M60/M62/M66 Simister Island Interchange

TR010064

6.5 FIRST ITERATION ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX F: OUTLINE SOIL MANAGEMENT PLAN

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

VOLUME 6

~~April~~ September 2024

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M60/M62/M66 Simister Island Interchange

Development Consent Order 202[ ]

FIRST ITERATION ENVIRONMENTAL MANAGEMENT PLAN APPENDIX F: OUTLINE SOIL MANAGEMENT PLAN

Regulation Reference	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010064
Application Document Reference	TR010064/APP/6.5
Author	M60/M62/M66 Simister Island Interchange Project Team

Version	Date	Status of Version
P021	~~April~~ September 2024	~~DCO Application Issue~~Examination Deadline 1

CONTENTS

Outline Soil Management Plan

F.1 Background to the plan

Introduction

F.1.1 This Outline Soil Management Plan (Outline SMP) sets out a strategy and action plan for the management of soils which are likely to be excavated and handled during the construction phase of the Scheme. This plan applies to topsoil and subsoils to be restored to agricultural land or reused in shallow landscaping during the construction of the M60/M62/M66 Simister Island Interchange (the Scheme) across areas of temporary and permanent land take. The purpose of this plan is to detail the principles of soil management that will be implemented by the Principal Contractor (PC) to protect soils and maintain their quality for future use before being returned to their original location where practicable or reused elsewhere on the Scheme.

F.1.2 A Soil Resource Plan (SRP) will be produced in accordance with Defra (2009) prior to construction. This will include interpretation of the results of the soil resource survey and Agricultural Land Classification (ALC) survey (Appendix 9.2 Agricultural Land Classification Survey Report (TR010064/APP/6.3) with respect to landscaping and will help identify sustainable reuses for soil resources disturbed by the Scheme. Pre-disturbance soil horizon thicknesses and soil types will be identified in the plan.

F.1.3 The scope of this plan is limited to soils which will be restored to agricultural land or reused in shallow landscaping. Soils which become surplus to agricultural restoration requirements should be prioritised for use in other landscaping or engineering applications which promote their retention onsite. The management of these soils for engineering applications falls outside the scope of this plan and should be managed in accordance with Appendix G) Outline Materials Management Plan (Outline MMP) and Appendix C) Outline Site Waste Management Plan (Outline SWMP) of this First Iteration Environmental Management Plan (EMP).

F.2 Responsibilities

F.2.1 In relation to the control and management of soil, the PC will establish the appropriate roles and responsibilities for site staff in accordance with Chapter 2: Table 2.1 Roles and Responsibilities of this First Iteration EMP.

F.2.2 The PC's Environmental Manager shall have overall responsibility for compliance with this document and the SRP, including monitoring, auditing and subcontractor communications required. Site managers and supervisors will have responsibilities delegated to them, including supervision of soil management compliance as required.

F.3 Legislation and Best Practice

F.3.1 Soil management will be undertaken following the Department for Environment, Food & Rural Affairs' published Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009) where practicable, which details approaches and techniques for the following:

- The identification of soil resources at an early stage in the development process.
- Planning of soil use.
- Soil management during the implementation of the Scheme, including sustainable use of surplus soil.
- The maintenance of soil quality and function both on and offsite.
- Avoidance of soil compaction and erosion (with a consequent reduction in flooding and water pollution).
- Knowledge and understanding of soil at all levels in the construction industry, including soil amelioration techniques.
- Areas of soil to be protected from earthworks and construction activities.
- The areas and types of topsoil and subsoil to be stripped, haul routes and stockpile locations.
- The methods for stripping, stockpiling, respreading, and ameliorating landscape soils.

F.3.2 It is noted that this Defra (2009) guidance is in the process of being updated, such that the updated guidance will be followed where applicable and appropriate.

F.3.3 In addition, the following guidance has been considered:

- Good Practice Guide for Handling Soils in Mineral Workings (The Institute of Quarrying, 2021)
- Specification for topsoil – BS 3882:2015 (The British Standards Institute, 2015).
- Specification for subsoil and requirements for use – BS 8601:2013 (The British Standards Institute , 2013).

