



Tylorstown Landslide
Environmental Impact Assessment
Volume 3 - Appendices
Series 16 Summary and Conclusion
December 2021



Appendix 16.1

Schedule of Mitigations



Tylorstown Landslip: Phase 4

Environmental Impact Assessment -
Mitigation Schedule

December 2021

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
Air Quality				
AQ M1	Impact of dust and PM10 generation on nearby sensitive human receptors	Site workers and nearby receptors	Adopt standard best practice working methods, in line with the IAQM Mineral Dust Guidance.	No significant effects
Cultural Heritage				
CH M1	Direct physical effect through removal of a substantial part of the heritage asset.	RH01 Llanwonno Upper Tip (TT01)	Preservation by record through a topographic survey.	No significant effects
CH M2	Direct physical impact. The widening of tramway for proposed transport corridor with damage or destroy the archaeological remains of a significant proportion of the heritage asset.	Tramway (TT03)	Preservation by record through a topographic survey and placing three archaeological trenches across the tramline.	No significant effects
CH M3			Preservation in situ by installing a curtilage fence around the remaining unaffected portion of the tramway, protecting the heritage asset from accidental damage during groundworks.	No significant effects
CH M4	Direct physical impact: the proposed transport corridor will cut across this heritage asset, bisecting it from its associated Winding Engine House (TT07).	Tramway (TT06)	Preservation by record through a topographic survey and one archaeological trench placed across the tramline.	No significant effects
CH M5	Direct physical impact: the proposed Receptor Site is situated on intact marshland that has potential for buried prehistoric landscape which may be damaged or destroyed by the deposition of tip material.	Potential buried prehistoric landscape (TT19)	Preservation by record through an archaeological strip, map and record of the proposed Receptor Site prior to the commencement of groundworks.	No significant effects

