

5. The Proposed Development

5.1 As set out at **Chapter 1: Introduction**, the Applicant proposes the construction, operation and maintenance of a Strategic Rail Freight Interchange (SRFI) as well as associated highways works and other facilities (in total, comprising the 'Proposed Development'). The Proposed Development is situated within the Order Limits (red line encompassing all development the Proposed Development Area, as shown in **Appendix 5.1** and in other DCO documents). An application is required to be made to the planning Inspectorate (PINS) because the Proposed Development is considered to comprise two Nationally Significant Infrastructure Projects (NSIPs) under the Planning Act 2008 (PA2008 - **Ref 5.1**).

5.2 In this case there are two types of NSIP that are applicable¹:

5.1 Rail Freight Interchange (as defined in Section 26 of the PA2008); and,

5.2 Highways (as defined in Section 22 of the PA2008).

5.3 Where a scheme involves development which meets the criteria for more than one type of NSIP, then such a scheme can be pursued in a single application for a DCO. It has been determined that there are two NSIPs forming the Proposed Development:

- The Main SRFI Site (*NSIP 1*); and
- Works to Junction 15a (J15a) of the M1 (*NSIP 2*).

5.4 The elements of the Proposed Development that are not encompassed within either NSIP are characterised in the draft DCO as 'Associated Development'. For the purposes of this PEIR (and the final application for DCO consent) the two NSIPs and the Associated Development are assessed as a single project. The Order Limits therefore include both the NSIPs and Associated Development.

5.5 The Associated Development broadly comprises:

- A43 access;
- a lorry park;
- underpass under Northampton Road;

¹ As the Proposed Development will: be situated in England and be at least 60 hectares in area; be capable of handling consignments of goods from more than one consignor and to more than one consignee and at least four goods trains per day; be part of the railway network in England; include warehouses to which goods can be delivered from the railway network in England either directly or by means of another form of transport; and not be part of a military establishment, and in relation to the improvement works at J15a will comprise alteration of a highway in England other than a motorway where: the Secretary State or a strategic highways company (such as Highways England) is the Highway Authority; the speed limit of any class of vehicle is expected to be over 50 miles per hour; and, the area of development is greater than 12.5 hectares.

- landscaping;
- habitat creation;
- minor highway works including works to:
 - Junction 16 of the M1 (M1/ A4500 (east to Northampton)/ A45 (west to Daventry)) (termed JUNCTION 1 herein);
 - A4500, Weedon Road (east)/ Tollgate Way/ A4500, Weedon Road (west)/ A5076, Upton Way (termed JUNCTION 3 herein);
 - A5076/ A5123/ Upton Way Roundabout (Pineham Park) (Dane Camp Way) (termed JUNCTION 4 herein)
 - A5076 (west)/ Hunsbury Hill Avenue/ Hunsbarrow Road/ A5076, Danes Camp Way/ Hunsbury Hill Road (termed JUNCTION 6 herein);
 - Towcester Road/ A5076, Danes Camp Way/ A5123, Towcester Road/ Mere Way/ Tesco Access (termed JUNCTION 7 herein);
 - A45 (south)/ Eagle Drive/ A45 (north)/ Caswell Road (termed JUNCTION 9 herein);
 - A45, Nene Valley Way (south); A428, Bedford Road (west)/ A5095, Rushmere Road/ A45, Nene Valley Way (north)/ A428, Bedford Road (east) (termed JUNCTION 10 herein);
 - A45, Nene Valley Way (south); A43, Lumbertubs Way/ A45, Nene Valley Way (north)/ Ferris Row (termed JUNCTION 11 herein);
 - Junction 15 of the M1 (M1/ A45 (north to Northampton and Wellingborough)/ Saxon Avenue/ A508, Northampton Road (south to Milton Keynes)) (termed JUNCTION 12 herein);
 - Tove Roundabout (A43, Towcester Bypass (southwest)/ Towcester Road/ A5, (north)/ A43 (northeast)/ A5, Watling Street (southeast)) (termed JUNCTION 14 or Tove Roundabout herein);
 - Abthorpe Roundabout (Abthorpe Road/ A43, Towcester Bypass (north)/ Brackley Road/ A43, Towcester Bypass (south)) (termed JUNCTION 15 or Abthorpe Roundabout herein);

- A5076, Upton Way (south)/ Telford Way/ A5076, Upton Way (north)/ Walter Tull Way/ Dustan Mill Lane (termed JUNCTION 19 herein);
- A5076, Upton Way (south)/ High Street/ A5076, Upton Way (north)/ Dustan Mill (Stub) (termed JUNCTION 20 herein);
- A508, Harborough Road (south)/ A5199, Welford Road/ A508, Harborough Road (north)/ Cranford Road/ Kingsland Avenue (termed JUNCTION 25 herein);
- A43/St John's Road (termed JUNCTION 29 herein);
- A43 Northampton Road (termed JUNCTION 31 herein); and
- Pedestrian/Cycle Way along Northampton Road and between Barn Lane to the junction of Collingtree Road (termed CYCLEWAY herein)

5.6 The works forming the Proposed Development are set out in more detail within this chapter. This chapter is structured under the following main headings:

- Project Overview
- Parameters and Flexibility
- Project Timescale
- Construction
- Operation and Maintenance
- Decommissioning

Project Overview

5.7 For the purposes of this Preliminary Environmental Information Report (PEIR) the Proposed Development is described in relation to the following aspects:

- the 'Main SRFI Site' (including the A43 access and all rail infrastructure) ;
- the 'J15a Works' ; and,
- 'Other Minor Highways

5.8 However, in addition to consideration of these individual aspects of the Proposed Development, the assessment addresses environmental impact arising from all development within the Order Limits as a whole. This ensures that the assessment is

not limited to effects arising solely from each aspect individually. In some cases, a particular aspect of the baseline, mitigation or assessment will also apply to all of the Proposed Development. This is termed 'All Development within Order Limits'.

5.9 The Proposed Development comprises the following principal elements:

The 'Main SRFI Site'

- Demolition of existing buildings and structures and grading the land to create a series of plateaus and bunds to permit development;
- An intermodal freight terminal with direct connections to the Northampton Loop Line, capable of accommodating trains of up to 775m long, including up to 3 gantry cranes, container storage, a train maintenance depot and facilities to transfer containers to Heavy Goods Vehicles (HGV);
- An express freight terminal with direct connections to the West Coast Main Line, capable of accommodating trains of up to 240m long, a freight platform with associated loading and unloading facilities;
- Up to 702,097 sq m (Gross External Area) of rail connected and rail served warehousing and ancillary service buildings including a lorry park, terminal control building and bus terminal;
- New road infrastructure including a new separated access point on the A43 (T), an internal site underpass (under Northampton Road) and necessary utilities infrastructure; and
- Strategic and structural landscaping and development of open space including alterations to public rights of way, the creation of publicly accessible open areas, flood attenuation, and the partial diversion of the Milton Malsor brook. This will mitigate some effects arising on biodiversity as a result of the Proposed Development within the Main SRFI Site. However, the main area of ecological mitigation is adjacent to J15a.

J15a Works

5.10 Improvements to J15a of the M1, including:

- Pre-development works to facilitate carriageway widening and configuration, including development of a construction compound to the east of the junction and partial demolition of existing carriageway;
- Widening and signalisation of existing northern roundabout;

- Widening of A5123 approach; widening of M1 southbound off-slip approach;
- Widening of A43 northbound approach to northern roundabout;
- Reconfiguration of existing southern roundabout to provide signalised T-Junction;
- Provision of two lane free flow slip on A43 SB;
- Provision of new link road between southern junction to M1 northbound on and off slips;
- Widening of A43 northbound approach to southern junction; and
- Provision of ecological mitigation to the south-west of the J15a, to mitigate habitat loss at the Main SRFI Site, and landscaping around the junction. This is Associated Development and does not form part of the J15a NSIP (NSIP 2).

Minor Highway Works

5.11 Minor highway works, are proposed as follows. These would involve minor pre-development works, though are largely located within the existing highways land. Junction numbers in capital letters refer to numbering used through the design of the project (see **Chapter 19: Highways and Transportation**), hence they are not sequential.

JUNCTION 1 - Junction 16 of the M1 (M1/ A4500 (east to Northampton)/ A45 (west to Daventry))

- Provision of traffic signal control;
- Reconfiguration of road markings to provide three lanes on circulatory carriageway;
- Widening of northbound and southbound off-slip approaches; and
- Widening of A45 approach.

JUNCTION 3 - A4500, Weedon Road (east)/ Tollgate Way/ A4500, Weedon Road (west)/ A5076, Upton Way

- Provision of additional lane on A4500 eastbound approach.

JUNCTION 4 - A5076/ A5123/ Upton Way Roundabout (Pineham Park) (Dane Camp Way)

- Widening and reconfiguration of road markings on Upton Way approach;

- Reconfiguration of road markings on Danes Camp Way approach and on circulatory carriageway, additional lane on A5123 approach and on circulatory carriageway, and additional lane on Upton Way exit.

JUNCTION 6 - A5076 (west)/ Hunsbury Hill Avenue/ Hunsbarrow Road/ A5076, Danes Camp Way/ Hunsbury Hill Road

- Provision of traffic signal control on both A5076 approaches (and circulatory carriageway);
- Provision of additional lane on both A5076 approaches;
- Provision of additional lane and merge on both A5076 exits; and
- Provision of additional lane on both northern and southern circulatory carriageway.

JUNCTION 7 - Towcester Road/ A5076, Danes Camp Way/ A5123, Towcester Road/ Mere Way/ Tesco Access

- Provision of additional lane and merge on Towcester Road (westbound exit);
- Provision of additional lane on A5076, Danes Camp Way approach;
- Provision of local widening and traffic signal control (including on circulatory carriageway) on A5123, Towcester Road approach;
- Provision of additional lane and merge on Mere Way exit; and
- Provision of extension to right turn lane on Mere Way approach.

JUNCTION 9 - A45 (south)/ Eagle Drive/ A45 (north)/ Caswell Road

- Provision of traffic signal control on Caswell Road approach (and circulatory carriageway).

JUNCTION 10 - A45, Nene Valley Way (south); A428, Bedford Road (west)/ A5095, Rushmere Road/ A45, Nene Valley Way (north)/ A428, Bedford Road (east)

- Widening of circulatory carriageway (between A45 (south) and A428 (west) by reducing central island; and
- Widening A428 (east) approach.

