



# A83 Rest and Be Thankful

The A83 Rest and Be Thankful Long-Term Solution

Environmental Impact Assessment Report

Volume 2 – Main Report

# A83 Rest and Be Thankful

A83 Access Argyll and Bute - Environmental Impact Assessment  
Report - Volume 2 – Main Report

Transport Scotland

A83AAB-AWJ-EGN-LTS\_GEN-RP-LE-000444

## Notice

This document and its contents have been prepared and are intended solely as information for Transport Scotland and use in relation to the Access to Argyll and Bute (A83) scheme.

Atkins WSP Joint Venture assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

# Contents

Ref.	Title	Page No.
<b>1</b>	<b>Introduction</b>	1-1
1.1	Overview	1-1
1.2	Background to the Proposed Scheme	1-2
1.3	Site Location Overview	1-4
1.4	Statutory Context for Environmental Impact Assessment	1-5
1.5	Environmental Impact Assessment Report	1-6
1.6	The Assessment Team	1-11
1.7	Review and Comments	1-11
<b>2</b>	<b>Need for the Proposed Scheme</b>	2-1
2.1	Introduction	2-1
2.2	Background	2-1
2.3	Proposed Scheme Objectives	2-3
2.4	Policy Context	2-4
2.5	Local Context	2-11
<b>3</b>	<b>Alternatives Considered</b>	3-1
3.1	Introduction	3-1
3.2	Route Corridor Options	3-1
<b>4</b>	<b>The Proposed Scheme</b>	4-1
4.1	Introduction	4-1
4.2	Description of Proposed Scheme	4-3
4.3	Land Required for the Proposed Scheme	4-49
4.4	Construction	4-69
4.5	Biodiversity Net Gain and Natural Capital	4-87
<b>5</b>	<b>Overview of the Assessment Process</b>	5-1
5.1	Introduction	5-1
5.2	Scope and Guidance	5-1
5.3	The Assessment Chapters	5-5
5.4	Proposed Scheme Design Modifications	5-13
5.5	Coordinated Assessment with Habitat Regulations Appraisal	5-13

Ref.	Title	Page No.
5.6	Limitations and Assumptions	5-14
<b>6</b>	<b>Consultation and Scoping</b>	6-1
6.1	Introduction	6-1
6.2	Approach and Methods	6-3
<b>7</b>	<b>Air Quality</b>	7-1
7.1	Introduction	7-1
7.2	Approach and Methods	7-2
7.3	Baseline Conditions	7-4
7.4	Embedded Mitigation	7-10
7.5	Potential Impacts	7-10
7.6	Mitigation	7-15
7.7	Residual Effects	7-17
<b>8</b>	<b>Cultural Heritage</b>	8-1
8.1	Introduction	8-1
8.2	Approach and Methods	8-1
8.3	Baseline Conditions	8-3
8.4	Embedded Mitigation	8-7
8.5	Potential Impacts	8-7
8.6	Mitigation	8-12
8.7	Residual Effects	8-15
<b>9</b>	<b>Landscape</b>	9-1
9.1	Introduction	9-1
9.2	Approach and Methods	9-1
9.3	Baseline Conditions	9-4
9.4	Embedded Mitigation	9-11
9.5	Potential Impacts	9-12
9.6	Mitigation	9-22
9.7	Residual Effects	9-25
<b>10</b>	<b>Visual Effects</b>	10-1
10.1	Introduction	10-1
10.2	Approach and Methods	10-1
10.3	Baseline Conditions	10-4

Ref.	Title	Page No.
10.4	Embedded Mitigation	10-6
10.5	Potential Impacts	10-6
10.6	Mitigation	10-15
10.7	Residual Effects	10-19
<b>11</b>	<b>Biodiversity</b>	11-1
11.1	Introduction	11-1
11.2	Approach and Methods	11-2
11.3	Baseline Conditions	11-6
11.4	Embedded Mitigation	11-20
11.5	Potential Impacts	11-24
11.6	Additional Mitigation	11-40
11.7	Residual Effects	11-47
<b>12</b>	<b>Geology, Soils and Groundwater</b>	12-1
12.1	Introduction	12-1
12.2	Sources of information	12-2
12.3	Approach and Methods	12-3
12.4	Baseline Conditions	12-7
12.5	Embedded Mitigation	12-8
12.6	Potential Impacts – Improvements to the OMR	12-12
12.7	Potential Impacts from the Long-Term Solution (LTS)	12-18
12.8	Mitigation	12-25
12.9	Residual Effects	12-27
<b>13</b>	<b>Material Assets and Waste</b>	13-1
13.1	Introduction	13-1
13.2	Approach and Methods	13-1
13.3	Baseline Conditions	13-5
13.4	Embedded Mitigation	13-7
13.5	Potential Impacts	13-8
13.6	Mitigation	13-13
13.7	Residual Effects	13-16
<b>14</b>	<b>Noise and Vibration</b>	14-1
14.1	Introduction	14-1

Ref.	Title	Page No.
14.2	Approach and Methods	14-1
14.3	Baseline Conditions	14-9
14.4	Potential Impacts	14-11
14.5	Mitigation	14-14
14.6	Residual Effects	14-14
<b>15</b>	<b>Population and Human Health</b>	15-1
15.1	Introduction	15-1
15.2	Approach and Methods	15-1
15.3	Baseline Conditions	15-6
15.4	Embedded Mitigation	15-10
15.5	Potential Impacts	15-11
15.6	Mitigation	15-38
15.7	Residual Effects	15-40
<b>16</b>	<b>Effects on Climate</b>	16-1
16.1	Introduction	16-1
16.2	Approach and Methods	16-1
16.3	Baseline Conditions	16-6
16.4	Embedded Mitigation	16-7
16.5	Potential Impacts	16-8
16.6	Mitigation	16-13
16.7	Residual Effects	16-15
<b>17</b>	<b>Climate Vulnerability</b>	17-1
17.1	Introduction	17-1
17.2	Approach and Methods	17-2
17.3	Baseline Conditions	17-5
17.4	Embedded Mitigation	17-12
17.5	Potential Impacts	17-12
17.6	Additional Mitigation	17-23
17.7	Residual Effects	17-23
<b>18</b>	<b>Major Accidents and Disasters</b>	18-1
18.1	Introduction	18-1
18.2	Approach and Methods	18-2

Ref.	Title	Page No.
18.3	Baseline Conditions	18-6
18.4	Embedded Mitigation	18-9
18.5	Potential Impacts	18-10
18.6	Mitigation	18-12
<b>19</b>	<b>Road Drainage and the Water Environment</b>	19-1
19.1	Introduction	19-1
19.2	Approach and Methods	19-1
19.3	Baseline Conditions	19-6
19.4	Embedded Mitigation	19-11
19.5	Potential Impacts	19-15
19.6	Specific Mitigation	19-18
19.7	Residual Effects	19-24
<b>20</b>	<b>Cumulative Effects</b>	20-1
20.1	Introduction	20-1
20.2	Approach and Methodology	20-2
20.3	Potential Cumulative Impacts	20-7
20.4	Conclusions	20-20
<b>21</b>	<b>Schedule of Environmental Commitments</b>	21-1
21.1	Introduction	21-1
21.3	Construction Environmental Management	21-1
21.4	Schedule of Environmental Commitments	21-3
<b>22</b>	<b>Summary of Significant Residual Effects</b>	22-1
22.1	Introduction	22-1
22.2	Summary of Significant Residual Effects	22-2



