

Summary Table: Chapter 6 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Land Use and Local Community

Receptor	Sensitivity / Value	Effect			Impact			Mitigation			Residual Impact		
		Construction	Operation	Construction	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	
Class 2 & 3.1 (Prime Agricultural Land)	High	Medium adverse	Medium beneficial	Moderate adverse	Moderate beneficial						Moderate adverse	Moderate beneficial	
		Agricultural land A Section 75 agreement under the provisions of the Town & Country Planning (Scotland) Act 1997 to be produced in consultation with landowners to determine land management practices which can be undertaken.											
Industrially designated land													
I1 - I5	Medium	Medium adverse	High beneficial	Minor adverse	Moderate beneficial						Minor adverse	Moderate beneficial	
Established business areas													
I6	Low	None	High beneficial	None	Minor beneficial								
Opportunity sites													
OPP1, OPP4	Medium	None	High beneficial	None	Moderate beneficial								
Community facilities													
CF3, CF4	Low	Medium adverse	High beneficial	Minor adverse	Minor beneficial	Public access to the working areas prevented through use of signage, barriers and gates. See mitigation in Chapter 7 - Recreation and Amenity (see summary table for Recreation and Amenity).					Minor adverse	Minor beneficial	
Environmental sites													
ENV4, ENV8, ENV9, ENV10	Low	Medium adverse	Medium beneficial	Minor adverse	Minor beneficial	Public access to the working areas will be prevented through the use of signage, barriers and gates. See mitigation in Chapter 7 - Recreation and Amenity (see summary table for Recreation and Amenity).					Minor adverse	Minor beneficial	

Receptor	Sensitivity Value	Effect		Impact		Mitigation		Residual Impact	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Housing sites									
RS	Medium	Medium adverse	Medium beneficial	Minor adverse	Minor beneficial				
Local Community									
All local community impacts	High	Medium adverse	High beneficial	Moderate adverse	Major beneficial	Implementation of the mitigation measures identified for Chapters 6 – 9 and 13- 17 (see summary tables)		Minor adverse	Major beneficial

Summary Table Chapter 7 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Recreation and Amenity

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Findhorn Bay Tourism and recreation	High	No effect	No effect	No impact	No impact	N/A	N/A	No Impact	No Impact
River Findhorn Tourism and recreation	Medium	Medium	Low	Moderate	Negligible	N/A	N/A	Moderate	Negligible
Outdoor recreational facilities – Forres Thisle FC	Low	Medium	Low	Minor adverse	Negligible	Relocate the pitch 7m in a north-easterly direction prior to works commencing; Ensure that works take place during the close season; and Ensure that the newly aligned pitch is ready in time for the new season to start in August.	Provide a pole with a "catching device" on the end to allow the ball to be recovered from the channel without anybody needing to enter the channel; Ensure that any maintenance manholes are not located on or very close to the football pitch playing surface; and Install a high netting fence at the south-west end of the ground where trees are currently present to help prevent balls being kicked out of the ground.	Negligible	Negligible
Forres Footpath Trust – River Findhorn Walk	Medium	High	Medium	Moderate adverse	Minor Adverse	This route will be retained throughout construction where possible, and diversions put in place if required; and Diversion/alternative routes will be clearly identified and signed, and advertised.	N/A	Moderate adverse	Minor adverse
Forres Footpath Trust – Short River Walk	Medium	High	Medium	Moderate adverse	Minor adverse	This route will be retained throughout construction where possible, and diversions put in place if required; and Diversion/alternative routes will be clearly identified and signed, and advertised.	N/A	Moderate adverse	Minor adverse
Sustrans Route	High	High	Medium	Major adverse	Minor adverse	A temporary traffic order is required for work from the Moray Council to close the Sustrans route; A diversion route must be discussed and agreed with Sustrans for use during construction; and Diversion routes will be clearly identified, signed and publicised.	N/A	Moderate adverse	Minor adverse

Summary Table: Chapter 8 - Impacts, Mitigation and Residual Impacts on Receptors Associated with the Historic Environment

Receptor	Sensitivity / Value	Magnitude of Potential Effects				Impact Significance				Mitigation				Residual Impact Significance			
		Construction		Operation		Construction		Operation		Construction		Operation		Construction		Operation	
		High	Low	High	Low	Major adverse	Minor adverse	Moderate adverse	No impact	SMC Consent. Field evaluations and tool box talks to construction workers.	N/A	Moderate adverse	Minor adverse	Moderate adverse	No impact		
Greshop Farm SAM (Site 13)	National	High	Low			Major adverse	Minor adverse			SMC Consent. Field evaluations and tool box talks to construction workers.	N/A	Moderate adverse	Minor adverse	Moderate adverse	Minor adverse		
Square Barrows outwith the SAM	National	High	N/A			Moderate adverse	No impact			Footprint of the West Forres Embankment and temporary road diversion to be stripped of 100% of its topsoil and all archaeological features exposed to be excavated as appropriate.	N/A	Moderate adverse	No impact	Moderate adverse	No impact		
Damaway Castle HGDL	National	Low	No impact			Moderate adverse	No impact			N/A	N/A	Moderate adverse	No impact	Moderate adverse	No impact		
Greshop Farm (Site 18)	Local	Medium	High			Moderate adverse	Moderate beneficial			Field evaluation required for the footprint of the works within this archaeological site and specifically targeted at ring ditch features	N/A	Moderate adverse	Moderate beneficial	Moderate adverse	Moderate beneficial		
Waterford Road (Site 20)	Regional	Medium	High			Moderate adverse	Moderate beneficial			Field evaluation required within or footprint of the works within this archaeological site.	N/A	Moderate adverse	Moderate beneficial	Moderate adverse	Moderate beneficial		
Findhorn Viaduct (Site 17)	National	Medium	High			Moderate adverse	Major beneficial			Leave a buffer zone of 1m around each pier during gravel extra removal, and Photographic survey of Findhorn Viaduct prior to any construction works.		Moderate adverse	Major beneficial	Moderate adverse	Major beneficial		
Waterford (Site 28)	Local	Low	High			Negligible	Moderate beneficial			Field evaluation required for the footprint of the works within this archaeological site		Moderate adverse	Moderate beneficial	Moderate adverse	Moderate beneficial		
Greshop House (Site 19)	Regional	Medium	High			Moderate adverse	Moderate beneficial			N/A	N/A	Moderate adverse	Moderate beneficial	Moderate adverse	Moderate beneficial		
Bridge of Findhorn (Site 7)	Regional	Low	Low			Minor adverse	Minor adverse			N/A	N/A	Minor adverse	Minor adverse	No impact	Minor adverse		
Balnageith (Site 54)	Regional	Medium	Low			Moderate adverse	Minor adverse			N/A	N/A	Moderate adverse	Minor adverse	Moderate adverse	Minor adverse		