JUNCTION 11 - A45, Nene Valley Way (south); A43, Lumbertubs Way/ A45, Nene Valley Way (north)/ Ferris Row

- Reconfiguration of road markings to provide three lanes on circulatory carriageway.

JUNCTION 12 - Junction 15 of the M1 (M1/ A45 (north to Northampton and Wellingborough)/ Saxon Avenue/ A508, Northampton Road (south to Milton Keynes))

- Additional lane on A45 approach to junction;
- Widening of circulatory carriageway to provide three lanes from A45 up to existing M1 bridge; and
- Additional merge lane on A45 exit from junction

JUNCTION 14 - Tove Roundabout (A43, Towcester Bypass (southwest)/ Towcester Road/ A5, (north)/ A43, (northeast)/ A5, Watling Street (southeast))

- Provision of additional lane on A43 (southwest) approach;
- Widening and reconfiguration of Towcester Road approach and A5 (north) exit;
- Provision of additional lanes on A5 (north) approach); and
- Widening of circulatory carriageway between A5 (north) and A5 (south) to provide additional lane on circulatory carriageway by enlarging central island.

JUNCTION 15 - Abthorpe Roundabout (Abthorpe Road/ A43, Towcester Bypass (north)/ Brackley Road/ A43, Towcester Bypass (south))

- Provision of additional lane on A43 (north) approach;
 - Realignment of A43 (north) and Brackley Road;
- Reconfiguration of road markings on Brackley Road and circulatory carriageway.

JUNCTION 19 - A5076, Upton Way (south)/ Telford Way/ A5076, Upton Way (north)/ Walter Tull Way/ Dustan Mill Lane

- Provision of additional lane on both Upton Way approaches;
- Provision of additional lane and merge on both Upton Way exits; and
- Widening and reconfiguration of road markings on circulatory carriageway.

***JUNCTION 20 - A5076, Upton Way (south)/ High Street/ A5076, Upton Way (north)/
Dustan Mill (Stub)***

- Provision of additional lane on both Upton Way approaches;
- Provision of additional lane and merge on both Upton Way exits; and
- Widening and reconfiguration of road markings on circulatory carriageway.

***JUNCTION 25 - A508, Harborough Road (south)/ A5199, Welford Road/ A508,
Harborough Road (north)/ Cranford Road/ Kingsland Avenue***

- Widening on A5199 approach.

5.12 These final three junctions, included within the proposed Order Limits, have been identified within the Transport Assessment (**Appendix 19.1**) as appropriate mitigation within the Proposed Development. Their assessment has generally not been included within the technical assessments (apart from **Chapter 19: Highways and Transportation**) due to late identification. However, it is considered they are highly unlikely to affect the conclusions reached in other chapters of this PEIR in terms of environmental significance of the Proposed Development, due to the nature of works, and their location within highway land. A full assessment of these three junctions will be included in the assessment undertaken for the final DCO submission.

JUNCTION 29 - A43/St John's Road

- Signage scheme proposed to include junction ahead and warning signs and countdown markers as well as high friction surfacing for northbound vehicles on the A43.

JUNCTION 31 - A43 Northampton Road

- Signage scheme proposed to include junction ahead warning signs with associated countdown markers.

***CYCLEWAY - Pedestrian/Cycle Way along Northampton Road and between Barn Lane
to the junction of Collingtree Road***

- The widening of the existing footway along Towcester Road to accommodate a footway/cycleway. The proposed footway/cycleway will measure 3 metres in width with a minimum 0.5m wide margin along the carriageway edge. The carriageway of Towcester Road/Northampton Road will be realigned in sections with a minimum width of 6.5m.
- A proposed 2 metre wide footway to be provided on the nearside corner of the Towcester Road/Rectory Lane junction To facilitate pedestrian

movements, a dropped kerb crossing point with tactile paving will be provided on Towcester Road immediately south of the junction with Rectory Lane. In addition a dropped kerb crossing with tactile paving will be provided on Rectory Lane immediately east of the junction with Towcester Road

- extension of the footway along Barn Lane to the junction of Collingtree Road

5.13 The drawings/plans considered in this PEIR are set out in Table 5.1 below.

Table 5.1: Plans Considered in the Preparation of the PEIR

Plan Name	Document reference ²	Location within PEIR
Considered as Embedded Mitigation³		
Order Limits		Appendix 5.1
Parameters Plan (Main SRFI Site)		Appendix 5.1
Green Infrastructure Plan (Main SRFI Site)		Appendix 5.1
J15a Green Infrastructure Plan (J15a works)		Appendix 5.1
Other Minor Highways works – site plans (17 no.)		Appendix 5.1
Construction Environmental Management Plan (CEMP)		Appendix 13.4
Masterplans and Landscape Masterplans		
Illustrative Masterplan (Main SRFI Site)		Appendix 5.2
Illustrative Landscape Masterplan (Main SRFI Site)		Appendix 5.2
Illustrative J15a Landscape Plan (J15a works)		Appendix 5.2
Earthworks Plans		
Earthworks Plateau Levels Option 5 (Main SRFI Site)		Appendix 5.3
Earthworks Bund Volumes Option 5		Appendix 5.3

² Document references will be confirmed for the final application. At present, the most recent documents relied on for this PEIR are included in the relevant appendices.

³ In addition, all requirements embedded in statute are embedded mitigation. This is considered further in individual technical chapters where Embedded Mitigation is outlined.

(Main SRFI Site)	
Plans Showing aspects of Mitigation	
Ecological Mitigation Plan (Main SRFI Site)	Appendix 5.4
Ecological Mitigation Plan (J15a works)	Appendix 5.4
Hedgerow and Tree Retention and Removal Plan (Main SRFI Site)	Appendix 5.4
Hedgerow and Tree Retention and Removal Plan (J15a works)	Appendix 5.4
Public Rights of Way Strategy (Main SRFI Site)	Appendix 5.4
Illustrative Colour Elevations (Main SRFI Site)	Appendix 5.4

5.14 Only measures considered as “embedded mitigation” will be an integral part of the Proposed Development. These include the landscaping strategy and minimum bund heights/ maximum plateau heights etc. shown on the Green Infrastructure Plans, developing within the identified Order Limits and carrying out operations within the requirements of the CEMP. Other plans represent an indicative way of developing the site – and in the case of **Appendix 5.4**, mitigation that has been introduced as “adaptive mitigation” to mitigate identified significant environmental effects of the Proposed Development (as discussed in **Chapter 7: EIA Methodology**). Some such mitigation would only be required where the build-out of the Proposed Development unmitigated would result in these identified impacts. For example, trees/ hedgerows identified for removal in the “hedgerow and tree retention and removal plan” would only be removed should the relevant section of the Main SRFI Site be developed. Other aspects would be required as adaptive mitigation regardless of the amount or location of development – such as mitigation associated with ecological protection (renovation of identified barns at the north of the site for bat roosts, for example, would be required prior to demolition or disturbance of any identified roosts). Relevant “embedded” and “adaptive” mitigation is described in each technical assessment.

5.15 The overarching parameters that have informed the assessment described within this PEIR are described below.

Parameters & Flexibility

Main SRFI Site

5.16 The extent of the Proposed Development on the Main SRFI Site is limited by a defined series of parameters (Parameters Plan in **Appendix 5.1**). A masterplan has also been prepared which illustrates one way how the Proposed Development could be

delivered within those parameters (Illustrative Masterplan in **Appendix 5.2**). However, this should not be assumed to be a definitive, or preferred, layout. The final layout will be determined by operational requirements of the SRFI.

- 5.17 Construction of the Proposed Development will be phased over a number of years. The logistics market is dynamic and the requirements of occupiers are constantly changing in order to meet market demands. The requirements of different occupiers also vary depending on the nature of their wider distribution network and their role in the wider supply chain.
- 5.18 Within the framework of the parameters for which consent is sought, flexibility is required to enable floorspace to be delivered that enables the Applicant to accommodate specific and changing occupier requirements and to give certainty to occupiers that they will be able to operate competitively without undue constraints imposed by the DCO during occupation. Details of occupier requirements will only be fully known after Development Consent has been granted.
- 5.19 The approach adopted in this PEIR is in accordance with Planning Inspectorate Advice Note Nine '*Using the Rochdale Envelope*' (**Ref.5.2**). That advice note confirms that there can be scope for flexibility in the final DCO. Nevertheless, the assessment work in this PEIR (for all aspects of the Proposed Development) has been undertaken to assess the reasonable worst-case on the basis of the fixed parameters which set out the location, extent and size of the Proposed Development for which consent is sought.
- 5.20 As a result of the parameters provided and the provision of a worst-case assessment, any future minor changes to scheme parameters (between consultation and application, or following submission) should not result in significant effects, or affect the maximum potential adverse effects assessed.
- 5.21 The development parameters for the proposed buildings are defined on the parameters-based plans (shown in the Parameters Plan in **Appendix 5.1** and summarised in **Table 5.2**) and form the basis of the assessment work in this PEIR. Illustrative and outline material is not relied upon as part of the Environmental Impact Assessment (EIA) either for this consultation process or the final submission, as this provides either an indicative, or just one possible way in which the Proposed Development may be delivered. Nevertheless, the Illustrative Masterplan (in **Appendix 5.2**) shows a configuration of buildings that that could be achieved under the proposed Parameters Plan for the Main SRFI Site (achieving the maximum floorspace permitted). This is intended to illustrate the realistic worst case for assessment in terms of building sizes and land take. Alternative options (including smaller warehouse units) are also possible, as indicated by **Table 5.2**. It should be noted that the realistic worst case used for each technical assessment is outlined in the relevant chapters, as building size and

land take is only one aspect of the Proposed Development that could impact on the environmental effects.

- 5.22 The rail freight layout seeks to provide as much flexibility as possible for intermodal and conventional wagon services (including for express freight traffic), to maximise the rail freight opportunities which can be achieved by the third-party operators, occupiers and other end users in the years following opening.
- 5.23 Building footprints are designed to allow sufficient space for parking, servicing and landscaping. The detailed design and layout of the warehouses will be driven by the operational requirements of the end-user(s).
- 5.24 The maximum building heights are calculated taking into account the anticipated re-grading of the site through a cut and fill exercise (as shown in **Appendix 5.3**). The heights are therefore AOD to ridge (i.e. including from sea level to the ridge of the building), providing an overall maximum relative height. Bunds on the Green Infrastructure Plan (**Appendix 5.1**) are presented as minimum heights, and plateaus as a maximum height so the extent and effectiveness of any predicted screening can be assured.
- 5.25 Each technical topic chapter of this PEIR sets out the realistic worst-case for that assessment based on the parameters provided.