F.4 Construction Impacts on Soil

F.4.1 Construction activities can have adverse effects on soils in several ways by:

- Accidental spillages or the use of chemicals may result in the contamination of soil resources if not managed correctly.
- The mixing of different soil types can degrade soil quality if soils are not segregated appropriately during handling.
- Contamination of soils can result in the need for treatment prior to reuse or disposal.
- Over-compaction of the soil using heavy machinery or the storage of construction materials.
- Deterioration of soil structure by incorrect storage, for example over-high stockpiles compressing soil structure.
- Covering of soils with impermeable materials. This can result in detrimental impacts on the soil's biological, chemical, and physical properties.

F.4.2 Construction related activities can result in some of the most significant adverse impacts on soil properties and soil quality.

F.5 Baseline Soil Information

F.5.1 Ground Investigations (GIs) and Agricultural Land Classification (ALC) surveys have been undertaken to better understand the soils and geological materials present within the scheme extents. Baseline soil conditions, including the presence of peaty/peat soil horizons/strata, are described Chapter 9: Geology and Soils of the Environmental Statement (TR010064/APP/6.1).

F.6 Outline Management

Preconstruction Planning

F.6.1 The SRP strategy will consider the following, where practicable:

- Maps showing topsoil and subsoil types, and the areas to be stripped and left in-situ.
- Methods for stripping, stockpiling, respreading, and ameliorating the soils.
- Location of soil stockpiles and content (e.g. Topsoil type A, subsoil type B).
- Schedules of volumes for each material.

- Expected after-use for each soil (e.g., used on site, used off site, retained for landscape areas)
- Identification of person responsible for supervising soil management.

F.7 Soil Management During Construction

F.7.1 Biosecurity risks will be identified in advance of soil stripping using good practice measures put in place as applicable, to reduce the potential for soil-borne disease (crop and animal disease) and pathogen transfer between different areas of agricultural land. This may include segregation of soils and cleaning/disinfection of machinery where appropriate.

F.7.2 Intrusive archaeological investigations must be undertaken ahead of construction works to avoid soil stripping resulting in damage to buried archaeology.

F.7.3 Areas of soil to be protected from construction activities will be clearly marked out by barrier tape and exclusion signs. The full depth of topsoil will be stripped from areas to be disturbed by construction, such as where haul roads, compounds and subsoil stockpiles are to be located, and from areas where topsoil will otherwise be sealed by permanent or temporary developments. The soil stripped from the areas of construction activities will be used to reinstate temporary land or sustainably reused within the Scheme where practicable.

F.7.4 Topsoil from below any root or crown spread of trees proposed to be retained will not be removed.

F.7.5 Sustainable drainage systems will be utilised on-site to provide long term protection of soils during the construction phase by facilitating infiltration and attenuation of surface water. This will be in the form of temporary drainage ditches, where required, to act as drains for adjacent fields.

F.7.6 Soils storage areas will be planned, considering volumes, in locations close to the planned excavation, wherever reasonably practicable. This will promote topsoil being reinstated in the same area of excavation once construction activities have concluded.

~~F.7.6~~F.7.7 Topsoils, subsoils, soils with distinctly different properties (including peat), and other materials, shall be stripped, stored and reinstated separately. Segregation on the basis of different properties shall be informed by the soil resource survey and detailed in the SRP.

~~F.7.7~~F.7.8 Agricultural soils from different fields will not be mixed, where practicable, to mitigate biosecurity issues and degradation of soil quality.

~~F.7.8~~F.7.9 Areas of construction in the North West Quadrant of the Scheme (NWQ) that are likely to cause the disturbance of peat are to follow the ‘SEPA

Regulatory Position Statement – Developments on Peat' (SEPA, 2010) guidance. Hierarchy of management approaches for developments that are located on peat are described as:

- Prevention – avoid generation of excess peat during construction.
- Re-use – peat generated on-site is used in an environmentally beneficial and suitable way, in the restoration of temporary works areas or as part of landscaping strategy.