Summary Table: Chapter 9 - Impacts, Mitigation and Residual Impacts on Receptors Associated with the Landscape and Visual Impact

Receptor	Sensitivity / Value	Magnitude of Potential Effects				Impact Significance				Mitigation				Residual Impact Significance	
		Construction		Operation		Construction		Operation		Construction		Operation		Construction	Operation
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
LANDSCAPE CHARACTER															
AGLV	None	No impact	No impact	No impact	No impact	N/A	Ensure an effective road diversion system (including temporary signage) during construction, to ensure that the industrial estate is disrupted to a minimum; and Ensure heavy plant and lorries keep to designated haul routes and designated work areas to cause minimum disruption to the football club.	N/A	Regular and effective landscape maintenance programme to ensure optimum growth and health for trees, shrubs and grassed areas; and Ensure plant/equipment keeps to designated maintenance access areas/routes.	No impact	Minor adverse	No impact	Minor adverse	No impact	No impact
Local plan	Medium	Moderate	Low	Moderate adverse	Moderate adverse	Ensure heavy plant and lorries keep to designated haul routes and designated work areas to cause minimum disruption to the area.	Ensure heavy plant and lorries keep to designated haul routes and designated work areas to cause minimum disruption to the area.	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Moderate adverse	Negligible
Moray	Low	Moderate	None	Minor adverse	Minor adverse	Minimise lorries travelling through the town and designate haul routes to cause minimum disruption.	Direct any floodlighting away from residential area; Good organisation of site with clearly designated work and storage areas; Provide clearly designated temporary footpaths along edge of AS6 and around the edge of the site; Ensure that access to and from Pilmuir is maintained during works; and Ensure that construction traffic keeps to designated haul routes and access roads during the construction period.	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Moderate adverse	Negligible
Forres	Medium	Moderate	Low	Moderate adverse	Moderate adverse	Minimise works on garden centre premises; and Replant area between river and garden centre with semi-mature native tree species after completion (see landscape schemes).	Minimise works on garden centre premises; and Replant area between river and garden centre with semi-mature native tree species after completion (see landscape schemes).	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Moderate adverse	Minor beneficial
Area 1	Low	Major	Minor	Major adverse	Major adverse	Herbicide applications around trees for a minimum of 5 years to ensure optimum establishment of an effective screen and watering of heavy standards during dry weather to ensure a high survival rate; and Ensure plant equipment keeps to designated maintenance access areas during maintenance operations.	Herbicide applications around trees for a minimum of 5 years to ensure optimum establishment of an effective screen and watering of heavy standards during dry weather to ensure a high survival rate; and Ensure plant equipment keeps to designated maintenance access areas during maintenance operations.	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Moderate adverse	Moderate beneficial
Area 2	Medium	Moderate	Low	Minor adverse	Minor adverse	Planting of native tree species; Effective weed control around base of young trees for a minimum of 5 years to ensure optimum establishment and growth; Sowing of embankments with grass; and Ensure plant equipment keeps to designated maintenance access areas/routes during maintenance operations.	Planting of native tree species; Effective weed control around base of young trees for a minimum of 5 years to ensure optimum establishment and growth; Sowing of embankments with grass; and Ensure plant equipment keeps to designated maintenance access areas/routes during maintenance operations.	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate beneficial
Area 3	Medium	Moderate	Low	Moderate adverse	Moderate adverse			Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate beneficial

Receptor	Sensitivity / Value		Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Area 4	Medium	Low	Moderate	Low	Moderate adverse	Moderate adverse	Ensure plant equipment and lorries keep to designated haul routes during construction of the scheme; Provide temporary alternative routes for cycle and foot paths; and Ensure that public access is disrupted for a minimum of time, by phasing work and replacing or upgrading footpath and cycle route infrastructure.	Regular and effective landscape maintenance programme to ensure optimum growth of grassed areas; and Ensure plant equipment keeps to designated maintenance access areas during maintenance operations.	Moderate adverse	Moderate adverse
Area 5	Low	Negligible	Moderate	Negligible	Minor adverse	Minor adverse	Ensure plant equipment and lorries keep to designated haul routes during construction of the scheme; and Ensure that public access is disrupted for a minimum of time by phasing work and replacing or upgrading footpaths.	Grass cutting twice a year on embankment to ensure optimum coverage and appearance; and Ensure plant equipment keeps to designated maintenance access areas during maintenance operations.	Minor adverse	Minor adverse
Area 6	Low	Low	Low	Low	Minor adverse	Negligible	Ensure plant equipment and lorries keep to designated haul routes during construction of the scheme; and Ensure that public access is disrupted for a minimum of time by phasing work and replacing or upgrading footpaths.	Ensure plant equipment and lorries keep to designated haul routes during maintenance operations.	Minor adverse	Negligible
VISUAL IMPACTS										
View 1	Medium	Negligible	Moderate	Negligible	Moderate adverse	Minor adverse	Ensure heavy plant and lorries keep to designated haul routes; Keep all equipment and materials within the site compound when and where practicable; and Ensure a well ordered and tidy site.	Grass cutting twice yearly on embankments to ensure optimum vigour of seeding.	Moderate adverse	Minor adverse
View 2	Medium	Low	High	Low	Moderate adverse	Minor adverse	Ensure plant equipment and lorries keep to designated haul routes; Sensitive placement of work lighting away from residential properties; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Planting of heavy standard trees on A96(T) embankment to enhance the view of Forres; Annual weed spraying around establishing tree planting for a minimum of 5 years to ensure optimum establishment and development; and Grass cutting twice yearly on embankments to ensure optimum vigour of grass / clover seeding.	Minor beneficial	Minor beneficial
View 3	Low	Negligible	Moderate	Negligible	Moderate adverse	Minor adverse	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Regular and effective landscape maintenance programme to ensure optimum establishment of grassed areas and tree planting	Moderate adverse	Minor adverse
View 4	Medium	Low	Moderate	Low	Moderate adverse	Moderate beneficial	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Regular and effective landscape maintenance programme to ensure optimum establishment of grassed areas and tree planting.	Moderate adverse	Moderate beneficial
View 5	Medium	Low	Moderate	Low	Moderate adverse	Moderate adverse	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Planting of heavy standard trees to soften the view of the garden centre; Annual weed spraying around establishing tree planting for a minimum of 5 years to ensure optimum establishment and development; and Grass cutting twice yearly on embankments to ensure optimum vigour of grass.	Moderate adverse	Minor beneficial