Table 5.2: Parameters Table (Main SRFI Site)

Zone	Use / Infrastructure	Minimum number of units	Maximum number of units	Maximum plateau level (m AOD)	Maximum building height (metres above finished floor level)	Total gross external floor area (sq m) ⁴
1	B8 (Warehousing)	2	4	77.540	18.5	
1a	Truck Parking	1	2	77.540	6.5	
2	B8 (Warehousing)	1	3	80.300	18.5	
3	B8 (Warehousing)	1	4	82.500	18.5	
4	B8 (Warehousing)	1	3	84.250	18.5	
5	B8 (Rail Connected Warehousing)	2	3	90.700	18.5	
5a	B8 (Rail Connected Warehousing)	1	2	88.550	18.5	
6	Maintenance Depot	1	1	92.500	18.5	
6a	Terminal Control Building & Gantry Crane	1	1 building & 3 gantry cranes	91.300	27 (Gantry Crane)	
7	Express Freight Terminal	1	1	94.330	4 (Canopy)	-
-	Bunds	-	-	98.0 (minimum	-	-
Total gross external floorspace (sq m)						702,097

⁴ Total floor area is not provided for each Zone, as there is flexibility built into the parameters plan to have a greater or lesser area up to the maximum allowable floor area across the whole SRFI Site. Provision of a maximum area would therefore suggest an unrealistically large total floorspace. An indicative spread of areas (as used in the masterplan) is provided in Table 5.8.

J15a Works

- 5.26 Parameters used for the J15a works are shown in the J15a Green Infrastructure Plan (in **Appendix 5.1**). This shows the current extent of the adopted highway, and location of particular areas of works, for example, the construction compound, areas to be used for ecological mitigation, and areas to be used for highways works. This identifies where there will be flexibility for works to extend. The nature of those works will be defined during more detailed project design. There are no parameters set for height of the junction, as works will not be high-level, but will be designed to follow the current height of the roadway, with allowances made for safe and efficient operation of the highway.

Minor Highway Works

- 5.27 Parameters used in the other minor highways works assessment are shown in the plans of the junctions in **Appendix 5.1** (i.e. the maximum boundary in which work, including construction works, could be undertaken). These works are located within the highways boundaries, with land take, where necessary comprising verges and similar vegetation. The nature of these works will be defined during more detailed project design. There are no parameters set for height of the junctions, as works will not be high-level, but will be designed to follow the current height of the roadway, with allowances made for safe and efficient operation of the highway.

Project Timescale

- 5.28 Precise details of construction phasing and timing will be confirmed immediately prior to the start of construction and after consent for the Proposed Development has been granted. This will be determined by operational requirements. However, for the purposes of the PEIR the timescales listed in Table 5.3 are assumed.

Table 5.3: Construction and Operation Timescales

Timeframe	Construction	First operation	Operation 'Short-Term'	Full operation - assessment year	Operation 'Long-term'
Project Timeframe	2019-2029	2021	2029-2039	2031	2039-2089

- 5.29 As the delivery of the site will be market driven, the construction phase effects will be extended over a number of years as buildings are delivered. It is currently anticipated that the Proposed Development will take around 10 years to deliver. The assessment of construction phase effects for the Proposed Development in this PEIR is based on a timeframe of approximately 2019-2029 (i.e. this is the 10-year period within which

construction phase effects are likely to occur). This construction period will apply to the Main SRFI Site, J15a and the Minor Highway Works.

- 5.30 However, in practice, elements may come forward for operation before this 10-year period (i.e. there will be operational effects in addition to construction effects within the 10-year construction period). First operation of the Main SRFI Site (alongside construction) is anticipated to occur at 2021. From this point onwards it can be assumed that some elements of the Proposed Development could be in use whilst the remainder of the Proposed Development continues to be constructed. It is estimated that approximately 130,000 sq m of the floorspace of the Main SRFI Site will be constructed by 2021 (approximately 20% of the final floorspace – see **Chapter 19: Highways and Transportation** (Method of Assessment)). With respect to highways works, at 2021 it is assumed that only J15a will be constructed, to allow for a reasonable worst case assessment of traffic flows. This is the assumption applied in the assessments within this PEIR. A phasing assessment for junction build-out is underway, which will inform the final DCO application.
- 5.31 It is possible that full build-out of the Main SRFI Site takes longer than 10 years. This will not affect the assessments materially as full operation (as assessed in the various operational assessments at 2031) will not be able to commence until all construction is completed. However, the 10-year construction period, alongside defined “first operation” and “full operation” dates (2021 and 2031 respectively) were selected to allow assessments to be made of different stages of operation (with potentially different environmental effects) at particular future points in time, assuming defined future baseline in terms of traffic and other environmental aspects.
- 5.32 Operational effects have been considered within a time-frame of 2029-2089. Thus, the operational ‘life’ of the development is anticipated to be approximately 60-years. However, the assessment of the “full” operational period (with no construction works still ongoing) has been assessed at 2031 (i.e. 10 years after first operation). This date was chosen (rather than 2029) to allow for ramping up of operation once construction is complete, and to allow for a potential construction period of longer than 10 years.
- 5.33 A “sensitivity test” of environmental effects should different construction and operational periods be assumed will be undertaken as part of the final ES submitted alongside the application for development consent. This will also include consideration of various options for phasing of construction (see text around **Table 5.4** below).

Construction

- 5.34 Construction includes all works, activities and processes that will be required to build the Proposed Development, including demolition and preparatory works.

Temporary Construction Compounds

Main SRFI Site

- 5.35 A temporary construction access is to be provided with a junction from the A43, positioned on the western area of the site. This would be located adjacent to the former petrol station.
- 5.36 The number and size of construction compounds and site cabins at any point in time will be dependent on the chosen contractor and the eventual phasing of the works. However, it is anticipated that a temporary construction area of up to approximately 3 ha size will be required within the Main SRFI Site. It is anticipated that this will be close to the temporary construction access. Works will then start with demolition and preparatory works across the Main SRFI Site (see following section) and the creation of the main site access from the A43, which will facilitate the main road-based access for the construction phase. A second construction compound of similar size will also be established in the east of the area, once the underpass has been created, to facilitate construction of the intermodal area.
- 5.37 It is anticipated that the temporary construction areas will be stripped of topsoil (which will be stockpiled within the temporary work area) with a layer of stone (such as a granular, limestone, sub-base aggregate) laid to protect the subsoil and create a suitable working surface. External temporary perimeter fencing will protect the compound and will not be accessible to the public for health and safety reasons.
- 5.38 A typical compound site may consist of:
- Site office;
 - Welfare facilities (mess/toilets/drying room);
 - Secure storage (typically lockable containers - if space is an issue for site establishment containers can be double-stacked);
 - Materials lay-down area (including space for deliveries, unloading and secure plant storage);
 - Segregated waste skips;
 - Construction parking (vans and cars);
 - Wheel-wash facility; and
 - Security hut (if 24-hour security required on site).
- 5.39 In addition, the following may be required for the site establishment. Where local utilities connections are available, these may be used subject to agreement with the relevant statutory undertaker; otherwise provisions will be made to bring temporary utilities to site:
- Water supply from an onsite bowser or local connection;
 - On site temporary sewage tank;
 - Drinking water supply from an onsite bowser or local connection;

- Low voltage electricity from onsite generators or local connection; and
- Telephone line/internet connection.

5.40 Smaller temporary works areas will be necessary to deliver building development within each development Zone (see “Buildings (Rail Served and Rail Connected Warehousing)” in the Construction section below), including all temporary access, working areas, storage and compound areas associated with the works.

5.41 Diversion of utilities as part of the Proposed Development is addressed in the “Demolition and Preparatory Works” section below. The temporary construction compounds and temporary works areas will be decommissioned on completion of construction and integrated into the proposed landscaping strategy at the Main SRFI Site.

J15a Works

5.42 A construction compound of approximately 3ha is proposed to the east of the junction. This will be constructed in the same manner as the Main SRFI Site. It will be reinstated to its current agricultural use on completion of the temporary construction works.

Minor Highway Works

5.43 Given the small-scale nature of these works, it is anticipated that construction compounds will use the existing structure of the road, with appropriate safety barriers in place, in common with usual practice for road works. There will be no requirement for additional land take to accommodate a temporary compound area.

Demolition and Preparatory Works

Main SRFI Site

Demolition

5.44 A series of demolition works will be required across the Main SRFI Site to form the development plateaus and the temporary highway access. Buildings would be required to be demolished across the site including the former petrol station near the A43, buildings at Manor Farm, Lodge Farm and Rathvilly Farm and the nursery in the east of the site. These are shown on the Parameters Plan in **Appendix 5.1**. Barns in the north of the Main SRFI Site would be renovated for bat protection as identified in **Chapter 16: Biodiversity** and the Parameters Plan. All demolition works would be carried out in accordance with standard guidelines and procedures and relevant regulation (including waste management requirements). Measures included in the Construction Environmental Management Plan (CEMP) (**Appendix 13.4**) and the Code of Construction Practice (CoCP), included as a DCO document will be followed. Such measures include the following:

- The demolition contractor shall carry out the work in accordance with the latest edition of BS6187;
- The breaking out of the various materials shall be carried out in accordance with current safety regulations and the contractor shall ensure that no section of the down-takings is left in an unsafe condition;
- The use of explosives and blasting shall not be permitted in the demolition works;
- The contractor shall provide as necessary adequate protection to structures on site to remain and to adjacent properties prior to commencing demolition as specified by the local planning authority. Any damage to adjacent properties or part structures arising as a result of the demolition work shall be made good by the contractor;
- Down-takings and debris shall be removed from the building demolition areas at regular intervals and shall not be allowed to “build up” inside the building and cause surcharge to the external walls;
- Where the contractor adopts plant to remove the material from the building, adequate protection to the ground surface shall be provided such that plant can travel safely and the minimum of damage disturbance is caused;
- Drainage works and connections and sealing of pipes terminated by virtue of demolition works shall be carried out in accordance with the Local Authority Requirements;
- All demolition works shall comply with the requirements of the Health and Safety Executive Guidance Notes GS 29/1 – 4 and obtain any necessary agreement with Local Authority;
- The contractor shall ensure that at the end of each working day the site is left in a safe and orderly condition;
- Site access and egress and a safe working place are required by the Construction (Working Places) Regulations 1966; and
- The contractor shall provide details of monitoring record/system to be adopted at the site boundary to record all materials and equipment leaving the site.