~~F.7.9~~F.7.10 It is noted that peat is a highly compressible material and can result in secondary consolidation. Where peat excavation cannot be avoided through design alterations, alternative peat management techniques will be followed.

~~F.7.10~~F.7.11 It is proposed that the excavated peat material will be managed through one of the below options:

- Use on site – excavated peat soils will be used on-site in construction or during reinstatement.
- Sustainable use off site - where on-site reuse is not practicable, sustainable reuses off site will be sought, such as in peatland restoration in the Greater Manchester area.

~~F.7.11~~F.7.12 Reuse opportunities will be further detailed in the Second Iteration EMP.

F.8 Soil Stripping

F.8.1 Before commencing work on site, topsoil and subsoil from all areas that are to be disturbed by construction activities or driven over by vehicles will be stripped by earthmoving plant that is appropriate for the task. Topsoil will be stripped to a thickness identified in the SRP, informed by the soil resource survey. This may be varied where distinct changes in colour/texture are observed, but the strip depth will generally not exceed 0.40 m below ground level. The operation should be adequately supervised and follow a detailed stripping plan that is detailed in the SRP.

F.8.2 Soil should not be handled in rainy conditions or when wet as this increases the risk of degrading soil quality. If heavy rainfall occurs during stripping operations work will be suspended. Soil stripping should be undertaken between April and early October as far as reasonably practicable, to reduce the risk of adverse weather and to allow a vegetative cover to be established on stockpiles/replaced soils following handling. Criteria for the cessation of soil handling and field tests to confirm that soils are in a suitable moisture state for handling will be set out in the SRP, based on Supplementary Note 4 of (The Institute of

Quarrying, 2021). All field tests will be carried out by competent persons with sufficient training.

F.8.3 Soil stripping methods will be confirmed in the Second Iteration EMP. This is likely to include the use of excavators and/or dozers for stripping, in broad accordance with the model methods in Defra (2009) and The Institute of Quarrying (2021).

F.8.4 During excavation of peat in the NWQ, the following methods will be applied:

- Peat shall be extracted as close to intact as is feasible, with remoulding by the excavator kept to a minimum.
- Excavation shall be monitored when working in known peat areas, and material shall be classified at the point of excavation by a suitably qualified person through visual inspection.

F.8.5 After excavation the handling and storage of peat will need to be managed as a separate operation.

F.8.6 Records will be kept of soil stripping operations undertaken to help ensure that soils are used for their intended purpose as per the SRP.

F.9 Soil Storage

Stockpile Construction

F.9.1 The main aim when temporarily storing soil in stockpiles is to maintain soil quality and reduce damage to the soil's physical condition so that it can be recovered upon reinstatement. If stockpiling is done incorrectly the physical condition of the soil can be damaged irreversibly, resulting in a loss of a valuable resource and potentially significant costs to the Scheme.

F.9.2 Where practicable, the storage of peat excavated from the NWQ will be avoided to reduce the likelihood of damage or drying. It is noted that temporary storage may be required on the Scheme if the re-use opportunities for peat are not immediately available. Where peat is stored, this will be as short as is practicably possible. The maximum storage duration for peat is currently anticipated to be two years based on the outline construction programme as it stands.

F.9.3 Soil will be transported directly to its stockpile location after stripping, and once the stockpile has been formed, the soil will remain in the stockpile until it is reused at its required destination.

F.9.4 Stockpile heights of 3-4m are commonly used for topsoil that can be stripped and stockpiled in a dry state. No stockpiles greater than 4m in

height will be used for topsoil or subsoil storage. No stockpiles of peat will be greater than 2m in height.

F.9.5 The location and approximate dimension of stockpiles will be detailed in the SRP. Stockpiles will not be positioned within the root or crown spread of trees, or adjacent to ditches, watercourses or existing or future excavations. Soil stockpiles will have a maximum side slope of 1:2.

F.9.6 Stockpiles will be located to avoid interface with surface water runoff. The topography of land will need to be assessed in the SRP to confirm suitable locations for soil stockpiles.