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
View 6	Medium	Moderate	Low	Moderate adverse	Minor beneficial	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Regular and effective maintenance of the scheme to ensure removal of vegetation from gravel beds.	Moderate adverse	Minor beneficial
View 7	Low	Moderate	Low	Moderate adverse	Moderate adverse	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Ensure plant equipment and lorries keep to designated haul routes.	Moderate adverse	Moderate adverse
View 8	Low	Moderate	Negligible	Moderate adverse	Minor adverse	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Regular and effective landscape maintenance programme to ensure optimum establishment of grassed areas	Minor adverse	Negligible
View 9	Low	Low	Negligible	Minor adverse	Negligible	Ensure plant equipment and lorries keep to designated haul routes; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Regular and effective landscape maintenance programme to ensure optimum establishment of grassed areas	Minor adverse	Negligible
View 10	Low	Low	Low	Minor adverse	Negligible	Ensure plant equipment and lorries keep to designated haul routes; Only remove vegetation within marked areas; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Ensure plant equipment and lorries keep to designated haul routes.	Minor adverse	Negligible
View 11	Low	Low	Low	Minor adverse	Minor adverse	Ensure plant equipment and lorries keep to designated haul routes; Only remove vegetation within marked areas; and Keep the works organised, with adequate storage areas clearly designated and no equipment or activity occurring out with the essential site area.	Ensure plant equipment and lorries keep to designated haul routes.	Minor adverse	Negligible

Summary Table Chapter 10 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Soils, Geology and Hydrogeology

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation (Construction)		Residual Impact	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Soils and Geology	Low	Medium adverse	Low adverse	Minor adverse	Negligible	N/A		Minor Adverse	Negligible
Hydrogeology	Medium	Low adverse	Low adverse	Minor adverse	Minor adverse	N/A		Minor Adverse	Minor Adverse
Groundwater quality	Medium	Medium adverse	Low adverse	Moderate adverse	Minor adverse	Mitigation for pollution will be in accordance with SEPA's Pollution Prevention and Control Guidelines PPG 5 (Works in, Near or Liable to Affect Watercourses), PPG 2 (Above Ground Oil Storage Tanks) and PPG 6 (Working at Construction and Demolition Sites).		Minor Adverse	Minor Adverse

Summary Table: Chapter 11 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Hydrology and Water Quality

Site	Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation (Construction)	Residual Impact of significance	
			Construction	Operation	Construction	Operation		Construction	Operation
River Findhorn	Natural surface flow	High	Low / neutral	Beneficial	No impact	Minor to moderate beneficial	Close monitoring of weather forecasts to ensure high flow events are anticipated well in advance; Suspension of all construction activities during high river flows; and Removal of men, plant and material during high river flows.	Negligible / No impact	Minor to moderate beneficial
Muckie Burn	Natural surface flow	High	Low adverse	Negligible / minor	Minor adverse	Negligible	Close monitoring of weather forecasts to ensure high flow events are anticipated well in advance; Suspension of all construction activities during high river flows; and Removal of men, plant and material during high river flows.	Minor adverse	Negligible
River Findhorn	Surface water abstractions	High	Neutral	Neutral	No impact	No impact	N/A	No impact	No impact
Muckie Burn	Surface water abstractions	High	Neutral	Neutral	No impact	No impact	N/A	No impact	No impact
River Findhorn	Water quality	High	Low adverse	Negligible / low adverse	Minor adverse	Negligible	Implementation of Pollution Management Plan (PMP) during the construction period and during any maintenance activities during the operation of the scheme. The PMP will include the following SEPA guidelines: PPG1 "General Guide to Prevention of Water Pollution" PPG5 "Works In, Near or Liable to Affect Watercourses" PPG6 "Working at Construction and Demolition Sites" PPG7 "Refuelling facilities" PPG13 "Vehicle washing and cleaning" PPG21 "Pollution incident response planning"	Minor adverse to negligible	Negligible
Muckie Burn	Water quality	High	Neutral	Neutral	No impact	No impact	Implementation of Pollution Management Plan	No impact	No impact

Summary Table: Chapter 12 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Geomorphology

