathland vegetation are likely.</p> <p>Therefore scenario 1 would have the least impact on this site as there will not be any additional housing additional to the RSS Phase 2 within the local area.</p>

		2008) proposes development of 40,680 new houses in Central Oxfordshire to 2026. This could lead to increases in traffic in the region, particularly on the M40 but also on motorways heading north.	
Land use change or habitat change	<p>Development in Stafford and Cannock Chase districts under CF3 is expected to result in land around Cannock Chase being used for development, as development is likely to be focused in Cannock town, Stafford town and Rugeley. Development in neighbouring towns may change land use in the surrounding areas, but these are not expected to have implications for land use or habitat change within the site itself.</p> <p>Components of Options 6, 7, 8, 9 will all have major implications as they include urban extensions close to Cannock Chase</p>	<p>The Stafford Local Plan and Cannock Chase Local Plan do not propose any land use or habitat changes around the site.</p> <p>The RES envisages improvements to the West Coast Mainline (which runs close to the north of the site), which may involve land take. It also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, which may affect land use in Cannock Chase.</p> <p>The Visitor Economy Strategy and the Cultural Strategy may increase use of the AONBs for tourism and recreation. This may lead to land take for development of tourism/recreation facilities in Cannock Chase AONB, which may affect the SAC.</p> <p>The Southern Staffordshire Visitor Economy Strategy aims to build on the 'green' tourism of Cannock Chase and the area's countryside attractions.</p>	<p>Possible in-combination effect driven by increased tourism and recreational use.</p> <p>The RSS Phase 2 does not cause direct land-take. From the three scenarios, scenario 1 would have the least impact as there is no additional housing in the local vicinity.</p> <p>Any proposals to take additional land within Cannock Chase to provide new infrastructure or tourism/ recreation facilities would have to be subject to appropriate assessment at project-level. However the Visitor Economy Strategy promotes increased recreational use of the area and makes this need more likely.</p> <p>Consultees highlighted the potential to consolidate the site and reduce fragmentation.</p>
Water supply	<p>Housing development under policy CF3, will result in the development of 6,100 additional houses in North Staffordshire, 26,500 in Telford and Wrekin, 5,700 in Newcastle under Lyme, 10,100 in Stafford, 6,000 in Staffordshire Moorlands, and 8,400 in Stoke on Trent, is likely to push the Staffordshire and East Shropshire water resource zone into deficit by the end of the plan period.</p> <p>Components of Options 6, 7, 8, 9 will all have major implications as they include urban extensions close to Cannock Chase.</p>	<p>Demand on water resources in the Staffordshire and East Shropshire water resource zone is also affected by housing growth in neighbouring regions.</p> <p>The North West Adopted Plan(Sept 2008) proposes housing development in Cheshire to 2026, specifically 39,200 new houses in the Southern Manchester / North East Cheshire HMA and South Cheshire HMA. It also proposes the regeneration and development of Crewe. Growth will put pressure on cross border water resources, and limit opportunities to import water. Additional water resources will need to be found within the region.</p>	<p>From previous RSS Phase 2 - Abstraction as a result of housing development may contribute to additional abstraction pressures on site. This is under investigation but the Environment Agency is confident there will be options available following the RoC to avoid any adverse effects on the site.</p>

		<p>The Proposed Changes to the East Midlands Regional Plan (527,725 new homes overall by 2026) proposes significant development in the Derby HMA (44,750 new homes by 2026) and the Leicester and Leicestershire HMA (97,000 new homes by 2026). These developments will also put pressure on cross-border water resources. In addition, some former power station and colliery sites in the Trent Valley may be suitable for re-use for new forms of power generation, which may increase abstractions.</p>	
<p>Overall conclusions</p>		<p>From previous consultation through RSS Phase 2 - Additional licenses for abstraction are unlikely to be issued and Environment Agency is confident that other options will be available for Severn Trent Water to meet abstract needs without affecting this site.</p> <p>The additional housing provision from the RSS is likely to increase the adverse effects associated with all these pressures and it is not therefore possible to conclude that there will be no significant effects on the integrity of this site. Using the RSS as a baseline the additional housing allocations, through potential growth scenarios 2 and 3 will only add to this pressure and potential scenario 1 will add the least additional pressure to an already adverse situation.</p> <p>This site is under considerable pressure from recreational use, water abstraction, air pollution and the effects of surrounding land use. The additional housing provision is likely to result in significant adverse effects on the integrity of the site unless action is taken. Increasing local or diffuse air pollution would alter the characteristic species composition of heathland vegetation and increase risks of invasion by non-characteristic species. This is also exacerbated by disturbance associated with increased recreational use.</p> <p>Additional licenses for abstraction are unlikely to be issued and Environment Agency is confident that other options will be available for Severn Trent Water to meet abstraction needs without affecting this site.</p> <p>The RSS is likely to increase the adverse effects associated with all these pressures and it is not therefore possible to conclude that there will be no significant effects on the integrity of this site. Therefore even taking growth scenario 1 as the best option for additional housing, there will still be significant effects on the integrity of this site.</p>	

CANNOCK EXTENSION CANAL SAC

Name and location		Cannock Extension Canal SAC (SK020058) Staffordshire and Walsall	
Reason(s) for designation		Floating water-plantain <i>Luronium natans</i> (Annex II species). An example of an anthropogenic lowland habitat supporting this species at the eastern limit of the plant's natural English range.	
Conservation objectives		Maintain in favourable condition the habitat for the internationally important population of floating water-plantain, with particular reference to the standing open water	
Key factors affecting site integrity		Cannock Extension Canal in central England is an example of anthropogenic, lowland habitat supporting floating water-plantain <i>Luronium natans</i> at the eastern limit of the plant's natural distribution in England. Integrity depends primarily on maintaining good water quality and limiting physical disturbance or damage.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Cannock Extension Canal is within 1km of the edge of Walsall. Walsall is within the MUA, and under PA1 as part of the North Black Country and South Staffordshire Regeneration Zone. It is also as a Tier 3 Strategic Centre under UR3 and PA11. The site is also within 3km of Cannock, identified under UR3 and PA11 as a Tier 4 Strategic Centre.			
Recreational pressure and disturbance	<p>Housing will grow under policy CF3 in Cannock Chase (5,800 additional houses) and Walsall (61,200 additional houses across the four Black Country authorities). Population increase in these areas could result in increased recreational pressure and disturbance at the site.</p> <p>Components of Options 6, 7, 8, 9 will all have major implications as they include urban extensions close to Cannock Chase</p>	<p>The RES aims to create a tourism and regeneration plan for canal related activity within the Black Country and Birmingham which is likely to lead to increased recreational pressure and disturbance.</p> <p>The Visitor Economy Strategy envisages investment in the canal network and the Black Country more generally as tourist destinations, which may add to visitor pressure on the canal.</p> <p>The Regional Housing Strategy identifies the north Black Country as in need of housing restructuring which may have consequences for recreational pressure and disturbance.</p>	<p>The site is likely to be exposed to increased levels of recreational use as a result of policies within the RSS and within the Visitor Economy Strategy and Regional Housing Strategy. Therefore additional housing will have an incombination effect.</p> <p>The three scenarios will not result in any further housing allocations within the Cannock area.</p> <p>Scenario 3 has the largest increase in housing within Stafford (3,000 increase) which is the nearest area to the site, followed by scenario 2 which has a 1,500 increase.</p> <p>. Therefore scenario 1 would have the least impact on this site.</p> <p>Consultees confirmed that an increase in boat traffic would have implications</p>

			<p>for the qualifying features by impacting on the clarity of the water, possibly affecting chemical water quality and increasing levels of disturbance.</p>
<p>Water supply</p>	<p>Housing development is likely to push the South Staffordshire water resource zone into deficit by the end of the plan period.</p> <p>Components of Options 6, 7, 8, 9 will all have major implications as they include urban extensions close to Cannock Chase.</p>		<p>The site is likely to be exposed to increased levels of water abstraction with the increase of 5,800 houses at Cannock Chase in the RSS Phase 2 allocation.</p> <p>The three potential scenarios will not result in any further housing allocations within the Cannock area.</p> <p>Scenario 3 has the largest increase in housing within Stafford (3,000 increase) which is the nearest area to the site, followed by scenario 2 which has a 1,500 increase.</p> <p>Therefore scenario 1 would have the least impact on this site with no net additional housing on top of the proposed 5,800 houses for Cannock Chase from the RSS Phase 2.</p>
<p>Water quality</p>	<p>The site is negatively affected by existing surface runoff, much of which is from roads. Increased traffic on the B4154 and A5, which may result from population growth and increased economic activity (promoted by policies under the chapters on Communities for the Future and Prosperity of All) could exacerbate this problem unless measures taken to reduce road run-off.</p> <p>Components of Options 6, 7, 8, 9 will all have major implications as they include urban extensions close to Cannock Chase</p>	<p>The Regional Economic Strategy aims to create a tourism and regeneration plan for canal-related activity within the Black Country and Birmingham, which may create an opportunity for water quality improvements.</p> <p>'Looking Forward: The Black Country in 2033' identifies the potential of the canal network to promote new and heritage uses which may lead to land use changes affecting levels of runoff.</p>	<p>Possible increases in road run-off if traffic levels on A5 and B4154 go up, but there are also possible opportunities for water quality improvements through the Regional Economic Strategy.</p> <p>The three scenarios will not result in any further housing allocations within the Cannock area.</p> <p>scenarios 3 has the largest increase in housing within Staffordshire (3,000 increase) which is the nearest area to the site, followed by scenarios 2 which has a 1,500 increase.</p>

			Therefore scenarios 1 would have the least impact on this site with no net additional housing on top of the proposed 5,800 houses for Cannock Chase from the RSS Phase 2.
Overall conclusions	Significant adverse effects on the site would occur if existing road run-off issues are not addressed and if levels of use of the site by boats increased. These will need to be addressed at the site level and at more detailed levels of planning, e.g. through the Local Development Frameworks		

Downton Gorge SAC

Name and location		Downton Gorge SAC (SO443743) Herefordshire	
Reason(s) for designation		Tilio-Acerion forests of slopes, scree and ravines W8 community – Fraxinus excelsior-Acer campestre-Mercurialis perennis woodland (Annex I habitat). An example of this habitat type in a narrow ravine with a distinctive microclimate and varied slopes and aspects. Species present include small-leaved lime Tilia cordata, large-leaved lime T. platyphyllos, ash Fraxinus excelsior and elm Ulmus spp. Ground flora includes wood fescue Festuca altissima and violet helleborine Epipactis purpurata. Fern-rich cliffs indicate a humid site.	
Conservation objectives		Maintain the Tilio-Acerion ravine forests in a favourable condition	
Key factors affecting site integrity		Integrity depends on maintaining the Tilio-Acerion ravine forest in favourable condition. This may be influenced by air quality.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Downton Gorge is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Ludlow (pop 10,000), approximately 3km away.			
Air pollution	The eastern end of Downton Gorge is approximately 2km from the A49 at Bromfield, and traffic increases on local roads are not expected to cause any significant increases in deposition of atmospheric pollutants on the site. Housing Options 3, 6 and 9 have the potential to increase levels of rural traffic in the locality of the site. NOx and acid deposition will need to be considered. More data required from the Highways Agency model.	The RES aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, which may increase transport around Downton Gorge affecting air quality.	Site currently receives Nitrogen and Acid deposition above its critical load. The HRA of the Phase 2 growth proposals took a precautionary approach to the impact of these deposition levels on the site. Given that the site is currently at critical loads any of the 3 scenarios may exacerbate this if they contribute to increased levels of NOx emissions in future. The site is however located to the west of much of the major development locations and therefore the degree of additional impact is likely to be low.
Overall Conclusions	Downton Gorge is to the west of any growth areas within the region and its integrity depends primarily on site-specific management and the particular microclimate of the ravines. However, a precautionary approach dictates that a significant effect on integrity cannot be pre-cluded, as it is not possible to prove that levels of diffuse air pollution will not increase and that those levels will not have an impact upon the integrity of the site. Further consultation with Natural England will be required to establish how sensitive the site is likely to be to possible increases in diffuse pollution. Natural England did not consider that recreational pressure is an issue on this site as access is controlled by permit.		

Fenn's Wixhall, Bettisfield, Wem and Cadney Mosses SAC

Name and location		Fenn's, Wixhall, Bettisfield, Wem and Cadney Mosses (SJ487364) Shropshire and Wrexham	
Reason(s) for designation		Active raised bogs (Annex I priority habitat). One of the largest and most southerly examples of this habitat in England. Conservation measures have allowed regeneration of bog vegetation on previously exploited areas. Vegetation includes <i>Sphagnum papillosum</i> , <i>Sphagnum magellanicum</i> , <i>Sphagnum pulchrum</i> , all three British species of sundew <i>Drosera</i> spp., cranberry <i>Vaccinium oxycoccos</i> , bog asphodel <i>Narthecium ossifragum</i> , royal fern <i>Osmunda regalis</i> , white beak-sedge <i>Rhynchospora alba</i> and bog-rosemary <i>Andromeda polifolia</i> , together with the nationally scarce moss <i>Dicranum affine</i> . Over 1,700 invertebrate species have been recorded here, including 29 nationally rare Red Data Book species. Degraded raised bogs still capable of regeneration (supporting Annex I habitat)	
Conservation objectives		Maintain habitats for which site designated in a favourable condition	
Key factors affecting site integrity		Integrity depends on maintaining active raised bogs and also degraded raised bogs still capable of natural regeneration. This requires maintenance or restoration of the water table and appropriate vegetation management.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
This site is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Whitchurch (pop 8,700), approximately 7km away.			
Recreational pressure and disturbance	Policies in the RSS are not likely to increase recreational pressure or disturbance in this area. However components of Options 3, 6, 9 which propose increased rural growth in western and north west areas. All could result in increased recreational pressures on the site.	The North Shropshire Plan will not result in any pressures in addition to those resulting from the RSS Phase 2 review. The Shropshire Economic Development Strategy envisages development of the Whitchurch to Ellesmere corridor to open up access to small lakes and meres. The Shropshire Union Canal runs through and alongside the south-western half of the site. The Visitor Economy Strategy envisages investment in the canal network as a tourist destination, which may increase visitor pressure on the canal and possibly the mosses.	The raised bogs are vulnerable to trampling and physical damage, but the main issues affecting site integrity are land use (afforestation, peat cutting and agricultural improvement) and water management (drainage). On part of the site there are self guided trails, but most of it, it is permit access only, but still think that there is a risk from increased recreation. The scenarios all bring an increase in 1,900 houses in the local area and therefore no one scenario can be championed. An additional 1,900 houses in the vicinity (on top of the proposed 25,700 houses in Shropshire from the RSS Phase 2) will increase visitor pressure

Water supply	<p>Housing development is likely to push the Staffordshire and East Shropshire water resource zone into deficit by the end of the plan period.</p> <p>Therefore additional housing from Options 3, 6 or 9 propose increased rural growth in western and north west areas and could increase further pressure on local water resources.</p>		<p>Site currently not affected by abstractions but maybe affected through additional abstractions with increased housing.</p> <p>The scenarios all bring an increase in 1,900 houses in the local area and therefore no one scenario can be championed. An additional 1,900 houses in the vicinity (on top of the proposed 25,700 in Shropshire houses from the RSS Phase 2) will increase pressure on water resources.</p>
Air Quality	<p>The north-western edge of the site is approximately 1km from the A495. An increase in traffic along this road will not have direct effects.</p> <p>However the site is currently affected by diffuse air pollution so any additional local increase in air pollution from development in the north-west of the region (options 3, 6 or 9) may have an impact.</p>	<p>No additional effects expected other than those caused by general increases in traffic within the region.</p>	<p>Site receives N and Acid deposition above critical load. RSS growth proposals (25,700 new houses in Shropshire) may exacerbate problem if it contributes to increase in levels of NOx emissions in future.</p>
Overall conclusions		<p>A precautionary approach dictates that a significant effect on integrity should be concluded due to effects of diffuse air pollution, as it is not possible to prove that levels will not increase. This site would be sensitive to abstraction as well as potential recreational disturbance.</p>	