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CH M6	Potential direct physical impact: as the Proposed Scheme stands the heritage assets should not be affected however measures should be put in place to protect them from accidental damage during groundworks.	Winding engine house remains (TT04 & TT07)	Preservation in situ by installing a curtilage fence around the Winding Engine House remains will protect these heritage assets from accidental damage during groundworks.	No significant effects
CH M7	Potential direct physical impact: within the proposed Receptor Site, whilst here are no standing remains it is likely that the footings survive underground and could be affected by the deposition of tip material.	Structures (TT08 & TT09)	Preservation by record through an archaeological strip, map and record of the proposed Receptor Site prior to the commencement of groundworks.	No significant effects
CH M8	Potential direct physical impact: there is potential for unknown archaeological deposits beneath the tip material that may be damaged by groundworks.	Potential buried archaeological deposits beneath RH01 Llanwonno Upper Tip (TT01)	Preservation by record through an archaeological watching brief of the final phases of tip removal as the excavation reach natural ground.	No significant effects
CH M9	Direct physical impact of Proposed Scheme will result in 3.05% absolute loss of HLCA and relative loss of HLCA key elements.	Rhondda Fach Eastern Enclosed Valley sides (HLCA023)	Natural landscaping of the Receptor Site and Llanwonno Upper Tip and sensitive surfacing of incline tramway.	Moderate Adverse
	Direct physical impact of Proposed Scheme will result in 0.4% absolute loss of HLCA and relative loss of HLCA key elements.	Rhondda Uplands (HLCA 030)		Moderate Adverse
	Indirect visual effects to the site as a whole due to the removal of a substantial part of RH01 Llanwonno Upper Tip (TT01), the widening of Tramway (TT03) and the new Receptor Site.	Tylor's Newydd Tips Group Site (GGAT07879m)		Major Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	Indirect visual effects to heritage assets caused by the new Receptor Site as well as the removal of a substantial part of RH01 Llanwonno Upper Tip (TT01) and the widening of Tramway (TT03).	RH02 'Old Smokey' tip		Moderate Adverse
	Indirect visual effects to heritage assets caused by the removal of a substantial part of RH01 Llanwonno Upper Tip (TT01) and the widening of Tramway (TT03).	Heritage assets within primary (250m radius) study area		Very Slight Adverse
	Indirect visual effects to heritage assets caused by the removal of a substantial part of RH01 Llanwonno Upper Tip (TT01) and the widening of Tramway (TT03).	Welfare Hall, Tylorstown (LB18284)		Moderate Adverse
	Indirect visual effects to heritage assets caused by the removal of a substantial part of RH01 Llanwonno Upper Tip (TT01) and the widening of Tramway (TT03).	Church of our Lady Penrhys (LB17659)		Very Slight Adverse
	Direct physical impact of Proposed Scheme will result in 3.05% absolute loss of HLCA and relative loss of HLCA key elements.	Rhondda Fach Eastern Enclosed Valley sides (HLCA023)		Moderate Adverse
	Indirect physical and non-physical (visual) effects.	Rhondda Fach Eastern Enclosed Valley sides (HLCA023) Rhondda Uplands (HLCA 030)		Moderate Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	Direct physical impact of Proposed Scheme will result in 0.4% absolute loss of HLCA and relative loss of HLCA key elements.	Church of our Lady Penrhys (LB17659)		Moderate Adverse
	Indirect physical and non-physical (visual) effects.	Rhondda Uplands (HLCA 030) Wattstown (HLCA018)		Moderate Adverse
	Indirect physical and non-physical (visual) effects.	Rhondda Fach Eastern Enclosed		Slight Adverse
	Indirect physical and non-physical (visual) effects.	Rhondda Fach Eastern Enclosed Valley sides (HLCA023) Rhondda Uplands (HLCA 030) Pontygwaith, Tylorstown and Stanleytown (HLCA019)		Slight Adverse
	Indirect visual effects.	Blaenllechau and Ferndale (HLCA020) Rhondda Fach Western Enclosed Valley Sides (HLCA024)		Very Slight Adverse
	Indirect visual effects.	Mynachdy Penrhys (HLCA025)		Very Slight Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	Indirect visual effects.	Brith-Weunydd & Troed-y-Rhiw (HLCA027)		Very Slight Adverse
Landscape and Visual				
VI M1	Site compounds, temporary buildings and the movement of construction vehicles will have a negative effect on the visual amenity. The height and design of the contractor's buildings may cause a visual barrier or a visual disturbance which would detract from the existing visual amenity.	Viewpoints: (1) Heol Tir Gwaidd, Penrhys (residential) (2) PRoW TYL 2/1, Park street (3) Union Place at the junction with Arfryn Terrace (residential) (4) Heol Llechau Wattstown (residential) (5) PRoW TYL 9/1 Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit (7) The junction of East Road and East Street to the Rhondda Fach Leisure Centre (both recreational and residential)	Careful planning of the construction phasing and layout to ensure visually intrusive features are located away from sensitive receptors or screened appropriately. A CEMP will be produced and include detailed methodology.	Moderate Adverse
VI M2	There will be a loss of vegetation, including native broadleaved trees and non-native coniferous trees during the construction phase of the works. The removal of this vegetation will result in change to the landscape fabric and increased levels of	Viewpoints: (1) Heol Tir Gwaidd, Penrhys (residential) (2) PRoW TYL 2/1, Park street (3) Union Place at the	The loss of herbaceous vegetation generally will be mitigated through the removal, storage and reinstatement of topsoil, allowing natural regeneration. The principle of only removing trees, shrubs and habitat where it is essential will be adopted, and the arboricultural impact assessment will be used to guide removal.	Moderate Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	visual disturbance and the loss of visual amenity.	junction with Arfryn Terrace (residential) (4) Heol Llechau Wattstown (residential) (5) PRoW TYL 9/1 Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit (7) The junction of East Road and East Street to the Rhondda Fach Leisure Centre (both recreational and residential)	The loss of native trees within the re-landscaped area of the tip will be mitigated through the planting of appropriate compensatory trees. No mitigation is proposed for the removal of non-native coniferous trees as these are of no ecological or landscape value. The contractor should confirm planning approval has been gained prior to the removal of any trees and must seek further planning approval before removing any additional trees or mature shrubs which are not identified for removal on the contract drawings.	
LC M1		Hillside and Scarp Slopes Mosaic Valley East		
LC M5			Install tree protection fencing around tree groups (as recommended in the Arboricultural Impact Assessment) and move alignment of channel outwith the root protection area of the trees.	Slight Adverse
VI M3	The light pollution created by the floodlighting of the site compound and vehicular movement etc. will cause a visual disturbance to any receptors, especially in the evening and early morning and will change the feeling within the landscape.	Viewpoints: (1) Heol Tir Gwaidd, Penrhys (residential) (2) PRoW TYL 2/1, Park street (3) Union Place at the junction with Arfryn Terrace (residential) (4) Heol Llechau Wattstown (residential) (5) PRoW TYL 9/1	All lighting used will be directional and all efforts should be made to avoid unnecessary light pollution. A CEMP will be produced to include detailed method statement.	Slight Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
		Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit (7) The junction of East Road and East Street to the Rhondda Fach Leisure Centre (both recreational and residential)		
LC M2		Hillside and Scarp Slopes Mosaic Valley East		Slight Adverse
VI M4	The storage of topsoil has the potential to cause a loss of visual amenity.	Viewpoints: (1) Heol Tir Gwaidd, Penrhys (residential) (2) PRoW TYL 2/1, Park street (3) Union Place at the junction with Arfryn Terrace (residential) (4) Heol Llechau Wattstown (residential) (5) PRoW TYL 9/1 Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit (7) The junction of East Road and East Street to the Rhondda Fach Leisure Centre (both recreational and residential)	Stockpiles of topsoil should be no higher than 2m for general topsoil. The stockpiling should comply with BS 3882:2015. Areas for topsoil storage to be agreed and managed.	No significant effects