## Tables

Ref.	Title	Page No.
1.1	Requirements of the EIA Regulations	1-9
3.1	Summary of the DMRB Stage 2 Environmental Assessment	3-9
4.1	Earthworks Summary for the Proposed Scheme	4-20
4.2	Proposed A83 Culverts	4-31
4.3	Proposed Culverts on OMR	4-33
4.4	Watercourse categories and descriptions	4-46
4.5	Embedded Mitigation	4-52
4.6	Indicative Construction Activities associated with the Proposed Scheme	4-72
5.1	DMRB Stages of EIA	5-2
5.2	Environmental Topics Assessed in Chapters 7 to 20 and the relevant DMRB Standards	5-3
5.3	Typical Environment value (sensitivity) and descriptions	5-8
5.4	Typical magnitude of impact and typical descriptions	5-9
5.5	Significance categories and typical descriptions	5-10
5.6	Significance matrix (Value / Impact Magnitude)	5-10
5.7	Hierarchy of Mitigation	5-11
7.1	Annual Mean Nitrogen Dioxide ( $\mu\text{g}/\text{m}^3$ ) at Diffusion Tube Sites in Argyll and Bute, 2018 - 2022	7-5
7.2	2024 Mapped Background Concentrations ( $\mu\text{g}/\text{m}^3$ )	7-6
7.3	Sensitive habitats within the Beinn an Lochain SSSI	7-8
7.4	Estimated Annual Mean Total NO <sub>x</sub> and Road NO <sub>2</sub> within Beinn an Lochain SSSI, 2033	7-13
7.5	Estimated Nitrogen Deposition at within Beinn an Lochain SSSI, 2033	7-14
7.6	Construction dust mitigation measures	7-15
7.7	Construction Residual Effects Pre and Post Mitigation Measures	7-18
8.1	Cultural heritage mitigation measures	8-13
8.2	Residual construction effects	8-16
8.3	Residual operational effects	8-21
9.1	Potential Effects on Landscape Receptors	9-15
9.2	Mitigation Measures	9-22

Ref.	Title	Page No.
9.3	Residual Effects Construction	9-26
9.4	Residual Effects Operation	9-35
10.1	Visual Effects	10-9
10.2	Mitigation Measures	10-15
10.3	Residual Effects Construction	10-19
10.4	Residual Effects Operation	10-24
11.1	Ecological Features and their Importance: Designated Sites (Volume 4, Appendices 11.1 and 11.4)	11-8
11.2	Ecological Features and their Importance: Terrestrial Habitats (Volume 4, Appendix 11.4 Designated Sites and Terrestrial Habitats)	11-9
11.3	Ecological Features and their Importance: Bryophytes (Volume 4, Appendix 11.5)	11-12
11.4	Ecological Features and their Importance: Aquatic Habitats and Species (Volume 4, Appendix 11.6)	11-13
11.5	Ecological Features and their Importance: Protected and Notable Species. (Volume 4, Appendices 11.5 and 11.7 – 11.14)	11-15
11.6	Embedded Ecological Mitigation Measures	11-22
11.7	Summary of Permanent and Temporary Habitat Losses	11-26
11.8	Additional Mitigation Measures	11-42
11.9	Residual Effects Construction	11-48
11.10	Residual Effects Operation	11-55
12.1	OMR Embedded Mitigation Measures	12-8
12.2	LTS Embedded Mitigation Measures	12-10
12.3	Mitigation Measures	12-26
12.4	Construction phase impact assessment (OMR Improvements)	12-27
12.5	Operational phase impact assessment (OMR Improvements)	12-30
12.6	Construction phase impact assessment (LTS)	12-32
12.7	Operational phase impact assessment (LTS)	12-34
13.1	Material types and quantities	13-9
13.2	Waste and arisings types and quantities to be diverted from landfill	13-10
13.3	Forecast waste types to be sent to landfill	13-12
13.4	Mitigation measures	13-14
13.5	Likely significance of effects	13-9

Ref.	Title	Page No.
14.1	Magnitude of change	14-5
14.2	Absolute noise level bandings	14-5
14.3	Initial significance bandings	14-6
14.4	Determining final significance	14-7
14.5	Existing baseline road traffic noise levels	14-9
14.6	OMR diversion route road traffic noise levels	14-12
14.7	OMR diversion route noise level change	14-12
14.8	BS 8233 indoor ambient noise levels for dwellings	14-13
14.9	Noise and vibration mitigation measures	14-14
14.10	Residual OMR diversion route noise effects	14-15
15.1	Sub-topics scoped out	15-10
15.2	Potential Impacts on WCH Routes	15-13
15.3	Construction Impacts on Farm Holding No.1	15-25
15.4	Construction Impacts on Upland Estate No.1	15-27
15.5	Construction Impacts on Upland Estate No.2	15-28
15.6	Construction Impacts on Forestry Holding No. 1	15-29
15.7	Operational Impacts on Farm Holding No.1	15-35
15.8	Operational Impacts on Upland Estate No.1	15-36
15.9	Operational Impacts on Upland Estate No.2	15-26
15.10	Operational Impacts on Forestry Holding No.1	15-37
15.11	Mitigation measures	15-38
15.12	Residual Effects Construction	15-41
15.13	Residual Effects Operation	15-55
16.1	Embedded mitigation measures	16-8
16.2	Construction phase (Do-Something) emissions	16-9
16.3	Operational phase emissions (tCO <sub>2e</sub> )	16-10
16.4	Comparison of the Proposed Scheme to Scottish Government carbon reduction targets	16-11
16.5	Comparison of the Proposed Scheme to Scottish transportation sectoral emissions envelope	16-12
16.6	Mitigation measures	16-14
16.7	Construction Residual Effects Pre and Post Mitigation Measures	16-16