Fens Pool SAC

Name and location		Fens Pools SAC (SO920888) Dudley	
Reason(s) for designation		Great crested newt <i>Triturus cristatus</i> (Annex II species), which occurs as a part of an important amphibian assemblage	
Conservation objectives		Maintain the population of great crested newt in a favourable condition	
Key factors affecting site integrity		Integrity depends on maintaining habitat (both freshwater ponds and terrestrial habitat) in a favourable condition for great crested newts <i>Triturus cristatus</i> . Appropriate water quality and quantity is important. Development that reduces or fragments the available terrestrial habitats for newts would be a significant negative factor. Recreational disturbance is cited as a vulnerability of the site in the original SAC citation.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine additional housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Fens Pools is located in Dudley (an area within the MUA, and part of the South Black Country/West Birmingham Regeneration Zone mentioned in PA1, PA2 and in PA7 as requiring a Regional Investment Site), and is approximately 1km from Brierley Hill/Merry Hill (identified under UR3 and PA11 as a Tier 2 Strategic Centre). Policy CF3 will result in 61,200 additional houses being constructed in the Black Country.			
Land take/land use change	<p>While the site itself would not be used for development, it is possible that land-use around the site could change.</p> <p>Increases in housing numbers in the Black Country may result in further pressure on land take.</p>	<p>The RES identifies the Black Country as an area for economic opportunities, and the site is within both a Regeneration Zone and a High Technology Corridor and in an area that has been identified as requiring a Regional Investment Site. It also aims to create a coherent tourism and regeneration plan for canal related activity within the Black Country and Birmingham, which could affect development along the Fens Pools branch of the canal.</p> <p>'Looking Forward: The Black Country in 2033' and the Regional Cultural Strategy both identify the potential of the canal network to promote new and heritage uses and the Visitor Economy Strategy identifies it as a priority for investment as a destination.</p>	<p>Favourable condition relies on maintenance of terrestrial habitat. The great crested newt is rather more demanding in its habitat requirements than the other widespread British amphibians. Undisturbed grassland, scrub and woodland are needed to provide good land habitat.</p> <p>The site is already surrounded by residential development on all sides. It depends on supporting habitat, which is not currently protected. Because of the permanence of any loss, removal of this surrounding terrestrial habitat would have a significant effect on the integrity of the site. This has been tackled through changes to the RSS in Phase One. This includes a policy stating that "The Brierley Hill and Dudley Area Action Plan will define a Northern Limit to development and land use at Brierley Hill which lies south of the SSSI surrounding the SAC Fens Pools". The Phase One AA Report also</p>

			recommends that subsequent AAs undertaken for LDDs or for specific developments in the area take into account the importance of supporting terrestrial habitat to the integrity of the site.
Recreational pressure and disturbance	<p>Policy CF3 will result in 61,200 additional houses being constructed in the Black Country. Population increases and development that will occur in the Black Country as a result of the RSS may well increase recreational pressure and disturbance on the site.</p> <p>Additional housing in the Black Country will also have an effect.</p>	<p>The RES aims to create a coherent tourism and regeneration plan for canal related activity within the Black Country and Birmingham which could increase recreational pressure and disturbance along the Fens Pools branch of the canal. 'Looking Forward: The Black Country in 2033' identifies the potential of the canal network to promote new and heritage uses and the Visitor Economy Strategy identifies it as a priority for investment as a destination.</p> <p>The Regional Housing Strategy seeks to regenerate communities either side of the Birmingham/Sandwell border, which may contribute to increased recreational pressure and disturbance.</p>	<p>Increasing numbers of visitors would increase chances of adverse effects on water quality (litter) and on levels of disturbance to terrestrial habitat surrounding the pools. Angling is also considered to be a factor that may lead to adverse effects¹⁰. The structure of the terrestrial habitat may be affected and areas eroded and trampled if visitor number significantly increase.</p>
Water quality	<p>Increases in surface water run-off are possible although this is not likely to be significantly increased from Phase Two. No additional impacts anticipated in association with the nine options.</p>	<p>The RES aims to create a coherent tourism and regeneration plan for canal related activity within the Black Country and Birmingham which could help to improve water quality along the Fens Pools branch of the canal.</p>	<p>Currently water quality is good at the site, but risk of accidental spillages entering the SAC from local factories, was a concern noted by Natural England in consultation with White Young Green¹¹. However, the Phase 2 Revisions are unlikely to increase the industries that could potentially discharge into the site.</p>
Overall conclusions	<p>The main issue is securing supporting habitat however specific measures are being applied through the adopted RSS to deal with securing supporting habitat so we can conclude the site will not be affected in this manner. The impact upon this site in terms of land take will very much depend of the location of new housing and therefore Appropriate Assessment at the application stage would be appropriate. None of the new housing options need to be dismissed at this stage.</p> <p>There are possible issues associated with recreational disturbance. Policies relating to sustainable development and green networks can play a part in strengthening mechanisms for protecting supporting habitat at this and other locations.</p> <p>None of the scenarios include proposals for additional housing in the Dudley area and therefore they do not constitute and additional impact to that which has already been identified within the Phase 2 HRA.</p>		

¹⁰ White Young Green (June 2007) Fens Pool SAC Baseline Report

¹¹ White Young Green (June 2007) Fens Pool SAC Baseline Report

Humber Estuary C.SAC

Name and location		Humber Estuary cSAC (SE 838 110)	
Reason(s) for designation		<p>Estuaries The Humber is the second-largest coastal plain estuary in the UK and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by the Rivers Ouse, Trent and Hull, Ancholme and Graveney. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines.</p> <p>Atlantic salt meadows A range of sand dune types in the outer estuary, together with subtidal sandbanks (H1110 Sandbanks which are slightly covered by sea water all the time), extensive intertidal mudflats (H1140 Mudflats and sandflats not covered by seawater at low tide), glasswort beds (H1310 <i>Salicornia</i> and other annuals colonising mud and sand), and 1150 coastal lagoons (Annex 1 Priority Habitat). As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands. Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands. Significant fish species include 1099 river lamprey <i>Lampetra fluviatilis</i> and 1095 sea lamprey <i>Petromyzon marinus</i> which breed in the River Derwent, a tributary of the River Ouse.</p> <p>Mudflats and sandflats not covered by seawater at low tide The Humber Estuary includes extensive intertidal mudflats and sandflats not covered by seawater at low tide. Upstream from the Humber Bridge, extensive mud and sand bars in places form semi-permanent islands</p>	
Conservation objectives		Maintain in a favourable status	
Key factors affecting site integrity		<ul style="list-style-type: none"> • Water quality • Water quantity • Air pollution • Recreational pressure and disturbance 	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Site is approximately 100km from West Midlands. The Humber Estuary is connected to Burton, Stoke and Newcastle via the Trent, and to Stafford, Lichfield, Tamworth and Birmingham via the Penk, the Tame and the Cole. Birmingham and Stoke are both within RES Regeneration Zones and are therefore likely to be areas with new economic activity. Birmingham is also at the centre of the network of High Technology Corridors and therefore is likely to be a focus for economic development. The North Staffs RZ aims to create or safeguard 300 jobs, to attract 270 new businesses and to remediate 50ha of brownfield land. The Birmingham & N Solihull RZ aims to create 640 jobs and 200 new businesses and to remediate 3 ha of brownfield land. It is not known how much development might take place in Birmingham as a result of the HTC initiatives.			
Water Supply	Further abstractions may be necessary for Severn Trent Water to abstract additional		Severn Trent's WRMP predicts a deficit in water for the East Midlands

	<p>water to meet housing growth increases through the preferred option and additional housing growth in the West Midlands.</p> <p>Water resources likely to stay in surplus until end of plan period</p>		<p>Water Resource Zone (WRZ) and therefore new schemes are suggested.</p> <p>Increased housing would put further demands on water abstraction which could have the potential to affect the River Trent and therefore the Humber. Areas on the eastern edge of the West Midlands such as Tamworth and Burton upon Trent will have an increased housing allocation of 2,900 and 11,000 respectively from the RSS Phase 2 and therefore water resource demand will increase.</p> <p>Scenario 1 does not increase housing in addition to the RSS Phase 2. However, Scenarios 2 and 3 propose a growth of 2,500 and 5,000 respectively in East Staffordshire (Burton).</p>
<p>Overall conclusions</p>	<p>Increased housing could put further demands to further increase abstraction, Severn Trent's WRMP predicts a deficit in water for the East Midlands WRZ so depending on where the extra abstraction is undertaken it could have the potential to affect the River Trent and therefore the Humber.</p>		

Pasturefields Salt Marsh SAC

Name and location		Pasturefields Salt Marsh SAC (SJ992249) Staffordshire	
Reason(s) for designation		Inland salt meadows (Annex I priority habitat). This is the only UK example of this habitat.	
Conservation objectives		Maintain the continental salt meadow in a favourable condition	
Key factors affecting site integrity		Integrity depends on maintaining the continental salt meadow (SM16 Inland Salt Marsh) in favourable condition, which depends on quality of water supply, seasonal flooding and vegetation management.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Pasturefields Salt Marsh is located approximately 4km from the eastern edge of Stafford, identified as a Settlement of Significant Development taking an additional 7,000 houses, under UR2 as a local regeneration area and under UR3 and PA11 as a Tier 4 Strategic Centre			
Water supply	There could be possible impacts associated with water abstraction in future if further water is sourced from the River Trent. Housing options 6, 7 8 and 9, with housing growth in Cannock Chase and Stafford, are likely to be the most likely significant demand on the water resources within the area of the site.		Site is vulnerable to abstraction pressure. None of the scenarios result in additional housing in the Cannock Chase area. However, Scenarios 2 and 3 result in additional growth in Stafford of 1,500 and 3000 respectively. This could place additional pressure on the aquifer feeding the site.
Water quality	<p>Housing development upstream, in particular the increased housing levels in Stoke on Trent or Newcastle under Lyme or within North Staffordshire generally, could increase surface water run off and the need for water treatment. The housing options including medium or major urban growth/extensions in North Staffs are 5, 6, 7, 8 and 9.</p> <p>Urbanisation and increased run off can contribute to flooding problems. Development without adequate water treatment infrastructure increases risk that floodwater will carry a high pollution load.</p>	The Visitor Economy Strategy identifies the canal network for investment as a destination. The Regional Cultural Strategy also envisages exploitation of the cultural potential of the canal network. These may help to improve water quality. The site is very close to the Trent and Mersey Canal.	<p>Scenarios 2 and 3 make provision for a 6,000 unit increase in housing in North Staffordshire in addition to the 17,100 within the RSS Phase 2 Revision. Scenario 1 would be the preferred option to avoid any additional housing upstream.</p> <p>Problems exist that are associated with flooding from the River Trent, with relatively high sewage loadings related to capacity for water treatment upstream.</p> <p>Recent surveys have also shown a decline in the salinity of the site due to the increasing impact of the freshwater ditch running through the centre of the marsh: this has had a detrimental effect on saltmarsh plant</p>

		<p>species. The main ditch through the site will be de-silted and incoming water upstream (from adjacent farmland) will be diverted into the River Sow.</p> <p>Water quality during flood events and its effects on the site is the subject of another appropriate assessment planned by the Environment Agency and Natural England. Water Treatment Infrastructure needs to be put in place ahead of development.</p>
Overall conclusions	<p>Significant impacts on site integrity are likely if water treatment infrastructure is inadequate for additional development upstream in the catchment in relation to the RSS Phase 2 Revisions and the additional scenarios for growth 2 and 3. Sustainable Urban Drainage Systems will be required to reduce/manage surface run off.</p> <p>If mitigation and avoidance measures are not secured then the provisions of The Regulations 85C and 85E of The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) will need to be considered for this site.</p>	

Peak District Dales SAC

Name and location	Peak District Dales SAC (SK142550) Derbyshire, Staffordshire
Reason(s) for designation	<p>Semi-natural dry grassland and scrub faces on calcareous substrate (Annex I habitat). <i>Tilio-Acerion</i> forests of slopes, screes and ravines - W8 <i>Fraxinus excelsior-Acer campestre-ercurialis perennis</i> woodland (Annex I habitat). European dry heaths, Calaminarian grasslands of the <i>Violetalia calaminariae</i>, Alkaline fens, Calcareous and calcschist screes of the montane to Alpine levels (<i>Thlaspietea rotundifolii</i>) and Calcareous rocky slopes with chasmophytic vegetation (all supporting Annex I habitats). White-clawed Crayfish <i>Austropotamobius pallipes</i> (Annex II species). Brook lamprey <i>Lampetra planeri</i>, Bullhead <i>Cottus gobio</i> (supporting Annex II species).</p>
Conservation objectives	<p>Maintain in a favourable condition <i>Tilio-Acerion</i> forests of slopes, screes and ravines, semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>), calcareous and calcschist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>) (Eutric scree) and chasmophytic vegetation on rocky slopes (Calcareous sub-types).</p> <p>Maintain habitats for the population of white-clawed crayfish, bullhead and brook lamprey in favourable condition.</p>
Key factors affecting site integrity	<p>Integrity depends on maintaining the designated vegetation types in favourable condition. The diversity of types means many factors affect integrity. Appropriate site management is crucial, but air quality also has an important influence. Integrity also depends on maintaining habitat for white-clawed crayfish, bullhead and brook lamprey in the River Dove.</p>
Assessment of significance of effects	

Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The Peak District Dales SAC is largely located in Derbyshire, although some parts are in Staffordshire. The nearest town in the West Midlands is Leek (approximately 6km west of the site), with the North Staffordshire conurbation approximately 10km away.			
Recreational pressure and disturbance	<p>This is a very popular area for visitors, and recreational pressures are already high. Population growth and development within those areas close to the site such as Newcastle under Lyne and Stoke on Trent arising from the RSS (both the Phase 2 Revision Stage and through Options 5, 6, 7, 8, and 9) are likely to increase these pressures further.</p> <p>Those components of Options 6, 7, 8, and 9 which include urban extensions for Burton on Trent, Stafford and Newcastle under Lyme could result in increased recreational pressures on the site</p>	<p>No additional effects envisaged in combination with Staffordshire Moorlands Local Plan.</p> <p>Additional in combination effects are considered likely with the Yorkshire and Humber Adopted Plan May 2008 the North West Adopted Plan Sept 2008 and the Proposed Changes to the East Midlands Plan July 2008; all three regions contribute to the visitor pressure issues. The Yorkshire and Humber and the North West RSS are particularly significant, given the proximity of the South Yorkshire and Greater Manchester/Tameside conurbations to the Peak District. The Yorkshire and Humber Plan (adopted May 2008) aims to provide 324,880 new dwellings in South and West Yorkshire (2004-2026), which may contribute to increased recreational pressure in the Peak District.</p> <p>The Regional Housing Strategy supports RENEW North Staffordshire housing market renewal pathfinder. This complements the North Staffordshire Regeneration Zone, which provides a basis for the creation of a viable economic base to underpin housing actions. Housing development in the Pathfinder area may lead to increased recreation and disturbance in the National Park.</p> <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs although this could also include the National Park.</p> <p>The Regional Cultural Strategy aims to promote 'cultural flagships' which may increase visits to those sites. None are identified but the strategy notes the Peak District National Park as a key regional asset. The Visitor Economy Strategy identifies the Peak District for investment as a destination and which will be supported as a visitor attraction.</p>	<p>Pressure from recreation and tourism is likely to increase. Significance of effects depends on extent to which this pressure translates into soil erosion and disturbance to vegetation.</p> <p>Integrated and sustainable transport initiatives could be a key issue to ensure increased visitor numbers do not result in increased traffic disturbance and emissions.</p> <p>In particular an increase in population in north Staffordshire area is likely to lead to an increase in recreational pressure in the Peak District. scenarios 2 and 3 make provision for a 6,000 unit increase in housing in North Staffordshire in addition to the 17,100 within the RSS Phase 2 Revision.</p>

<p>Air pollution</p>	<p>It is now well established that air pollution is transported over hundreds or even thousands of kilometres. Because acidic pollution is trans-boundary, there is no clear relationship between emissions and deposition levels. The prevailing winds from the west mean that the RSS could exacerbate background air pollution for this site as all development is west of this site.</p> <p>There are a number of small roads that run through the Peak District Dales sites in Staffordshire, but only one major road – the A532 – passes close to the site, less than 1km from the western-most parts of the site. It is unlikely that the site would be adversely affected directly by changes in air quality arising from local traffic levels.</p>	<p>RSS is not expected to have negative in combination effects with the Staffordshire LTP at the site, as the plan does not contain any schemes that will impact on the A532.</p> <ol style="list-style-type: none"> The RES identifies North Staffordshire as an area of opportunity for increased economic activity and is a designated a Regeneration Zone and as an area for a Regional Logistics Site. This increased economic activity is likely to affect traffic levels, which may affect sites sensitive to diffuse air pollution including the Peak District Dales SAC. <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs although this could also include the National Park.</p> <p>The Regional Cultural Strategy aims to promote new and existing ‘cultural flagships’, which may result in an increase in visitors to those sites. The Peak District National Park is noted as a key regional asset, which may result in an increase in traffic to the area and to specific sites, potentially affecting air quality.</p> <p>The Visitor Economy Strategy identifies the Peak District National Park as a destination to be sustained. It aims generally to attract more visitors and more tourism investment to the region.</p> <p>The Proposed Changes to the East Midlands Regional Plan proposes significant development in Derby (44,750 new homes to 2026) and Nottingham (70,500 new homes to 2026), and lesser development in Chesterfield and Ilkeston. These developments may increase traffic on major roads to the north west of the West Midlands region e.g. A50, A52, A6, contributing to diffuse air pollution. Also proposed are:</p> <ol style="list-style-type: none"> major new or revitalised energy generation in the Trent Valley 	<p>Site is over its critical load and any additional pollution would have a significant adverse effect. It is therefore necessary to demonstrate that regional levels of air pollution will not be driven up by the RSS and a pollution-neutral approach is adopted.</p> <p>Overall, there is little strategic impact of the RSS2 housing options on the network as compared to the National Forecast (TEMPRO) distribution (Mott MacDonald 2008. PRISM-WM RSS2 Transport Evidence for the Highway Agency).</p> <p>The variation of journey time between scenarios is quite small along the key corridors. A highway based do something scenario (P-TIF) is increasing the journey times on routes, but is also reducing the congestion on the SRN and allowing more traffic.</p> <p>There are local impacts noted due to the housing and network interventions, which would need to be assessed in more detail.</p> <p>Integrated and sustainable transport initiatives could be a key issue to ensure increased visitor numbers do not result in increased traffic disturbance and emissions locally.</p>
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		<ol style="list-style-type: none"> 2. promoting CHP and energy from waste in the Three Cities sub-area 3. promoting energy generation from biomass in the Northern sub-area. <p>All could contribute to diffuse air pollution in the National Park.</p> <p>The North West Plan (adopted September 2008): proposes development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. It also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through West Midlands and affecting background air quality. Nantwich and rural Cheshire more generally are also proposed for increased tourism, which could increase traffic on M6.</p>	
<p>Overall conclusions</p>	<p>The housing growth proposals within the RSS Phase 2 Revision and any additional housing growth in the North Staffordshire area are considered likely to add to a variety of in-combination pressures on the site, all of which affect the integrity of the site. It will be necessary to demonstrate that the overall housing proposals within the RSS will not exacerbate these pressures, particularly diffuse air pollution. Mechanisms may also be required to manage disturbance caused by tourism.</p> <p>If mitigation and avoidance measures are not secured then the provisions of The Regulations 85C and 85E of The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) will need to be considered for this site.</p>		