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
VI M5	Additional traffic will be visible within the construction area. This additional traffic will create a visual disturbance and have an adverse impact on its rural qualities especially on the upper slopes.	Viewpoints: (1) Heol Tir Gwaidd, Penrhys (residential) (2) PRoW TYL 2/1, Park street (3) Union Place at the junction with Arfryn Terrace (residential) (6) PRoW TYL 9/1 south east of Llanwonno Summit (7) The junction of East Road and East Street to the Rhondda Fach Leisure Centre (both recreational and residential)	A CEMP will be produced to include further details of the construction traffic movements.	Slight Adverse
LC M3		Hillside and Scarp Slopes Mosaic Valley East		Slight Adverse
LC M4	Introduction of engineered slopes	Hillside and Scarp Slopes Mosaic Valley East	Engineered slopes to be seeded with a low maintenance reclamation mix and slopes allowed to green over.	Slight Adverse
VI M7		Viewpoints: (5) PRoW TYL 9/1 Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit		Slight Adverse
LC M5	Loss of important habitats	Hillside and Scarp Slopes Mosaic Valley East		Slight Adverse

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VI M6	The steep embankments to introduce engineered form into the view.	Viewpoints: (5) PRoW TYL 9/1 Blaenllechau Road (6) PRoW TYL 9/1 south east of Llanwonno Summit	Topsoil at the receptor site to be stripped and reused as a top dressing to promote natural regeneration. Habitats to be translocated.	Slight Adverse
Biodiversity				
Sites				
B M1	Habitat loss and degradation	Old Smokey Slopes SINC	<p>Habitats have been mapped and assigned a value of high, medium or low (illustrated as RED, AMBER and GREEN respectively) in the ecology mitigation strategy (Appendix 9.7).</p> <p>High value habitat (RED) - Where possible there will be no works or removal of the highest value habitats. Where removal of the habitat is necessary due to excavation works or prior to deposition of materials at the Receptor Site, turf removal will be carried out. Turves will be stored in a pre-determined location on a low value habitat and re-instated following the completion of the earthworks to replace the areas of habitat removed.</p> <p>Medium value habitats (AMBER) - Where habitat clearance is required topsoil will be stripped and stored in pre-designated locations of low biodiversity value. The topsoil will be re-instated on site following the completion of earthworks to promote natural regeneration of habitat.</p> <p>The turf translocation and topsoil re-instatement is detailed in the Ecological Method Statement and Mitigation Strategy Plan for the Proposed Scheme. Acid flush turves and marshy</p>	Slight Adverse