Site	Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
			Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
River Findhorn Middle Course (Within Scheme Extent)	Bedload Dynamics	Low to Medium	Low	Low / Medium	Moderate Adverse	Moderate Beneficial	<p>Minimise extent and duration of works in-channel;</p> <p>Temporarily stop work during high flows. No stockpiling of excavated material near the watercourse;</p> <p>Minimise the exposure of part completed works by commencing works downstream and moving upstream; and</p> <p>Inspect and monitor the watercourse regularly for erosion and deposition.</p>	<p>Scour protection at the toe of in-channel structures where required;</p> <p>Bank protection or energy dissipation measures where required;</p> <p>Regular maintenance operations in the Back Run channel as required. Debris and vegetation clearance may be necessary following extended periods of low flow;</p> <p>Sediment management in the Back Run as required;</p> <p>Inspect and monitor the channel regularly, every 6 months for first 2 years and annually thereafter. Identify areas of active erosion, deposition, and instability of existing flood defence structures; and</p> <p>Monitoring the channel in the vicinity of the Railway Bridge, the Broom of Moy and the Waste Transfer Station.</p>	Minor Adverse	Moderate Beneficial (some sites Minor Adverse)
			Low	Low / Medium	Minor Adverse	Negligible	<p>A Sediment Management Plan will be developed in consultation with SEPA and SNH;</p> <p>Minimise extent and duration of works in the channel;</p> <p>Minimise the exposure of part completed works by commencing works downstream and moving upstream;</p> <p>Inspect and monitor the watercourses regularly for erosion and deposition as required;</p> <p>Confine construction traffic to purpose built access tracks;</p> <p>During placement of concrete in the Plimuir water filled trench, the pumping pipe will be left in place with the pipe-end buried in the fluid mass of concrete;</p> <p>Any spillage from the placement of concrete for the structure of the outfall will be contained in a sandbagged area and removed immediately; and</p> <p>The timing of the placement of concrete will be carried out so that flood events do not occur while wet cement is exposed.</p>	<p>Some maintenance will be required over time as the channel adapts to new flows and hydraulic conditions. It is envisaged that this will reduce from year to year, and qualitative assessments will provide detail on areas which are experiencing sediment-related problems. From this a decision can be made on whether sediment maintenance intervention is required, and if so, an appropriate measure should then be employed. Due regard to the impact of vegetation or sediment removal on habitats and whole sediment dynamics of the river at a reach and catchment scale should be considered. A site walkover of flood defences should be performed following all high flow events to assess potential sediment-related problems, and if necessary decide on a course of appropriate action.</p>	Minor Adverse	Moderate Beneficial (some sites Minor Adverse)

Site	Receptor	Sensitivity Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
			Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Findhorn Bay	Bedload Dynamics	High	No Effect	No Effect	n/a	n/a	n/a	n/a	n/a	n/a
	Sediment Supply	High	Low	Low	Minimise the exposure of part completed works by commencing works downstream and moving upstream.	Monitoring and maintenance procedures will be implemented as outlined in the Monitoring and Maintenance section.	Negligible to Minor Adverse	Negligible to Minor Adverse	Negligible to Minor Adverse	Negligible to Minor Adverse
Back Run and Muckle Burn	Bedload Dynamics and Sediment Supply	Low to Medium	Low	Low	Minimise extent and duration of works in-channel; Temporarily stop work during high flows; No stockpiling of excavated material will occur near the watercourse.;	Bank protection or energy dissipation measures will be implemented as required; Regular maintenance operations may be required in the Back Run channel as it will only carry water during medium and high flow events. Debris and vegetation clearance may be necessary following extended periods of low flow;	Minor Adverse	Minor Adverse	Minor Adverse	Negligible to Minor Beneficial
					Minimise the exposure of part completed works by commencing works downstream and moving upstream; and inspect and monitor the watercourse regularly for erosion and deposition throughout the construction phase and optimise construction methods accordingly.	Sediment management may be necessary should a series of transporting events deliver an excessive quantity of gravel and cobbles to the Back Run; and Inspect and monitor the channel regularly every 6 months for first 2 years and annually thereafter. Identify areas of active erosion, deposition, and instability of existing flood defence structures.	Negligible to Minor Beneficial	Negligible to Minor Beneficial	Negligible to Minor Beneficial	Negligible to Minor Beneficial

Summary Table: Chapter 13 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Aquatic Ecology

Site	Receptor	Sensitivity/Value	Magnitude of Potential Effect		Impact Significance		Mitigation		Operator	Residual Impact of Significance	
			Construction	Operation	Construction	Operation	Construction	Operation		Construction	Operation
River Findhorn	Salmonids	International / National	Low adverse	Neutral	Minor - moderate adverse	No impact	Implementation of Sediment / Pollution management.	N/A		Minor adverse	No impact
Muckle Burn	Salmonids	International / National	Low adverse	Low adverse	Minor adverse	Minor adverse / negligible	N/A	N/A		Minor adverse	Minor adverse / negligible
River Findhorn	Lamprey	Undesignated	Low adverse	Neutral	Negligible	No impact	Implementation of Sediment / Pollution management; and If possible works within the low flow channel to be limited to outside the spawning and hatching period for sea lamprey and brook lamprey (1 April to 1 June).	N/A		Negligible	No Impact / minor beneficial
Muckle Burn	Lamprey	Undesignated	Low adverse	Low adverse	Negligible / minor adverse	Minor adverse / negligible	N/A	N/A		Negligible / minor adverse	Minor adverse / negligible
River Findhorn	Freshwater invertebrates	Undesignated	Low adverse	Neutral	Negligible	No impact	Implementation of Sediment / Pollution management.	N/A		Negligible	No impact
Muckle Burn	Freshwater invertebrates	Undesignated	Low adverse	Low adverse / neutral	Negligible	Negligible / no impact	N/A	N/A		Negligible	Negligible / no impact
River Findhorn	Exposed riverine sediments	Undesignated	Medium adverse	Medium adverse	Minor adverse	Minor adverse	If excavation is to be carried out mid March to mid November. Selected areas of the top 200mm of the existing gravel bars will be selected and re-laid to retain the character and invertebrate complement of the habitat; If excavation is to be carried out Nov to mid March, topsoil from the vegetated areas adjoining the gravel bars will be lifted and re-laid at the new channel / point bar interface within 2 hours to retain the existing population of hibernating beetles; ERS top soil contaminated by invasive plant species will be kept separate from other material and disposed of appropriately within the works; and The opening of the back run to the rivers edge will be completed during low flow.	N/A		Negligible / minor beneficial	Negligible / minor beneficial
River Findhorn	Aquatic Macrophytes	Undesignated	Neutral	Neutral	No impact	No impact	N/A	N/A		No impact	No impact
Muckle Burn	Aquatic Macrophytes	Undesignated	Low adverse	Low adverse	Negligible	Negligible	N/A	N/A		Negligible	Negligible

Summary Table: Chapter 14 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Terrestrial Ecology