River Clun SAC

Name and location		River Clun SAC (SO393754) Herefordshire, Shropshire	
Reason(s) for designation		Freshwater pearl mussel <i>Margaritifera margaritifera</i> (supporting Annex II species)	
Conservation objectives		Maintain habitats for freshwater pearl mussel	
Key factors affecting site integrity		Integrity depends on maintaining habitat for freshwater pearl mussel. Levels of flow are important due to the need to support migration of salmonid fish. Also water quality	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The River Clun site is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Ludlow (pop 10,000), approximately 8km away. The RES identifies Shropshire generally as an area for economic opportunity and the site falls within the Rural Regeneration Zone. Ludlow is identified as an economic ‘spoke’ and the Ludlow Eco-Business Park promises the creation of several hundred new jobs in high skill industries over the next 5 – 10 years. There is also a potential Ludlow Food Centre at Bromfield, about 10km to the east.			
Recreational pressures/ disturbance.	<p>Policies in the RSS are not likely to increase recreational pressure or disturbance in this area, although recreation levels and access to these types of site may increase across the Region as a result of population growth (under policies from Communities for the Future), economic development (under policies from Prosperity for All), improved accessibility (under Transport and Accessibility) etc.</p> <p>While overall populations levels in the locality are not anticipated to change significantly under any of the housing options. However options 3, 6 and 9 may increase populations locally through additional rural housing and may result in increase pressure from recreation.</p>	<p>The South Shropshire Local Plan does not provide for development or growth additional to that set out in the RSS.</p> <p>The Herefordshire UDP identifies Leintwardine (adjacent to the southern end of the site) as a ‘Main Village’, which may take additional housing within the settlement boundary, although no precise allocation is made. However, it does not seem likely that the plan would provide for additional development over that in RSS.</p> <p>The Visitor Economy identifies Ludlow and The Marches and Shropshire generally as an area envisaged for investment as a tourist destination. Hereford and Shrewsbury are identified as gateways to the wider countryside, and Ludlow & The Marches as an area for priority working on improving transport access and joint working with Wales and Herefordshire, all of which may lead to increased visitor pressure. The Regional Cultural Strategy aims to promote ‘cultural flagships’ which may increase visits to those sites. None are identified but the strategy notes the AONBs and waterways as key regional assets. The SAC is very close to the Shropshire Hills AONB therefore may be affected by increased recreational pressure and</p>	<p>Recreation levels would only affect site integrity if it was associated with damage to habitat for freshwater pearl mussel, e.g. through pollution. Phase 2 will not increase levels of recreational use <i>per se</i>. There may be in combination effects driving up levels of recreational use, but these are not considered likely to translate into effects on site integrity.</p>

		<p>disturbance.</p> <p>The Wales Spatial Plan identifies that Central Wales has a huge potential for tourism and aims to identify opportunities for enhanced inland tourism. May lead to increased pressure on the Clun.</p>	
Water supply	<p>The site is near the border of the Severn and Herefordshire Conjunctive Use water resource zones. The Severn water resource zone is already in significant headroom deficit. New additional housing is proposed under policy CF3 for a number of districts within the water resource zone: Coventry (33,500 houses), Bridgnorth (2,500), Shrewsbury and Atcham (8,200), South Shropshire (4,900), South Staffordshire (3,500), North Warwickshire (3,000), Nuneaton and Bedworth (10,800), Rugby (10,800), Stratford on Avon (approximately 7,250), Warwick (10,800), Bromsgrove (approximately 3,750), Redditch (3,300), Worcester (3,200), Wychavon (approximately 12,750) and Wyre Forest (3,400). Additional resource development and water management measures will be required to meet demands from new housing development. The Herefordshire Conjunctive Use zone is likely to go into a small deficit until a major new resource brings the zone back into surplus. However site is not currently affected by abstraction.</p> <p>The RSS Phase 2 Revision has already flagged water supply as being a key issue for this site. All options may have the potential to increase demand for water resources which may affect the River Clun. Options 3,6 and 9 might represent the higher likelihood of significant effect on the site as a result of the additional housing in the rural west. The outcome of the ROC is critical for this site.</p>	<p>No significant in-combination effects foreseen. However, site directly linked to Severn System and would be affected by any water resources issues that impeded Salmonid migration.</p>	<p>The River Clun is a habitat 'Review of Consents' (ROC) site. Site investigated for impact of abstraction and no current issues identified. If there is a variation to the public water supply site and an impact is shown during test pumping then licence will not be allowed.</p> <p>However, site directly linked to Severn System and would be affected by any water resources issues that impeded Salmonid migration.</p> <p>All 3 scenarios include growth in the rural west and have the potential to increase demands upon water resources that may affect the River Clun. Currently the information on the review of consents is not available. This data is critical to assessing the impact upon integrity of the site.</p> <p>Natural England reported that the site is vulnerable to increased abstraction.</p>

Overall conclusions	Water quality/supply risks. Some issues with phosphate loadings due to inadequate water treatment. Site directly linked to Severn System and could be affected by any water resources issues that impeded Salmonid migration.
	By careful design in incorporation of water resource neutral design water supply/quality issues can be successfully avoided. Proposals will need to be tested at the local level to ensure that they do not have an impact upon this site.

River Dee and Bala Lake SAC

Name and location	River Dee and Bala Lake SAC (SJ423503) Cheshire, Denbighshire, Gwynedd, Shropshire, Flintshire, Wrexham		
Reason(s) for designation	Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation (Annex I habitat). Atlantic salmon <i>Salmo salar</i> (Annex II species). Floating water-plantain <i>Luronium natans</i> (Annex II species). Sea lamprey <i>Petromyzon marinus</i> , Brook lamprey <i>Lampetra planeri</i> , River lamprey <i>Lampetra fluviatilis</i> , Bullhead <i>Cottus gobio</i> and Otter <i>Lutra lutra</i> (supporting Annex II species).		
Conservation objectives	Maintain in a favourable condition the water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Maintain, in favourable condition, habitats for the populations of Atlantic salmon, bullhead, brook lamprey, river lamprey, sea lamprey, otter and floating water-plantain.		
Key factors affecting site integrity	Integrity depends on maintaining water courses in favourable condition to support the water crowfoot communities for which they are designated; also, the habitats for populations of floating water-plantain, Atlantic salmon, bullhead, brook, river and sea lamprey, and otter: all these require appropriate water supply and quality.		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The River Dee flows along Shropshire's border with Wales, for approximately 10km. The site is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Oswestry (pop 17,100), approximately 10km away.			
Water supply	The Oswestry and Ellesmere water resource zone is expected to stay in surplus for the plan period under all options.	The North West Adopted Plan (Sept 2008) makes allocations for 416,000 new dwellings. It also proposes the economic regeneration and development of Crewe. Growth will put pressure on cross border water resources, and limit opportunities to import water. Additional water resources will need to be found within the region.	RoC indicates that some current abstractions are having an effect and will have to be modified. Increased housing is likely to exacerbate pressure on supply. Possible cumulative adverse effect on integrity as Welsh Water, Severn Trent Water and Dee Valley Water all take water from this system. From consultation with Liz Jones from the Environment Agency believes that a review of RoC of abstraction licences for the R Dee SAC has not indicated any adverse effect on site integrity from a supply/volumetric point of view. A number of surface water abstraction licences have required options appraisal due to fish entrainment issues and others due to instantaneous flow rate requirements only. None of the EA-regulated groundwater abstractions in the north Shropshire area that were considered to have the potential to influence the River Dee were found to have a significant impact on baseflows to the river. The water companies that take water directly from the River Dee

			<p>are Dwr Cymru/Welsh Water, United Utilities Water and Dee Valley Water. Severn Trent Water have responsibilities in north Shropshire and possess groundwater abstraction licences that have been reviewed because of hydrological links to the River Dee.</p> <p>Because of these groundwater links, increased housing and any economic development in the area has the potential to exacerbate pressure on water supply. The RSS Phase 2 housing allocation for Shropshire is 25,700 and there will be a potential increase on top of that for all three scenarios.</p> <p>How significant this would be depends upon the status of the supplying waterbody at the time of application to abstract/increase current abstraction. EA would not grant further abstraction in the north Shropshire area unless water resources were sufficient to meet demand. Also, licences would not be issued if there was a likelihood of adverse effect on protected sites (<i>pers. comm. Liz Jones EA</i>).</p>
Water quality	Development arising from the RSS is not likely to affect water quality in the river or lake.		<p>There are water quality issue in the lower Dee, where the P target is failed, due to a combination of point and diffuse sources.</p> <p>There are conflicting messages from Natural England and Environment Agency regarding water quality issues so this needs to be investigated further.</p>
Overall conclusions	Review of Consents indicates that some current abstractions are having an effect and will have to be modified. Possible cumulative adverse effect on integrity as Welsh Water, Severn Trent Water and Dee Valley Water all abstract from this system. Water quality may also be an issue – see above points raised by Environment Agency.		

River Mease SAC

Name and location		River Mease SAC (SK260114) Derbyshire, Staffordshire, Leicestershire	
Reason(s) for designation		Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation (Annex I habitat) Spined loach <i>Cobitis taenia</i> (Annex II species). This site is a good example of a riverine population of this species in England. Bullhead <i>Cottus gobio</i> (Annex II species). Representative of the central England populations of bullhead. White-clawed crayfish <i>Austropotamobius pallipes</i> and Otter <i>Lutra lutra</i> (supporting Annex II species)	
Conservation objectives		Maintain the river as a favourable habitat for floating formations of water crowfoot (<i>Ranunculus</i>), populations of bullhead, spined loach and white-clawed crayfish, and the river and adjoining land as habitat for populations of otter.	
Key factors affecting site integrity		Integrity depends on maintaining the river as a suitable habitat for floating formations of water crowfoot (<i>Ranunculus</i>) and for populations of bullhead, spined loach, and white-clawed crayfish. Water supply and quality are key factors. Integrity also depends on maintaining the river and adjoining land as suitable habitat for populations of otter.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	Possible effects in combination with other plans and policies	Effect on site integrity of the three scenarios
At its nearest point, the River Mease is approximately 7km from Tamworth, identified under UR2 as a local regeneration area, under UR3 and PA11 as a Tier 4 Strategic Centre, under PA9 as the location for a Regional Logistics Site, and under T6 as the potential site for a Park and Ride location (through the provision of additional parking at the station). Possible 2,900 homes for Tamworth District. It is about 6km from Lichfield. Both Lichfield and Tamworth are identified by the Regional Housing Strategy as being within a housing market area suitable for intervention.			
Water supply	Increased development will increase pressure on water supply. The HRA of the RSS Phase 2 Revisions identified that housing growth and other demands mean WRZ will be in deficit by 2024 and in critical period by 2009. The additional housing options in the catchment of the River Mease could increase the demand for abstraction.	The Proposed Changes to the East Midlands RSS identifies that parts of the East Midlands, notably the Trent Valley, have clear location advantages for major energy installations. Some former power station and colliery sites may be suitable for re-use for new forms of power generation, which may increase abstractions.	Review of consents has confirmed risks from future abstraction. High levels of household growth in the West Midlands in the catchment of this river could have a significant effect if abstraction is needed from the river. Risk to site integrity is possible in relation to any development in Stafford or to east of Birmingham. However, any new abstraction would only be allowed if water were available after the RoC process is completed.
Water quality	Diffuse pollution and sedimentation are an issue but this arises mainly from agricultural activities. The RSS and nine housing options are considered unlikely to have a significant effect on this issue although if the land use changes from largely rural to more developed it could improve these water quality effects.	No in-combination effects foreseen	There is also a need for improvements in SUDS and water treatment. The successful use of SUDS and other systems for attenuating surface water rely on them being correctly built to an appropriate standard and properly maintained. Degradation of water quality is likely to have significant adverse impacts upon the spined loach population, one of the features of the river, in particular, which is intolerant of poor quality water and this is not just a diffuse

			<p>pollution issue.</p> <p>Sewage works are a major contributor to the problem on this river too (outcome of RoC). Any increase, either through the main sewage works or through individual houses would be a potential issue.</p> <p>Decision dependant on understanding capacity and situation of local sewage treatment works</p> <p>However, if STW do not currently discharge into Mease it is unlikely that Phase 2 or the three scenarios will have an adverse effect on integrity as site is in a rural location.</p> <p>Habitats Directive Review is currently being undertaken by the EA for this site and decision should be reviewed when the results are available.</p>
Change in surrounding land use	<p>An additional 8,000 homes was planned within the RSS Phase 2 Revision for Lichfield district although the majority are likely to go in the major town (Options 2 and 8). General levels of traffic are expected to go up and barrier effects could increase for species like otter.</p>	<p>It is assumed that the potential development of the canal and National Forest for tourism and recreation through the Lichfield Local Plan is unlikely to result in change of use of surrounding land, although there is no indication of whether or not this may happen.</p> <p>The Regional Housing Strategy identifies Lichfield and Tamworth within the Coalfields and Central Commuter Belt housing market, as an area suitable for intervention although the scale is not specified.</p> <p>The Proposed Changes to the East Midlands Plan (July 2008) proposes development in Coalville and Swadlincote . These developments could change use of some land surrounding the SAC.</p>	<p>Possibly an issue if this translates into water quality impacts (see above).</p> <p>Key issue if this translates into water quality impacts (see above) in terms of both nutrient enrichment and alterations to riverbed (loss of gravels for spined loach). This is presently primarily an issue of agricultural land management.</p> <p>Increased development through the WMRSS Phase 2 Revision and the additional scenarios and in combination effects with the Proposed Changes to the East Midlands Regional Plan and the Regional Housing Strategy mean that the success of the river's otter population could be affected. Increased mortality on roads is a possibility.</p>
Overall conclusions	<p>Not possible to conclude that there won't be an adverse impact on site integrity. Changes to water supply and water quality are the greatest risks. A review of the situation following the findings of the Habitats Directive Review is necessary.</p>		

River Usk SAC

Name and location	River Usk SAC (SO301113)
Reason(s) for designation	<p>Annex II species that are a primary reason for selection of this site:</p> <p>Sea lamprey <i>Petromyzon marinus</i> The Usk is a medium-sized catchment in south Wales, important for its population of sea lamprey. Survey of juveniles and observation of spawning adults indicates that this species is mainly restricted to the lower reaches of the catchment. The site supports a range of Annex II fish species.</p> <p>Brook lamprey <i>Lampetra planeri</i> The Usk in south Wales supports a healthy population of brook lamprey and is considered to provide exceptionally good quality habitat likely to ensure the continued survival of the species in this part of the UK.</p> <p>River lamprey <i>Lampetra fluviatilis</i> The Usk in south Wales supports a healthy population of river lamprey and is considered to provide exceptionally good quality habitat likely to ensure the continued survival of the species in this part of the UK. The river also supports important populations of Brook lamprey <i>Lampetra planeri</i>, for which it is also selected.</p> <p>Twaite shad <i>Alosa fallax</i> The River Usk is one of the largest rivers in south Wales, and twaite shad has long been known to spawn there. The Usk is one of only four sites in the UK where a known breeding population of twaite shad occurs (the Rivers Wye and Tywi are other SAC sites). Water quality and quantity are considered favourable for this species. The main channel is largely unmodified and a variety of aquatic habitats are present, including good quality spawning gravels and deep pools used for cover by adults and fry. However, Trostrey and Rhadyr Weirs may be a barrier to shad migration under low flow conditions.</p> <p>Atlantic salmon <i>Salmo salar</i> The river Usk is a river famous for its salmon, with a high proportion (c. 30–40%) of multi sea winter fish recorded in the rod catch. In 1999 the Usk had highest estimated egg deposition of any British river south of Cumbria, and was one of the few rivers in England and Wales to exceed its spawning target for salmon. The Usk has a mixed catchment with a largely unmodified river channel, no significant obstructions to salmon migration, good quality spawning gravels and a diversity of habitats providing excellent habitat for salmon parr. The most important tributaries for salmon spawning are included within the site boundary.</p> <p>Bullhead <i>Cottus gobio</i> The Usk represents bullhead in the southern part of its range in Wales. It is considered to have exceptionally high-quality habitat with good water quality, abundant cover and a variety of aquatic habitats. Bullhead are widespread throughout the Usk system.</p> <p>Otter <i>Lutra lutra</i> The River Usk is an important site for otters in Wales. They are believed to be using most parts of the main river, from Newport upstream, and in recent years signs of otters have increased. In 1991 an expansion upstream of known otter ranges was recorded on several tributaries, including the Honddu, Senni and Crai. The upper Usk may have acted as a 'refuge' during the decline of the 1950s, and had subsequently acted as a 'source' population for recolonisation of south-</p>

	east Wales.		
	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation		
Conservation objectives			
Key factors affecting site integrity	<ul style="list-style-type: none"> The River Usk is an excellent habitat for six Annex II freshwater fish. There are some concerns over long term aquatic and riparian habitat degradation but these are being addressed in the Usk Catchment Management Plan, the Conservation Strategy, the River SSSI Management Plan, and by the Countryside Council for Wales and Environment Agency encouraging owners and occupiers to carry out positive habitat management through agreements and agri-environment schemes. There are few barriers to migration for the anadromous species and where barriers exist, investigation is proposed to analyse for potential impacts and remedy them through multi-species fish passes. Water quality is good throughout the main river, except for localised enrichment from sewage discharges, the effects of which, along with the more significant water abstractions, are being closely monitored by the Environment Agency. 		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	Possible effects in combination with other plans and policies	Effect on site integrity of the three scenarios
Water supply	<p>Any increase in housing in Herefordshire (16,600 in Phase 2 Revision and a further 1,200 within Options 3, 6 and 9) could increase the demand on Welsh Water for additional water supplies. Depending on how Welsh Water meets the demand for additional water will determine whether there would be any requirement for abstraction from the Usk catchment.</p> <p>Risk to site integrity is possible. However, any new abstraction would only be allowed if water were available after the RoC process is completed.</p>	No in-combination effects foreseen	<p>All three scenarios result in an increase of 1,200 new house units on top of the 16,600 of the Phase 2 Revision allocation.</p> <p>Review of consents has confirmed risks from future abstraction. High levels of household growth could have a significant effect if abstraction is needed from the River. Risk to site integrity is possible. However, any new abstraction would only be allowed if water were available after the RoC process is completed.</p>
Water quality	<p>Decision dependant on understanding capacity and situation of local sewage treatment works</p> <p>However, if Severn Trent Water or Welsh Water do not currently discharge into Usk it is unlikely that Phase 2 or any of the nine housing options will have an adverse effect on</p>	No in-combination effects foreseen	<p>Decision dependant on understanding capacity and situation of local sewage treatment works.</p> <p>However, if Severn Trent Water or Welsh Water do not currently discharge into Usk unlikely that Phase 2 or additional options/growth scenarios will have an adverse effect on integrity as site is in a rural location.</p>