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
			<p>grassland topsoil will be translocated or re-instated within the newly created swales and attenuation areas within the drainage design where conditions will most suitable.</p> <p>Habitat damaged or lost at stage areas will be re-instated when works have been completed.</p> <p>The process will be overseen by the EcOW and controlled by the incorporating the certification procedure.</p>	
B M5	Long-term loss or degradation of habitat biodiversity value		<p>A five-year Aftercare Plan will be in place to monitor and ensure the establishment of the reinstated habitats and the progress of the natural regeneration.</p> <p>This will include weeding, watering and invasive species control and monitoring the success of habitat re-establishment and natural regeneration through habitat and vegetation sampling surveys.</p>	Slight Adverse
B M2	Degradation of habitats outside of the footprint of the Proposed Scheme (but within the Red Line Boundary) may be degraded due to damage from site traffic and personnel, dust and potential hydrological changes.		<p>Designated haul routes, access points and compound locations will be used. The routes and locations have been identified to ensure that degradation of habitat through vehicular access and damage from site personnel is avoided.</p> <p>Where habitats with higher biodiversity (RED and AMBER) are present within the redline boundary, but outside of the footprint of the development, they will be fenced off to protect from accidental damage.</p> <p>A phased construction programme will be implemented to protect and minimise the direct impact of the works on the RED and AMBER habitats within the redline boundary. A phased construction method will also enable reduce the area for topsoil/turf storage required as storage can be achieved on a rotational basis.</p>	Slight Adverse

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Habitats				
B M1	Habitat loss and degradation	Priority habitats: Marshy grassland	The Priority habitats are present within Old Smokey Slopes SINCE and the details of mitigation measures are described in B M1, under the 'sites' section of this table above	Slight Adverse
B M5	Long-term loss or degradation of habitat biodiversity value	Acid flush and raised bog Unimproved grassland, acid grassland and dry heath mosaic Dry heath	A five-year Aftercare Plan will be in place to monitor and ensure the establishment of the reinstated habitats and the progress of the natural regeneration. This will include weeding, watering and invasive species control and monitoring the success of habitat re-establishment and natural regeneration through habitat and vegetation sampling surveys.	Slight Adverse
B M8	Habitat loss and degradation	Priority habitats: Semi-natural broad-leaved woodland	Where loss of mature trees is required to facilitate reprofiling works at Llanwonno Tip, compensatory planting of native trees will be required in the area, either within the existing footprint of the habitat or to the west, along the drainage channel.	Slight Adverse
Species				
B M3	Direct mortality through vegetation clearance and excavation works and loss of terrestrial habitat – both temporary and permanent due to excavations, creation of the haul road and compound site and deposition of material at the Receptor Site.	Reptiles	Vegetation and soil/turf removal will follow a Reptile and Amphibian Site Clearance Method Statement, which includes the erection of reptile fencing around the perimeter of the footprint of the works prior to any works commencing. Vegetation clearance will be carried out under a two-stage cut and any potential refugia will be carefully dismantled by hand.	Slight Adverse
B M4		Great Crested Newt		Slight Adverse