Receptor	Importance Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
International and European designations (Ramsar, SPAs, and SACs)	International	Medium	Medium	Moderate adverse	Moderate adverse	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared (see Appendix D) and is being implemented; and Vegetation removal and gravel extraction will be phased to reduce potential erosion risk and sediment input and hence reduce disturbance to designated sites downstream.	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared and is being implemented (see Appendix D). This will involve some spraying of invasive species and their propagules beyond the construction of the Scheme in specific areas	Moderate adverse	Moderate adverse
National designations (SSSI's)	National	None	Low	Moderate adverse	Moderate adverse	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared and is being implemented (see Appendix D); and Vegetation removal and gravel extraction will be phased to reduce potential erosion risk and sediment input and hence reduce disturbance to designated sites downstream.	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared and is being implemented (see Appendix D). This will involve some spraying of invasive species and their propagules beyond the construction of the Scheme in specific areas	Moderate adverse	Moderate adverse
Regionallocal designations (LNRs, SINS)	Regional	Medium	Low	Minor adverse	No impact	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared and is being implemented (see Appendix D); and Vegetation removal and gravel extraction will be phased to reduce potential erosion risk and sediment input and hence reduce disturbance to designated sites downstream.	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive Invasive Species Management Plan has been prepared and is being implemented (see Appendix D). This will involve some spraying of invasive species and their propagules beyond the construction of the Scheme in specific areas.	Minor adverse	No impact
Local plan designations	Local	Low	Low	No impact	Moderate beneficial	N/A	N/A	No impact	Moderate beneficial
Local Biodiversity Action Plan Habitats	Local	High	High	Moderate adverse	Moderate adverse	High value trees will be retained where possible; Replanting and habitat creation will be undertaken to replace felled trees and temporarily lost habitat (See planning drawings 9S4465/9801 to 9S4465/9822); If compensatory planting is not successful in certain areas, then further planting will be undertaken; Non-native species control programmes will be undertaken to improve the extent and quality of LBAP habitats and reduce the risk of spread to designated sites and LBAP habitats which would	A post construction monitoring regime as part of the Operation and Maintenance manual will be developed in consultation with FDSFB, SNH and SEPA to determine the long-term impacts of the Scheme on the affected aquatic and terrestrial habitats.	Minor adverse	Minor adverse

Receptor	Importance / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Trees	Regional / County	Medium	Medium	Moderate adverse	Moderate adverse	<p>Rock armour will be provided at the exit of the outfall to provide scour protection to protect trees in the area.</p> <p>Clearance or trimming of trees and shrubs will be undertaken in accordance with British Standard 3998 – 'Recommendations for tree work';</p> <p>Trees to be removed will be marked clearly by the contractor and checked by the Project Manager;</p> <p>Trees to be retained will be temporarily fenced off to protect them during construction;</p> <p>Clearance will be avoided between 1 March and 31 August as this could disturb breeding birds; and</p> <p>Soft felling will be implemented for trees that contain or have the potential to contain bat roosts.</p>	<p>5265 trees and 111 shrubs of native, local provenance will be planted around the site to replace some of the removed trees; and</p> <p>Some of the felled trees and scrub will be left as rotting piles (in a location where it will not pose a risk during floods) to provide good habitat for reptiles, invertebrates, and small mammals.</p>	Moderate adverse	Moderate adverse
Other flora and habitats	Unspecified	Medium	Medium	Minor adverse	Minor adverse	<p>Clearance or trimming of trees and shrubs will be undertaken in accordance with British Standard 3998 – 'Recommendations for tree work';</p> <p>Trees to be removed will be marked clearly by the contractor and checked by the Project Manager;</p> <p>Trees to be retained will be temporarily fenced off to protect them during construction;</p> <p>Avoid clearance that would disturb breeding birds during the period 1 March to 31 August;</p> <p>Implement soft felling of trees that contain or have the potential to contain bat roosts;</p> <p>All trees or branches will be appropriately disposed of, or reused within the site; and</p> <p>Trees and shrubs of native, local provenance will be planted around the site to replace some of</p>	<p>Trees and shrubs of native, local provenance will be planted around the site to replace some of the removed trees; and</p> <p>Some of the felled trees and scrub will be left as rotting piles (in a location where it will not pose a risk during floods) to provide good habitat for reptiles, invertebrates, and small mammals.</p>	Minor adverse	Minor adverse

Receptor	Importance / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Invasive plant species	Local			Moderate adverse	Moderate adverse	the removed trees. An Invasive Species Management Plan will be implemented. This includes annual inspection and spraying prior to, during and after construction and details the methods for removing and disposing of giant hogweed and Japanese knotweed during construction.	To combat the risk of spread of invasive species in the footprint of the Scheme and the downstream area, a comprehensive invasive species management plan has been prepared and is being implemented (see Appendix D). This will involve spraying of invasive species and their propagules beyond the construction of the Scheme in specific areas.	Moderate beneficial	Moderate beneficial
Bats	European	Low	Medium	Major adverse	Major adverse	At sites where trees have been identified with medium or high potential roost sites further surveys of bat activity will be undertaken. Several dawn or dusk surveys (in accordance with SNH/Bat conservation Trust guidance) spread over a period of several weeks from June to August 2008 will be undertaken to detect any significant maternity roosts. At sites where trees have been identified as having low potential – features will be checked during the activity surveys; If bat roosts are identified during these surveys in areas that will be affected by construction, discussions with SNH will be held on how to proceed. On the outcome of these discussions a licence issued by the Scottish Government may be required; Any trees with the potential to contain bat roosts will be soft felled in phases with a licensed bat worker present at all times following a methodology agreed with SNH; If bats are identified on site during construction works will cease and SNH will be contacted immediately; and Areas under construction will be lit sensitively to reduce potential impacts on bat feeding resulting from changes to invertebrate behaviour.	Bat boxes will be established throughout areas affected by tree removal to mitigate for lost roosting habitat; and Tree planting and habitat restoration will be initiated where appropriate (See planning drawings 9S4465/9801 to 9S4465/9822).	Moderate adverse	Minor adverse
Otters	European	Low	Low	Moderate adverse	Moderate adverse	In consultation with SNH and the Scottish Executive a pre-construction survey will be undertaken to supplement the previous surveys and review the location of otter holts, resting sites and otter activity within the construction footprint. This will be used to inform the	A planting programme will be undertaken to replace the tree and vegetation lost along the riparian corridor where possible.	Moderate adverse	Moderate adverse