	<p>integrity. Habitats Directive Review is currently being undertaken by the EA for this site and decision should be reviewed when the results are available</p>		<p>Habitats Directive Review is currently being undertaken by the EA for this site and decision should be reviewed when the results are available.</p>
Overall conclusions	<p>Not possible to conclude that there won't be an adverse impact on site integrity. Changes to water supply and water quality are the greatest risks. A review of the situation following the findings of the Habitats Directive Review is necessary.</p>		

River Wye SAC

Name and location	River Wye SAC (SO109369) Monmouthshire, Gloucestershire, Herefordshire, Powys		
Reason(s) for designation	<p>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation (Annex I habitat). A large river representative of sub-type 2 of this habitat. An exceptional range of aquatic flora occurs in the catchment. Transition mires and quaking bogs (supporting Annex I habitat). White-clawed crayfish <i>Austropotamobius pallipes</i> (Annex II species). Welsh tributaries are the best Welsh sites for this species. Sea lamprey <i>Petromyzon marinus</i> (Annex II species). Brook lamprey <i>Lampetra planeri</i> (Annex II species). River lamprey <i>Lampetra fluviatilis</i> (Annex II species). The Wye is exceptionally good habitat for the three lamprey species. Twaites shad <i>Alosa fallax</i> (Annex II species). The largest spawning areas for this species occur in the Wye.</p> <p>Atlantic salmon <i>Salmo salar</i> (Annex II species). An important UK population of salmon, particularly as it has a high proportion of multi-sea winter individuals, a declining stock component in the UK. Bullhead <i>Cottus gobio</i> (Annex II species). The Wye probably represents most habitat conditions in which bullhead occurring the UK.</p> <p>Otter <i>Lutra lutra</i> (Annex II species). The densest and best-established otter population in Wales. Allis shad <i>Alosa alosa</i> (supporting Annex II species).</p>		
Conservation objectives	Maintain the river as a habitat for floating formations of water crowfoot (<i>Ranunculus</i>) of plain and sub-mountainous rivers, populations of Atlantic salmon, allis shad, twaites shad, bullhead, lampreys, and white-clawed crayfish, and the river and adjoining land as habitat for populations of otter.		
Key factors affecting site integrity	Integrity depends on maintaining the river as suitable habitat for floating formations of water crowfoot (<i>Ranunculus</i>) of plain and sub-mountainous rivers. Also as suitable habitat for populations of Atlantic salmon, allis shad, twaites shad, bullhead, brook lamprey, river lamprey, sea lamprey and white-clawed crayfish. Integrity also depends on maintaining the river and adjoining land as habitat for populations of otter.		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	Possible effects in combination with other plans and policies	Effect on site integrity of the three scenarios
The River Wye flows through Herefordshire, through a number of smaller towns (e.g. Hay on Wye, Ross on Wye), as well as Hereford, identified under CF3 as an area of significant development, which will take 8,300 additional houses, and under UR3 and PA11 as a Tier 3 Strategic Centre. Household numbers in Herefordshire are expected to increase by 16,600 between 2006 and 2026.			
Recreational pressure and disturbance	Recreation levels on and access to the site may increase as a result of population growth (particularly the development of 8,300 additional houses in Hereford, and a further 8,300 elsewhere across the county under policy	As well as identifying Hereford and Ross-on-Wye as 2 towns where development will be focused, the UDP also identifies other 'Main Villages' where additional housing may be located, including settlements on the River Wye (e.g. Staunton on Wye, Fownhope, Goodrich, Hampton Bishop) although no quantified allocations are made. However, it does not seem likely that the UDP would provide for development greater than that which would arise from the RSS, and therefore it does not seem likely	Damage to water crowfoot plant communities is possible due to increasing water sports based on the river. Physical disturbance of otter is also possible.

	<p>CF3), improved accessibility (under policies from the Transport and Accessibility chapter) <i>etc.</i></p> <p>The new housing options will not result in a significant change in population in the area other than that already predicted. Options 3, 6 and 9 through additional rural provision may result in more households closer to the site however this is not considered significant. No additional LSEs are anticipated over those already identified.</p>	<p>that there would be any in combination effects in terms of recreational pressure and disturbance.</p> <p>The Visitor Economy Strategy identifies Herefordshire generally as an area envisaged for investment as a tourist destination. Hereford is identified as a destination and as a visitor gateway to the wider countryside, and Ludlow & The Marches as an area for priority working on improving transport access and joint working with Wales and Herefordshire. In addition, Market Towns are identified as destinations for investment, which includes Ross. All of these factors may lead to increased recreational pressure and disturbance.</p> <p>The RES and the Visitor Economy Strategy also seek to exploit the economic potential of the AONBs. In addition the Cultural Strategy aims to promote 'flagships' – although none are identified, the AONBs and the waterway network are noted as key regional assets, both of which may affect the use of the Wye Valley.</p> <p>The Wales Spatial Plan identifies that Central Wales has a huge potential for tourism and aims to identify opportunities for enhanced inland tourism. This may indirectly lead to increased pressure on the Wye.</p>	
Water supply	<p>Increased abstraction may be needed to supply housing growth in Hereford, and potentially from other development elsewhere in Herefordshire, which relies on the Wye.</p> <p>Options 3, 6 and 9 through additional rural provision in Herefordshire have the potential to increase demands on water supply consequently requiring abstraction. Other options may also have an impact on this site. Further data is required.</p>	<p>Growth in South Wales, Gloucester, Cheltenham and Tewkesbury will require increased abstractions from this catchment. Water is also transferred from the River Wye to the Usk to provide Cardiff, so there is additional demand pressure from growth in South Wales.</p> <p>Development of Ross and Leominster under the Market Towns Initiative and the RES may increase sewage discharges to the Wye.</p>	<p>The River Wye is subject to a review of licences and consents under the Habitats Directive, which could affect future resource availability. Although WRZ is mainly in surplus during the plan period, current abstractions are affecting the site. It is likely that control rules will be modified that will restrict existing abstractions by Welsh Water. Growth in this and adjacent regions may result in the need for abstractions that may pose a risk to site integrity.</p> <p>Abstraction for development under the RSS alone and in combination with other plans such as the Visitor Economy Strategy could increase effects from abstraction. The additional housing allocations within the three</p>

<p>Water quality</p>	<p>White-clawed crayfish noted to require hard water, with >10mg/l CaCO₃, thus could be affected by discharges. In addition, water temperatures are critical to the species; so heated discharge may be an issue, especially in autumn.</p> <p>Impacts of pesticides on crayfish, fish fry and <i>Ranunculus</i> beds is detrimental, often even at low concentrations.</p> <p>The Phase 2 Revision plans for 16,600 additional homes in Herefordshire (including 8,300 within Hereford City). The sewage treatment works will have to deal with the additional waste water. Options 3, 6 and 9 will lead to an additional 1200 in Herefordshire through additional rural provision in Herefordshire</p> <p>Any increase in abstraction may have an impact on water quality. Discharge from Sewage Treatment Works arising from increased housing numbers may also have an impact.</p>	<p>Development of Ross and Leominster under the Market Towns Initiative may affect run-off and increase sewage discharges to the Wye. The RES also identifies Herefordshire generally as an area for economic opportunity and the whole county falls within the Rural Regeneration Zone. Significant developments are possible, which may affect run-off into the Wye.</p> <p>Some Sewage Treatment Works are at risk: Rotherwas Sewage Treatment Works is at high risk and Moreton on Lugg Sewage Treatment Works is at medium risk.</p> <p>The pressure on water supply could have implications for water quality. Development of Ross and Leominster under the Market Towns Initiative and the RES may increase sewage discharges to the Wye.</p>	<p>scenarios will increase this effect. Adverse effects on integrity possible.</p> <p>The site is currently considered to be affected by sewage discharges. The existing STWs will have difficulties in accommodating additional growth and 16,600 additional homes are planned for Herefordshire.</p> <p>Habitats Directive Review is currently being undertaken by the EA for this site and decision should be reviewed when the results are available.</p> <p>Water abstraction is a significant issue as well as water quality problems associated with sewage discharges (phosphate loadings high). RSS and plans could affect water quality and supply. More investigation will be required, although engagement as part of the main NLP study indicates that there are no reasons why it will not be possible to mitigate this.</p>
<p>Land use change or habitat change</p>	<p>Given the level of development expected for Herefordshire and in some of the towns on the River Wye (e.g. Hereford, which will take</p>	<p>The Herefordshire UDP may result in land use or habitat changes in some towns on the River Wye that are not identified in the RSS, e.g. Staunton on Wye, Fownhope, Goodrich, Hampton Bishop. However, it does not seem likely that the UDP would provide for development greater than that which</p>	<p>Land use changes associated with the RSS and other plans could affect water quality and supply (see above)</p>

	<p>an additional 8,300 houses under CF3), it is likely that land use and habitats near the site may change as a result of the RSS and the housing options.</p> <p>Levels of sediment important to crayfish, so gross land use changes affecting sediment loading, quality of sediment and oxygen levels would be detrimental. Impacts of pesticides on crayfish, fish fry and <i>Ranunculus</i> beds is detrimental, often even at low concentrations.</p>	<p>would arise from the RSS.</p> <p>The RES identifies Herefordshire generally as an area for economic opportunity including tourism and the whole county falls within the Rural Regeneration Zone. Ross and Leominster are identified as economic 'spokes' for 10-15,000 sq ft of economic development. Investment will be made into the 'Hereford Learning Village'. Hereford is identified as a site for a CHP plant. Significant land use changes are therefore likely, with implications in terms of surface-water run-off, levels of sediment and water quality (see above).</p>	
<p>Overall conclusions</p>		<p>Habitats Directive Review currently being undertaken. Early indications are that existing abstraction and discharge licences will have to be modified to protect site. Increased pressures from additional housing in Herefordshire from the housing scenarios and the Phase 2 Revisions will increase tensions between need of water supply and treatment and protecting the environment. Loss of supporting habitat and disturbance of qualifying features also pose a risk to site integrity.</p>	

Severn Estuary C SAC

Name and location	Severn Estuary cSAC (ST267478) Vale of Glamorgan, Cardiff, Newport, Avon, City of Bristol, Monmouthshire, Gloucestershire, Gwent, North Somerset, Somerset, South Glamorgan, South Gloucestershire
Reason for (proposed) designation	Atlantic salt meadows (<i>Glauca-Puccinellietalia maritimae</i>) (Annex I habitat), for which this is considered one of the best areas in the UK Mudflats and sandflats not covered by seawater at low tide (Annex I habitat), for which this is considered one of the best areas in the UK Sandbanks which are slightly covered by seawater at all times (Annex I habitat), for which this is considered one of the best areas in the UK Reefs (Annex I habitat), for which this estuary is considered to have a significant presence Estuaries (Annex I habitat), for which this is considered one of the best areas in the UK Allis shad <i>Alosa alosa</i> (Annex II species), for which the area is considered to support a significant presence Twaite shad <i>Alosa fallax</i> (Annex II species), for which this is considered one of the best areas in the UK River lamprey <i>Lampetra fluviatilis</i> (Annex II species), for which this is considered one of the best areas in the UK Sea lamprey <i>Petromyzon marinus</i> (Annex II species), for which this is considered one of the best areas in the UK ¹²
Conservation objectives	None available
Key factors affecting site integrity	Recreational pressure and disturbance Water quality Water quantity Invasive or non-native species

¹² Information from Langston et al. 2003

Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
<p>The estuary is connected via the Severn to Worcester, Stourport, Bridgnorth, Telford and Shrewsbury, to Ludlow via the Teme, to Kidderminster via the Stour, to Ross and Hereford via the Wye and to Leominster via the Lugg. The river systems are also connected via the canal network to Birmingham and the Black Country and to the Trent and Mersey. Worcester is identified under policy CF3 as an area of significant development taking 10,300 additional houses, as is Telford (24,000 additional houses), Shrewsbury (6,200) and Hereford (8,300). Both Worcester and Telford are also identified as nodes for the High Technology Corridors in the Regional Economic Strategy and are therefore likely to be a focus for development.</p>			
Water supply	<p>The Severn system is a major source of water supply for the region. The Severn Water Resource Zone includes many districts which will take additional housing under policy CF3, including Coventry (33,300 additional houses), Bridgnorth (2,500), Shrewsbury and Atcham (8,200), South Shropshire (4,900), South Staffordshire (3,500), North Warwickshire (3,000), Nuneaton and Bedworth (10,800), Rugby (10,800), Stratford on Avon (approximately 7,250), Warwick (10,800), Bromsgrove (approximately 3,750), Redditch (3,300), Worcester (3,200), Wychavon (approximately 12,750) and Wyre Forest (3,400). Further abstraction could affect sediment levels, flows <i>etc.</i> downstream.</p> <p>All the additional housing options may increase water resource demands upon this site.</p>	<p>Economic development within the catchment as a whole arising from the RES could increase pressure for abstraction from the Severn.</p> <p>The Proposed Changes to the South West Draft Regional Spatial Strategy (July 2008) proposes increases in employment and significant housing development (56,400) in the Gloucester and Cheltenham HMA. Housing growth and economic development could contribute to increased abstraction from the Severn.</p>	<p>Given the interconnected nature of the site all the 3 scenarios have the potential to add to impact that have already been identified in the Phase 2 HRA.</p> <p>Reduction in water supply has the potential to adversely effect qualifying features especially migratory fish such as the river lamprey.</p> <p>With the levels of growth envisaged the WRZ goes into deficit between 2014 – 2016 and 2020-2024. Housing and economic growth pose risk to site integrity through water demand increases from the Severn Corridor. Habitats Directive Review currently underway which may limit existing abstractions and create tension in areas of growth. Severn System under considerable pressure for water supply. Reduction in water supply has the potential to adverse effect on qualifying features especially migratory fish such as the river lamprey. LSE depends on future sourcing of water supply for the region. Under investigation as part of Habitats Directive Review of Consents</p>

Water quality	<p>The Severn Corridor and tributaries flow through much of the region so the waters have the potential to be both positively and negatively affected by much of the development and regeneration proposed in Phase 2. For example, the River Stour is a tributary of the River Severn, so any additional sewage loadings in the Black Country resulting from the additional 61,200 homes planned within the RSS Phase 2 Revision will ultimately affect the Severn Estuary sites. The housing options could add to this impact. But equally the surface water runoff improvements expected from the clean up of contaminated land will be beneficial.</p> <p>Sewage discharge from additional housing may have an impact upon this site.</p>	<p>Economic development within the catchment arising from the RES could have an impact on water quality in the estuary, by affecting run-off and sewage discharges into the Severn and increasing abstraction, which could affect water quality in the estuary.</p>	<p>Qualifying Species such as Allis shad <i>Alosa alosa</i>, river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> immediately at risk if water quality deteriorates.</p> <p>Impossible to conclude there will not be an adverse affect due to the risks identified in the EA technical paper.</p> <p>Habitats Directive Review is currently being undertaken by the EA for these sites and decision should be reviewed when the results are available.</p> <p>Unclear LSE for all scenarios. Increasing levels of development across the region could affect water quality in the Severn and the estuary, and the pressure on water supply may also have implications for water quality.</p>
Overall conclusions		<p>Risks to site integrity from changes in water supply and water quality resulting from Phase Two and additional housing options in combination with other development in the South West region. This will directly affect qualifying features. Additional housing within the region has the potential to add to the impact upon the site. Potential impact from housing could be avoided by careful use of water resouse neutral design.</p>	