F.9.7 Stockpiles will be more than 10m from any existing watercourse or drains. Stockpile location planning will consider the overland flood flow paths so as not to introduce an obstacle in the topography. Where possible, stockpiles will be used to screen construction works and storage areas from nearby visual and noise receptors from adjacent residential areas.

F.9.8 Any excavated peat from the NWQ will be stockpiled separately, monitored for water content, and irrigated if needed. Rainwater or water of a low nutrient content shall be used for this purpose where practicable.

F.9.9 Stockpiling methods detailed in Figure F.1 below will be utilised for dry non-plastic soils. The aim is to create a large core of dry soil, and to restrict the amount of water that can ingress the stockpile during the storage period. Dry soil that is stored in this manner can remain so for a period of years and it is reusable within days of respreading.

Method 1 – Dry non-plastic soils

The soil is loose-tipped in heaps from a dump truck (a), starting at the furthest point in the storage area and working back toward the access point. When the entire storage area has been filled with heaps, a tracked machine (excavator or dozer) levels them (b) and firms the surface in order for a second layer of heaps to be tipped. This sequence is repeated (c & d) until the stockpile reaches its planned height. To help shed rainwater and prevent ponding and infiltration a tracked machine compacts and re-grades the sides and top of the stockpile (e) to form a smooth gradient.

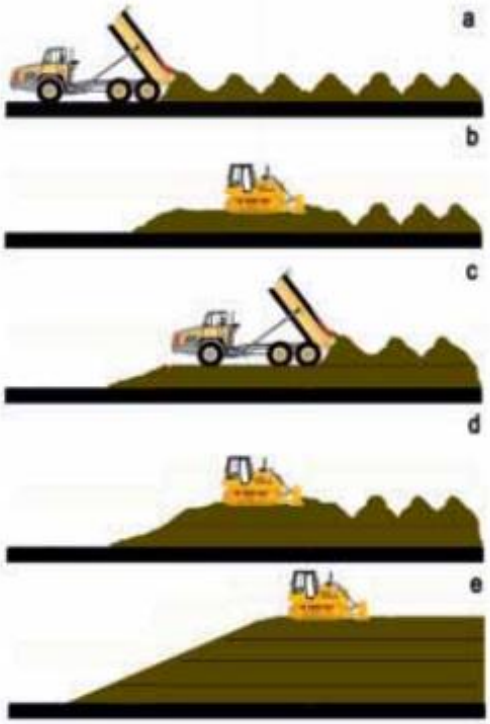

Figure F.1 - Dry non-plastic soil stockpile technique (Defra , 2009)

F.9.10 Soil stripping when soils are in a wet plastic state should be avoided. If this is anticipated to be unavoidable, stockpiling methods detailed in Figure F.2 below will be utilised. This method minimises the amount of compaction, while at the same time maximising the surface area of the stockpile to enable the soil to dry out further. It also allows the soil to be heaped up into a stockpile once it has dried out.