Ref.	Title	Page No.
16.8	Operational Residual Effects Pre and Post Mitigation Measures	16-18
17.1	Potential construction effects scoped out of further assessment	17-8
17.2	Potential operational effects scoped out of further assessment.	17-9
17.3	Potential construction impacts	17-13
17.4	Potential operational impacts on asset receptors (including their operation, maintenance, and refurbishment)	17-14
17.5	Potential operational impacts on end users	17-19
17.6	Additional mitigation identified	17-23
17.7	Residual Effects Construction	17-24
17.8	Residual Effects Operation	17-26
18.1	Excluded Receptors	18-3
18.2	Major Events Baseline	18-7
18.3	Potential Major Events during the Construction Phase Grouped by High Level Risk Event	18-10
18.4	Potential Major Events during the Operational Phase Grouped by High Level Risk Event	18-11
18.5	Essential Mitigation Measures	18-13
19.1	Embedded Mitigation Measures	19-13
19.2	Mitigation Measures	19-20
19.3	Construction Potential Impacts and Residual Effects	19-27
19.4	Operational Potential Impacts and Residual Effects	19-36
20.1	Determining Significance of Cumulative Effects	20-4
20.2	Effects Interactions Cumulative Effects - Construction	20-8
20.3	Effects Interactions Cumulative Effects - Operation	20-13
20.4	Reasonably Foreseeable Developments Screening Assessment	20-17
21.1	Schedule of Essential Mitigation Commitments	21-5
22.1	Chapter 9 Significant Residual Effects (Landscape) – Construction	22-2
22.2	Chapter 9 Significant Residual Effects (Landscape) – Operation	22-6
22.3	Chapter 10 Significant Residual Effects (Visual Effects) – Construction	22-8
22.4	Chapter 10 Significant Residual Effects (Visual Effects) – Operation	22-12
22.5	Chapter 11 Significant Residual Effects (Biodiversity) – Construction	22-14
22.6	Chapter 14 Significant Residual Effects (Noise and Vibration) – Construction	22-15

Ref.	Title	Page No.
22.7	Chapter 15 Significant Residual Effects (Population and Human Health) – Construction	22-16
22.8	Chapter 15 Significant Residual Effects (Population and Human Health) – Operation	22-18
22.9	Chapter 19 Significant Residual Effects (Road Drainage and Water Environment) – Construction	22-21
22.10	Chapter 19 Significant Residual Effects (Road Drainage and Water Environment) – Operation	22-23

## Plates

Ref.	Title	Page No.
3.1	Access to Argyll and Bute (A83) Route Corridor Options	3-3
4.1	Aerial view of Glen Croe including an overview of the Proposed Scheme layout	4-4
4.2	Debris Flow Shelter and associated maintenance access (Visualisation)	4-5
4.3	Plan view of the proposed junction between the A83 and B828 Glenmore local road including the ghost island on the A83 and the channelising island on the B828	4-12
4.4	Plan view of the proposed direct access and maintenance track located immediately north of the Croe Water (Cobbler Bridge) providing maintenance access directly to the roof of the DFS	4-13
4.5	Plan view of the proposed Rest and Be Thankful Viewpoint car park improvements with a single junction providing access to the car park and an integrated bus stop / turning area	4-15
4.6	Concept design of Rest and Be Thankful Viewpoint car park improvements	4-17
4.7	Plan view of the proposed Active Travel Link adjacent to the B828 Glenmore local road connecting the Rest and Be Thankful Viewpoint car park to the Glen Croe Forestry Track / Core Path	4-19
4.8	Photograph of a spigot mortar emplacement adjacent to the B828 Glenmore Local Road with the A83, OMR, Beinn Luibhean and The Cobbler in the background	4-20
4.9	Computer generated image of the DFS at the southern end of the Proposed Scheme	4-26
4.10	Computer generated image of the DFW at the northern end of the Proposed Scheme	4-28
4.11	Computer generated image of B02 Burn Bridge at the northern end of the Proposed Scheme	4-29
4.12	Aerial Imagery of two existing lay-bys within the Proposed Scheme extents	4-37
4.13	Computer generated image of the DFS northern portal with the various lighting proposals illustrated	4-41
4.14	Aerial image of Glen Croe containing the Proposed Scheme boundary and associated Biodiversity Net Gain and Natural Capital Enhancement Sites	4-88

## Volume 3 – Figures

Ref.	Title
Figure 1.1	Proposed Scheme Location Plan
Figure 1.2	Environmental Features
Figure 3.1	Stage 2 Options
Figure 4.1	Scheme Layout Overview
Figure 4.2a	Mainline Plan and Profile
Figure 4.2b	Active Travel Link to Forestry Track Plan and Profile
Figure 4.3	Debris Flow Shelter General Arrangement Plan and Elevation
Figure 4.4	Debris Flow Wall Overall Plan
Figure 4.5a	Watercourse Diversion Concept Design
Figure 4.5b	B02 Burn Bridge General Arrangement
Figure 4.6	Long Term Solution Preferred Option Detention Basin Typical Details
Figure 4.7	Biodiversity Net Gain (BNG) and Natural Capital (NC) Enhancement Sites
Figure 4.8	Proposed Scheme Baseline Terrestrial and Watercourse Habitat Plan
Figure 4.9	Proposed Scheme Post Development Terrestrial and Watercourse Habitat Plan
Figure 4.10	OMR Improvements Enhancement Sites Baseline Terrestrial and Watercourse Habitat Plan
Figure 4.11	OMR Improvements Enhancement sites Post Development Terrestrial and Watercourse Habitat Plan
Figure 4.12	LTS Enhancement Sites Baseline Terrestrial and Watercourse Habitat Plan
Figure 4.13	LTS Enhancement Sites Post Development Terrestrial and Watercourse Habitat Plan
Figure 4.14	LTS Enhancement Sites BNG Watercourse Reach Plan
Figure 7.1	Receptors Sensitive to Construction Dust
Figure 8.1	Known Heritage Assets
Figure 9.1	Landscape Designations
Figure 9.2	Landscape Character
Figure 9.3	Landscape and Ecological Mitigation
Figure 9.4	Rest and Be Thankful Car Park Concept Design
Figure 10.1	Viewpoint Locations
Figure 10.2	Zone of Theoretical Visibility (ZTV)

Ref.	Title
Figure 10.3	Photographs
Figure 10.4	Photomontages
Figure 11.1	Designated Sites
Figure 11.4a	Terrestrial Habitats (UKhab)
Figure 11.4b	Terrestrial Habitats (National Vegetation Classification)
Figure 11.5	Locations of Notable Bryophyte Species
Figure 11.6	Aquatic Ecology Screening Area and Survey Results
Figure 11.7a	Breeding Birds Survey Visit April 2023
Figure 11.7b	Breeding Birds Survey Visit May 2023
Figure 11.7c	Breeding Birds Survey Visit June 2023
Figure 11.7d	Breeding Birds Survey Visit July 2023
Figure 11.7e	Breeding Birds Territories
Figure 11.7f	Black Grouse Habitat Suitability
Figure 11.7g	Barn Owl Roost Suitability
Figure 11.8a	Suitability of Watercourses for Otter
Figure 11.8b	Otter Presence/Likely Absence Survey Results_CONFIDENTIAL
Figure 11.8c	Otter Monitoring Locations and Incidental Records of American Mink Evidence_CONFIDENTIAL
Figure 11.9a	Pine Marten Survey Area
Figure 11.9b	Pine Marten Survey Results
Figure 11.10a	Red Squirrel Survey Area
Figure 11.10b	Red Squirrel Survey Results
Figure 11.11a	Bat Survey Area and Survey Access
Figure 11.11b	Bat Dusk Emergence/Dawn Re-entry and Inspection Survey Results
Figure 11.11c	Automated Static Bat Detector Results (May - September 2023)
Figure 11.11d	Automated Static Bat Detector Locations (Winter 2023-2024)
Figure 11.12a	Badger Survey Area
Figure 11.12b	Badger Survey Results CONFIDENTIAL
Figure 11.13a	Invertebrate Sample Station Locations
Figure 11.14a	Reptile Habitat Suitability Assessment Results
Figure 11.14b	Incidental and Desk Study Species Records
Figure 11.16a	Enhancement Sites Location Plan