South Pennine Moors SAC

Name and location	South Pennine Moors SAC (SK144960) Barnsley, Bradford, Calderdale, Cheshire, Derbyshire, Kirklees, Lancashire, Leeds, North Yorkshire, Oldham, Rochdale, Sheffield, Staffordshire, Tameside
Reason(s) for designation	European dry heaths (Annex I habitat). The most south-easterly upland location of this habitat in the UK Blanket bogs (Annex I habitat). The most south-easterly occurrence of this habitat in Europe Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> (Annex I habitat). Representative of this habitat type in the UK, but with tendency to be drier than those examples to the north and west. North Atlantic wet bogs with <i>Erica tetralix</i> , Transition mires and quaking bogs (supporting Annex I habitats).
Conservation objectives	Maintain, in favourable condition, the: <ul style="list-style-type: none"> • Blanket bog (active only) • European dry heaths (all subtypes) • Northern Atlantic wet heaths with <i>Erica tetralix</i> • Transition mires and quaking bogs • Old oak woods with <i>Ilex</i> and <i>Blechnum</i>
Key factors affecting site	Recreational pressure and disturbance: probably the key threat to species and habitats in this SAC, the site is surrounded

integrity	<p>by urban areas, so is under intense pressure for recreational use. Trampling and associated erosion has caused significant damage to blanket bog.</p> <p>Water quantity: inappropriate levels of moor-gripping damage the site, lowering the water table.</p> <p>Air pollution: damage to bryophytes and lichens over the last hundred years, with possible impacts on dwarf-shrub interests as well. A particular problem where it has caused loss of Sphagnum, allied with problems listed above. Also affecting the species composition of woodland ground flora (below).</p> <p>Appropriate management is key to maintaining habitats for which site designated, primarily through burning and grazing. Land use in surrounding areas: fragmentation of woodland has occurred; overgrazing and inappropriate burning in surrounding areas inhibits the ability of woodland to expand. Invasive species: <i>Rhododendron</i> is a known problem species in the woodlands.</p>
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Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
<p>The South Pennine Moors SAC covers 65,000 ha across Yorkshire, Derbyshire, Lancashire, Cheshire and Staffordshire. Relatively speaking, only a small part of the site falls within the West Midlands. The nearest town to this area of the site is Leek, approximately 4km from the edge of the site, and identified under UR2 as a local regeneration area. The number of households in the district, Staffordshire Moorlands, is expected to increase by 6,000 over 2006-2026, an increase of 14.6%.</p>			
Recreational pressure and disturbance	<p>This is a very popular area for visitors, and recreational pressures are already high. Population growth and development arising from the RSS (both the Phase 2 Revision Stage and through Options 5, 6, 7, 8, and 9 within those areas close to the site such as Newcastle under Lyne and Stoke on Trent are likely to increase these pressures further. In particular an increase in population in north Staffordshire area could lead to an increase in recreational pressure on the South Pennine Moors.</p>	<p>The RSS is not expected to have effects in combination with Staffordshire Moorlands Local Plan, as this plan will not result in any pressures in addition to those resulting from the RSS.</p> <p>The Regional Cultural Strategy aims to promote 'cultural flagships' which may increase visits to those sites. None are identified but the strategy notes the Peak District National Park as a key regional asset. The Visitor Economy Strategy identifies the Peak District for investment as a destination and which will be supported as a visitor attraction.</p> <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs although this could also include the National Park.</p> <p>The Regional Housing Strategy supports the Stoke and Newcastle Housing Market Renewal Pathfinder. This complements the North Staffordshire Regeneration Zone, which provides a basis for the creation of a viable economic base to underpin housing actions. Housing development in the Pathfinder area may lead to increased recreation and disturbance in the</p>	<p>Consultees at the HRA RSS Phase 2 Revision stage, confirmed a possible in-combination effect driven by increased tourism and recreational use.</p> <p>In particular an increase in population in north Staffordshire area is likely to lead to an increase in recreational pressure in the Peak District. scenarios 2 and 3 make provision for a 6,000 unit increase in housing in North Staffordshire in addition to the 17,100 within the Phase 2</p>

		<p>National Park.</p> <p>Additional in combination effects are considered likely with the Yorkshire and Humber Adopted Plan May 2008 the North West Adopted Plan Sept 2008 and the Proposed Changes to the East Midlands Plan July 2008; all three regions contribute to the visitor pressure issues. The Yorkshire and Humber and the North West RSS are particularly significant, given the proximity of the South Yorkshire and Greater Manchester/Tameside conurbations to the South Pennines.</p> <p>The North West Adopted Plan (September 2008) proposes 39,200 new dwellings to 2003- 2021 in South Manchester and East and South Cheshire, which may increase recreational pressures. It also identifies that an opportunity exists to capitalise upon links between tourist attractions in the North West and its surrounding regions, particularly in the Peak District National Park.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes 49,200 new dwellings in the Northern and Peak, Dales and Park HMAs to 2001-2026. It also seeks to manage tourism and visitor pressures in the National Park, in particular by developing tourism in adjacent areas to ease pressures on the Park itself.</p> <p>The Yorkshire and Humber Adopted Plan (May 2008) aims to provide 324,480 new dwellings in South and West Yorkshire (2004-2026), which may contribute to increased recreational pressure in the South Pennines</p>	<p>Revision Preferred Option.</p>
<p>Air Pollution</p>	<p>The A53 passes through the site as it runs between Leek and Buxton. Increases in traffic along the A53 may have air quality impacts for the parts of the site adjacent to the road.</p> <p>Also affected by diffuse air pollution and any increase in emissions of NO_x or SO₂ across the region.</p> <p>It is now well established that air pollution is transported over hundreds or even thousands of kilometres. Because acidic</p>	<p>The Staffordshire LTP suggests that congestion on the A53 will worsen from 2011 onwards.</p> <p>The RES identifies North Staffordshire as an area of opportunity for increased economic activity, a designated Regeneration Zone and as an area suitable for a Regional Logistics Site. This increased economic activity is likely to affect traffic levels.</p> <p>The RES also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs but this may include the National Park.</p> <p>The Regional Cultural Strategy aims to promote new and existing</p>	<p>High level of acid and nitrogen deposition may be currently having an adverse effect on habitat structure and diversity of the plant communities for which the site is designated.</p> <p>Overall, there is little strategic impact of the RSS2 housing options</p>

	<p>pollution is trans-boundary, there is no clear relationship between emissions and deposition levels. The prevailing winds from the west means that the RSS could exacerbate background air pollution for this site as all development is west of this site and the new housing options could add to this. .</p>	<p>'cultural flagships', which may result in an increase in visitors to those sites. The Peak District National Park is noted as a key regional asset, which may result in an increase in traffic to the area and to specific sites, potentially affecting air quality.</p> <p>The Visitor Economy Strategy identifies the Peak District National Park as a destination to be sustained. It aims generally to attract more visitors and more tourism investment to the region.</p> <p>Proposed Changes to the East Midlands Regional Plan proposes significant development in Derby (44,750 new homes) and Nottingham (70,500 new homes), and lesser development in Chesterfield and Ilkeston. These developments may increase traffic on major roads to the north west of the West Midlands region e.g. A50, A52, A6, contributing to diffuse air pollution. Also proposes:</p> <ol style="list-style-type: none"> 1. major new or revitalised energy generation in the Trent Valley; 2. promoting CHP and energy from waste in the Three Cities sub-area; 3. promoting energy generation from biomass in the Northern sub-area. <p>All could contribute to diffuse air pollution in the National Park.</p> <p>The North West Adopted Plan (Sept 2008) proposes development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. The Plan also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through West Midlands affecting background air quality. Nantwich and rural Cheshire more generally are also proposed for increased tourism also potentially increasing traffic on M6.</p>	<p>on the network as compared to the National Forecast (TEMPRO) distribution.</p> <p>The variation of journey time between scenarios is quite small along the key corridors. A highway based do something scenario (P-TIF) is increasing the journey times on routes, but is also reducing the congestion on the SRN and allowing more traffic.</p> <p>There are local impacts noted due to the housing and network interventions, which would need to be assessed in more detail.</p> <p>Integrated and sustainable transport initiatives could be a key issue to ensure increased visitor numbers do not result in increased traffic disturbance and emissions locally.</p>
<p>Land use change or habitat change</p>	<p>As the development of 6,000 additional houses in Staffordshire Moorlands will be dispersed around the district (rather than concentrated in one town) it is possible that there may be some land use or habitat changes arising from the Phase 2 Revisions near the site.</p>	<p>The RSS is not expected to have effects in combination with the Staffordshire Moorlands Local Plan, as these plans do not propose any land use or habitat changes around the site.</p>	<p>Consultees at the WMRSS Phase 2 Revision stage confirmed that the site may be vulnerable to general changes in land use. The site is</p>

	<p>No additional housing growth was proposed for the Staffordshire Moorlands area within any of the nine options.</p>		<p>surrounded by urban areas: habitat fragmentation is already an issue for some woodlands, and housing development (combined with barrier effects due to increased traffic) is likely to increase the isolation of small areas of habitat and their vulnerability to disturbance.</p> <p>However, no additional housing growth was proposed for the Staffordshire Moorlands area within any of the nine options or the subsequent three scenarios being considered by this HRA.</p>
<p>Overall conclusions</p>	<p>Considering current pressures from recreation and exceedances with regard to air pollution adverse effects on site integrity are likely and appropriate measures need to be identified. Management of recreational and amenity use is a particular issue to ensure that levels of disturbance do not increase.</p>		

The Stiperstones and the Holley SAC

Name and location	The Stiperstones and the Holley SAC (SJ375006) Shropshire		
Reason(s) for designation	European dry heaths (Annex I habitat). An example of transitional heathland between lowland and upland heath, maintained in excellent condition by rotational cutting and burning Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> (supporting Annex I habitat)		
Conservation objectives	Maintain in favourable condition the old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i>		
Key factors affecting site integrity	Integrity depends primarily on woodland management and on heathland management through a programme of rotational, controlled winter burning and cutting. Air pollution: if excess nitrogen deposition occurs, this favours the growth of undesirable species (typically grasses) over species typical of heathland habitats.		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Air pollution	<p>This site is approximately 1km from the A488 at its nearest point.</p> <p>RSS growth proposals (25,700 houses in Shropshire) may exacerbate problem if it contributes to an increase in levels of NOx emissions from transport, business and domestic sector in future.</p> <p>Options 3, 6 and 9 with rural provision in the west may contribute to an increase in levels of NOx emissions as prevailing winds could take emissions towards the site.</p>	<p>Cumulative region-wide air pollution.</p> <p>The Regional Economic Strategy aims to secure increased opportunities for economic development in western Shropshire and which could lead to increased traffic in the area.</p> <p>It also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, as does the Visitor Economy Strategy and the Regional Cultural Strategy, which may increase transport around the Stiperstones and the Holley.</p>	<p>High level of acid and nitrogen deposition may be currently having an adverse effect on the vegetation for which the site is designated and also on habitat structure.</p> <p>Measures to limit air pollution are necessary due to current exceedance of critical loads.</p> <p>The three scenarios all provide an increase in 1,900 houses in Shropshire (on top of the 25,700 from the RSS Phase 2 allocation). Therefore this could have an adverse affect on current NOx levels.</p>
Overall conclusions	Air pollution has been identified as a key factor affecting the integrity of the site. We cannot conclude site integrity will not be adversely affected. Current exceedance of critical loads means that stronger measures are necessary to limit any additional air pollution.		

West Midlands Mosses SAC

Name and location	West Midlands Mosses SAC (SK026282) Cheshire, Shropshire, Staffordshire
Reason(s) for designation	Natural dystrophic lakes and ponds (Annex I habitat). Examples of this habitat type in this region are rare. One pool is unusual, being base-rich, two typically base-poor. Transition mires and quaking bogs (Annex I habitat). This habitat and the previous are representative of Schwingmoor vegetation (floating mats of vegetation growing out from pool edges), a vegetation type confined in the UK to this region and mid-Wales
Conservation objectives	Maintain in a favourable condition the habitat types for which this site is designated
Key factors affecting site integrity	<p>West Midlands Mosses contains three pools, one at Clarepool Moss and two at Abbots Moss, that are examples of dystrophic lakes and ponds in the lowlands of England and Wales, where this habitat type is rare. The lake at Clarepool Moss is unusual as a dystrophic type on account of its relatively base-rich character, which is reflected in the presence of a diverse fauna and flora. The two at Abbots Moss are more typical, base-poor examples. The dystrophic lakes and ponds at this site are associated with Schwingmoor development, a characteristic of this habitat type in the West Midlands.</p> <p>Schwingmoor is an advancing floating raft of bog-moss Sphagnum, often containing NVC type M3 <i>Eriophorum angustifolium</i> bog pool community, which grows from the edge of the pool and can completely cover over the pool; the site has also been selected for this Annex I feature (7140 Transition mires and quaking bogs). The component sites need to be considered individually due to their differing characters.</p> <p>West Midlands Mosses: Abbots Moss: Site integrity depends primarily on maintaining the Schwingmoor community. Nutrient-trapping trees have been cleared. Site is vulnerable to recreational disturbance in particular.</p> <p>West Midlands Mosses: Clarepool Moss: Site integrity depends primarily on maintaining the Schwingmoor community. Problems include nutrient enrichment and colonisation of the open habitats by trees.</p> <p>West Midlands Mosses: Chartley Moss: Site integrity depends primarily on maintaining the Schwingmoor community. Site is at an advanced stage of natural succession between open water and trees. Problems include nutrient enrichment and colonisation of the open habitats by trees. Agricultural runoff also affects this site, but is under a management agreement.</p> <p>West Midlands Mosses: Wybunbury Moss: Site is vulnerable to undergrazing and water pollution from agriculture &/or runoff</p>

Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine additional housing options will affect the European site	In-combination effects with other plans and policies	Effect on site integrity of the three scenarios
<p>Two sites from the West Midlands Mosses SAC fall within the Region. Clarepool Moss (in Shropshire) is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town is Ellesmere (pop 3,200), approximately 3km away.</p> <p>Chartley Moss (in Staffordshire) is also not located very near any major towns, although Stafford is approximately 10km from the site.</p>			
Air pollution	<p>Stafford is the nearest town to Chartley Moss. The Phase 2 Revision allocates 10,100 housing units for Stafford and Option 7 makes provision for an additional 3000 units for Stafford.</p> <p>Chartley Moss is approximately 200m from the A518 (running between Stafford and Uttoxeter) at its closest point on the northern boundary, and may be affected by local air quality changes caused by traffic increases.</p> <p>Clarepool Moss is adjacent to the A495, in Shropshire and changes in traffic levels as a result of an increase in journeys associated with new development in the local area could potentially have air quality impacts on the site.</p> <p>The RSS Phase 2 Revision allocated 25,700 houses within Shropshire and the additional rural provisions within Options 3, 6 and 9 proposed an additional 1,900 units in the County.</p>	<p>The RSS is not expected to have effects in combination with LTPs at either site. Although both sites could be affected by changes in traffic levels, the Shropshire LTP and the Staffordshire LTP do not propose any schemes relating to routes around the sites and there is no suggestion that traffic levels on this route will change.</p> <p>The North West Adopted Plan (Sept 2008) proposes development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. It also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through West Midlands affecting background air quality. Nantwich and rural Cheshire generally are also proposed for increased tourism also potentially increasing traffic on M6.</p> <p>The Proposed Changes to the South East Plan (July 2008) proposes development of 40,680 new houses in Central Oxfordshire to 2026. This could lead to increases in traffic in the region, particularly on the M40 but also on motorways heading north.</p>	<p>The scenarios 2 and 3 allocate an additional 1,900 housing units to the 25,700 units for Shropshire within the Phase 2 Review. Therefore the site integrity may be effected if air pollution levels increase locally.</p> <p>In addition, scenarios 2 and 3 propose additional growth in Stafford (1,500 and 3000 respectively). If this led to an increase in traffic on the A518 there could be an increase in local air pollution.</p> <p>High level of acid and nitrogen deposition may be currently having an adverse effect on habitat structure and diversity at the site.</p> <p>Overall, there is little strategic impact of the RSS2 housing options on the network as compared to the National Forecast (TEMPRO) distribution (Mott MacDonald 2008. PRISM-WM RSS2 Transport Evidence for the Highway Agency).</p> <p>The variation of journey time between scenarios is quite small along the key corridors.</p> <p>A highway based do something scenario (P-TIF) is increasing the journey times on routes, but is also reducing the congestion on the SRN and allowing more traffic.</p>

			<p>There are local impacts noted due to the housing and network interventions, which would need to be assessed in more detail.</p> <p>Considering the current exceedance of critical loads and levels on the sites, avoidance measures are considered appropriate. It is therefore necessary to demonstrate that regional levels of air pollution will not be driven up by the RSS and a pollution-neutral approach is adopted.</p>
Water supply	<p>Housing development is likely to cause the both the South Staffordshire and the Staffordshire and East Shropshire water resource zones into deficit by the end of the plan period.</p> <p>Additional housing in south Staffordshire and in Shropshire will likely increase the pressure on water resource zones.</p>		<p>Housing development under the RSS is likely to create water deficit problems. Abstraction could be a potential issue for both sites, if it is from the local aquifer.</p> <p>Previous consultation from RSS Phase 2 review deemed that existing procedures under the Water Framework Directive will ensure that water supplies are protected for these sites This will still be the case for the three growth scenarios.</p>
Water quality			<p>Septic tanks/soakaways etc could be a potential issue for these sites if in the local area.</p>
Overall conclusions	<p>We cannot conclude that site integrity will not be adversely affected. Considering the current exceedance of critical loads and levels on the sites, avoidance measures are considered appropriate to ensure that the plan does not exacerbate existing adverse trends in air quality.</p>		

Wye Valley and Forest of Dean bat sites SAC

Name and location		Wye valley and Forest of Dean bat sites SAC (SO605044) Monmouthshire, Gloucestershire	
Reason(s) for designation		Lesser horseshoe bat <i>Rhinolophus hipposideros</i> (Annex II species). The greatest concentration of this species in the UK, with c.26% of the total population. Most sites selected are maternity sites. Greater horseshoe bat <i>Rhinolophus ferrumequinum</i> (Annex II species). Representative of this species at the northern edge of its UK range with about 6% of the national population, containing most of the maternity roosts in the region	
Conservation objectives		None available	
Key factors affecting site integrity		Integrity depends on maintaining in favourable condition the habitats for lesser and greater horseshoe bats. The main influences on this are land use within foraging areas and levels of disturbance.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
These sites occupy 142.7ha in the neighbouring counties of Gloucestershire and Monmouthshire, with Herefordshire the nearest county in the West Midlands. Herefordshire will have 16,600 more households by 2026 (an increase of 20.4% of which around half will be in Hereford),			
Land use change	The nearest site is approximately 7km from the Hereford border, and 12km from Ross on Wye, the nearest significant settlement in the West Midlands. The housing development and economic development in Phase 2 is largely directed towards Hereford. A large proportion of the remainder is likely to be delivered in other large towns such as Leominster, Credenhill and Ross on Wye. Options 3, 6 and 9 may result in additional land use change that could affect foraging sites for bats. This may represent an additional LSEs above that already identified	The RES identifies Herefordshire generally as an area for economic opportunity and the whole county falls within the Rural Regeneration Zone. Ross is identified as an economic 'spoke' for 10-15,000 sq ft of economic development. The Proposed Changes to the South West Draft Regional Spatial Strategy (July 2008) proposes increases in employment and housing development in the Gloucester and Cheltenham TTWA, including 6200 houses in the Forest of Dean. Housing growth and economic development could affect species outside protected areas through land use changes and disturbance.	Research suggests most lesser horseshoe bats forage within 2.5 km of their nursery roost (Bontandina F. and Schofield H. and Beat Naef-Daenzer 2002). Radio-tracking reveals that lesser horseshoe bats forage in woodland. (Journal of Zoology 258: 281-290 Cambridge University Press.) Female greater horseshoe bats may travel up to 10km in winter in search for roosts with the correct temperature and feeding sites (Ransome, 1991a). However Duvergé and Jones (1994) suggest that key habitats within 4km of a greater horseshoe roost site should be maintained or improved. Although development promoted through the Phase 2 on its own is unlikely to lead to land use changes that significantly affect foraging areas we cannot conclude that in combination with other development promoted in adjacent regions there will not be an adverse effect.