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			<p>All vegetation clearance and earthworks will be supervised by an EcOW.</p> <p>The programme will ensure that once cleared, the receptor areas do not recolonise with vegetation to become reptile 'suitable' and appropriate on-going management will be employed until the remediation works commence.</p> <p>More detailed information is specified in the separate Reptiles and Amphibians Site Clearance Method Statement.</p>	
Enhancements				
B E1	Increased hibernation locations for reptiles within the site area, benefitting local reptile populations.	Reptiles	At least one 'below ground' reptile hibernaculum will be created on site. Tree cuttings from felled conifer trees and brash on site will be re-purposed for this creation. The location(s) will be agreed by the supervising ecologist.	N/A
B E2	Increased nesting locations for kestrels within the site area, benefitting local kestrel populations.	Kestrels	Installation of at least one kestrel nesting box. These should be located along the woodland edge / fence line of the coniferous plantation at the north-east of the receptor site, or along the boundary of the woodland closest to the donor site.	N/A
B E3	Increased nesting locations for starlings within the site area, benefitting local starling populations.	Starlings	Starling boxes should also be erected as this rapidly declining species was recorded using the site to feed and the species is likely to be present in the breeding season. Boxes should be sited in mature trees on the site (in the absence of buildings on site) with entrance holes facing away from the prevailing wind.	N/A
B E4	Increased nesting locations for breeding birds within the site area, benefitting local breeding bird populations.	Breeding birds	At least 10 closed and open fronted boxes for a range of common breeding bird species that take readily to boxes such as blue tit, great tit and wren, should be erected in	N/A

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			suitable woodland habitat across the site, particularly along the river corridor or in adjacent woodland areas.. These boxes will provide roosting sites in winter.	
Geology, Soils and Waste				
GSW M1	Reduction in mineral resources in the area.	Onsite mineral resources	A further round of ground investigation (as described in Appendix 10.3) is proposed to compliment the works undertaken in January 2021, once the majority of the slipped material has been moved.	Slight
GSW M2			Any outcropping seams which may have become exposed during the 2020 landslip will be reburied during Phase 4 works to remove the potential of oxidation and subsequent combustion of the coal.	
GSW M3			A watching brief will be implemented to identify any high coal containing pockets (provisionally material with calorific value above 10 MJ/kg) and this can be placed as an activity within the Materials Management Plan for the Scheme.	
GSW M4	Reduction in the waste capacity of the region.	Local waste management facilities	Development and implementation of a CEMP that includes good materials management methods, such as location of temporary haul routes and re-use of temporary works materials from haul routes, plant and piling mattresses etc.	Slight
GSW M5			A Site Waste Management Plan (SWMP) should be developed and regularly updated during the Proposed Scheme. The SWMP would identify, prior to the start of construction, the types and likely quantities of wastes that may be generated. It would set out how these wastes would be reduced, reused, managed and disposed.	

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			<p>The SWMP would contain a Materials Management Plan (MMP) which sets out how all construction phase materials are managed through the use of the CL:AIRE protocol. This provides a clear, consistent, and efficient process which enables the reuse of excavated materials onsite and it enables the direct transfer and reuse of clean naturally occurring soil materials between sites..</p> <p>Implementation of the SWMP and the accompanying MMP would ensure that material reuse is maximised by minimising waste at source (reducing the requirement for new construction materials) and during construction.</p>	
Water Environment and Flood Risk				
WEFR M1	Indirect Impact – Adverse effects on water quality and ecological features as a result of soil, dust, and pollutants entering the watercourses from machinery or fuel tank leakages.	Afon Rhondda Fach – source to confluence Rhondda.	To prevent any pollution events during construction, appropriate pollution prevention measures will be included in the CEMP and applied across the construction site, particularly during the excavation and handling of material. Where relevant, the proposed works shall comply with and refer to DEFRA & the EA's Pollution Prevention Guidance as well as NRW guidance.	Negligible
	Indirect Impact – Adverse effects on water quality and ecological features as a result of the disturbance of existing contaminants in the Llanwonno Upper Tip (RH01).			Negligible
	Direct adverse effects on water quality and ecological features as a result of soil, dust, and pollutants entering the watercourses from machinery or fuel tank leakages.	Unnamed drains within the red line boundary.		Negligible
	Direct adverse effects on water quality and ecological features as a result of the			Negligible