Ref.	Title
Figure 11.16b	Enhancement Sites: Protected Species Data CONFIDENTIAL
Figure 12.1	Superficial Geology
Figure 12.2	Bedrock Geology
Figure 12.3	Ground Investigation Locations
Figure 12.4	Peat Classifications
Figure 12.5	Superficial and Bedrock Aquifer Productivity
Figure 12.6	Aquifer Vulnerability
Figure 12.7	Groundwater Dependent Terrestrial Ecosystems
Figure 12.8	Peat Deposits underlying the Proposed Scheme
Figure 12.9	Proposed Drainage Networks
Figure 14.1	OMR Diversion Route Noise Study Area
Figure 15.1	Population and Human Health Receptors
Figure 19.1	WFD waterbodies
Figure 19.2	Water Feature References
Figure 19.3	The Proposed Scheme and watercourses
Figure 19.4	Donor Catchments
Figure 19.5	Catchment Delineation
Figure 19.6	Loch Restil model Extents
Figure 19.7	Croe water model extents
Figure 19.8	50%AEP Max Flood Extent + Glen Croe sensitive receptors
Figure 19.9	3.33%AEP Max Flood Extent + Glen Croe sensitive receptors
Figure 19.10	1%AEP Max Flood Extent + Glen Croe sensitive receptors
Figure 19.11	0.5%AEP Max Flood Extent + Glen Croe sensitive receptors
Figure 19.12	0.5%AEP +CC Max Flood Extent + Glen Croe sensitive receptors

## Volume 4 – Appendices

Ref.	Title
Appendix 1.1	Environmental Impact Assessment Record of Determination
Appendix 1.2	Statement of Competency
Appendix 4.1	Biodiversity Net Gain / Natural Capital Assessment
Appendix 4.2	First Iteration Environmental Management Plan
Appendix 6.1	Summary of Scoping Consultation Responses
Appendix 7.1	Air Quality Legislation, Policy and Guidance
Appendix 7.2	Air Quality Methodology
Appendix 8.1	Cultural Heritage Legislation, Policy and Guidance
Appendix 8.2	Cultural Heritage Methodology
Appendix 8.3	Known Heritage Assets Table
Appendix 8.4	Historic Environment Desk-Based Assessment
Appendix 9.1	Landscape Legislation, Policy and Guidance
Appendix 9.2	Landscape Methodology
Appendix 10.1	Visual Effects Methodology
Appendix 11.1	Report to inform Habitat Regulations Appraisal
Appendix 11.2	Biodiversity Legislation, Planning Policy and Guidance
Appendix 11.3	Biodiversity Methodology
Appendix 11.4	Designated Sites and Terrestrial Habitat Report
Appendix 11.5	Bryophyte Report
Appendix 11.6	Aquatic Receptor Report
Appendix 11.7	Breeding Bird Report
Appendix 11.8	Otter Report
Appendix 11.9	Pine Marten Report
Appendix 11.10	Red Squirrel Report
Appendix 11.11	Bat Report
Appendix 11.12	Badger Report
Appendix 11.13	Terrestrial Invertebrate Report
Appendix 11.14	Reptiles and Other Notable Species Report
Appendix 11.15	Outline Landscape and Ecological Management and Monitoring Plan

Ref.	Title
Appendix 11.16	Enhancement Site Survey Report
Appendix 12.1	Geology, Soils and Groundwater Legislation, Policy and Guidance
Appendix 12.2	Geology, Soils and Groundwater Methodology
Appendix 12.3	Geology, Soils and Groundwater Baseline
Appendix 12.4	Cuttings Assessment
Appendix 12.5	Spillage and Routine Runoff Assessments
Appendix 12.6	Outline Peat Management Plan
Appendix 13.1	Material Assets and Waste Legislation, Policy and Guidance
Appendix 13.2	Material Assets and Waste Methodology
Appendix 13.3	Material Assets and Waste Baseline Data Tables and Graphs
Appendix 14.1	Noise and Vibration Legislation, Policy and Guidance
Appendix 14.2	Noise and Vibration Methodology
Appendix 15.1	Population and Human Health Legislation, Policy and Guidance
Appendix 15.2	Population and Human Health Methodology
Appendix 15.3	Population and Human Health Baseline
Appendix 15.4	Population and Human Health Assessment Tables
Appendix 15.5	Land Interest Questionnaire
Appendix 16.1	Effects on Climate Legislation, Policy and Guidance
Appendix 16.2	Effects on Climate Methodology
Appendix 17.1	Climate Vulnerability Legislation, Policy and Guidance
Appendix 17.2	Climate Vulnerability Methodology
Appendix 17.3	Climate Vulnerability Baseline
Appendix 18.1	Major Accidents and Disasters Legislation, Policy and Guidance
Appendix 18.2	Major Accidents and Disasters Methodology
Appendix 18.3	Risk Record
Appendix 19.1	Road Drainage and the Water Environment Legislation, Policy and Guidance
Appendix 19.2	Road Drainage and the Water Environment Methodology
Appendix 19.3	Road Drainage and the Water Environment Baseline
Appendix 19.4	Hydromorphology Assessment
Appendix 19.5	Water Quality Assessment
Appendix 19.6	Flood Risk Assessment

## Abbreviations

Abbreviation	Description
A&BC	Argyll and Bute Council
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekday Traffic
ACR	Argyll Coastal Route
AEP	Annual Exceedance Period
AFP	Argyll Forest Park
AIA	Agricultural Impact Assessment
ALARP	As Low As Reasonably Practicable
AOD	Above Ordnance Datum
APIS	Air Pollution Information System
APQ	Areas of Panoramic Quality
AQ	Air Quality
AQMA	Air Quality Management Areas
AQS	Air Quality Strategy
AWI	Ancient Woodland Inventory
AWJV	AtkinsRéalis WSP Joint Venture
BCR	Benefit to Cost ratios
BEIS	Business, Energy and Industrial Strategy
BGS	British Geological Survey
BNG	Biodiversity Net Gain
BPM	Best Practice Mitigation
CAR	Controlled Activities Regulations
CC	Climate Change
CCI	Community Conservation Index
CDE	Construction, Demolition and Excavation
CDM	Construction Design and Management
CDW	Construction and Demolition Waste
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management