			The 3 scenarios, in relation to additional rural provision in this area, have the potential to add to the impacts already identified in the Phase 2 HRA. The precise location of any housing areas would need to be carefully chosen and impact may be successfully avoided
Recreational pressure and disturbance	<p>Increased population across the West Midlands (from an increase in housing of 365,600 by 2026), in particular in Herefordshire where 16,600 additional houses will be constructed, plus policies to improve transport and accessibility within the region, may result in more recreational pressure in the Forest of Dean and the Wye Valley.</p> <p>Increased housing numbers in Herefordshire particularly close to the site may add to the recreational impact identified</p>	<p>The Visitor Economy Strategy identifies Herefordshire generally as an area envisaged for investment as a tourist destination. In addition, Market Towns are identified as destinations for investment, which includes Ross. All of these factors could contribute to increased recreational pressure and disturbance in the Forest of Dean. In addition the Cultural Strategy aims to promote 'flagships' – although none are identified, the AONBs and the waterway network are noted as key regional assets, both of which may affect the use of the Wye and the Forest of Dean.</p>	<p>Adverse factors that generally affecting greater horseshoe bat and lesser horseshoe bat include:</p> <ul style="list-style-type: none"> • factors affecting foraging areas. • factors affecting roosts. • direct losses to populations. <p>Any increase in recreation in the area is unlikely to have adverse impacts unless significant land use change occurs to support recreation (new infrastructure).</p>
Land use change or habitat change	<p>Development in Herefordshire under the RSS could have implications for habitat mix and spatial organisation within bat foraging areas. Options 3 and 9 may exacerbate this LSE</p>		Possible impacts due to land use change within foraging ranges.
Overall conclusions	General changes in land use in this and neighbouring regions could affect the quality of foraging areas		

Wye Valley Woodlands SAC

Name and location		Wye Valley Woodlands SAC (ST530957) Monmouthshire, Gloucestershire, Herefordshire	
Reason(s) for designation		<p><i>Asperulo-Fagetum</i> beech forests (Annex I habitat). This is the western limit of this woodland type in the UK, with a rare variety of woodland types represented. The component site Lady Park Wood is an outstanding near-natural old-growth structure in mixed broadleaf woodland</p> <p><i>Tilio-Acerion</i> forests of slopes, screes and ravines (Annex I habitat). The most extensive examples of this woodland type in the west of its UK range.</p> <p><i>Taxus baccata</i> woods (Annex I habitat). Representative of this woodland type in the southwest of its range.</p> <p>Lesser horseshoe bat <i>Rhinolophus hipposideros</i> (supporting Annex II species)</p>	
Conservation objectives		None available	
Key factors affecting site integrity		Integrity depends on maintaining, in favourable condition, the Tilio-Acerion forests of slopes, screes and ravines, <i>Asperulo-Fagetum</i> beech forests and <i>Taxus baccata</i> woods of the British Isles. In addition, to maintain in favourable condition the habitats for the population of lesser horseshoe bats.	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The site is not located near any MUAs, Settlements of Significant Development, Strategic Centres or major towns likely to take development – the nearest town to the northern boundary is Ross on Wye (population 10,000), which is approximately 10km away.			
Recreational pressure and disturbance	<p>See above. Policies in the RSS are not likely to increase recreational pressure or disturbance in this area, although recreation levels and access to these types of site may increase across the Region as a result of population growth (from an increase in housing of 365,600 by 2026, in particular in Herefordshire where 16,600 additional houses will be constructed), improved accessibility (under the Transport and Accessibility chapter) etc.</p> <p>While overall populations levels are not likely to change the new housing options may result in redistribution of households in rural areas from Options 3, 6 and 9 may exacerbate the LSE identified.</p>	<p>The Herefordshire UDP identifies Whitchurch (approximately 1.5km from the site) as a 'Main Village', which may take additional housing within the settlement boundary, although no quantified allocation is made. This could increase levels of recreational use of the site.</p> <p>The Visitor Economy Strategy identifies Herefordshire generally as an area envisaged for investment as a tourist destination. In addition, Market Towns are identified as destinations for investment, which includes Ross. All of these factors could contribute to increased recreational pressure and disturbance along the Wye Valley. In addition the Cultural Strategy aims to promote 'flagships': although none are identified, the AONBs and the waterway network are noted as key regional assets, both of which may affect the use of the Wye Valley.</p>	Potential for localised soil erosion and disturbance to bats. However, significant adverse impacts on the integrity of the site are unlikely due to Phase 2 and the three growth scenarios as it does not directly promote any significant change in levels of recreational use affecting the woodlands.
Land use	The nearest site is approximately	The RES identifies Herefordshire generally as an area for economic	The Phase 2 HRA

<p>change and fragmentation</p>	<p>7km from the Hereford border, and 12km from Ross on Wye, the nearest significant settlement in the West Midlands. Herefordshire will take an additional 16,600 additional houses across the county, with half of this number to be located in Hereford. There are no explicit proposals for Ross on Wye under the revised RSS.</p> <p>Options 3, 6 and 9 propose additional rural provision which is being proposed could result in increase traffic and increased levels Nitrogen. Further data from the Highway Agency model is required</p>	<p>opportunity and the whole county falls within the Rural Regeneration Zone. Ross is identified as an economic 'spoke' for 10-15,000 sq ft of economic development. Impacts on bat foraging areas are possible.</p> <p>The Proposed Changes to the South West Draft Regional Spatial Strategy (July 2008) proposes increases in employment and housing development in the Gloucester and Cheltenham TTWA, including 6200 houses in the Forest of Dean. Housing growth and economic development could affect species outside protected areas through land use changes and disturbance.</p> <p>The Herefordshire UDP identifies Whitchurch (approximately 1.5km from the site) as a 'Main Village', which may take additional housing within the settlement boundary, although no quantified allocation is made.</p>	<p>identified that development in and around Hereford and in neighbouring regions could have an impact by altering land use within foraging areas, the configuration of farmland in relation to new development and the viability of farming in an increasingly urbanised context.</p> <p>The additional housing for the 3 scenarios are unlikely to make a significant additional impact however the precise location of any developments will be critical.</p>
<p>Air pollution</p>	<p>The northern end of the site is located approximately 1km from the A40. No significant effects of pollutant deposition associated with local traffic levels are envisaged.</p> <p>Options 3, 6 and 9 from additional rural provision could result in increase traffic and increased levels Nitrogen. Further data from the Highway Agency model is required</p>	<p>The RES aims to secure increased opportunities for economic development in Herefordshire, which could lead to increased traffic in the county. It also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, which may increase transport around the Wye Valley Woodlands.</p> <p>The Visitor Economy Strategy and the Cultural Strategy identify AONBs as key tourism assets to be promoted, and Herefordshire more generally.</p> <p>The Proposed Changes to the South West Draft Regional Spatial Strategy (July 2008) proposes development of 6,200 houses in the Forest of Dean, which is likely to increase traffic emissions in the area: this may affect air quality in the Wye Valley Woodlands. The plan also identifies Gloucestershire as having potential for biomass, which may indirectly lead to increased combustion emissions in that area.</p>	<p>Currently receiving Nitrogen deposition above critical load and ozone above critical levels. Ozone is secondary pollution generated through complex process involving sunlight. So concentrate on reducing NOx emissions.</p> <p>The 3 scenarios may add nitrogen deposition however this will depend on</p>

			the precise location of development within the area.
Overall conclusions	We cannot conclude that site integrity will not be adversely affected. Considering the current exceedance of critical loads and levels on the sites, avoidance measures are considered appropriate to ensure that the plan does not exacerbate existing adverse trends. General land use change could also be a factor affecting site integrity in the longer term: this is largely driven by the housing proposals. The precise location of potential developments will be critical.		

SPA

Humber Flats, Marshes and Coast (Phase 2) spa

Name and location	Humber Flats, Marshes and Coast (Phase 2) SPA () Humberside, Lincolnshire
Reason for (proposed) designation	<p>Internationally important breeding populations of Annex I bird species Little Tern <i>Sternula albifrons</i> 2 pairs: 0.1% of the GB population (1993) Internationally important winter populations of Annex I bird species Hen Harrier <i>Circus cyaneus</i> >20 ind.:>2.7% of the GB population (5-yr peak mean 1984/85-1988/89) Bar-tailed Godwit <i>Limosa lapponica</i> 1,593 ind.:3% of the GB population (1991/92-1995/96) Ruff <i>Philomachus pugnax</i> 14 ind.:2% of the GB population (1991/92-1995/96) European Golden Plover <i>Pluvialis apricaria</i> 29,235 ind.:11.7% of the GB population (1991/92-1995/96) Nationally important populations of Annex I bird species: Common Pochard <i>Aythya ferina</i> <25 pairs: up to 10% of the GB population (breeding) Common Teal <i>Anas crecca</i> 1,362 ind.:1% of the GB population (this and following, wintering) Eurasian Wigeon <i>Anas penelope</i> 4,941 ind.:1.8% of the GB population Mallard <i>Anas platyrhynchos</i> 3,207 ind.:0.6% of the GB population Ruddy Turnstone <i>Arenaria interpres</i> 371 ind.:0.6% of the GB population Common Pochard <i>Aythya ferina</i> 1,009 ind.:2.3% of the GB population Greater Scaup <i>Aythya marila</i> 86 ind.:0.8% of the GB population Brent Goose <i>Branta bernicla bernicla</i> 2,553 ind.:0.9% of the GB population Sanderling <i>Calidris alba</i> 546 ind.:2.4% of the GB population Dunlin <i>Calidris alpina alpina</i> 23,605 ind.:1.7% of the GB population Red Knot <i>Calidris canutus</i> 33,848 ind.:9.8% of the GB population Common Ringed Plover <i>Charadrius hiaticula</i> 278 ind.:1% of the GB population Eurasian Oystercatcher <i>Haematopus ostralegus</i> 5,149 ind.:1.4% of the GB population Eurasian Curlew <i>Numenius arquata</i> 2,423 ind.:0.7% of the GB population Grey Plover <i>Pluvialis squatarola</i> 1,338 ind.:0.8% of the GB population Common Shelduck <i>Tadorna tadorna</i> 4,083 ind.:1.4% of the GB population Common Redshank <i>Tringa totanus</i> 4,452 ind.:2.5% of the GB population Northern Lapwing <i>Vanellus vanellus</i> 30,403 ind.:2% of the GB population An internationally important assemblage of birds: 152,926 individuals over winter (5-yr peak mean to 1998), including: Brent Goose, Common Shelduck, Eurasian Wigeon, Common Teal, Mallard, Common Pochard, Greater Scaup, Eurasian Oystercatcher, Common Ringed Plover, European Golden Plover, Grey Plover, Northern Lapwing, Red Knot, Sanderling,</p>

	Dunlin, Ruff, Bar-tailed Godwit, Eurasian Curlew, Common Redshank, Ruddy Turnstone		
Conservation objectives	Maintain, subject to natural change, the populations of Annex I bird species, and the internationally important assemblage of birds,		
Key factors affecting site integrity	<ul style="list-style-type: none"> • Land take • Impact on protected species outside protected areas • Recreational pressure and disturbance • Water quality • Water quantity 		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Site is approximately 100km from West Midlands. The Humber Estuary is connected to Burton, Stoke and Newcastle via the Trent, and to Stafford, Lichfield, Tamworth and Birmingham via the Penk, the Tame and the Cole. Birmingham and Stoke are both within RES Regeneration Zones and are therefore likely to be areas with new economic activity. Birmingham is also at the centre of the network of High Technology Corridors and therefore is likely to be a focus for economic development. The North Staffs RZ aims to create or safeguard 300 jobs, to attract 270 new businesses and to remediate 50ha of brownfield land. The Birmingham & N Solihull RZ aims to create 640 jobs and 200 new businesses and to remediate 3 ha of brownfield land. It is not known how much development might take place in Birmingham as a result of the HTC initiatives.			
Water Supply	<p>Further abstractions may be necessary as the other licences for Severn Trent Water to abstract are modified and housing growth increases need for water.</p> <p>Water resources likely to stay in surplus until end of plan period</p>		<p>Severn Trent's WRMP predicts a deficit in water for the East Midlands Water Resource Zone (WRZ) and therefore new schemes are suggested.</p> <p>Increased housing would put further demands on water abstraction which could have the potential to effect the River Trent and therefore the Humber.</p> <p>Areas on the eastern edge of the West Midlands such as Tamworth and Burton upon Trent will have an increased housing allocation of 2,900 and 11,000 from the RSS Phase 2 and therefore water resource demand will increase.</p> <p>Scenario 1 does not increase housing in addition to the RSS Phase 2. However, Scenarios 2 and 3 propose a growth of 2,500</p>

			and 5,000 respectively in East Staffordshire (Burton)
Overall conclusions	Increased housing could put further demands to further increase abstraction, Severn Trent's WRMP predicts a deficit in water for the East Midlands WRZ so depending on where the extra abstraction is undertaken it could have the potential to effect the River Trent and therefore the Humber.		

Peak District Moors (South Pennine Moors Phase I) SPA

Name and location	Peak District Moors (South Pennine Moors Phase I) SPA (SK157968) Staffordshire		
Reason(s) for designation	Annex I bird species (breeding populations as described at designation) Merlin <i>Falco columbarius</i> >30 pairs: 2.2% of GB population (1995) Short-eared Owl <i>Asio flammeus</i> >22 pairs: 2.3% of GB population (1990) European Golden Plover <i>Pluvialis apricaria</i> >435 pairs: 1.9% of GB population		
Conservation objectives	None available		
Key factors affecting site integrity	Direct land take Impact on protected species outside protected areas: Golden Plover use land off-site for feeding in some cases, so agricultural practices may have significant impacts where populations of macro-invertebrates are affected Recreational pressure and disturbance: disturbance to breeding birds and damage to habitats through trampling and erosion will reduce breeding success and the extent of available habitat, potentially causing reduction in population sizes. Site is very close to large population centres, and significant numbers of people use it for recreation Water quality: critical to the maintenance of blanket bog habitat. One of the principal causes of sub-optimal habitat cited in SPA data form Water quantity: critical to the maintenance of blanket bog habitat. One of the principal causes of sub-optimal habitat cited in SPA data form Air pollution if nutrient loading alters species compositions. One of the principal causes of sub-optimal habitat cited in SPA data form. Appropriate land management is critical to maintaining habitats		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
This site is located in the northeast of Staffordshire, approximately 4km from Leek (and identified under UR2 as a local regeneration area) and 10km from Stoke on Trent, an MUA.			
Recreational pressure and disturbance	This is a very popular area for visitors, and recreational pressures are already high. Population growth and development arising from the RSS (both the Phase 2 Revision Stage and through Options 5, 6, 7, 8, and 9 within those areas close to the site such as Newcastle under Lyne and Stoke on Trent are likely to increase these pressures further. In particular an increase in population in north	The RSS is not expected to have effects in combination with Staffordshire Moorlands Local Plan, as this plan will not result in any pressures in addition to those resulting from the RSS. The Regional Cultural Strategy aims to promote 'cultural flagships' which may increase visits. None are identified, but the strategy notes the Peak District National Park as a key regional asset. The Visitor Economy Strategy	In particular an increase in population in north Staffordshire area is likely to lead to an increase in recreational pressure in the Peak District. Potential growth scenarios 2 and 3 make provision for a 6,000 unit increase in housing in

	<p>Staffordshire area could lead to an increase in recreational pressure on the Peak District Moors.</p>	<p>identifies the Peak District for investment as a destination and which will be supported as a visitor attraction.</p> <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs, although this could also include the National Park.</p> <p>The North West Adopted Plan (September 2008) proposes 39,200 new dwellings to 2003- 2021 in South Manchester and East and South Cheshire, which may increase recreational pressures. It also identifies that an opportunity exists to capitalise upon links between tourist attractions in the North West and its surrounding regions, particularly in the Peak District National Park.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes 49,200 new dwellings in the Northern and Peak, Dales and Park HMAs to 2001-2026. It also seeks to manage tourism and visitor pressures in the National Park, in particular by developing tourism in adjacent areas to ease pressures on the Park itself.</p> <p>The Yorkshire and Humber Adopted Plan (May 2008) aims to provide 324,480 new dwellings in South and West Yorkshire (2004-2026), which may contribute to increased recreational pressure in the South Pennines.</p> <p>The Regional Housing Strategy supports the Stoke and Newcastle Housing Market Renewal Pathfinder. This complements the North Staffordshire Regeneration Zone, which provides a basis for the creation of a viable economic base to underpin housing actions. Housing development in the Pathfinder area may lead to increased recreation and disturbance in the National Park and SPA.</p>	<p>North Staffordshire in addition to the 17,100 within the RSS Phase 2 Revision.</p> <p>As there is potential to increase disturbance to breeding birds and damage to supporting habitats cannot conclude that there will not be an adverse effect on site integrity.</p> <p>Two of the Annex 1 bird species for which the site is designated are short-eared owl and golden plover, both of which are ground-nesting species, so are particularly susceptible to disturbance and predation (H. Wake 2008).</p>
<p>Air Pollution</p>	<p>The A53 passes through the site as it runs between Leek and Buxton. Increases in traffic along the A53 may have air quality impacts for the parts of the site adjacent to the road.</p> <p>Also affected by diffuse air pollution and any increase in emissions of NO_x or SO₂ across</p>	<p>The Staffordshire LTP suggests that congestion on the A53 will worsen from 2011 onwards. However, the RSS is not expected to have any in combination effects with the LTP, as the plan does not contain any schemes that will impact on the routes around the site.</p> <p>The RES identifies North Staffordshire as an area of</p>	<p>High level of acid and nitrogen deposition may be currently having an adverse effect on habitat structure and the species composition of plant communities. This has</p>