Earthworks

- 5.45 To assist in preparing the site for development, a series of preparatory works are to be undertaken. This includes a series of earthworks, which are required in each phase of the development, to create the required building plateaus and to create landscape screening

mounds in a number of locations within the site. The design of earthworks (as shown in **Appendix 5.3**) was to avoid an overall net import or export of material from the site and to re-use, as far as possible, topsoil generated from the site strip for landscaping purposes or within the screening bunds. There was also an aim to ensure each individual phase of construction maintained its own earthworks balance, to avoid the movement of significant volumes of material between phases, and to adopt a single plateau level within each phase to allow future flexibility for different building sizes and plot configurations. In some locations, however, the plateau levels were dictated by the rail levels or to tie into the proposed access from the A43.

- 5.46 This PEIR has been undertaken on the basis that all topsoil will be retained on site for landscaping/bunding purposes. It has also been assumed that all other earthworks will re-use any remaining material, i.e. there will be no net import/export of soil during the earthworks exercise.
- 5.47 In order to minimise the engineered look of the proposed bunds, external slopes will be kept to a maximum slope of 1 in 5. The mounding will follow existing contouring on site to create a more naturalised landscape edge to the Proposed Development. Slopes facing in towards the Proposed Development will be a maximum of 1 in 3 to ensure that the proposed mounding can achieve the intended level of visual mitigation of key views towards the development and also support structural vegetation. Mounding will be kept close to the development edge to ensure the maximum amount of amenity space can be created around the periphery of the Main SFRI Site.
- 5.48 The highest screening mound would be located within the north east of the site, which would be approximately 97m AOD (no less than 5 m above the intermodal plateau and no less than 14.5m above the height of the nearest development plateau – though likely less than 10m above ground level at this point). A smaller mound would also run from north to south, positioned to the east of Northampton Road, the mound would be approximately 86m AOD at its highest point. Finally, one further mound will be located within the north of the site, running in a north to south direction, at its highest point the mound will be approximately 87m AOD.

Other Preparation including Utilities

- 5.49 Two multi fuel pipelines are currently located along the southern boundary of the site. The Proposed Development seeks to divert these pipelines to the south, to ensure that the proposed buildings are not positioned above the pipelines. Overhead utilities, such as the existing overhead power line would be undergrounded. All relocation works of third party infrastructure will either be undertaken and contracted directly by the Statutory undertaker or undertaken by approved contractors to a standard appropriate for the Statutory undertaker and within the terms established by any protective provisions contained within any granted order.

5.50 The grid connection itself is not considered as part of the Proposed Development, as addressed in **Chapter 15: Utilities**. The exact route to be taken from the existing Northampton West substation (plus upgrading of this substation) will be determined by the Statutory Undertaker (Western Power Distribution – WPD). It is therefore addressed as a cumulative development. Three viable cable routes have been suggested to the proposed substation on the Main SRFI Site. The proposed routes all follow roads, as such the cable would be laid parallel to the road with a route being chosen to minimise road crossings and overall disruption caused by road closures. WPD have approximated an installation timescale of 3 years for the enabling and upstream works.

J15a Works

5.51 Preparatory works at J15a will follow the same principles as the Main SRFI Site. The junction is required to be operational throughout works. Therefore demolition (i.e. partial demolition of the existing carriageway to facilitate works) will only take place on a section of the existing carriageway, while the remainder of the carriageway remains operational, or once construction of the alternative is complete and operational. The construction compound will be developed in advance of works commencing. Highways works and associated preparatory works (for example, removal of verge vegetation and any required levelling of ground) will only take place within the area shown as “Highway Works” in the J15a Green Infrastructure plan in **Appendix 5.1**.

Minor Highway Works

5.52 Demolition and preparatory works at the 16 identified junctions and Cycleway will follow the same principles as the Main SRFI Site. These will involve minimal works, as development would be largely within highway land. The only demolition, if required (for example, removal of verge vegetation and any required levelling of ground, or partial demolition of the existing carriageway) would take place while ensuring the remainder of the carriageway remained operational. Should any utilities require diversion to facilitate carriageway widening or similar, these would also take place within the Order Limits.

Construction Works

Main SRFI Site

5.53 The Main SRFI Site can be broadly described in relation to two areas: the east and west of the old Northampton Road:

- West - the area between the A43 and Northampton Road / Towcester Road comprising development to the north and south of the spine road. This includes two main development Zones (1 and 2) plus the lorry park (Zone 1a).
- East - the remaining area of the Main SRFI Site located to the east, between Towcester Road / Northampton Road and the railway lines. Access to the eastern parcel will be taken via the main spine road (via an underpass under

Northampton Road) and not via Northampton Road itself. The eastern area of the Main SFRI Site will comprise three main development Zones (3,4 and 5), each having logistics buildings and associated works as described above. There will also be the proposed intermodal facility and the express freight cross dock platform located adjacent to each of the railway lines.

5.54 Indicative phasing of development is set out in **Table 5.4** below. This is based on the Parameters Plan in **Appendix 5.1**. There will however be flexibility in the phasing adopted, depending on market requirements. The grade separated junction, spine road through the site, underpass, initial rail connection to the Northampton Loop Line (NLL) and intermodal area (or part of) will be key aspects of the Proposed Development, and are anticipated to be constructed prior to first operation in 2021. Evidently, construction of these is integral to operation of the SRFI. The order of other building development in relation to these, however, is only indicative, and there is the potential that some phases may be constructed in parallel. The assessments within this PEIR have assumed a 10-year construction period, and the divisions between construction and operations as outlined in the “Project Timescale” section above. A sensitivity analysis to address how a shorter overall construction phase (for example, should phases be constructed in parallel) would affect the assessed construction effects will be included in the ES submitted with the DCO application, should this flexibility still be sought.

Table 5.4: Anticipated Phasing of Construction

Phase	Description
1	New Grade Separated Junction on A43
2	Haul Road (Spine Road) from A43 to Underpass on Northampton Road (plus bus terminus/ emergency access)
3	Underpass
4	Haul Road (Spine Road) from Underpass to Intermodal Area
5	Rail connections (NLL) and Intermodal Terminal
6	Rail Connected Buildings (Zone 5)*
7	Buildings at A43 frontage (Zone 1 and 2 (western extent))*
8	Rail Connected Building (Zone 5a)*
9	Buildings east of Northampton Road (Zone 4)*
10	Buildings at A43 frontage (Zone 1 and 2 (eastern extent))*

Phase	Description
11	Buildings east of Northampton Road (Zone 3)*
12	Express freight terminal (Zone 7)*
13	Train maintenance depot (Zone 6)*

* phasing to be determined by user / operator requirements.

- 5.55 The principal elements of the construction works are summarised below. This is summarised in relation to the nature of the element/group of elements concerned, rather than in the order of the anticipated phasing.

New Grade Separated Junction on A43

- 5.56 It is currently anticipated that the first stage of works will take an initial construction access from the A43. This will use the former petrol filling station access point. This will allow the establishment of a temporary construction compound to the east of the access point. Works will then start with the creation of the main site access from the A43, which will facilitate the main road-based access for the construction phase.

- 5.57 The permanent works at/from the A43 require the creation of four slip lanes, formed by site-won material used as engineering fill, and the creation of a grade separated roundabout comprising a single 9.5m wide carriageway with access to the four slip lanes and a new 15.8m wide carriageway on an embankment, also formed by site-won material, descending to the site. The grade separated roundabout will sit approximately 7m above the existing carriageway of the A43. The works will include landscaping, drainage, services and lighting columns up to 18m high on the slip roads and roundabout gyratory.

Main Spine Road/ Haul Road

- 5.58 A central spine/estate road will be created to Northampton Road, to allow works on the underpass to begin (to allow the spine road to pass beneath). It is anticipated that the road will be 7.3m wide. The routing of this spine road (between Zones) is shown on the Parameters Plan in **Appendix 5.1**. However the exact location of the road is intended to be flexible to allow it to serve the final layout of the site. Once complete, this underpass will allow access to the eastern area of the Main SRFI Site (i.e. east of Northampton Road).

- 5.59 Construction access will then be taken to the eastern boundary of the Main SRFI Site and another construction compound created (location to be determined). This will allow works to begin on creating the rail infrastructure for the intermodal terminal (described separately below).

Bus Terminus and Emergency Access

- 5.60 A bus terminus is likely to be formed during the creation of the main spine road. It will provide turning, pick up / drop off areas and layover space for buses serving the site. This area of the site will also include an emergency access link to Northampton Road. This will be formed as a simple priority junction with Northampton Road. It will be security gate controlled (or similar) to prevent vehicle access (to be entirely controlled by the emergency services and not the operators. It will allow pedestrian or cycle access.

Underpass

- 5.61 The underpass will take the form of sections of a preformed 'box' (concrete, for example) positioned below the existing Northampton Road in a cutting. It is anticipated that the underpass will be approximately 5.3m deep. This will provide for the necessary earth working to form the underpass, including temporary diversions of the alignment of Northampton Road and its reinstatement at a higher level than existing. The underpass will be drained by pumping to the wider site drainage system, including the temporary drainage system installed to enable the delivery of this and other works.