Abbreviation	Description
CIfA	Chartered Institute for Archaeologists
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CMP	Carbon Management Plan
COMAH	Control of Major Accident Hazards
CO <sub>2</sub>	Carbon dioxide
CRP	Construction Runoff Permits
CSL	Construction Site Licences
CWA	Core Wildness Areas
CWP	Control of Woodland Policy
D&B	Design and Build
DEFRA	Department for Environment, Food and Rural Affairs
DFS	Debris Flow Shelter
DFW	Debris Flow Wall
DMRB	Design Manual for Roads and Bridges
DoW	Definition of Waste
DSM	Digital Surface Model
DTM	Digital Terrain Model
EC	European Commission
ECoW	Environmental Clerk of Works
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EQR	Ecological Quality Ratio
ESG	Environmental Steering Group
EU	European Union
EZoL	Ecological Zone of Influence
FEH	Flood Estimation Handbook and associated methods ( <a href="https://www.ceh.ac.uk/services/flood-estimation-handbook">https://www.ceh.ac.uk/services/flood-estimation-handbook</a> )
FLS	Forestry and Land Scotland
FRA	Flood Risk Assessment
GBR	General Binding Rules

Abbreviation	Description
GDLs	Gardens and Designed Landscapes
GGBS	Ground Granulated Blast-furnace Slag
GHG	Greenhouse Gas
GI	Ground Investigation
GIR	Ground Investigation Report
GIS	Geographic Information System
GLIVIA	Guidelines for Landscape and Visual Impact Assessment
GWDTE	Groundwater Dependent Terrestrial Ecosystems
HAWRAT	Highways Agency Water Risk Assessment Tool
HER	Historic Environment Record
HES	Historic Environment Scotland
HDV	Heavy Duty Vehicle
HGV	Heavy Goods Vehicle
HRA	Habitat Regulations Appraisal must be carried out by the 'competent authority' if a plan or project (either alone or in combination with other plans or projects) could affect a European designated site.
HSE	Health and Safety Executive
IEFs	Important Ecological Features
IEMA	Institute of Environmental Management and Assessment
IIP	Infrastructure Investment Plan
INNS	Invasive Non-native Species
ISO	International Standards Organisation
IUCN	International Union for Conservation of Nature
LCT	Landscape Character Type
LDP	Local Development Plan
LEMMP	Landscape Ecological Management and Monitoring Plan
LLTNP	Loch Lomond and the Trossachs National Park
LLTNPA	Loch Lomond and the Trossachs National Park Authority
LOAEL	Lowest Observed Adverse Effect Level
LTS	Long-Term Solution
LVIA	Landscape and Visual Impact Assessment
MA&D	Major accidents and disasters
mAOD	Metres Above Ordnance Datum

Abbreviation	Description
MMP	Materials Management Plan
MoRPh	Modular Physical
MSA	Mineral Safeguarding Area
MTS	Medium-Term Solution
MWJP	Minerals and Waste Joint Plan
NAAFP	Northern Area Argyll Forest Park
NAAPQ	North Argyll Area of Panoramic Quality
NBN	National Biodiversity Network
NC	Natural Capital
NHL	National Heritage List
NHS	National Health Service
NO <sub>x</sub>	Nitrogen Oxides
NO <sub>2</sub>	Nitrogen dioxide
NPF4	National Planning Framework 4
NRFA	National River Flow Archive (Search Data   National River Flow Archive (ceh.ac.uk))
NRHE	National Record for the Historic Environment
NSAs	National Scenic Areas
NTDS	National Traffic Data System
NTS	National Transport Strategy
NVC	National Vegetation Classification
NVMP	Noise and Vibration Management Plan
OLEMMP	Outline Landscape and Ecology Management and Monitoring Plan
OMR	Old Military Road
OS	Ordnance Survey
PAN	Planning Advice Note
PAS	Publicly Available Specification
PES	Preliminary Engineering Services
PESS	Preliminary Engineering Support Services
PFA	Pulverised Fuel Ash
PI	Potential Impact
PMP	Peat Management Plan

Abbreviation	Description
PM <sub>10/2.5</sub>	Particulate Matter (10/2.5)
PPS	Plans, Policies and Strategies
PSSR	Preliminary Sources Study Report
PWMS	Precautionary Working Method Statement
PWS	Private Water Supply
QMED	The value of the annual maximum flood which may be expected to be equalled or exceeded once every two years on average.
RABT	Rest and Be Thankful
RCP	Representative Concentration Pathway
RDWE	Road Drainage and the Water Environment
ReFH2	Revitalised Flood Hydrograph Method 2 – ReFH2 software is used to derive peak flows and hydrographs as part of the FEH methods.
RSPB	Royal Society for the Protection of Birds
RTA	Road Traffic Accident
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SF	Scottish Forestry
SIA	Simple Index Approach
SLP	Sensitive Lighting Plan
SLQ	Special Landscape Quality
SMMP	Soils and Materials Management Plan
SNH	Scottish Natural Heritage
SOAEL	Significant Observed Adverse Effect Level
SPA	Special Protection Area
SPP	Species Protection Plans
SRP	Soil Resource Plan
SSD	Stopping Sight Distance
SSSI	Site of Special Scientific Interest
STPR	Strategic Transport Projects Review
SuDS	Sustainable Drainage System
SWMP	Site Waste Management Plan



Abbreviation	Description
SY15	Summer of year 15
TMP	Traffic Management Plan
TRL	Transport Research Laboratory
TRN	Trunk Road Network
TSS	Total Suspended Solids
UAV	Unmanned Aerial Vehicle
UKCP	United Kingdom Climate Projections
UKFS	UK Forestry Standard
VRS	Vehicle Restraint Systems
WCH	Walkers, cyclists and horse-riders
WCHAR	Walking, Cycling, Horse-Riding Assessment Report
WFD	Water Framework Directive
WoSAS	West of Scotland Archaeological Service
WRAP	Waste & Resources Action Programme
WSI	Written Scheme of Investigation
WWII	World War Two
WY1	Winter of year 1
ZTV	Zone of Theoretical Visibility

## Glossary

Term	Definition
1D / 2D	1-Dimensional, 2-Dimensional. Used to describe hydraulic models. 1D models represent channels using depth average velocity to represent each reach of the channel. 2D models represent floodplains as domains with depth averaged velocity. 1D / 2D models links the two approaches.
(Major) Accident	In the context of the Proposed Scheme, an event that threatens immediate or delayed serious damage to human health, welfare and/or the environment and requires the use of resources beyond those of Transport Scotland or its contractors to respond to the event. Serious damage includes the loss of life or permanent injury and/or permanent or long-lasting damage to an environmental receptor that cannot be restored through minor clean-up and restoration efforts. The significance of this effect will take into account the extent, severity and duration of harm and the sensitivity of the receptor.
Adaptive Capacity	The capacity of receptors to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.
Affected Road Network (ARN)	Parts of the road network which are identified as likely to be affected by changes in air quality as a result of a development project.
Air Pollution Information System	A support tool for consultants, conservation and regulatory agencies, industry and local authorities for assessing the potential effects of air pollutants on habitats and species.
Air Quality Management Area	An area identified where the National Air Quality Strategy Objectives are not likely to be achieved.
Air Quality Objective	Objectives are policy targets generally expressed as a maximum ambient pollutant concentration to be achieved. The objectives are set out in the UK Government's Air Quality Strategy for the key air pollutants.
Ambient Noise Level	The all-encompassing noise level measured in in $L_{Aeq,T}$ , The Ambient Noise Level incorporates background sounds as well as the industrial source noise under consideration.