	<p>the region. Population growth and development arising from the RSS (both the Phase 2 Revision Stage and through Options 5, 6, 7, 8, and 9 within those areas close to the site such as Newcastle under Lyne and Stoke on Trent could lead to an increase in local air pollution.</p>	<p>opportunity for increased economic activity and is a designated a Regeneration Zone and as an area for a Regional Logistics Site. This increased economic activity is likely to affect traffic levels, which may affect sites sensitive to diffuse air pollution.</p> <p>The RES also aims to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs but this may include the National Park.</p> <p>The Regional Cultural Strategy aims to promote new and existing 'cultural flagships', which may result in an increase in visitors to those sites. The Peak District National Park is noted as a key regional asset, which may result in an increase in traffic to the area and to specific sites, potentially affecting air quality.</p> <p>The Visitor Economy Strategy identifies the Peak District National Park as a destination to be sustained. It aims generally to attract more visitors and more tourism investment to the region.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes significant development in Derby (44,750 new homes) and Nottingham (70,500 new homes), and lesser development in Chesterfield and Ilkeston. These developments may increase traffic on major roads to the north west of the West Midlands region e.g. A50, A52, A6, contributing to diffuse air pollution. Also proposes:</p> <ol style="list-style-type: none"> 1. major new or revitalised energy generation in the Trent Valley; 2. promoting CHP and energy from waste in the Three Cities sub-area; 3. promoting energy generation from biomass in the Northern sub-area. <p>All could contribute to diffuse air pollution in the National Park.</p> <p>The North West Adopted Plan (September 2008) proposes</p>	<p>knock-on effects for associated bird populations and their breeding success. Considering the current exceedance of critical loads at the sites, avoidance measures are considered appropriate.</p> <p>Overall, there is little strategic impact of the RSS2 housing options on the network as compared to the National Forecast (TEMPRO) distribution (Mott MacDonald 2008. PRISM-WM RSS2 Transport Evidence for the Highway Agency.</p> <p>The variation of journey time between scenarios is quite small along the key corridors. A highway based do something scenario (P-TIF) is increasing the journey times on routes, but is also reducing the congestion on the SRN and allowing more traffic.</p> <p>There are local impacts noted due to the housing and network interventions, which would need to be assessed in more detail.</p> <p>Integrated and sustainable transport initiatives could be a key issue to ensure increased visitor numbers do not result in increased</p>
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		development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. The draft Plan also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through West Midlands affecting background air quality. Nantwich and rural Cheshire more generally are also proposed for increased tourism also potentially increasing traffic on M6.	traffic disturbance and emissions locally.
Wind-power development	The WMRSS Phase 2 Revision encourages the development of renewable energy generation schemes, although locations are not specified under policies being revised under Phase 2.	The Regional Energy Strategy highlights the potential for wind energy development although locations are not specified. The Draft East Midlands Regional Plan identifies that the Peak area has opportunities for small-scale wind energy generation.	Wind energy developments alone or in-combination with other plans can cause mortality of birds and disturbance, as well as hydrological change. Difficult to draw firm conclusions without information on possible locations.
Overall conclusions	Potential of negative effects from increases in diffuse air pollution increases in recreational disturbance and erosion and siting of wind turbines. High risk of adverse effect to site integrity cannot be ruled out.		

Severn Estuary SPA

Name and location	Severn Estuary SPA (ST267479) Vale of Glamorgan, Cardiff, Newport, City of Bristol, Monmouthshire, Gloucestershire, North Somerset, Somerset, South Gloucestershire
Reason(s) for designation	<p>Internationally important populations of regularly occurring Annex I species: Bewick's [Tundra] Swan <i>Cygnus columbianus bewickii</i> 289 individuals: 4.1% of GB population, 1.7% of European population (5-yr peak mean 1988/9-1992/3)</p> <p>Internationally important populations of regularly occurring migratory bird species: Greater White-fronted Goose <i>Anser albifrons albifrons</i> 3,002 individuals: 1% of NW Europe flyway population Common Shelduck <i>Tadorna tadorna</i> 2,892 individuals: 1.2% of NW Europe population Gadwall <i>Anas strepera</i> Dunlin <i>Calidris alpina alpina</i> 41,683 individuals: 2.9% of E Atlantic flyway population Common Redshank <i>Tringa totanus</i> 2,013 individuals: 1.3% of E Atlantic flyway population</p> <p>Internationally important assemblage of waterfowl: 68,026 birds, of which 17,502 are wildfowl, 50,524 waders</p> <p>Nationally important bird populations within internationally important assemblage: Eurasian Wigeon <i>Anas penelope</i> 3,977: 1.6% GB population Common Teal <i>Anas crecca</i> 1,998: 2% GB population Northern Pintail <i>Anas acuta</i> 523: 2.1% GB population Common Pochard <i>Aythya ferina</i> 1,686: 3.8% GB population</p>

	<p>Tufted Duck <i>Aythya fuligula</i> 913: 1.5% GB population Ringed Plover <i>Charadrius hiaticula</i> 227: 1% GB population Grey Plover <i>Pluvialis squatarola</i> 781: 3.7% GB population Eurasian Curlew <i>Numenius arquata</i> 3,096 3.4% GB population Whimbrel <i>Numenius phaeopus</i> 246: 4.9% GB population Spotted Redshank <i>Tringa erythropus</i> 3: 1.5% GB population</p>
Conservation objectives	To maintain populations of bird species for which the site is designated an SPA, in particular: Bewick's Swan.
Key factors affecting site integrity	<p>Key site vulnerabilities relate to maintaining coastal processes and controls on large-scale human activities within the site, such as land reclamation, aggregate extraction and flood-defence construction Water quality issues arise from agricultural runoff and sewage discharges raising nutrient levels, and industrial pollution</p>

Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
<p>The estuary is connected via the Severn to Worcester, Stourport, Bridgnorth, Telford and Shrewsbury, to Ludlow via the Teme, to Kidderminster via the Stour, to Ross and Hereford via the Wye and to Leominster via the Lugg. The river systems are also connected via the canal network to Birmingham and the Black Country and to the Trent and Mersey. Worcester is identified under policy CF3 as an area of significant development taking 10,300 additional houses, as is Telford (24,000 additional houses), Shrewsbury (6,200) and Hereford (8,300). Both Worcester and Telford are also identified as nodes for the High Technology Corridors in the Regional Economic Strategy and are therefore likely to be a focus for development.</p>			
Water supply	<p>The Severn system is a major source of water supply for the region. The Severn Water Resource Zone includes many districts which will take additional housing under policy CF3, including Coventry (33,300 additional houses), Bridgnorth (2,500), Shrewsbury and Atcham (8,200), South Shropshire (4,900), South Staffordshire (3,500), North Warwickshire (3,000), Nuneaton and Bedworth (10,800), Rugby (10,800), Stratford on Avon (approximately 7,250), Warwick (10,800), Bromsgrove (approximately 3,750), Redditch (3,300), Worcester (3,200), Wychavon (approximately 12,750) and Wyre Forest (3,400). Further abstraction could affect sediment levels, flows etc downstream. Reduction in water flows in the Severn has the potential to affect the extent of habitats in the estuary and the extent and distribution of species that act as a food source for internationally important bird populations.</p> <p>All of the additional housing options may increase water resource demands upon this site.</p>	<p>Economic development within the catchment as a whole arising from the RES could increase pressure for abstraction from the Severn.</p> <p>The Proposed Changes to the South West Draft Regional Spatial Strategy proposes increases in employment and significant housing development in the Gloucester and Cheltenham HMA (56,400 new homes) Housing growth and economic development could contribute to increased abstraction from the Severn.</p>	<p>Severn system is currently under stress. WRZ likely to go into deficit in near future. Housing and economic growth poses risk to site integrity as water demand increases from the Severn Corridor. Habitats Directive Review currently underway which may limit existing abstractions and be a tension in areas of growth.</p> <p>Given the reliance on the River Severn for water resources across the West Midlands all 3 scenarios have the potential to add to the impacts identified in the Phase 2 HRA.</p>

Water quality	<p>The Severn Corridor and tributaries flow through much of the region so the waters have the potential to be both positively and negatively affected by much of the development and regeneration proposed in Phase Two. (See housing figures above (but equally the surface water runoff improvements expected from the clean up of contaminated land will be beneficial). Change in sediment levels, fresh/saline balance and pollution incidences may impact on invertebrates and therefore the qualifying bird species. Affect of increased nutrient levels on waders less clear - sewage outfalls may provide considerable supplies of food for bird species, either as directly edible matter or by artificially enhancing concentrations of invertebrate food through nutrient enrichment</p> <p>Sewage discharge from additional housing may have an impact upon this site.</p>	<p>Economic development within the catchment arising from the RES could have an impact on water quality in the estuary, by affecting run-off and sewage discharges into the Severn and increasing abstraction, which could affect water quality in the estuary.</p>	<p>Increased housing allocations are unlikely to affect the integrity of site (alone or in combination). The plan is not considered likely to impact upon the invertebrate communities or to affect the bird populations directly through changes in water quality. None of the scenarios are likely to have an impact.</p> <p>The Habitats Directive Review is currently being undertaken by the Environment Agency for this site and decision should be reviewed when the results are available.</p>
Overall conclusions		<p>Increased housing allocations and economic growth poses risk to site integrity as water demand increases from the Severn Corridor. Habitats Directive Review currently underway which may limit existing abstractions limit water supply options in areas of growth.</p>	

South Pennine Moors Phase 2 spa

Name and location	South Pennine Moors Phase 2 SPA (SD953349)
Reason(s) for designation	<p>The site supports the following populations of Annex I breeding bird species: Merlin <i>Falco columbarius</i> 28 pairs: 2.2% of GB population European Golden Plover <i>Pluvialis apricaria</i> 292 pairs: 1.3% of GB population Short-eared Owl <i>Asio flammeus</i> 3 pairs: 0.3% of GB population</p> <p>An internationally important assemblage of breeding birds, including the following species: Northern Lapwing <i>Vanellus vanellus</i>, Common Snipe <i>Gallinago gallinago</i>, Eurasian Curlew <i>Numenius arquata</i>, Common Redshank <i>Tringa totanus</i>, Common Sandpiper <i>Actitis hypoleucos</i>, Whinchat <i>Saxicola rubetra</i>, Northern Wheatear <i>Oenanthe oenanthe</i>, Ring Ouzel <i>Turdus torquatus</i>, Twite <i>Carduelis flavirostris</i>, Dunlin <i>Calidris alpina schinzii</i></p>
Conservation	Maintain, in favourable condition, habitats for Annex I bird species of European importance, with particular reference to Merlin,

objectives	Golden Plover and Short-eared Owl Maintain, in favourable condition, habitats for migratory bird species of European importance, with particular reference to upland moorland Maintain, in favourable condition, the blanket bog, European dry heath, Northern Atlantic wet heaths with <i>Erica tetralix</i>		
Key factors affecting site integrity	Integrity depends largely on maintaining suitable upland moorland habitat , including blanket bog, European dry heath and Northern Atlantic wet heaths with <i>Erica tetralix</i>		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the additional nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The South Pennine Moors Phase 2 falls partly within the Staffordshire Moorlands district. This district will see the development of 6,000 additional houses under policy CF3, and 18ha of employment land. The nearest town to this area of the site is Leek, approximately 4km from the edge of the site, and identified under UR2 as a local regeneration area. The RES identifies North Staffordshire as an area of opportunity for increased economic activity and is a designated a Regeneration Zone and as an area for a Regional Logistics Site.			

Recreational pressure and disturbance	<p>This site is flanked by two large industrial areas (Greater Manchester and South/West Yorkshire), and is a popular area for visitors and recreational pressures are already high. While there is not likely to be significant population growth close to the site, recreation levels and access to the site is likely to increase across the Region as a result of population growth and improved accessibility (<i>i.e.</i> under the Transport and Accessibility chapter) arising from the WMRSS.</p> <p>This site is a very popular area for visitors, and recreational pressures are already high. Population growth and development arising from the RSS (both the Phase 2 Revision Stage and through Options 5, 6, 7, 8, and 9) are likely to increase these pressures further. In particular an increase in population in north Staffordshire area, in particular in Newcastle under Lyme and Stoke on Trent, could lead to an increase in recreational pressure in the Peak District.</p>	<p>The RSS is not expected to have effects in combination with Staffordshire Moorlands Local Plan, as this plan will not result in any pressures in addition to those resulting from the RSS.</p> <p>The Regional Cultural Strategy aims to promote 'cultural flagships' which may increase visits. None are identified but the strategy notes the Peak District National Park as a key regional asset. The Visitor Economy Strategy identifies the Peak District for investment as a destination and which will be supported as a visitor attraction.</p> <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs although this could also include the National Park.</p> <p>The North West Adopted Plan (September 2008) proposes 39,200 new dwellings to 2003- 2021 in South Manchester and East and South Cheshire, which may increase recreational pressures. It also identifies that an opportunity exists to capitalise upon links between tourist attractions in the North West and its surrounding regions, particularly in the Peak District National Park.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes 49,200 new dwellings in the Northern and Peak, Dales and Park HMAs to 2001-2026. It also seeks to manage tourism and visitor pressures in the National Park, in particular by developing tourism in adjacent areas to ease pressures on the Park itself.</p> <p>The Yorkshire and Humber Adopted Plan (May 2008) aims to provide 324,480 new dwellings in South and West Yorkshire (2004-2026), which may contribute to increased recreational pressure in the South Pennines.</p> <p>The Regional Housing Strategy supports the Stoke and Newcastle HMR Pathfinder. This complements the North Staffordshire Regeneration Zone, which provides a basis for the creation of a viable economic base to underpin housing actions. Housing development in the Pathfinder area may lead to increased recreation and disturbance in the National Park and SPA.</p> <p>The Yorkshire and Humber Draft Plan aims to provide 198,560 new dwellings in South and West Yorkshire, which may contribute to increased recreational pressure in the South Pennines.</p>	<p>In particular an increase in population in north Staffordshire area is likely to lead to an increase in recreational pressure in the Peak District. scenarios 2 and 3 make provision for a 6,000 unit increase in housing in North Staffordshire in addition to the 17,100 within the Phase 2 Revision Preferred Option.</p> <p>As there is potential to increase disturbance to breeding birds and damage to supporting habitats cannot conclude that there will not be an adverse effect on site integrity.</p> <p>Two of the Annex 1 bird species for which the site is designated are short-eared owl and golden plover, both of which are ground-nesting species, so are particularly susceptible to disturbance and predation (H. Wake 2008)</p>
Air pollution	<p>The site is currently receiving acid and nitrogen deposition above its critical load. Increases in emissions</p>	<p>The Staffordshire LTP suggests that congestion on the A53 will worsen from 2011 onwards. However, the RSS is not expected to have any in combination effects with the LTP, as the plan does not contain any schemes that will impact on the routes around the site.</p>	<p>Site over its critical load. High level of acid and nitrogen deposition may be currently having</p>

	<p>are likely to come from the construction and operation of additional homes in the regions, the additional car journeys associated with both the increased population and increase in number of trips made, the construction or operation of additional business in the regions. In particular an increase in population in north Staffordshire area, in particular in Newcastle under Lynne and Stoke on Trent.</p>	<p>The RES identifies North Staffordshire as an area of opportunity for increased economic activity and is a designated a Regeneration Zone and as an area for a Regional Logistics Site. This increased economic activity is likely to affect traffic levels, which may affect sites sensitive to diffuse air pollution including the Peak District Moors.</p> <p>The RES seeks to develop the economic benefits from the outstanding environmental assets of the region, particularly the AONBs although this could also include the National Park.</p> <p>The Regional Cultural Strategy aims to promote new and existing 'cultural flagships', which may result in an increase in visitors to those sites. The Peak District National Park is noted as a key regional asset, which may result in an increase in traffic to the area and to specific sites, potentially affecting air quality.</p> <p>The Visitor Economy Strategy identifies the Peak District National Park as a destination to be sustained. It aims generally to attract more visitors and more tourism investment to the region.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes significant development in Derby (44,750 new homes) and Nottingham (70,500 new homes), and lesser development in Chesterfield and Ilkeston. These developments may increase traffic on major roads to the north west of the West Midlands region e.g. A50, A52, A6, contributing to diffuse air pollution. Also proposes:</p> <ol style="list-style-type: none"> 1. major new or revitalised energy generation in the Trent Valley 2. promoting CHP and energy from waste in the Three Cities sub-area 3. promoting energy generation from biomass in the Northern sub-area. <p>All could contribute to diffuse air pollution in the National Park.</p> <p>The North West Adopted Plan (September 2008) proposes development of Manchester, Liverpool and Central Lancashire, including economic growth from Manchester Airport, which could lead to increases in traffic on M6. Also proposes regeneration and development of Crewe, supporting its role as a transport gateway and for tourism, possibly leading to increases in traffic on M6 through West Midlands affecting background air quality. Nantwich and rural Cheshire more generally are also proposed for increased tourism also potentially increasing traffic on M6.</p>	<p>an adverse effect on habitat structure and diversity at the site.</p> <p>Any further increase in diffuse air pollution in the region would be significant.</p> <p>Overall, there is little strategic impact of the RSS Phase 2 preferred option on the network as compared to the National Forecast (TEMPRO) distribution.</p> <p>The variation of journey time between scenarios is quite small along the key corridors. A highway based do something scenario (P-TIF) is increasing the journey times on routes, but is also reducing the congestion on the SRN and allowing more traffic.</p> <p>There are local impacts noted due to the housing and network interventions, which would need to be assessed in more detail.</p> <p>Integrated and sustainable transport initiatives could be a key issue to ensure</p>
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			increased visitor numbers do not result in increased traffic disturbance and emissions locally.
Wind-power development	The RSS encourages the development of renewable energy generation schemes, although locations are not specified under policies being revised under Phase 2.	The Regional Energy Strategy highlights the potential for wind energy development although locations are not specified. The Proposed Changes to the East Midlands Regional Plan (July 2008) identifies that the Peak area has opportunities for small-scale wind energy generation.	The South Pennine Moor Phase 2 SPA is located outside the West Midlands regional borders. So proposals within the site for possible wind turbines would be subject to policies contained within the NW and East Midlands RSSs. However, the support for renewable generation with the RSS may, in combination, lead to wind power development which affects the site.
Overall conclusions	Negative effects from increases in diffuse air pollution, increases in recreational disturbance and erosion and possible siting of wind turbines. High risk of adverse effect to site integrity.		