Rail Connections (Intermodal Terminal, Express Freight Terminal, Train Maintenance Depot)

- 5.62 The creation of the rail connections will involve creating level land, laying tracks as well as providing incidental works, such as alterations to main line signalling and electrification, new crossings for public rights of way, landscaping and drainage infrastructure.
- 5.63 The initial rail works will allow the use of rail for some construction activity, potentially including bulk material deliveries or exports. The first phase of rail works will involve the creation of a first phase intermodal facility with direct rail access to the main line.
- 5.64 The necessary infrastructure to connect the site to the rail network will include clearance, excavation and earth working to create a level area which matches the existing main line rail tracks. Connections will be created to both the slow and fast lines of the West Coast Main Line (WCML), in both directions of travel. In addition, main line cross-overs will be provided, which allow trains on the main line to cross tracks to access the site connection points. Internal routes within the site to facilitate access to directly rail served warehousing will also be created, between each of these connection points.
- 5.65 An intermodal freight terminal will be created. Fencing around the intermodal terminal will be 2.8m high palisade construction in line with Government mandatory requirements for terminals likely to export or import freight via the Channel Tunnel. The layout provides for 8 sidings, all capable of accommodating a 775m length train. Two of the sidings running parallel to the WCML slow lines will be equipped with overhead electrification as reception sidings, to allow electric trains to enter the site, prior to shunting by diesel locomotives or on board diesel engines into the intermodal area. Bunded fuelling facilities will be provided for reachstackers, internal movement vehicles or locomotives.

- 5.66 Alongside the WCML fast lines a further two reception sidings will be provided, also capable of accommodating 775m length trains. These, together with an internal chord line, will provide a continuous double-track electrified route for trains between the WCML slow lines and fast lines, maximising route opportunities on the main line during normal and out-of-course working.
- 5.67 An express freight platform will be created. This will allow direct access to the WCML fast lines. A dedicated electrified loop line from the fast line reception sidings will serve this terminal, formed of a raised platform and overhead canopy, allowing direct level access between express freight trains and goods vehicles docked against the platform.
- 5.68 The entirety of the on-site rail infrastructure will be multipurpose and capable of being used as required by the terminal operator for train arrival, departure, stabling or handling. The development will provide for all necessary signals and point work. The rail works will also include landscaping, the creation of bunds and screening areas, habitat creation areas, footpaths, and acoustic screens.
- 5.69 Indicative screening, landscaping, and locations and numbers of masts and gantries have been included in the Illustrative Masterplan (**Appendix 5.2**) which have been included in the technical assessments in this PEIR where necessary.
- 5.70 Further consideration of the rail aspect of the proposed Development is addressed in **Chapter 8: Rail**, and its associated Rail Operations Report (**Appendix 8.1**).

Buildings (Rail Served and Rail Connected Warehousing)

- 5.71 Rail-served and rail-connected warehousing space will require buildings up to 18.5m in height following the creation of development plateaus and the levelling of the site to link to infrastructure provision. Perimeter bunds will require bulk earthworks, as outlined in the “Demolition and Preparatory Works” section above. Prior to development on the relevant Zones, “embedded mitigation” including the strategic landscaping / open space (as summarised separately below) will be in place. Where possible, additional advance landscaping will be provided to maximise maturing time. Precise details of landscaping and timing of delivery will be confirmed after development consent has been granted, as outlined below. Given this uncertainty over timing, the “realistic worst case” in terms of available screening and ecological benefit offered by such landscaping is described in the relevant technical assessments (for example **Chapter 16: Biodiversity** and **Chapter 17: Landscape and Visual Impact Assessment**). Mitigation in each Zone will also include acoustic screens, ponds and open watercourses to which the development areas will connect.
- 5.72 The Proposed Development will require ancillary buildings and structures within each development plot, including (for example) a gate house; sprinkler tanks and a pump house; a vehicle wash; bunded fuel storage tanks; electricity substations and any other necessary minor ancillary structures (including for example smoking shelters or picnic areas). The developed area will also include car parking, HGV tractor and trailer parking and cycle

parking. Security fencing will be provided around the site perimeter of each development plot, and will be a maximum of 2.4m high, likely to be of a coloured welded mesh-type construction.

- 5.73 Services will be provided in multi service trenches up to and within the development plots and will be capable of providing a range of power, water and communications services to each development plot.

Building Design

- 5.74 The detailed design and appearance of buildings will be finalised at a later stage in accordance with the principles provided by the separate Design and Access Statement. This indicates that the buildings should be functional and high quality structures, and suggests materials, designs and colours that should be used to create a “strong sense of identity”. Illustrative elevations of buildings, including suggested colours, are provided in **Appendix 5.4**. Although building design will be finalised by the eventual operators, the assessments in this PEIR have assumed that a requirement of the DCO will be building out of the site in accordance with the principles of the Design and Access Statement.

- 5.75 The following materials are considered to be appropriate for a development of this nature and scale:

- Ribbed/flat composite cladding panels;
- Profiled/trapezoidal cladding laid horizontally and vertically;
- Curtain walling entrance features and aluminium framed glazing to office areas;
- External painted metalwork framing systems usually painted white to ensure a consistent approach;
- Timber cladding in controlled areas to soften façades; and
- Aluminium standing seam roofing to office buildings.

- 5.76 A palette of neutral colours including a range of graduated greens are proposed for façades and roofs (as shown in the elevations figure in **Appendix 5.4**). Where appropriate, these will be combined with the opportunity for the use of stronger colours as features on buildings. It is assumed that there will be a requirement in the DCO that materials will be submitted to the Local Planning Authority for approval prior to construction commencing on any Zone.

- 5.77 Solar photovoltaic (PV) panels could be accommodated on the warehouse buildings. However, as addressed in **Chapter 23: Climate Change Adaptation and Mitigation**, the means by which CO₂ emissions from buildings could be reduced will be contained in future applications for buildings to be brought forward, which will comply with the requirements of

the time. Therefore, there is no assumption in this assessment that such PV panels will be in place.

Landscape Zones

- 5.78 The Proposed Development of the Main SFRI Site will inevitably result in the loss of farmland and associated field edge vegetation. It is proposed to offset this through the development of a series of biodiverse and ecologically rich landscape zones to provide a net gain in area of woodland habitat, species rich grassland habitat, wetland habitat and increasing overall length of hedgerow. Although some of this is accommodated within the Main SRFI Site itself, the majority of ecological mitigation will be achieved through a 26ha area adjacent to J15a. This mitigates the impact at the Main SRFI Site, though is described in the relevant J15a section below.
- 5.79 Landscaping provided within the Main SFRI Site will form boundaries between building Zones and break up areas of car parking. The landscaped areas will incorporate opportunities for habitat creation and enhancement, as well as leisure opportunities including walks. The landscape areas include publically accessible structural landscape Zones (for example around Arm Farm); structural landscape zones (around the development Zones) and spine road landscaping.
- 5.80 The landscape corridors focused around the periphery of the Main SFRI Site and adjacent to internal road corridors are based on the following key design principles:
- To minimise the effect of the Proposed Development (and specifically the Main SFRI Site) on the adjacent landscape character and on views towards the Main SFRI Site through the use of mounding and native structural planting belts.
 - To integrate drainage and acoustic mitigation into the design to provide a holistic landscape strategy that responds to the existing site constraints and surrounding receptors.
 - To maximise the ecological mitigation within the landscape zones through the retention and enhancement of the existing vegetation framework where feasible.
 - To provide connectivity for wildlife through the creation of a matrix of different habitats providing interconnectivity between the different zones and into the wider area. Mitigation will be implemented where required to respond to individual species needs and provide a robust site specific solution.
 - To provide connectivity both through the site and into surrounding areas. The development will incorporate a number of diverted footpaths along with new footpath links. Footpaths around the periphery of the site will be placed in broad landscape corridors to retain openness and provide a setting.

- To implement the landscape proposals in accordance with current best practice.
- 5.81 An Illustrative Landscape Masterplan for the Main SRFI Site is provided in **Appendix 5.2**, and an Ecological Mitigation Plan and Hedgerow and Tree Retention and Removal Plan in **Appendix 5.4**. These demonstrate the various principles described above and how they would be applied to a typical development layout. Further information in relation to each landscape zone is also provided as part of the separate 15-year Management and Maintenance Plan (M&MP) and is assessed as required within the technical chapters of this PEIR.
- 5.82 However, as for the main Illustrative Masterplan, these demonstrate ways in which the required mitigation could be achieved. The details would be agreed prior to development. Mitigation outlined in the Green Infrastructure Plan (**Appendix 5.1**) is embedded and can be relied on in the assessments within the PEIR.

Landscaping outside the Order Limits

- 5.83 The assessment within this PEIR focusses entirely on mitigation that can be provided within the Order Limits as part of the Proposed Development (both “embedded” in the project design and “adaptive” having been introduced as a result of the assessments undertaken and to be achieved through a requirement within the DCO). The Applicant also intends to make a landscaping fund available to local residents to facilitate additional landscaping or planting in gardens or other land, to further mitigate the effect of the Proposed Development. This cannot be relied on in the assessments as there can be no obligation on local residents to take up such an offer – though it is possible that the fund itself could be required through the DCO. There is however, the potential that such additional landscaping could provide a significant benefit. Reliance on off-site mitigation is not made in assessments carried out herein to ensure robustness of the assessment.

J15a Works

- 5.84 Construction works on J15a will require to take place while continuing operation of the existing junction. Phasing of the works will be developed as the project design progresses. However, it will involve three distinct areas.

Highways Works

- 5.85 These works will take place as shown on the J15a Green Infrastructure Plan in **Appendix 5.1**. Works will involve:
- widening (and signalisation) of the existing northern roundabout;
 - widening of A5123 approach;
 - widening of M1 southbound off-slip approach;
 - widening of A43 northbound approach to northern roundabout;

- reconfiguration of existing southern roundabout to provide signalised T-Junction;
- provision of two lane free flow slip on A43 SB;
- provision of new link road between southern junction to M1 northbound on and off slips;
- widening of A43 northbound approach to southern junction

5.86 All works will take place according to highway best practice, as outlined in the CEMP (**Appendix 13.4**) and Code of Construction Practice (DCO Document). Necessary plant and equipment, hours of work etc. are outlined in the “Construction Processes” section below. The works will include provision or modification of drainage and services, the details of which will be agreed with the Highways Authority. There will be minimal requirement for site levelling, bunding etc.

Landscape Mitigation

5.87 Landscape mitigation is proposed primarily in the north of the junction and to the east of the Grand Union Canal, and comprises retention of existing vegetation (such as around and within the northern roundabout, and south of the M1 and along the edges of the roadway) and additional soft landscaping to the east of the A43 and south of the new slip road. This is shown in the J15a Green Infrastructure Plan in **Appendix 5.1**. The retained vegetation will be protected during highway works, and new landscaping will be established as soon as possible after works. The areas will incorporate opportunities for habitat creation and enhancement, as well as leisure opportunities including extending existing pathways to link with a right of way.