Term	Definition
Ancient woodland	Land that has been continually wooded since at least since 1750 in Scotland.
Annual Average Daily Traffic (AADT)	A daily total traffic flow (24hrs), expressed as a mean daily flow across all 365 days of the year.
Annual Average Weekday Traffic (AAWT)	The average volume of vehicle traffic of a highway or road for a year, excluding weekends and bank holidays, and adjusted for seasonal variations.
Appointed Contractor	Term used to describe an individual or company appointed by a developer to construct or manage a project
Appropriate Assessment	An assessment of impacts associated with a development on a European Protected Site. An Appropriate Assessment is required by law under Regulation 48 of the Habitats Regulations (1994), implementing Article 6(3) of the Habitats Directive (92/43/EEC) where likely significant effects on a European Protected Site have been identified.
Archaeology	The scientific study of past human life and change through analysis of material remains that humans have left behind
Baseline	A description of the current state of the environment without implementation of the project
Biodiversity	The variety of life in the world or in a particular habitat or ecosystem.
Biodiversity Action Plan	A plan setting out objectives and actions for the conservation of biodiversity based on the targeting of resources towards priority habitats and species.
Biodiversity enhancement	The <a href="#">National Planning Framework 4</a> (NPF4) and the <a href="#">Scottish Government Draft Planning Guidance: Biodiversity</a> mention that “ <i>in order for biodiversity to be ‘enhanced’ it will need to be demonstrated that it will be in an overall better state than before intervention, and that this will be sustained in the future.</i> ”

Term	Definition
Biodiversity Net Gain	Biodiversity Net Gain is a process which leaves nature in a better state than before.
Buffer	a defined, often demarcated area around an object or asset to ensure that there is adequate space for protection
Catchment	A catchment is an area where water is collected by the natural landscape. As the water flows over the landscape, it finds its way into streams and down into the soil, eventually feeding the river.
Catch Pit	Channel at upstream side DFS.
Chainage	The distance of any point along a road, measured along the road centreline from a chosen origin or start point.
Circular economy	Maximising the sustainable use and value of resources, eliminating waste from all stages of the resource lifecycle, while benefiting both the economy and the environment.
Climate Change	This refers to a change in the state of the climate, which can be identified by changes in average climate characteristics which persist for an extended period, typically decades or longer.
Competent Authority	An authority that is legally responsible for discharging the requirements of the EIA Directive 2014/52/EU via the development consenting process.
Competent Expert(s)	The terms used in the EIA Regulations to describe a suitably qualified and experienced person (or persons) responsible for the preparation of the EIA Report.
Construction Environmental Management Plan (CEMP)	A plan prepared which sets out how a construction project will avoid, minimise or mitigate effects on the environment in accordance with environmental commitments.
Construction Materials	Primary, recycled / secondary and renewable sources of materials required for constructing a project.
Conveyance	The movement of water from one location to another.

Term	Definition
Culvert	<p>A primary culvert is defined as a buried conduit which carries, or is intended to carry, flow from a watercourse, and which does not form part of a larger pipe network.</p> <p>A connectivity culvert is defined as a buried conduit which is intended to carry flow from one side of an embankment or raised feature to another to ensure that hydraulic equilibrium is maintained.</p>
Cumulative Effects	Impacts that result from incremental changes caused by other present or reasonably foreseeable actions together with the project.
dB (decibel)	<p>The unit of sound level. A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds (<math>s_1</math> and <math>s_2</math>) is given by <math>20 \log_{10} (s_1/s_2)</math>. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is <math>20 \mu\text{Pa}</math>.</p>
dB(A)	The unit of sound level, A-weighted, which considers the increased sensitivity of the human ear at some frequencies.
Debris Flow Shelter	A portal frame type structure with an open aspect on one side and solid wall on the other that protects road users and infrastructure from debris flow and rockfall events.
Debris Flow Protection Wall	A rigid barrier type structure that protects road users and infrastructure from debris flow / rockfall events.
Demarcation	Physically marking the limit or boundary of an object or asset to ensure that its location is known
Demolition	The action or process of deconstructing, demounting or otherwise bringing down / breaking out of buildings and structures.
Design Manual for Roads and Bridges (DMRB)	A document that provides requirements which shall be applied to the appraisal, design, maintenance, operation and disposal of motorway and all-purpose trunk roads for which one of the Overseeing Organisations is highway or road authority.

Term	Definition
Desk study	Assessment of a site usually preceding ground investigations typically incorporating a review of available site information, consultation with relevant bodies and a site visit.
Diffusion Tubes	Passive samplers which consist of small plastic tubes containing a chemical reagent to absorb the pollutant to be measured directly from the air.
Disaster	In the context of the Proposed Scheme, a naturally occurring phenomenon such as an extreme weather event (for example storm, flood, temperature) or ground-related hazard events (for example subsidence, landslide, earthquake) with the potential to cause an event or situation that meets the definition of a Major Accident as defined above.
Discharge	Release of effluent to surface water or groundwater, this may include treated sewage from wastewater treatment works and septic tanks, industrial effluent and road runoff.
Disposal	Any operation which is not recovery, (e.g. discarding waste to landfill).  This includes any operation that has as a secondary consequence the reclamation of substances or energy.
Do Minimum	The conditions that would persist in the absence of the implementation of a construction or improvement project, but given that maintenance on the road network is ongoing.
Do Something	The conditions that would occur as a consequence the implementation of a construction or improvement project.
Drainage Network	A drainage system, including pipes, chambers and SuDS features that convey surface water run-off from the road to adjacent outfall.
Ecological Clerk of Works	A qualified ecologist who monitors and advises on construction sites, ensuring that ecological impacts are minimised and that the law relating to protected species etc. is complied with.
Effect	Term used to express the consequence of an impact

Term	Definition
EIA	A formal process set down in The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017 (SSI 2017 No. 137) used to systematically identify, predict and assess the likely significant environmental impacts of a proposed project or development.
Embankment	Flood embankments are earth filled structures designed to contain high river levels. They are commonly grass-covered but may need additional protection against erosion by swiftly flowing water, waves, or overtopping.
Embedded Mitigation	Design measures which are integrated into a project for the purpose of minimising environmental effects.
Emissions Factors Toolkit	Toolkit used to assist local authorities in carrying out Review and Assessment of local air quality as part of their duties under the Environmental Act 1995. In addition the toolkit is used as the basis of emission assumption in future years when undertaking air quality modelling studies.
Enhancement	A measure that is over and above what is required to mitigate the adverse effects of a project. 'Enhancement' of a habitat is also sometimes used as a compensatory measure to offset losses elsewhere.
Environmental Clerk of Works	A qualified ecologist who monitors and advises on construction sites, ensuring that ecological impacts are minimised and that the law relating to protected species etc. is complied with.
Erosion	A natural process leading to the removal of sediment from a riverbed, bank, floodplain, or coastline.
Essential Mitigation	Mitigation critical for the delivery of a project which can be acquired through statutory powers.
External Influencing Factor	A factor which occurs beyond the limits of the Proposed Scheme that may present a risk to the Proposed Scheme, e.g. if an external disaster occurred (e.g. earthquake, Control of Major Accident Hazard (COMAH) site major accident) it would increase the risk of serious damage to an environmental receptor associated with the Proposed Scheme.