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	disturbance of existing contaminants in the Llanwonno Upper Tip (RH01).			
	Potential for the water quality of the SE Valleys Carboniferous Coal Measures WFD waterbody and aquifer due to the creation of new pathways for contaminants and pollutants during excavation works at Llanwonno Tip.	SE Valleys Carboniferous Coal Measures.		Negligible
	Indirect Impact – Adverse effects on water quality and ecological features as a result of soil, dust, and pollutants entering the watercourses from machinery or fuel tank leakages			Negligible
	Indirect Impact – Adverse effects on water quality and ecological features as a result of the disturbance of existing contaminants in the Llanwonno Upper Tip (RH01).			Negligible
WEFR M2	Potential increase in surface water flood risk due to storage of material/temporary structures as well as works to the drainage network. Increase in impermeable surfaces through hard standing or compaction of soils.	Working areas, floodplain and valley side	The afore mentioned CEMP will include appropriate measures to manage drainage and surface water flood risk during construction	Negligible
WEFR M3	Potential degradation of chemical and ecological quality elements of the Afon Rhondda Fach due to increased leaching	Afon Rhondda Fach - source to confluence Rhondda	The drainage design of the Llanwonno Tip includes swales. These will be appropriately vegetated in order to capture and retain some of the metals (such as lead) found to be present in the colliery material, thereby reducing the amount reaching	Year 1- Slight

Ref	Impact/Effect	Receptor(s)	Mitigation/Enhancement proposal	Residual Effect
	and mobilisation of metals, following the handling and deposition of colliery material.		the Afon Rhondda Fach and SE Valleys Carboniferous Coal Measures.	Year 15- Negligible
	Potential degradation of chemical quality elements of the SE Valleys Carboniferous Coal Measures due to increased leaching and mobilisation of metals, following the handling and deposition of colliery material.	SE Valleys Carboniferous Coal Measures	The effectiveness of this mitigation measure is expected to increase with time, as vegetation establishes within and around the swales.	Year 1- Slight Year 15- Negligible
WEFR M4	Potential degradation of chemical and ecological quality elements of the Afon Rhondda Fach due to increased leaching and mobilisation of metals, following the handling and deposition of colliery material.	Afon Rhondda Fach - source to confluence Rhondda	The drainage design of the Receptor Site includes swales and attenuation areas. These will be appropriately vegetated (with rush and sedge species for example) to capture and retain some of the metals (such as lead) found to be present in the colliery material, thereby reducing the amount reaching the Afon Rhondda Fach and SE Valleys Carboniferous Coal Measures.	Year 1- Slight Year 15- Negligible
	Potential degradation of chemical quality elements of the SE Valleys Carboniferous Coal Measures due to increased leaching and mobilisation of metals, following the handling and deposition of colliery material.	SE Valleys Carboniferous Coal Measures	The effectiveness of this mitigation measure is expected to increase with time, as vegetation establishes within and around the swales.	Year 1- Slight Year 15- Negligible
WEFR M5	Potential degradation of chemical and ecological quality elements of the Afon Rhondda Fach due to increased leaching and mobilisation of metals, following the handling and deposition of colliery material.	Afon Rhondda Fach - source to confluence Rhondda	Topsoil shall be reinstated to cap both the remainder of Llanwonno tip and the Receptor Site, allowing natural regeneration of vegetation in these areas. This would reduce the mobilisation of sediment and leachate following the deposition of the colliery material. The effectiveness of this mitigation measure is expected to increase with time, as vegetation establishes itself and stabilises the topsoil capping.	Year 1- Slight Year 15- Negligible
	Potential degradation of chemical quality elements of the SE Valleys Carboniferous Coal Measures due to increased leaching and mobilisation of metals, following the handling and deposition of colliery material.	SE Valleys Carboniferous Coal Measures		Year 1- Slight Year 15- Negligible