5.88 The Illustrative J15a Landscape Plan (**Appendix 5.2**) suggests how the landscape mitigation may be brought forward.

Ecological Mitigation

5.89 An area for ecological mitigation has been identified to the south-west of the junction, covering approximately 26ha. This is shown in the J15a Green Infrastructure Plan in **Appendix 5.1**. This will be designed following necessary pre-construction surveys, and is intended to maximise the ecological mitigation within the landscape zones through the retention and enhancement of the existing vegetation framework and field pattern where feasible.

5.90 The J15a Ecological Mitigation Plan (**Appendix 5.2**) suggests how the ecological mitigation may be brought forward, though this is dependent on the findings of future pre-development surveys. It is anticipated to include retained vegetation including marshland and woodland, renovated barns for owls and bats, new marshland areas and waterbodies, hedgerows and new vegetation including native trees and shrubs. Ditches alongside

hedgerows could create “blueway” links to enhance habitat value. It is intended that the majority of the area could be kept in arable use, as long as this is non-intensive), with a mixture of overwinter stubble and winter bird crops/cover.

Other Minor Highways Works

- 5.91 Construction works will require to take place with continued operation of the junctions. All works will take place according to highways best practice (as outlined in the CEMP (**Appendix 13.4**) and Code of Construction Practice). Necessary plant and equipment, hours of work etc. are outlined in the “Construction Processes” section below. Aspects of the work requiring widening or reconfiguration of the junctions are listed in **Table 5.5** below, which also indicates where there will be some requirement for minor construction works to level verges or similar. Order of works will be established following a phasing assessment. No additional landscaping is proposed at these junctions.

Table 5.5 Other Highway Works – Schedule of Works

Junction	Description	Physical works on highways land	Additional works	Red line only in highways land	Works involve take of verges
1	Junction 16 of the M1 (M1/ A4500 (east to Northampton)/ A45 (west to Daventry))	Widening of northbound and southbound off-slip approaches Widening of A45 approach	Provision of traffic signal control Reconfiguration of road markings to provide three lanes on circulatory carriageway	Yes	Yes
3	A4500, Weedon Road (east)/ Tollgate Way/ A4500, Weedon Road (west)/ A5076, Upton Way	Provision of additional lane on A4500 eastbound approach		Yes	Yes
4	A5076/ A5123/ Upton Way Roundabout (Pineham Park) (Dane Camp Way)	Widening of road markings on Upton Way approach	Reconfiguration of road markings on Upton Way approach Reconfiguration of road markings on Danes Camp Way approach and on circulatory carriageway, additional lane on A5123 approach and on circulatory carriageway, and additional lane on Upton Way exit.	Yes	No (only takes central reservation section of A5076)
6	A5076 (west)/ Hunsbury Hill Avenue/ Hunsbarrow	Provision of additional lane on both A5076 approaches	Provision of traffic signal control on both A5076	Yes	Yes

Junction	Description	Physical works on highways land	Additional works	Red line only in highways land	Works involve take of verges
	Road/ A5076, Danes Camp Way/ Hunsbury Hill Road	Provision of additional lane and merge on both A5076 exits Provision of additional lane on both northern and southern circulatory carriageway	approaches (and circulatory carriageway)		
7	Towcester Road/ A5076, Danes Camp Way/ A5123, Towcester Road/ Mere Way/ Tesco Access	Provision of additional lane and merge on Towcester Road (westbound exit) Provision of additional lane on A5076, Danes Camp Way approach Provision of local widening (including on circulatory carriageway) on A5123, Towcester Road approach Provision of additional lane and merge on Mere Way exit Provision of extension to right turn lane on Mere Way approach	Provision of traffic signal control (including on circulatory carriageway) on A5123, Towcester Road approach	Yes	Yes
9	A45 (south)/ Eagle Drive/ A45 (north)/ Caswell Road		Provision of traffic signal control on Caswell Road approach (and circulatory carriageway).	Yes	No (Only road markings)
10	A45, Nene Valley Way (south); A428, Bedford Road (west)/ A5095, Rushmere Road/ A45, Nene Valley Way (north)/ A428, Bedford Road (east)	Widening of circulatory carriageway (between A45 (south) and A428 (west) by reducing central island Widening A428 (east) approach		No (small section of land near substation taken)	Yes

Junction	Description	Physical works on highways land	Additional works	Red line only in highways land	Works involve take of verges
11	A45, Nene Valley Way (south); A43, Lumbertubs Way/ A45, Nene Valley Way (north)/ Ferris Row		Reconfiguration of road markings to provide three lanes on circulatory carriageway	Yes	No (only road markings)
12	Junction 15 of the M1 (M1/ A45 (north to Northampton and Wellingborough)/ Saxon Avenue/ A508, Northampton Road (south to Milton Keynes))	Additional lane on A45 approach to junction Widening of circulatory carriageway to provide three lanes from A45 upto existing M1 bridge Additional merge lane on A45 exit from junction		Yes	Yes
14	Tove Roundabout (A43, Towcester Bypass (southwest)/ Towcester Road/ A5, (north)/ A43, (northeast)/ A5, Watling Street (southeast))	Provision of additional lane on A43 (southwest) approach Widening and reconfiguration of Towcester Road approach and A5 (north) exit Provision of additional lanes on A5 (north) approach); and Widening of circulatory carriageway between A5 (north) and A5 (south) to provide additional lane on circulatory carriageway by enlarging central island.		No	Yes
15	Abthorpe Roundabout (Abthorpe Road/ A43, Towcester Bypass (north)/ Brackley Road/ A43, Towcester Bypass	Provision of additional lane on A43 (north) approach Realignment of A43 (north) and Brackley Road	Reconfiguration of road markings on Brackley Road and circulatory carriageway	No	Yes

Junction	Description	Physical works on highways land	Additional works	Red line only in highways land	Works involve take of verges
	(south))				
19	A5076, Upton Way (south)/ Telford Way/ A5076, Upton Way (north)/ Walter Tull Way/ Dustan Mill Lane	Provision of additional lane on both Upton Way approaches Provision of additional lane and merge on both Upton Way exits Widening of circulatory carriageway	Reconfiguration of road markings on circulatory carriageway	Yes	Yes
20	A5076, Upton Way (south)/ High Street/ A5076, Upton Way (north)/ Dustan Mill (Stub)	Provision of additional lane on both Upton Way approaches Provision of additional lane and merge on both Upton Way exits Widening of circulatory carriageway	Reconfiguration of road markings on circulatory carriageway	Yes	Yes
25	A508, Harborough Road (south)/ A5199, Welford Road/ A508, Harborough Road (north)/ Cranford Road/ Kingsland Avenue	Widening on A5199 approach.		Yes	Yes
29	A43/St John's Road	High friction surfacing for northbound vehicles on the A43	Signage scheme proposed to include junction ahead and warning signs and countdown markers	Yes	No
31	A43 Northampton Road		Signage scheme proposed to include junction ahead warning signs with associated countdown markers	Yes	No

Junction	Description	Physical works on highways land	Additional works	Red line only in highways land	Works involve take of verges
CYCLE WAY	Additional off-site infrastructure improvements to provide suitable pedestrian and cycling infrastructure between the main site, the surrounding villages and the southern residential areas of Northampton	<p>The widening of the existing footway along Towcester Road to accommodate a footway/cycleway (3m in width with a minimum 0.5m wide margin along the carriageway edge). The carriageway of Towcester Road/Northampton Road will be realigned in sections with a minimum width of 6.5m</p> <p>A proposed 2 metre wide footway to be provided on the nearside corner of the Towcester Road/Rectory Lane junction To facilitate pedestrian movements, a dropped kerb crossing point with tactile paving will be provided on Towcester Road immediately south of the junction with Rectory Lane. In addition a dropped kerb crossing with tactile paving will be provided on Rectory Lane immediately east of the junction with Towcester Road</p> <p>Extension of the footway along Barn Lane to the junction of Collingtree Road.</p>		Yes	Yes

Traffic Management and Access

All Development within Order Limits

Traffic Management

- 5.92 An outline construction traffic management plan (CTMP) has been prepared and is provided in **Appendix 19.3**. Submission of a CTMP will be made with the DCO, though CTMPs for each stage will be implemented following detailed design.
- 5.93 Haulage routes will be agreed with the relevant highway authorities as a requirement within the DCO, designed to avoid unnecessary trips through urban areas and to avoid HGV's passing through surrounding villages. There will be no access to construction traffic (or indeed operational traffic) to the Main SRFI Site via Northampton Road, unless directed by the Emergency Services. The timing of highway improvements will be agreed with the highway authorities, with trunk road improvements being agreed with Highways England.
- 5.94 The parking facility within the construction compound(s) will remove the potential for drivers arriving early from parking on the wider local road network.
- 5.95 As outlined in **Chapter 19: Highways and Transportation** and the CTMP the number, movements and parking of construction vehicles (both HGVs and staff) has been estimated to be approximately 1,320 two-way vehicles movements across the busiest day (434 employee vehicles and 226 HGVs accessing the site). A maximum of up to 482 construction workers are anticipated to be on site during the construction period (Phase 10).

Pedestrian Access

- 5.96 The location of stopped up and diverted public rights of way are shown on the access and rights of way plans (in **Appendix 5.4**). New 2m wide footpaths will be formed, likely to comprise compacted crushed limestone aggregate or similar. Footpaths will also be set within the proposed landscaping works, including in land to the east of the NLL in the east of the site. Should the adjacent Northampton Gateway development be brought forward (as addressed in **Chapter 3: Reasonable Alternatives**, and in the cumulative assessments within the technical chapters and **Chapter 26: Cumulative Effects Summary**) these footpaths will tie into the proposed footpath network associated with that site, though they also provide a "stand-alone" solution to link into the existing footpath network.
- 5.97 Three new pedestrian bridges over the surrounding railway lines are proposed; two crossing the NLL to the east of the Main SRFI Site and one over the West Coast Mainline (WCML) to the south. The works will also include part of a new north–south pedestrian / cycle link between Milton Malsor and Blisworth ("CYCLEWAY" junction).
- 5.98 A pedestrian underpass will be formed under the alignment of the new A43 access (grade separated junction), to allow pedestrians using a new footpath network around the site to pass safely across this new infrastructure. This will take the form of an artificially lit culvert,

which has the capability of accommodating pedestrian and cycle users. It will also accommodate provision for wildlife connectivity with the adjacent habitats. It will be drained by pumping to connect to drainage infrastructure to be provided on either side of the access road. An overall underpass width of 15.3m is indicatively provided, allowing for a number of different potential carriageway and foot/cycleway width options to be considered within the final design.