Term	Definition
Floodplain	The adjacent flat area next to the river that is associated with being flooded.
Fluvial Flooding	Flooding caused by rivers.
Freeboard	The difference between the flood defence level and the design flood level. The freeboard is to account for uncertainties involved in flood estimation, and other physical factors that vary between sites such as post-construction settlement or wave action.
Future Baseline	An outline of the likely evolution of the current state of the environment without implementation of the project.
Geographical Information System (GIS)	A range of techniques using the graphic capabilities of computers for an integrated analysis of maps, images, sites and finds. GIS has rapidly become essential in the interpretation of fieldwork data and is used within County and other archaeological units.
Geomorphology	The study of landforms, their processes, form, and sediments at the surface of the Earth is known as Geomorphology.
Greenhouse Gasses (GHGs)	Gases in the atmosphere that absorb radiation emitted from Earth's surface resulting in a greenhouse effect.
Groundwater	All water which is below the surface of the ground in the saturation zone (below the water table) and in direct contact with the ground or subsoil.
Hazard	Anything with the potential to cause harm, including ill-health and injury, damage to property or the environment; or a combination of these.
Hazardous waste	Any waste that displays one or more of the hazardous properties listed in Annex III of the Waste Directive (2008/98/EC).
Heavy Duty Vehicle (HDV)	Defined in the DMRB as vehicles with a gross weight greater than 3.5 tonnes. Includes HGVs and buses and coaches.
Heavy Goods Vehicle (HGV)	Defined in the DMRB as goods vehicles with a gross weight greater than 3.5 tonnes.



Term	Definition
Hectare	An area measuring 10,000 square metres.
HEWRAT	Highways England Water Risk Assessment Tool. Routine runoff and surface water quality assessment to determine whether a risk is acceptable.
Historic Environmental Record (HER)	A record of all known archaeological finds and features and historic buildings and historic/ landscape features, relating to all periods from the earliest human activity to the present day; maintained by each County and Unitary Authority in the United Kingdom.
Hydromorphology	A term largely created for the Water Framework Directive comprising a blend of hydrology and geomorphology.
Important Ecological Feature	An ecological receptor of sufficient value to merit detailed impact assessment. Habitats, species and species groups that are considered to have a nature conservation value of local or greater are considered important ecological features in the context of this assessment.
Inert Waste	Waste :  1) that does not undergo any significant physical, chemical or biological transformations;  2) that does not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter from which it comes into contact in a way likely to give rise to environmental pollution or harm to human health; and  3) where its total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water or groundwater (see Directive 1993/31/EC 'The Landfill Directive')
Internal Influencing Factor	A factor which occurs within the limits of the Proposed Scheme that may present a risk to the Proposed Scheme.
Invasive Non-Native Species	Non-native UK plants that are invasive, for example Japanese Knotweed.

Term	Definition
Invasive Species	Non-native UK plants that are invasive, for example Japanese Knotweed.
Key construction materials	Construction materials which constitute the majority of material required to deliver the scheme (by weight).
L <sub>A10,18h</sub>	The A-weighted sound level, in dB, that is exceeded 10% of the time between 06:00 and 00:00. This is the standard index used within the UK to describe traffic noise.
L <sub>Aeq,T</sub>	The equivalent continuous sound level over a measurement period (T). This is the level of a notional steady sound that would contain the same amount of energy as the A-weighted fluctuating sound measured over that period.
Landfill capacity	The known, forecast or estimated remaining landfill void space, either regionally or nationally, generally measured in cubic metres.
LiDAR	Light Detecting and Ranging – technique used to gather terrain level data
Light Duty Vehicle (LDV)	Defined in the DMRB as vehicles with a gross weight less than 3.5 tonnes. Includes cars vans and goods vehicles.
Light Goods Vehicle (LGV)	Defined in the DMRB as vehicles with a gross weight less than 3.5 tonnes. Includes vans and goods vehicles
Likely Significant Effect	Term used within Habitat Regulations Appraisal, this term relates to pathways for impacts where the possibility of risk to a European Protected Site cannot be ruled out. Appropriate assessment is undertaken where LSEs cannot be ruled out.
Limit Values	Refers to legally binding limits of airborne concentrations of chemical substances and represent conditions under which it is believed that adverse health effects would not occur in the majority of the population.
Listed Building	A building of special architectural or historic interest. Listed buildings are graded A, B or C, with Grade A being the highest. Listing includes the interior as well as the exterior of the building

Term	Definition
Local Air Quality Management Technical Guidance	A technical guidance document designed to support local authorities in carrying out their duties under the Environment Act 1995 and subsequent Regulations. These duties require local authorities to review and assess air quality in their area from time to time. In addition the document provides tools and guidance for undertaking air quality modelling studies.
Local Planning Authority	The local authority or council that is empowered by law to exercise planning functions.
Magnitude of Effect	The actual change taking place to the environment, for example, the extent of land take or predicted change in noise levels.
Magnitude of Impact	The magnitude of an impact is typically defined by the following factors: <ul style="list-style-type: none"> <li>• extent – the area over which an effect occurs</li> <li>• duration – the time for which the effect occurs</li> <li>• frequency – how often the effect occurs and</li> <li>• severity – the degree of change relative to existing conditions.</li> </ul>
Mainline	The carriageway carrying the main flow of traffic, generally traffic passing straight through a junction or interchange.
Major Event Category	A set of values used to categorise events within a related parent MA&D Group.
Major Event Group	A MA&D which can be grouped as either a Natural Hazard (Disaster) or Technological or Manmade Hazard (Major Accident).
Major Event Type	A set of values used to sub-categorise events within a MA&D Category.
Mannings n	Standard industry values for defining roughness within hydraulic models.
Meander	One of a series of regular sinuous curves in the channel of a river or other watercourse.
Mineral sites	Operation sites or sites identified within strategic planning documents for the extraction of minerals.

Term	Definition
Monitoring	A continuing assessment of the performance of the project, including mitigation measures. This determines if effects occur as predicted or if operations remain within acceptable limits, and if mitigation measures are as effective as predicted.
Multi Agency Response Team	Multi Agency Response Team co-ordinates the flow of information both between agencies and to the public.
National Vegetation Classification (NVC)	A comprehensive classification and description of the plant communities of Britain, administered by the Joint Nature Conservation Committee.
Natura 2000	A network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right.
Natural capital	Natural Capital is defined by <a href="#">NatureScot</a> as the elements of nature (e.g. habitats and ecosystems) which “provide social, environmental and economic benefits to humans”.
Nature Scot	NatureScot is a public body responsible for Scotland’s natural heritage and advisor to the Scottish Government
Net Zero	A term for when Greenhouse Gas emissions are reduced to zero or near zero with residual emissions needing to be removed from the atmosphere so that the total amount of Greenhouse Gases emitted in the atmosphere equals zero.
Nitrogen Dioxide (NO <sub>2</sub> )	Formed by the oxidation of nitric oxide in ambient air.
Nitrogen Oxide (NO <sub>x</sub> )	Collective term for nitrogen dioxide and nitric oxide, released from the combustion of fuel and discharged by vehicles and power stations.
Non-hazardous waste	Waste that is neither classified as inert nor hazardous.
Operational	The functioning of a project on completion of construction.