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WEFR M6	Potential changes in groundwater levels at both the Receptor Site and Llanwonno Tip due to changes soil/material depth above the groundwater, following the movement of colliery material.	SE Valleys Carboniferous Coal Measures	Monitoring wells to be installed prior to the placement of material on the Receptor Site, to monitor any changes in groundwater levels with at least two rounds of water level monitoring before placement of the material at the Receptor Site	Negligible
WEFR M7			Boreholes will be drilled at Llanwonno Upper Tip, at a time when most of the material has been moved (once the valley slope is stable), in order to monitor whether groundwater levels remain stable (within seasonal variations), particularly in the vicinity of springs, streams and former ponding area. Groundwater levels will be monitored over 6 months, during winter, employing a once a month frequency	
WEFR M8	Increased surface water flood risk posed within the Receptor Site area and downstream, as a result of depositing the colliery material.	Floodplains and flood risk receptors	Provisions of appropriate drainage design. An outline design has been provided for this, but continued consideration shall be made for this during detailed design.	Negligible
Noise				
N M1	Disturbance to residents and users of the leisure centre through excessive noise.	Residential Receptors and Rhondda Fach Leisure Centre	<p>Construction works should only take place during weekdays daytime and Saturday mornings and the number and type of plant used will be inline with assumptions and limitations stated.</p> <p>BS 5228-1 suggests a limit of 55 dB LAeq,1h (free-field) for daytime construction noise for earth moving activities likely to occur for a period in excess of six months.</p>	No significant effects
Major accidents and Disasters				
MAD M1	Storm damage – heavy rain, thunderstorms, direct or indirect to assets.		Adhere to best practice guidance to ensure safety on site, accounting for:	Tolerable

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	Droughts/Heatwaves.	Construction workers, local residents and amenity users.	<ul style="list-style-type: none"> weather conditions (gritting of haulage routes in winter, hydration and screening of workers in the summer, etc.); Ensure that emergency routes are identified, and fire fighters/emergency vehicles are able to access the site easily; Potential UXOs. 	
	Wildfires: forest fire, bush/brush pasture.			
	Sub-zero temperatures and heavy snow.			
MAD M2	Pluvial (surface water) Flooding.	Construction workers, local residents and amenity users.	Ensure appropriate temporary drainage is put in place around the construction compound and the haulage route (any new impermeable surfaces) to avoid build-up of water that could lead to instability of the ground.	Tolerable
MAD M3	Groundwater flooding	Construction workers, local residents and amenity users.	<p>Conduct ground investigations to ensure the integrity and stability of the ground below where material is being removed and where it is being placed in the receptor site.</p> <p>Monitor the stability of the ground throughout the construction of the Proposed Scheme, as well as six months after its construction, including groundwater levels.</p>	Tolerable
	Subsidence/ sink holes	Construction workers and local amenity users		Tolerable
	Landslips	Construction workers Afon Rhondda Fach Rhondda Fach Leisure Centre Residents of Tylorstown NCN Route 881 and users		Tolerable
	Mines and storage caverns	Construction workers and local amenity users		Tolerable

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Pedestrians, Cyclists and Equestrians				
PCE M1	Total severance of footpath will lead to an alternative route having to be used during construction.	Footpath TYL/9/1	During construction, appropriate temporary signage should be deployed to identify safe alternative route for users around the RLB of the site. Consultation should be undertaken with the local PRow officer, prior to construction, to inform users of the impact and seek opinion on the provision of a safe alternative route for users. No mitigation proposed to reduce alternative journey length.	Slight Adverse
	Indirect impacts through increased pedestrian traffic and noise levels from construction activities.	Footpath YCC/16/1		Slight Adverse
PCE M2	Open country land within the red line boundary will be inaccessible during construction. Users will have to use other open access land in the area.	Open country public access land	Consultation should be undertaken with the local PRow officer prior to construction to inform users of the impact and seek opinion on the provision of safe alternative open access areas.	Slight Adverse
	Change in ambience to the public forest adjacent to the Proposed Scheme and inaccessibility to the small amounts of public forest within the red line boundary.	Public forest		Slight Adverse
PCE M3	Part of the route will be used as the access route to get construction vehicles to site at the beginning of the construction period, and again to get them off site at the end of the construction period.	NCN Route 47	Liaison with Sustrans, RCT and NRW, signage put up along route and surrounding area to ensure that users are aware of when the route will be used by heavy plant vehicles as far in advance as possible.	No significant effects
PCE M4	Permanent diversion of PRow by approximately 80m around the Receptor Site.	Footpath TYL/9/1	Provision of new section of PRow around the Receptor Site	Slight Adverse