- 5.99 A new right of way is also proposed at J15a (as shown on the Illustrative J15a Landscape Plan in **Appendix 5.2**). This will be constructed in the same way as the footpaths around the Main SRFI Site.

Construction Processes

All Development within Order Limits

Construction Management Frameworks

- 5.100 All construction sites have the potential to cause temporary nuisance and disruption to site users, neighbouring occupants, car users, pedestrians, local wildlife and other sensitive receptors. Consideration of the potential effects during construction (including elements of operation), as well as mitigation and monitoring, has been undertaken as part of the technical chapters of this PEIR.
- 5.101 This work has regard to the principles set out in the separate draft (high-level) documents including: Construction Environmental Management Plan (CEMP); Site Waste Management Plan (SWMP); 15-year Management and Maintenance Plan (M&MP); Materials Management Plan (MMP) Pollution Prevention Method Statement (PPMS); and Construction Traffic Management Plan (CTMP). The documents provide more detail regarding the construction works and the key activities that will be undertaken, and provide the basis for the preparation of more detailed plans in due course.
- 5.102 The full content of these documents is not repeated in this chapter. Nevertheless, some key principles are outlined.

Plant and Equipment

- 5.103 Construction activity will utilise mobile plant such as earthmoving equipment, mobile cranes and HGVs as well as temporary stationary plant such as fixed cranes, compressors and generators. Floodlights may be required at night-time and in poor light conditions.
- 5.104 Plant and equipment during construction of the development is expected to include, but is not limited to the plant listed in **Table 5.6** below following during the various stages of work.

Table 5.6: Anticipated Plant and Construction Equipment

Stage of Development	Anticipated Plant and Construction Equipment
Top soil stripping	Tracked blade machine
	Medium sized excavator (20-35 tonnes)
	25 ton all terrain dump trucks
Cut/ fill (Approx. 200,000m ³ areas)	Large sized excavator (36-50 tonnes)
	25 ton all terrain dump trucks
	Tracked blade machine
	Soil sheep's foot compactor
Cut/ fill (Approx. 665,000m ³ areas)	Large sized excavator (36-50 tonnes)
	45 ton all terrain dump trucks
	Tracked blade machine
	Soil sheep's foot compactor
Stabilisation (Approx. 200,000m ³ areas)	Towed integrated mixer and spreader
	Tractor
	Powder silo
Stabilisation (Approx. 665,000m ³ areas)	Towed integrated mixer and spreader
	Tractor
	Powder silo
Earthworks supporting equipment	Tractor
	Water bowser
	Fuel bowser
	Grader – haul road maintenance
Drainage	Excavator (20-30 tonnes)
	Dumper (6-30 tonnes)
	Trench Compactor
	Pump 2"
	Tractor and trailer for materials distribution
On-site highways	Grader/ dozer final formation trims
	8 wheel tippers – import dry stone aggregate and paving materials
	Medium excavator (20-35 tonnes)
	Compactor (roller)
	Paving machine
	Twin drum roller
Highways structures	Backhoe
	Rotary/ CFA piling rig
	Sheet piling rig
	Crane – less than 100 tonnes support to FRC works
	Crane – 500 tonnes (underpass installation)
Buildings	Crane – 1,00 tonnes (bridge deck install A43)
	Rotary/ CFA piling rig – foundations

Stage of Development	Anticipated Plant and Construction Equipment
Railworks	Crane – steelwork erection
	Mobile elevated works platforms – cladding
	Telehandler
	Tracked blade machine for spreading ballast
	Road-rail excavator
	Rail ballast tamper
	Telehandler

Hours of Work

- 5.105 Construction work (excluding archaeological investigations, landscaping and any non-intrusive internal fit-outs) is not assessed to take place other than between 7.00am – 7.30pm weekdays and 8.00am – 1.00pm on Saturdays (excluding public holidays). Any exception to this (except in emergencies), would be limited to activity within completed buildings, and noise limits would be the same as those to be achieved during the operational phase at night. Sunday and bank holiday working would be undertaken for works which do not cause noise that is audible outside the boundary of the site.

Construction Workers

- 5.106 A range of full-time, part-time and shift pattern construction work will be required. Over the estimated 10-year construction period, construction of the Main SRFI Site could be expected to directly support approximately 482 construction workers during the construction period (approximately 268 FTE in any year). Further workers would be required for the J15a and Minor Highway Works. However, throughout the construction period, on-site employment can be expected to fluctuate, peaking during intense periods of activity.
- 5.107 Construction of the Proposed Development will also generate indirect and induced effects, beyond the direct creation of construction jobs. Investment will generate expenditure on construction materials, goods and other services that will be purchased from a wide range of suppliers.

Pre-construction Surveys

- 5.108 As detailed in the technical chapters of the PEIR, there is a requirement to complete a series of pre-construction surveys to update information gathered for the application process at the time of construction. **Table 5.7** below provides a breakdown of the required surveys to be undertaken. These include surveys at the Main SRFI Site and J15a. The Minor Highway Works are not anticipated to require further surveys.

Table 5.7: Pre-Construction Surveys

Technical Discipline	Required Pre-Construction Survey
Air Quality (PEIR Chapter 9)	Monitoring of baseline air quality
Agriculture (PEIR Chapter 10)	Soil and Agricultural Land Classification Survey
Archaeology (PEIR Chapter 11)	Reconnaissance Field Survey
	Geophysical Survey
	Archaeological Trail Trenching Evaluation
Built Heritage (PEIR Chapter 12)	Heritage Site Visits
Ground Conditions (PEIR Chapter 13)	Preliminary Baseline Ground Conditions Survey
	Phase 2 Ground Contamination Investigation
Hydrology (PEIR Chapter 14)	Site Walkover Survey
Biodiversity (PEIR Chapter 16)	Phase 1 Habitat Survey
	Phase 2 Botany Survey (General)
	Phase 2 Botany Survey (Hedgerows)
	Veteran Tree Survey
	Amphibians – Habitat Suitability Index
	Aquatic Invertebrates Survey
	Badger Habitat Assessment
	Bats Ground Level Tree Assessment
	Bats Tree Climbing Survey
	Bats Tree Emergence and Dawn Survey
	Bats Initial Building Assessment
	Bats Emergence and Dawn Re-Entry
	Bats Transect Surveys
	Breeding Birds and Barn Owls Survey
	Golden Plover and Lapwing Surveys
	Reptiles Protected Presence/ Absence Survey
	White Clawed Crayfish Survey
Terrestrial Invertebrates Survey	
Landscape and Visual Impact (PEIR Chapter 17)	Landscape and Visual Field Surveys
Noise (PEIR Chapter 18)	Baseline Long Term Noise and Vibration Monitoring
Highways (PEIR Chapter 19)	Automatic Traffic Count Survey
	Automatic Number Plate Recognition Surveys
	Topographical Survey
Lighting (PEIR Chapter 21)	Baseline Lighting Survey

Lighting

- 5.109 As outline in Section 5.8 of the CEMP, construction lighting will be required to illuminate the access / egress point to the site, for site safety working and security. Construction lighting

may also be required to facilitate early evening working through the winter. Where appropriate site lighting will be time controlled to turn off to a reduced coverage for security during the night.

- 5.110 Security lighting will be provided to the temporary works compound areas and for task-specific items associated with earthworks and stockpiling activities on site and the surrounding works area. Lighting will be directed so only the site compound is illuminated, minimising light pollution beyond the compound boundary. There may be a security presence on site overnight. However to minimise impacts on local residents there will be no lighting of the construction site once works cease each evening.
- 5.111 The lighting adopted will be selected and installed to negate obtrusive light (light pollution). The selection of lighting fittings and illumination levels will be in accordance with the relevant regulations and guidance.

Operation and Maintenance

- 5.112 Operation and maintenance relates to the Proposed Development once completed and in operation, and includes planned and unplanned maintenance activities to be undertaken.

Main SRFI Site

- 5.113 Operators that require a direct rail connection will be located in buildings in the eastern area of the Main SRFI Site. For occupiers with an indirect rail requirement or an anticipated future rail requirement, their location will depend on the scale of the building and the occupier’s preference for location. This may involve occupation of buildings located either on the eastern area of the Main SRFI Site, where direct rail connectivity is possible or, for occupiers which can rely on use of the intermodal facility, on the western area of the Main SRFI Site closer to the A43.
- 5.114 Provided below is an overview of the site and confirmation of the (approximate) floor areas attributed to these various aspects. This information is taken from the illustrative Masterplan in **Appendix 5.2** (as opposed to the Parameters Plan) and it therefore indicative only, and should not be assumed to be a maximum for any identified Zone.

Table 5.8: Indicative Floorspace Overview

Site Zone	Proposed Development	Indicative Gross External Area (GEA) (sqm)
1	Unit 8, 9 and 10	116,537
1a	Truck Park	112
2	Unit 11, 12 and 13	95,754

Site Zone	Proposed Development	Indicative Gross External Area (GEA) (sqm)
3	Unit 1 and 2	135,810
4	Unit 3 and 4	122,812
5	Unit 6 and 7	129,790
5a	Unit 5	89,052
6	Train Maintenance Depot	11,450
6a	Control Centre	780
Total		702,097

Hours of Operation

5.115 It is anticipated the operation of the Proposed Development will be 24-hours a day, 7-days a week.

Rail and Warehousing Operation

5.116 The range of activities associated with the SRFI would include:

- Road and rail haulage services;
- Road / rail interchange facilities (transfer of traffic between modes, intermediate storage of wagons / containers);
- Receiving of loads into warehousing;
- Breaking down large deliveries for redistribution (known as “break bulk”);
- Storage of goods for later processing / distribution;
- Processing of goods (e.g. relabelling, repackaging, adding UK instruction manuals or plugs);
- Resorting goods into consolidated outbound deliveries (a simple example is where inbound loads, each containing a single product A to Z, are then resorted into outbound loads, with each containing various amounts of products A to Z);
- Despatching of loads from warehousing; and
- Management and planning of distribution activities up and down the supply chain.