RAMSAR

Humber Estuary Ramsar

Name and location	Humber Estuary Ramsar
Reason for designation	Designated under Ramsar criteria: Ramsar criterion 1 The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Within the Humber Estuary Ramsar site there are good examples

	<p>of four of the five physiographic types of saline lagoon.</p> <p>Ramsar criterion 3 The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i>.</p> <p>Ramsar criterion 5 Assemblages of international importance: 153,934 waterfowl, non-breeding season (5 year peak mean 1996/97-2000/2001)</p> <p>Ramsar criterion 6 – species/populations occurring at levels of international importance. Eurasian golden plover, <i>Pluvialis apricaria altifrons</i> subspecies – NW Europe, W Continental Europe, NW Africa population 17,996 individuals, passage, representing an average of 2.2% of the population (5 year peak mean 1996-2000) Red knot, <i>Calidris canutus islandica</i> subspecies 18,500 individuals, passage, representing an average of 4.1% of the population (5 year peak mean 1996-2000) Dunlin, <i>Calidris alpina alpina</i> subspecies – Western Europe (non-breeding) population 20,269 individuals, passage, representing an average of 1.5% of the population (5 year peak mean 1996-2000) Black-tailed godwit, <i>Limosa limosa islandica</i> subspecies 915 individuals, passage, representing an average of 2.6% of the population (5 year peak mean 1996-2000) Common redshank, <i>Tringa tetanus brittanica</i> subspecies 7,462 individuals, passage, representing an average of 5.7% of the population (5 year peak mean 1996-2000) Common shelduck, <i>Tadorna tadorna</i> Northwestern Europe (breeding) population 4,464 individuals, wintering, representing an average of 1.5% of the population (5 year peak mean 1996/7-2000/1) Eurasian golden plover, <i>Pluvialis apricaria altifrons</i> subspecies – NW Europe, W Continental Europe, NW Africa population 30,709 individuals, wintering, representing an average of 3.8% of the population (5 year peak mean 1996/7-2000/1) Red knot, <i>Calidris canutus islandica</i> subspecies 28,165 individuals, wintering, representing an average of 6.3% of the population (5 year peak mean 1996/7-2000/1) Dunlin, <i>Calidris alpina alpina</i> subspecies – Western Europe (non-breeding) population 22,222 individuals, wintering, representing an average of 1.7% of the population (5 year peak mean 1996/7-2000/1) Bar-tailed godwit, <i>Limosa lapponica lapponica</i> subspecies 2,752 individuals, wintering, representing an average of 2.3% of the population (5 year peak mean 1996/7-2000/1) Common redshank, <i>Tringa tetanus brittanica</i> subspecies 4,632 individuals, wintering, representing an average of 3.6% of the population (5 year peak mean 1996/7-2000/1)</p> <p>Ramsar criterion 8 The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas.</p>
Conservation objectives	Maintain in a favourable status

Key factors affecting site integrity	<ul style="list-style-type: none"> • Disturbance to vegetation through cutting / clearing • Vegetation succession • Lack of reedbed management leading to scrub encroachment • Water diversion for irrigation/domestic/industrial use • Abstraction causes reduced freshwater input. Review of consents well advanced but not yet implemented. • Overfishing • Substantial lamprey by-catch in eel nets in River Ouse. • Pollution – domestic sewage • Reduced dissolved oxygen in River Ouse is a barrier to fish migration. Review of consents well advanced but not yet implemented. • Pollution – agricultural fertilisers • Recreational/tourism disturbance 		
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
<p>Site is approximately 100km from West Midlands. The Humber Estuary is connected to Burton, Stoke and Newcastle via the Trent, and to Stafford, Lichfield, Tamworth and Birmingham via the Penk, the Tame and the Cole. Birmingham and Stoke are both within RES Regeneration Zones and are therefore likely to be areas with new economic activity. Birmingham is also at the centre of the network of High Technology Corridors and therefore is likely to be a focus for economic development. The North Staffs RZ aims to create or safeguard 300 jobs, to attract 270 new businesses and to remediate 50ha of brownfield land. The Birmingham & N Solihull RZ aims to create 640 jobs and 200 new businesses and to remediate 3 ha of brownfield land. It is not known how much development might take place in Birmingham as a result of the HTC initiatives.</p>			
Water Supply	<p>Further abstractions may be necessary as the other licences for Severn Trent Water to abstract are modified and housing growth increases need.</p> <p>Water resources likely to stay in surplus until end of plan period for water.</p> <p>Options 3 and 8 have the largest allocation of housing in Birmingham and sites on the eastern side of the West Midlands region which could draw on water resources from the Humber region.</p>		<p>Severn Trent's WRMP predicts a deficit in water for the East Midlands Water Resource Zone (WRZ) and therefore new schemes are suggested.</p> <p>Increased housing would put further demands on water abstraction which could have the potential to effect the River Trent and therefore the Humber.</p> <p>Areas on the eastern edge of the West Midlands such as Tamworth and Burton upon Trent will have an increased housing allocation of 2,900 and 11,000 respectively from the RSS Phase 2 and therefore water resource demand will increase.</p> <p>Scenario 1 does not increase housing in addition to the RSS Phase 2. However, Scenarios 2 and 3 propose a growth of 2,500 and 5,000 respectively in East Staffordshire (Burton on Trent)</p>

Overall conclusions	Increased housing could put further demands to further increase abstraction, Severn Trent's WRMP predicts a deficit in water for the East Midlands WRZ so depending on where the extra abstraction is undertaken it could have the potential to effect the River Trent and therefore the Humber. Possible LSE with regard to water supply
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Midlands Meres and Mosses Phase I Ramsar

Name and location	Midlands Meres and Mosses phase I Ramsar site Cheshire, Shropshire, Staffordshire
Reason(s) for designation	Ramsar criterion 1 (contains a representative, rare or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region): a diverse range of habitats, from open water to raised bog Ramsar criterion 2 (supports vulnerable, endangered or critically-endangered species or threatened ecological communities): a number of rare species of wetland plants occur, including five nationally scarce species, as well as an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book invertebrate species)
Conservation objectives	None available
Key factors affecting site integrity	Invasive species: considered a major impact on this site ¹³ (<i>Crassula helmsii</i> , <i>Impatiens glandulifera</i> ?) Recreational pressure and disturbance: in line with other bog and mire habitats, trampling and erosion are likely to be a significant issue where public access occurs. Water quality: declines in water quality through nutrient enrichment and sediment (see also below). Eutrophication is considered a major impact on this site Land use in surrounding areas: agricultural practices and urban runoff are likely to affect the scattered sites through nutrient enrichment and sedimentation.

¹³ Information from Ramsar Site information sheet

Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine additional housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
Midland Meres and Mosses Phase I includes 16 component sites scattered across the Shropshire/Cheshire plain, sw of Manchester and nw of Birmingham. Sites include: Hanmer Mere (Wrexham); Llyn Bedydd (Wrexham); Vicarage Moss (Wrexham); Abbots Moss (Cheshire); Chapel Mere (Cheshire); Linmer Moss (Cheshire); Brownheath Moss (Shropshire); Cole Mere (Shropshire); Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses (Wrexham and Shropshire); Hencott Pool (Shropshire); Morton Pool and Pasture (Shropshire); Oss Mere (Shropshire); Sweat Mere and Crose Mere (Shropshire); Aqualate Mere (Staffordshire); Black Firs and Cranberry Bog (Staffordshire); and Cop Mere (Staffordshire) ¹⁴			
Land take/land use changes	Options 3,6 and 9 increase rural provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9.		<p>Agricultural practices and urban runoff are likely to affect the scattered sites through nutrient enrichment and sedimentation.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs; Cranberry Bog; and Cop Mere.</p>
Recreational pressure and disturbance	It is possible that there could be some increased recreational pressures and disturbance on these sites as a result of local population growth, improved accessibility (<i>i.e.</i> under the Transport and Accessibility chapter) <i>etc.</i> arising from the RSS overall including the housing options.	<p>The Visitor Economy Strategy identifies Shropshire generally for investment as a destination. It is possible that this could increase recreational pressure and disturbance on the sites within Shropshire although the likelihood of this is not estimable.</p> <p>The Shropshire Economic Development Strategy envisages development of the Whitchurch to Ellesmere corridor to open up access</p>	<p>Sites likely to be affected by different pressures depending on their location. Some may be liable to recreation effects due to a localised increase in housing.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but</p>

¹⁴ Information from Ramsar Convention press release http://www.ramsar.org/wn/w.n.midland_meres.htm

		to small lakes and meres.	scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.
Water supply	Options 6, 7, 8 and 9 increase local provision around Telford	<p>The North West Adopted Plan (September 2008) proposes growth and development in Cheshire, specifically 39,200 new houses in the Southern Manchester / North East Cheshire and South Cheshire 2003-2021. It also proposes the regeneration and development of Crewe.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes significant development in the Derby HMA (44,750 new homes) and the Leicester and Leicestershire HMA (97,000 new homes). These developments may put pressure on cross-border water resources. In addition, some former power station and colliery sites in the Trent Valley may be suitable for re-use for new forms of power generation, which may increase abstractions.</p>	<p>Sites likely to be affected by different pressures depending on their location.</p> <p>Some may be liable to water supply effects. Previous consultation from RSS Phase 2 review deemed that existing procedures under the Water Framework Directive will ensure that water supplies are protected for these sites.</p> <p>Potential scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.</p>
Water quality	<p>Some sites affected by high levels of phosphate, largely connected with agricultural run-off. However growth and development in the vicinity of sites could exacerbate surface run off.</p> <p>Options 3, 6 and 9 increase rural provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9.</p>	<p>The North West Adopted Plan (September 2008) proposes growth and development in Cheshire, specifically 39,200 new houses in the Southern Manchester / North East Cheshire and South Cheshire 2003-2021. It also proposes the regeneration and development of Crewe.</p> <p>This growth may cause additional problems with surface water runoff.</p>	<p>Sites likely to be affected by different pressures depending on their location. Some may be liable to water quality effects. HRA required to ensure sites not affected by local run-off associated with development.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and</p>

			scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.
Air pollution	It maybe an issue for some of the sites which make up this Ramsar site, those which have terrestrial wetland features rather than the open water.	None	<p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area (Shropshire) and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.</p> <p>It maybe an issue for some of the sites which make up this Ramsar site, those which have terrestrial wetland features rather than the open water. Air pollution levels may change and until this is clarified on a local level it cannot be ruled out.</p>
Overall conclusions	Growth in this and neighbouring regions will put pressure on cross border water resources, and limit opportunities to import water. Additional water resources will need to be found within the region. It is expected that existing procedures under the Water Framework Directive will ensure that water supplies are protected for these sites. Water quality issues are largely connected with local agricultural run-off. Agricultural sources (e.g. of phosphate) may need to be addressed. Air quality is an issue for some of the sites which make up this Ramsar site, those which have terrestrial wetland features rather than the open water.		

Midlands Meres and Mosses Phase 2 Ramsar

Name and location		Midlands Meres and Mosses Phase 2 Ramsar site (SJ435343) Cheshire, Clwyd, Shropshire, Staffordshire, Wrexham	
Reason(s) for designation		<p>Ramsar criteria:</p> <p>1 (contains a representative, rare or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region): site contains a diverse range of habitats, from open water to raised bog</p> <p>2 (supports vulnerable, endangered or critically-endangered species or threatened ecological communities): Nationally scarce species present include cowbane <i>Cicuta virosa</i>, elongated sedge <i>Carex elongata</i>, bryophytes <i>Dicranum affine</i> and <i>Sphagnum pulchrum</i>. Endangered invertebrates are also present: the moth <i>Glyphipteryx lathamella</i>, the caddisfly <i>Hagenella clathrata</i> and the sawfly <i>Trichiosoma vitellinae</i>.</p>	
Conservation objectives		None available	
Key factors affecting site integrity		<p>Invasive species: considered a major impact on this site¹⁵ (<i>Crassula helmsii</i>, <i>Impatiens glandulifera</i>?)</p> <p>Water quality: eutrophication is considered a major impact on this site</p> <p>Land take for development</p> <p>Recreational pressure and disturbance: in line with other bog and mire habitats, trampling and erosion are likely to be a significant issue where public access occurs</p> <p>Water quality: declines in water quality through nutrient enrichment and sediment (see also below)</p> <p>Land use in surrounding areas: agricultural practices and urban runoff are likely to affect the scattered sites through nutrient enrichment and sedimentation</p>	
Assessment of significance of effects			
Nature of potential impact	How West Midlands RSS Phase 2 and the nine housing options will affect the European site	In combination effects with other plans and policies	Effect on site integrity of the three scenarios
The Midlands Meres and Mosses Phase 2 sites are in 18 different locations across Wrexham, Cheshire, Shropshire and Staffordshire covering over 1,500ha. Sites are Bagmere (Cheshire), Berrington Pool (Shropshire), Betley Mere (Staffordshire), Bomere, Shomere & Betton Pools (Shropshire), Brown Moss (Shropshire), Clarepool Moss (Shropshire), Flaxmere Moss (Cheshire), Hatch Mere (Cheshire), Marton Pool, Chirbury (Shropshire), Oak Mere (Cheshire), Oakhanger Moss (Cheshire), Quoisley Meres (Cheshire), Rostherne Mere (Cheshire), Tatton Meres (Cheshire), The Mere, Mere (Cheshire), White Mere (Shropshire), Wynbunbury Moss (Cheshire)			
Land take/land use change	Options 3, 6 and 9 increase local provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9.		<p>Agricultural practices and urban runoff are likely to affect the scattered sites through nutrient enrichment and sedimentation.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any</p>

¹⁵ Information from Ramsar Site information sheet

			increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and solution scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.
Recreational pressure and disturbance	Options 3, 6 and 9 increase local provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9.	<p>The Visitor Economy Strategy identifies Shropshire generally for investment as a destination. It is possible that this could increase recreational pressure and disturbance on the sites within Shropshire although the likelihood of this is not estimable.</p> <p>The Shropshire Economic Development Strategy envisages development of the Whitchurch to Ellesmere corridor to open up access to small lakes and meres.</p>	<p>Some sites may be liable to recreation effects due to a localised increase in housing. Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.</p>

<p>Water supply</p>	<p>Options 3, 6 and 9 increase local provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9</p>	<p>The North West Adopted Plan (September 2008) proposes growth and development in Cheshire, specifically 39,200 new houses in the Southern Manchester / North East Cheshire and South Cheshire (2003-2021). It also proposes the regeneration and development of Crewe.</p> <p>Growth will put pressure on cross border water resources, and limit opportunities to import water. Additional water resources will need to be found within the region.</p> <p>The Proposed Changes to the East Midlands Regional Plan (July 2008) proposes significant development in the Derby HMA (44,750) and the Leicester and Leicestershire HMA (97,000)</p> <p>These developments may put pressure on cross-border water resources. In addition, some former power station and colliery sites in the Trent Valley may be suitable for re-use for new forms of power generation, which may increase abstractions.</p>	<p>Sites likely to be affected by different pressures depending on their location. Some may be liable to recreation effects due to a localised increase in housing.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs; Cranberry Bog; and Cop Mere.</p>
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<p>Water quality</p>	<p>Some sites affected by high levels of phosphate, largely connected with agricultural run-off. However growth and development in the vicinity of sites could exacerbate surface run off.</p> <p>Options 3, 6 and 9 increase rural provision. In Shropshire on top of the proposed 25,700 from the RSS Phase 2 there will be an additional 1,900 houses from options 3, 6 and 9.</p>	<p>The North West Adopted Plan (September 2008) proposes growth and development in Cheshire, specifically 39,200 new houses in the Southern Manchester / North East Cheshire and South Cheshire 2003-2021. It also proposes the regeneration and development of Crewe. This growth may add to existing eutrophication problems by increasing nutrient levels in surface waters.</p>	<p>Sites likely to be affected by different pressures depending on their location. Some may be liable to recreation effects due to a localised increase in housing.</p> <p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs; Cranberry Bog; and Cop Mere.</p> <p>HRA required to ensure sites not affected by local run-off associated with development. Agricultural sources of phosphate pollution may need to be tackled through Phase Three Revision of the RSS.</p>
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<p>Air pollution</p>	<p>It maybe an issue for some of the sites which make up this ramsar site, those which have terrestrial wetland features rather than the open water</p>		<p>Scenarios 1, 2 and 3 all have an additional 1,900 houses (on top of the 25,700 from the RSS Phase 2) in the local area (Shropshire) and therefore no-one site can be championed to decrease the impact.</p> <p>However, scenarios 1 and 3 do not have any increase in housing across Staffordshire but scenario 2 has an increase in 1,500 houses and scenario 3 has an increase in 3,000 new houses allocated for Stafford which may affect the sites within Staffordshire such as Aqualate Mere; Black Firs: Cranberry Bog; and Cop Mere.</p> <p>Those sites for which terrestrial wetland features rather than the open water are important are more likely to be affected by acid deposition. Air pollution levels may change and until this is clarified on a local level it cannot be ruled out.</p>
<p>Overall conclusions</p>		<p>Agricultural practices and urban runoff are likely to affect the scattered sites through nutrient enrichment. Sites likely to be affected by different pressures depending on their location. HRA required to ensure the sites are not affected by local run-off associated with development. Agricultural sources of phosphate pollution may need to be tackled through Phase Three Revision of the RSS.</p>	