Receptor	Importance / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance			
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation		
Badgers	National	Medium	Low	Major adverse	Minor adverse	<p>Due to the dynamic sett distribution, targeted surveys will be required on an annual basis up to the time of construction to confirm the location of badger setts thus ascertaining the need for licences and mitigation;</p> <p>For all badger setts which display signs of current use that are identified within 30m of the construction footprint, consultation with SNH will be undertaken to assess the potential need for a badger licence and appropriate mitigation agreed. In the case of setts where exclusion is required, this mitigation may include temporary/permanent relocation to other existing setts or artificial setts and provision of compensatory habitat;</p> <p>Where works are likely to disturb setts, works will avoid the main breeding season for badgers (this being December to June inclusive);</p> <p>Some of the felled trees and scrub will be left as rotting piles (in a site where it will not pose a risk during floods) to provide good habitat for</p>	<p>application for a license to disturb otters which will be required (see Permissions and Licenses section below);</p> <p>Construction work will be undertaken during agreed daylight working hours of 07.00 hours to 19.00 hours in summer and 07.00 to 17.00 in winter, unless exceptional circumstances require otherwise, however work will not be undertaken near the river at night under artificial lighting. This will allow otters to migrate through the area at night undisturbed;</p> <p>Construction areas will be left in a safe condition during periods of inactivity, with chemicals and construction materials stored safely in accordance with SEPA's Pollution Prevention and Control Guidelines (PPG 2 - Above ground oil storage tanks, and PPG 5 - Works in, near or liable to affect watercourses). Key measures may include capping all pipes, covering trenches or providing a means of escape for otters and the placement of all potentially hazardous discarded material, in closed containers; and</p> <p>Designated routes for personnel and plant to access work elements to minimise the disturbance footprint.</p>	Minor adverse	<p>In the case of setts if exclusion is required, this mitigation may include temporary/permanent relocation to other existing setts or artificial setts and provision of compensatory habitat as agreed with SNH and the Scottish Government; and</p> <p>Any permanent fences constructed, within areas used for badger foraging, shall be designed to accommodate badger passage.</p>	Minor adverse	Negligible

Receptor / Importance / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
	Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Red Squirrels	Low	Medium	No impact	Minor adverse	A walk-over survey will be undertaken prior to construction to confirm the absence of red squirrels and dreys within areas where tree felling will occur; and Consultation with SNH will be undertaken prior to commencement of works to discuss the results of the preconstruction surveys.	Tree planting of local provenance native species will be carried out as part of the Scheme which will improve the red squirrel habitat.	No impact	Negligible
Water voles	None	Medium	No impact	Minor beneficial	N/A	N/A	No impact	Minor beneficial
Birds	High (during breeding season) Medium (outwith breeding season)	Medium	Major adverse (during breeding season) Minor adverse (outwith breeding season)	Minor adverse	All tree felling and scrub clearance required should be undertaken outwith the nesting period of 1st March-31st August inclusive; If tree felling or scrub clearance must be undertaken within the breeding period (March-August inclusive), the habitat in question must be checked by a bird surveyor prior to works commencing, and no breeding birds found to be present. The areas of habitat must be small discrete areas due to the difficulties of checking large areas of woodland and scrub accurately to locate breeding birds;	Nest boxes will be put up, and monitored to ensure they are kept in good condition. Locations for boxes will be discussed with SNH.	Minor adverse	Minor adverse

Receptor	Importance / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
						<p>The Scheme should offer the opportunity for planting of native species, particularly in the Pilmuir area the west of the residential estate. These areas are both currently rather uniform in terms of habitat and have low densities of breeding birds;</p> <p>Limit vehicle activity to designated access roads to avoid disturbance to ground nesting birds; and</p> <p>However, if nests are located during construction, works must cease immediately in that area, and SNH must be consulted to establish what action should be taken; and</p> <p>Minimise direct lighting impact on potential nesting areas (e.g. open water, ditches and hedges / bushes).</p>			
Amphibians	Local	Low	Low	Negligible	No impact	<p>Pre construction walk over survey will be undertaken prior to works near the identified pond and other areas of suitable habitat.</p>	<p>Vegetation will be reinstated following the completion of the works;</p> <p>If any amphibians are found during maintenance procedures, work must cease immediately in the vicinity and advice must be sought from SNH on how to proceed; and</p> <p>The removal and control of invasive plant species would benefit both the spawning sites and adjacent foraging and refuge sites.</p>	Negligible	No impact
Reptiles	National	Low	None	Moderate adverse	No impact	<p>Ground clearance will be undertaken in a sensitive manner to avoid injury to animals, and enable these to be identified should they be present;</p> <p>If any reptiles located during ground clearance, work will cease and in consultation with SNH, will be relocated to suitable habitat outwith the fenced-off area such that they cannot access the construction site; and</p> <p>Some of the felled trees and scrub to be left as rotting piles (in a site where it will not pose a risk during floods) to provide good habitat for reptiles, invertebrates, and small mammals.</p>	<p>Vegetation will be reinstated following the completion of maintenance work;</p> <p>If any reptiles are found during maintenance procedures, work must cease immediately in the vicinity and advice must be sought from SNH on how to proceed; and</p> <p>Some of the felled trees and scrub will be left as rotting piles (in a site where it will not pose a risk during floods) to provide good habitat for reptiles, invertebrates, and small mammals.</p>	No impact	No impact

Summary Table: Chapter 15 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Traffic