Term	Definition
Particulate Matter	Discrete particles in ambient air, with diameters ranging between nanometres (billionths of a metre) to micrometres (millionths of a metre).
Particulate Matter of 10 micrometres or less (PM <sub>10</sub> )	Very small solid particles present in engine exhausts, categorised on the basis of the size of the particles.
Particulate Matter of 2.5 micrometres or less (PM <sub>2.5</sub> )	Very small solid particles present in engine exhausts, categorised on the basis of the size of the particles.
Peat resource	Existing or potential peat extraction sites.
Photomontage	Inserting an image of a proposed development onto a photograph for the purposes of creating an illustrative representation of potential changes to existing views.
Pollution Climate Mapping	A collection of models designed to fulfil part of the United Kingdom's EU Directive (2008/50/EC) on ambient air quality and cleaner air for Europe, requirements to report on the concentrations of particular pollutants in the atmosphere.
Preparing for reuse	Checking, cleaning or repairing operations, by which products or components of products that have become waste are prepared for reuse without further pre-processing.
Primary materials	Materials that are from a non-renewable source (also referred to as virgin materials).
Proposed Scheme	The Proposed Development is taken to be the description of the long-term solution and any associated construction activities and ancillary works.
Receptor	A defined individual environmental feature that has potential to be affected by a project.
Recovery	Any operation which results in a waste serving a useful purpose by replacing materials which would otherwise have been used to fulfil that particular function. Recovery also includes waste being prepared or processed to fulfil a particular function.

Term	Definition
Recycle	Any recovery operation where waste is reprocessed into products, materials or substances whether for its original or other purposes. Recycling includes the reprocessing of organic material but excludes energy recovery and the reprocessing of waste into materials to be used as fuels or for backfilling operations.
Return Period	A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size. For example, the 100year return period does not mean this is the event that occurs every 100 years. It actually refers to the flood magnitude that has a probability of exceedance of 1/100 in any given year (i.e., a 1% chance).
Reuse	Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived; reuse presumes that significant reprocessing is not required.
Riparian	The area related to or at the edge of a river.
Risk	The likelihood of an impact occurring combined with effect or consequence(s) of the impact on a receptor if it does occur.
Risk Event	An identified, unplanned event, which is considered relevant to the Proposed Scheme and has the potential to be a MA&D subject to assessment of its potential to result in a significant adverse effect on an environmental receptor.
River Basin Management Plan	A plan setting out actions required within a river basin to achieve environmental quality objectives, reviewed on a six-yearly basis.
Special Area of Conservation	An area designated under the Habitats Regulations. They protect one or more special habitat and / or species, terrestrial or marine, listed in the Habitats Directive
Scoping	The process of considering the information required for reaching a (reasoned) conclusion on the likely significant effects of a project on the environment.
Secondary (materials)	Useful by-products from manufacturing or industrial processes.
Sedimentation	The process of settling or being deposited as a sediment.

Term	Definition
Sensitivity	<p>The sensitivity of a receptor is a function of its value, and capacity to accommodate change reflecting its ability to recover if it is affected. It is typically defined by the following factors:</p> <ul style="list-style-type: none"> <li>• adaptability – the degree to which a receptor can avoid, adapt to or recover from an effect.</li> <li>• tolerance – the ability of a receptor to accommodate temporary or permanent change.</li> <li>• recoverability – the temporal scale over and extent to which a receptor will recover following an effect.</li> </ul>
SGoRR	Scottish Government Resilience Room which is activated to co-ordinate the work of the Scottish Government and its agencies, and brief Ministers during emergencies and significant events.
Site arisings	Construction, demolition, excavation and other arisings generated from within a project boundary.
Site of Special Scientific Interest.	Statutory designated site of national importance. The site network is protected under the Nature Conservation (Scotland) Act 2004 (as amended).
Site Waste Management Plan (SWMP)	A system or document for implementing, monitoring and reviewing waste prevention measures.
Small watercourses	The small watercourses flowing down the hillside.
Special Protection Areas	An area designated to protect birds, and the habitat of birds, listed in the Wild Birds Directive (Directive 74/409/EEC).
Standard of Protection (SoP)	All flood protection structures are designed to be effective up to a specified flood likelihood (Standard of Protection). For events beyond this standard, flooding will occur. The chosen Standard of Protection will determine the required defence height and/ or capacity.
Sterilise	Substantially constrain / prevent existing and potential future use and extraction of materials.
Surface water flooding	Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead.

Term	Definition
Sustainable Drainage Systems (SuDS)	Sustainable Drainage System. SuDS are an approach to managing surface water (rainfall runoff) which mimic the natural processes of attenuation, infiltration and evapotranspiration. SuDS comprise a sequence of management practices, control structures and strategies which are designed to drain surface water efficiently and sustainably, whilst also minimising pollution and managing the impact on the water quality of local water bodies.
Transport Scotland	The government agency responsible for the operation, maintenance and improvement of Scotland's trunk roads and motorways.
UK Habitat Classification	System for classifying habitats, covering terrestrial and freshwater habitat types.
Visual Amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Vulnerability	In the context of the <a href="#">2014 EU Directive</a> , the term refers to the 'exposure and resilience' of the Proposed Scheme to the risk of a MA&D. Vulnerability is influenced by sensitivity, adaptive capacity and magnitude of impact.
Waste	Any substance or object that is discarded, and that has not been subject to acceptable recovery (including recycling) or disposal.
Waste infrastructure	Facilities that handle, treat/prepare for reuse, recycle and dispose (landfill) of waste.
Water Body	A body of surface water, or a body of groundwater. The WFD defines discrete surface water bodies, but not necessarily a whole river, while groundwater bodies should be distinct.
Watercourse	Any natural or artificial channel above or below ground through which water flows, such as a river, brook, beck, ditch, mill stream or culvert.
Water Framework Directive	The European Union (EU) Water Framework Directive (WFD) is retained under the <a href="#">Retained EU Law (Revocation and Reform) Act 2023</a> ; and has been transposed into Scottish law by the ' <a href="#">Water Environment and Water Services (Scotland) Act 2003</a> ' (the WEWS Act), sets targets for restoring and improving the ecological status of water bodies.



Term	Definition
Water quality	The chemical and biological status of various parameters within the water column and their interactions, for example dissolved oxygen, indicator metals such as dissolved copper, or suspended solids (the movement of which is determined by hydrological process and forms geomorphological landforms).
WINFAP-FEH	Software that enables you to estimate peak flows and flood frequency curves for gauged and ungauged catchments, using the latest Flood Estimation Handbook (FEH) methods.
Zone of Theoretical Visibility	The computer-generated theoretical visibility of an object in the landscape.