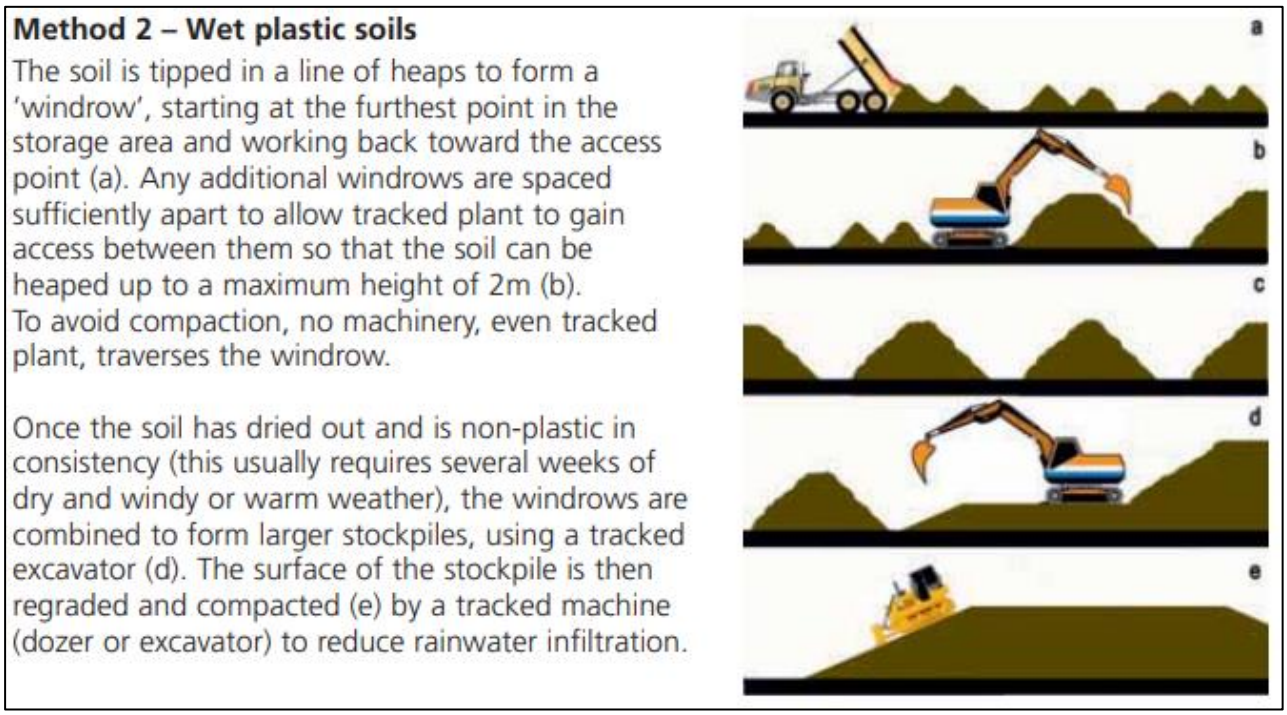

Figure F.2 - Wet plastic soil stockpile technique (Defra , 2009)

Management of Stockpiles

F.9.11 Stockpile signs will be used to clearly define the material type and area. This will reduce unnecessary disturbance during the construction phases. No tracking over stockpiles will occur, except during excavation.

F.9.12 The locations, volumes and contents of stockpiles will be clearly recorded in the SRP.

F.9.13 ~~If~~ Where it is anticipated that a soil stockpile~~s~~ will be stored for more than 6 months, then a suitable seed mix ~~will~~ shall be applied to the stockpile to help establish a vegetative cover and thereby reduce surface erosion and prevent weed infestation. Any weeds that have been established on stockpiles will be managed during summer months through the application of an appropriate herbicide or cutting techniques. Where the stockpiles are left unvegetated, they will be sprayed with water as necessary to prevent dust generation.

F.9.14 The stockpiles will be monitored for signs of ponding, as indicated by standing water, and erosion. Where it occurs, temporary drainage measures, regrading and/or silt fencing will be put into effect.

F.10 Soil Restoration

Reuse and restoration of soils

F.10.1 Where land is to be reinstated to its former use, such as for agriculture, soils will be reinstated to their pre-disturbance depths and quality as far as practicable, with reference to the SRP. The PC shall not be obliged to reinstate the soil into any better condition than as evidenced by the SRP and schedule of condition. Once the works are completed, these areas will be restored to a condition that will not inhibit the future extraction of mineral resources.

F.10.2 Where land is to be restored to agriculture the PC will liaise with the landowner/occupier, through the Agricultural Liaison Officer (ALO), and set out the detail for restoration on each specific area of farmland. The land restoration will proceed with full consultation between the landowner/occupier and the PC, including inspection of works where applicable and in accordance with requisite site health and safety procedures.

F.10.3 Sustainable drainage systems will be utilised on-site to provide protection of soils during the construction phase by facilitating infiltration and attenuation of surface water. This will be in the form of temporary drainage ditches.

F.10.4 Large debris greater than 75mm will be removed from areas to be reinstated prior to receiving topsoil or subsoil.

F.10.5 Cultivation and decompaction measures will be used where appropriate during reinstatement. The requirement for these treatments will be assessed in the SRP.

Subsoil

F.10.6 Prior to reinstatement an assessment should be undertaken on the requirements for ripping.