Site	Receptor	Impact Significance		Mitigation		Residual Impact of significance	
		Construction	Operation	Construction	Operation	Construction	Operation
A96(T)	Driver delay	Negligible	No Impact	Construction traffic will avoid vehicle movements at peak traffic times and where possible internal roads will be used so that traffic does not need to use the road network.	N/A	Negligible	No Impact
A96(T) Diversion	Driver delay	Negligible	No Impact	Advance warning of the road works will be given to drivers giving them options to change their route or time of travel to avoid peak traffic times.	N/A	Negligible	No Impact
Road Network	Dust and mud	Minor Adverse	No Impact	Maintenance of internal haul roads to minimise dust and mud generation and installation of wheel washing plant at access points onto the highway.	N/A	Negligible	No Impact
Waterford Road	Construction traffic intrusion	Minor adverse	No Impact	Advice will be given to local residents in the area of the steady presence of HGV's on these roads, a traffic operational plan will be put in place along the narrow section of Waterford road and appropriate provision for material unloading and staff parking will be identified within the boundary of the construction site.	N/A	Minor Adverse	No Impact
Road Network	Flooding of roads	No Impact	Moderate beneficial	N/A	No mitigation required	No Impact	Moderate beneficial

Summary Table: Chapter 16 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Noise and Vibration

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance		
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation	
Residential properties adjacent to A96(T) - Construction traffic noise	Low	Low	-	None	-	N/A	N/A	None	-	
Ramflat Road/Pilmuir Rd/Pilmuir Rd West - off-site construction traffic noise on minor public roads	High	High	-	Moderate	-	As the condition of road surfaces is not within the control of the Contractor, mitigation of construction related heavy goods vehicle noise is best achieved by the application of Best Practice operational controls such as construction traffic speed limits i.e. 20 mph limits past residential properties; and These measures will additionally help to minimise potential adverse ground borne vibration impacts.	N/A	Minor	-	
Waterford / Monklands Farms & Mains of Moy - off-site construction traffic noise on minor public roads	High	High	-	Major	-		N/A	N/A	Moderate	-
Mains of Moy - off site construction traffic vibration on minor public roads	High	High	-	Major	-	No mitigation is required for the noise associated with vehicle movements on haul routes; The recommended mitigation to reduce the potential adverse vibration impact is to ensure speeds of vehicles past housing are kept very low, 20 mph for example in and around Pilmuir, and road and track surfaces adjacent to residential properties should be maintained in good condition in order to prevent vehicle 'body slap' and the subsequent associated ground borne vibration; and In addition, perceptible vibration can cause residents to notice old cracks in walls and ceilings, arising from natural building settlement, that have not previously been observed; this in turn can lead to unwarranted claims for compensation against contractors for vibration-induced damage. To minimise the opportunity for such claims and to provide reassurance to residents, it is recommended that structural surveys be conducted of buildings particularly close to any O&M tracks or existing roads on which construction traffic may be travelling. Particular perceived adverse impacts might be expected where there is no existing road.	N/A	Major	-	
Greshop House - Construction traffic noise on O&M roads	Medium	0 dB	-	None	-		None	-	None	-
Monkland Farm - Construction traffic noise on O&M roads	Medium	0 dB	-	None	-		None	-	None	-
Broom Of Moy - construction traffic noise on O&M roads	High	0 dB	-	None	-		None	-	None	-
Dalvey Smithy Cottages - Construction traffic noise on O&M roads	Medium	0 dB	-	None	-		None	-	None	-
Greshop House - Construction traffic vibration on O&M roads	Medium	Not perceptible	-	None	-		None	-	None	-
Monkland Farm - Construction traffic vibration on O&M roads	Medium	Not perceptible	-	None	-		None	-	None	-
Broom Of Moy - construction traffic vibration on O&M roads	High	High	-	Moderate to Major	-		None	-	Minor	-
Dalvey Smithy Cottages - Construction traffic vibration on O&M roads	High	High	-	Moderate to Major	-		None	-	Minor	-
Residential properties on Callier Road - A96 diversion	Low	+1 to +8 dB	-	Negligible to moderate	-		The recommended mitigation to reduce the potential adverse noise impact is, for the duration of the temporary diversion of the A96(T), the construction of a temporary noise barrier along the borderline of the A96(T) to provide acoustic shielding to the houses. The fencing should be designed to completely screen the line of sight of the construction traffic from the	N/A	None	-

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Earnhill House – construction activity noise including O&M track construction (Table 16.9)	High	None	-	None	-	residential properties. Typical construction of a suitable noise barrier might comprise wood panelling of at least 18mm thickness, well sealed with no gaps or loose panels, and to a height of approximately 3m. Such a barrier may potentially provide noise attenuation values of up to 10 dB.		None	-
Broom of Moy – general construction noise impact (Table 16.9)	High	None	-	None	-	The recommended mitigation to reduce the potential adverse noise impact at Broom of Moy is the construction of a temporary noise fence along the edge of the proposed O&M track, designed to the previously described specification (paragraph 16.63) and situated to completely screen the line of sight of the construction area from residential properties.		None	-
Broom of Moy – haul route construction noise impact (Table 16.9)	High	+4 to +11 dB	-	Minor to Major	-	The recommended mitigation to reduce the predicted noise impact associated with the creation of the A96 diversion is to construct a noise fence in order to screen the line of sight between the houses closest to the diversion route and the construction works. The extent of the noise fence will depend on the finalised route of the diversion, however it is recommended that the fence is constructed to screen any housing less than 40m from the works. The fence should be constructed as close as possible to the construction site and to previously stated specifications (paragraph 16.63).		Negligible to Minor	-
Greshop House – right hand river bank processing activity noise (Table 16.9)	High	+6 dB	-	Moderate	-	In addition to the above measures, the principal contractor and sub-contractors would be expected to apply the principles of Best Practicable Means (BPM), as defined in BS 5228: Part 1: 1997, to all their construction activities. BPM includes, but is not limited to:		None	-
Greshop House – North Forres embankment construction noise (Table 16.9)	High	None	-	None	-	<ul style="list-style-type: none"> Use of the most modern equipment available; Ensuring that equipment is properly maintained and operated and is fitted with properly fitted and closed acoustic enclosures where appropriate; Controls on the hours of working and the prevention of noisy activities at unsociable times; Preventing plant equipment to idle unnecessarily; Not parking mobile plant near to sensitive receptors such that early morning starts may cause disturbance; Siting fixed equipment such as generators behind site cabins or using natural topographic screening to reduce noise at nearby sensitive receptors. 		None	-
Dalvey Smithy Cottages - construction activity noise including O&M track construction (Table 16.9)	High	None	-	None	-		N/A	None	-
North Plimuir – raising existing A96 – noise (Table 16.9)	Low	+1 to +12 dB	-	Negligible to Major	-			None or Minor	-
North Plimuir – all other construction activity noise (Table 16.9)	Low	None	-	None	-			None	-
South Plimuir – Plimuir drainage channel construction noise (Table 16.9)	Medium	+1 dB	-	Negligible	-			None	-
South Plimuir – all other construction activity noise (Table 16.9)	Medium	None	-	None	-			None	-
Plimuir - night pumping activity noise	Medium	+2 to +18 dB	-	Negligible to major	-		N/A	None	-
Broom of Moy - night pumping activity noise	High	+29 dB	-	Major	-			None	-

Receptor	Sensitivity / Value	Magnitude of Potential Effects		Impact Significance		Mitigation		Residual Impact Significance	
		Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
Greshop House - night pumping activity noise	High	0 dB	-	None	-	<p>designed "quiet" pump, or equivalent; and</p> <p>The construction of a temporary noise barrier or partial enclosure, lined with acoustically absorbent material and positioned to completely obstruct the line of sight between the pump and the nearest receptor, would potentially reduce the receptor noise levels by up to 10 dB in the case of a barrier or at least 15dB in the case of a partial enclosure. The screen should be placed as close to the pump as possible, and would ideally enclose the pump on 3 sides or, in the case of an enclosure, on top as well, leaving the side facing away from the receptor open for ventilation and access.</p>	-	None	-
Dalvey Smithy Cottages – Left hand river bank rock crusher noise	Medium	0 dB	-	None	-	<p>Due to the size of the rock crushing equipment, it may be difficult to physically screen the equipment. However, it is our understanding that the occupants at Greshop House have a positive perception of the scheme and its potential long term benefits. This positive perception, combined with Best Practice construction working methods, will serve to significantly reduce the perceived adverse impact of this activity.</p>	N/A	None	-
Greshop House – Left hand river bank rock crusher noise	High	+6 dB	-	Moderate	-	<p>Where the use of a physical noise barrier is possible, this will ensure that noise attenuation of up to 10 dB is provided for the residents of Greshop House; and</p> <p>No specific mitigation is required in relation to Dalvey Smithy Cottages but the contractor will be expected to apply the principles of BPM as previously described in all operations.</p>	-	None	-
North Pilmuir – night time operational noise from pumping station	Medium	-	Medium	-	Minor to Moderate	<p>The relocation of the control centre to the southeast side of the pump station, to act as a physical noise barrier between the pumping station and the houses and to prevent reflected noise from the building facade being directed towards the houses on Caillier Road;</p>	-	Negligible	-
North Pilmuir – day time operational noise from pumping station	low	-	Low	-	None	<p>It is recommended that the pumps be mounted on resilient mountings to control vibration induced noise and that the pipe and ductwork is similarly resiliently mounted and isolated to reduce potential resonance of pipework and ducting; and</p> <p>Additional mitigation that might be required, should additional assessment find that noise impacts are higher than expected, might include enclosure of the top of the pump well.</p>	-	None	-
North Pilmuir – noise from operation of Motor Control Centre	Low (day) / Medium (night)	-	None	-	None	N/A	-	-	None

Summary Table, Chapter 17 - Impacts, Mitigation and Residual Impacts on Receptors Associated with Air Quality

Source	Pollutant	Frequency	Adverse/ Beneficial	Significance	Mitigation (construction)	Adverse/ Beneficial (With Mitigation)	Significance (With Mitigation)
Exhaust emissions from on road vehicles on A96(T) & Waterford Road	NO ₂	Potentially continuous for duration of construction period	Adverse	Negligible	Multiple occupancy of site vehicles will be promoted during consultation with the use of crew buses where required; Implementation of minimum vehicle emission controls based on European Emission Standards on site; and Implementation of mitigation measures for 'Strategic Road Network' proposed in Chapter 15.	Adverse	Negligible
	PM ₁₀						
Exhaust emissions from on road vehicles accessing FAS sites	PM ₁₀	Potentially continuous for duration of construction period	Adverse	Minor	Implementation of mitigation measures for reducing local intrusion by construction vehicles proposed in Chapter 15 - Traffic	Adverse	Minor
	SO ₂						
Exhaust emissions from on road vehicles in congested traffic	PM ₁₀	Potentially continuous for duration of construction period	Adverse	Moderate	Implementation of mitigation measures for reducing driver delay on 'Diversion of the A96(T)' proposed in Chapter 15 - Traffic for both the A96(T) diversion and the diversion on Waterford Road.	Adverse	Minor
	SO ₂						
Exhaust emissions from NRRM	NO ₂	Potentially continuous for duration of construction period	Adverse	Minor	Non road mobile machinery and plant should be well maintained. If any emissions of dark smoke occur then the relevant machinery should stop immediately and any problem rectified; All NRRM shall comply with either the current or previous EU Directive Staged Emission Standards (97/68/EC, 2002/88/EC, 2004/26/EC). All NRRM shall be fitted with Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting); The ongoing conformity of plant retrofitted with DPF, to a defined performance standard, shall be ensured through a programme of on-site checks; and Consideration of energy conservation measures including instructions to throttle down or switch off idle construction equipment; consideration to switching off the engines of trucks while they are being loaded or unloaded, ensure equipment is properly maintained to ensure efficient energy consumption.	Adverse	Negligible
	PM ₁₀						
Construction Activities	Dust	Potentially continuous for duration of construction period	Adverse	Moderate	Dust emissions should be controlled by the effective implementation of the Code of Construction Practice and by following best practice in the control of dust and dust emissions as outlined in the Greater London Authority and London Councils Control of Dust Emissions from Construction and Demolition Best Practice Guidance; and Emissions from mobile crushing and screening should be controlled via a Pollution Prevention and Control Permit issued under the Pollution Prevention and Control (Scotland) Regulations 2000 by SEPA.	Adverse	Minor