F.10.7 Subsoil spreading should be undertaken from the furthest point from the haul road access point to avoid site traffic, such as dumpers and excavators, over compacting the soil. The spreading will be undertaken at an agreed thickness or to the same thickness as was present in the field prior to stripping, should it be returned to its former use. This will be agreed with the landowner/occupier, through the ALO.

F.10.8 Subsoil placement will be suspended if sustained heavy rain occurs during the soil handling operations. Soil placement should be between April and early October as far as reasonably practicable, to reduce the risk of adverse weather and to allow a vegetative cover to be established on stockpiles/replaced soils following handling.

Topsoil

F.10.9 The PC will endeavor to reuse soils as soon as is reasonably practicable and return topsoil stripped during the construction of the Scheme as close to its source of origin as reasonably practicable, and as appropriate to the design, during restoration.

F.10.10 Topsoil will be excavated from stockpile areas and spread evenly across the designated area. The spreading will begin at the furthest point from the haul roads access to avoid excess site traffic on the subsoil. Topsoil should not be trafficked once placed on the subsoil.

F.10.11 Topsoil will be spread to an agreed depth, should the land be returned to its former use. This will be agreed with the landowner/occupier, through the ALO.

F.10.12 Topsoil placement will be suspended if sustained heavy rain occurs during the soil handling operations. Soil placement should be between April and early October as far as reasonably practicable, to reduce the risk of adverse weather and to allow a vegetative cover to be established on stockpiles/replaced soils following handling.

Peat

F.10.13 The use of peat on-site should be prioritised to minimise carbon loss and maximise ecological benefit for the Scheme.

F.10.14 The following options have been identified as reuse opportunities on-site, as part of the Scheme:

- Habitats Enhancement - Re-use of peat for the creation of wetland-based habitats or reinstatement of affected peatland habitats. Peat reuse in each area will be developed at the detailed design stage.
- Landscaping Restoration - Re-use of peaty -soils to restore landscape areas around the Scheme that have been affected by construction activities.

F.10.15 Opportunities to re-use peat on-site in either habitat enhancement or landscape restoration will be developed in the detail design of the Scheme. Details of available peat re-use opportunities within the Scheme boundary will be detailed in the Second Iteration EMP.

F.10.16 After the use of peat within the Scheme boundary has been exhausted, the opportunity to re-use peat off-site will be considered. The use of excavated material in peatland restoration schemes will be explored. Off-site re-use opportunities will be confirmed in the Second Iteration of the EMP.

~~F.10.16~~F.10.17 Whichever option is taken, consideration will be given to maintaining the hydrological conditions of the peat insofar as practicable to minimise peat wastage and carbon losses. Details of the reuse shall

also be recorded, including the location, volume, depth and peat condition at the time of reuse.

Aftercare

~~F.10.17~~F.10.18 Temporarily possessed agricultural land will be handed back to the landowner/occupier at the earliest opportunity once the restored land is in a suitable condition to be returned to its former agricultural use.

~~F.10.18~~F.10.19 Where land is to be used temporarily and returned to the landowner/occupier, the ALO will be responsible for discussing and agreeing reinstatement measures with the landowner/occupier.

~~F.10.19~~F.10.20 The ALO will undertake inspections of restored agricultural land with the landowner/occupier where issues arise requiring potential remedial measures.

~~F.10.20~~F.10.21 The ALO will coordinate the appropriate remedial actions and/or any previous agreements made at the time of acceptance of the initial restoration works and handover to the landowner/occupier.

F.11 References

Defra . (2009). *Construction Code of Practice.* London : Crown .

SEPA. (2010). *SEPA Regulatory Position Statement – Developments on Peat.* Motherwell: National Waste Policy Unit.

The British Standards Institute . (2013). *Specification for subsoil and requirements for use.* London: The British Standards Institute .

The British Standards Institute. (2015). *Specification for topsoil.* London: The British Standards Institute.

The Instutute of Quarrying. (2021). *Good Practice Guide For Handling Soils.* Nottingham: The Institute of Quarrying .