- 5.117 The operation of the rail aspects of the Proposed Development is described in **Chapter 8: Rail** and associated Rail Operations Report (**Appendix 8.1**).
- 5.118 The proposed SRFI facility will operate to provide fast, efficient processing of containers and other intermodal units, between trains, road vehicles and intermediate storage areas. To facilitate this, the scheme will take rail access from two strategic lines on the national rail network. Trains will subsequently arrive from either direction of travel depending on the ultimate origin/destination of the trains and the route used by the operators to reach the site.
- 5.119 The Northampton Loop Line (NLL) (WCML slow lines) handles most of the freight and non-express passenger services at present. Trains will pass directly into or alongside the intermodal terminal to facilitate fast turnaround of trains once off the main line. Provision has been made in the track layout design to allow both diesel and electrically-hauled trains to access the sidings.
- 5.120 In addition (and uniquely for a SRFI), there will be provision for access to and from the WCML fast lines (known historically as the London to Rugby Line), mainly for express freight services, similar to those used by the Royal Mail between London, Warrington, Glasgow and Newcastle (and more recently used by Eddie Stobart, Sainsbury's and TNT). The loop off the main line would be of sufficient length to allow trains to enter and depart at higher speeds. A cross-dock platform would allow trains and goods vehicles to transfer goods quickly between modes. This facility would allow freight users to benefit from faster transits than currently possible with road haulage or traditional rail freight services.
- 5.121 The four separate main line access points (two on the NLL and two on the WCML) would also be interconnected within the site, providing maximum flexibility in moving trains on and off site as directed by Network Rail. For example, when any of the main line routes is closed for engineering works, or due to disruption, the rail layout would enable Network Rail to route services via the other main line if necessary.
- 5.122 The design of the main line connections can be used by all the types of freight train anticipated to use the SRFI (intermodal, conventional and express); the nature of the connections is designed to reflect the respective emphasis of traffic movements and to best integrate these into the pattern of main line services. The connections would consist of main line crossovers (allowing trains on the main line to cross between main line tracks as required to reach the connection points) and new connections on and off the main line into site. This configuration would serve to maximise the potential of the Proposed Development's connectivity to the strategic freight network.
- 5.123 The intermodal terminal would be open to all users, whether on-site or off-site, and would be open to all rail freight operating companies (FOCs) as a fully open-access facility. Dedicated container handling vehicles (known as "tugmasters" or "dockspotters") would be available to occupiers on site to move containers between the intermodal terminal and individual warehouse units. The intermodal terminal would also have facilities for secure

parking of HGVs awaiting entry to the handling area (typically achieving a 20-minute turnaround once inside), along with ancillary facilities including driver amenities, maintenance, administration and workshop buildings.

- 5.124 Additional rail formations on site would then allow for direct siding access into or alongside some of the larger warehouse units, or to provide stabling and servicing facilities for locomotives and rolling stock.
- 5.125 In the short-term, the immediate requirements of Rail Central would be to cater for the initial start-up phase achieving approximately 4 trains per day each way, with an expectation that this would develop over a period of years in line with the experience of the small number of SRFI developed to date.
- 5.126 The site is capable of handling the level of rail freight traffic anticipated by the scale of rail-served floorspace and hinterland traffic, the GB Freight Model indicating this to be in the order of 13 intermodal trainloads in and out per day, this quantum then being distributed amongst intermodal, conventional wagon and express freight services by train operators and their customers.
- 5.127 Based on the current patterns of activity at existing SRFI, it is anticipated that the majority of rail traffic would comprise deep-sea containers moved from a network of major port facilities (such as Felixstowe, Southampton, London Gateway, Purfleet, Bristol, Liverpool, Teesport and Grangemouth). The next largest component is likely to be domestic intermodal services, the site being well-placed on the main North-West to South-East national freight corridor within Great Britain. The balance of traffic would then comprise European intermodal services, conventional wagon services and express freight services.
- 5.128 The intermodal terminal would be equipped with multiple sidings capable of handling maximum length (775m) freight trains. All of the non-electrified sidings within the terminal would be accessible for overhead gantry crane operation, providing more efficient (and electrically-driven) interchange of containers between road and rail.
- 5.129 Space would be provided alongside the sidings for containers to be stored temporarily if required between road and rail interchange (each train typically processed within a 2-4 hour window depending on the number of containers and handling equipment involved).
- 5.130 Once berthed inside the intermodal terminal, trains will be unloaded and reloaded, each train typically being processed within a 2-4 hour window, depending on the number of containers and handling equipment utilised. Once reloaded, the trains would then be prepared to await departure.
- 5.131 The intermodal terminal would also accommodate short-term storage of containers awaiting call-off by trains or HGVs. This would provide a total storage capacity of around 4700 TEU (Twenty-foot Equivalent Units; the standard measure of size in the container industry), the equivalent of 75 intermodal trainloads (or around 3 days' throughput by rail assuming the

full capacity of approximately 13 intermodal trainloads per day (26 movements in total)). The number and average dwell time for containers on site would be determined by end user requirements and/or the terminal operator.

- 5.132 As trains are unloaded and reloaded, containers will be moved to and from the terminal by road, either serving occupiers on site or those in the wider hinterland. Goods received by warehouses on site will be processed, stored and resorted for onward distribution by road or rail as required.
- 5.133 Following the unloading of the trains, goods will be separated out, some of which will be distributed directly onto HGVs for onward travel. Other goods will be unloaded to the warehousing units provided on site, where items can be sorted for subsequent storage and distribution.
- 5.134 The Proposed Development will also provide up to 688,859 sq m (gross external area) of rail connected and rail served warehousing space (out of the full floorspace of 702,097 sq m overall). Provision has been made for Zone 5 and 5a to have direct rail siding access allowing direct transfer of goods by forklift between trains and warehousing, whilst the remainder will be served by a common-user, open-access intermodal facility.

Maintenance Requirements

- 5.135 The rail infrastructure on site will be maintained to the appropriate standard necessary to effect safe and reliable movement of trains to, from and within the site. This will take the form of regular inspections of tracks, pointwork, signalling and electrification, with spot maintenance and component renewal undertaken as required.
- 5.136 Roads that are to be adopted by the highway authority, will be subject to a commuted sum payable to the highway authority to cover its maintenance for a specified period of time. This will be agreed in advance with the highway authority. Private roads within the site will be maintained by the site operator. It is anticipated that the highway authority will require any roads connecting to an adopted road to be maintained to an adoptable standard for a specified distance from the edge of the adopted highway boundary. Again, this will be agreed in advance with the highway authority.
- 5.137 In respect of ecology, the majority of the Main SRFI Site will be covered by a 15 year M&MP (15 Year Soft Landscape Maintenance, Ecological Enhancement and Overall Management Plan for the Main SRFI Site – presented as a separate DCO document) covering landscape and ecological management and maintenance, which will address management practices for the natural areas of the site (non-operational areas) and areas which are specifically created to benefit wildlife. The aims of this are to ensure:
- the successful establishment and continued growth through to maturity of the Soft Landscape scheme shown on the Illustrative Landscape Masterplan (**Appendix 5.2** of this PEIR).

- that the infrastructure landscape at the Main SRFI Site develops in a manner commensurate with the original design intentions.
- that the maintenance and management of the soft landscape areas is commensurate with and achieves the aims and objectives of sound ecological management and enhancement.
- the successful establishment and retention of an effective landscape buffer around the periphery of the site. In particular along the northern boundary of the main site where it borders the village of Milton Malsor.
- a long term future for the existing trees and new trees, thicket and hedgerow planting with particular emphasis upon achieving enhancement of ecological potential, conservation and visual amenity.
- rapid establishment of the plant material with resultant total ground cover, thereby suppressing weed growth and reducing maintenance requirements.
- the natural growth form and maximise the seasonal potential of individual species by the pruning methods adopted.
- management of the landscape in a manner convivial with the safety of site users, such as maintaining visibility splays and the removal of dead, dying or diseased tree branches.
- the successful establishment and continual enhancement of the whole site in accordance with ecological principles to increase the overall biodiversity of the site.
- enhancement of the ecological value of the site above and beyond its current value and provide habitats for a range of protected species known to occur within the vicinity.

5.138 This M&MP will also describe monitoring regimes for protected species for which habitat will be created (and protecting existing habitat), for example bat and barn owl boxes in trees and barns. Monitoring will also be linked specifically to requirements of protected species licensing for example, bats and Great Crested Newts (off-site).

5.139 The surface water drainage regime will comprise of a mix of formal underground drainage features such as pipes and tanks, and above ground features such as ditches, swales and attenuation basins. Where the drainage systems fall entirely within the boundary of a single property/ownership, the ongoing maintenance will fall to the relevant owner. The owner will be responsible for ensuring that all drainage systems are kept clear of debris and that any flow controls are kept in good working order.

- 5.140 Drainage systems which serve more than one property/ownership will be the responsibility of the overall maintenance company in charge of overseeing the post-construction operation of the development as a whole. The maintenance company will ensure that all open water conveyance and storage features, pipes and culverts are kept clear of debris so that flows are not impeded. All flow control structures will be inspected on a regular basis to ensure that they are operating correctly.
- 5.141 A number of existing ditches traversing the site would be maintained and diverted. These are currently within the control of the Internal Drainage Board (IDB) and it is anticipated that these particular ditches will continue to fall under the IDB's remit.
- 5.142 Maintenance of all other services (electricity, water, gas, telecoms) on, or crossing the site will be maintained by the respective statutory undertaker for that service. Ownership of the land allocated to the new primary substation will need to be transferred to the statutory provider who will build and maintain the facility on site.

Plant and Equipment

- 5.143 On-site activities include, but are not limited to:
- Rail Mounted Gantry cranes (RMG) loading and unloading containers on the intermodal platform;
 - Diesel trains moving, and idling across the on-site rail network;
 - Diesel rail shunters moving under full load;
 - Movement of people and vehicles (cars, vans);
 - HGVs, including those with chillers mounted on the vehicle, entering and manoeuvring within the site;
 - Reach stackers and tugs manoeuvring around the site;
 - General purpose diesel and electric forklift trucks manoeuvring in the yards;
 - Maintenance of road, rail and intermodal handling equipment;
 - Electricity substation; and
 - Operation of warehouse mechanical ventilation and cooling plant.

Operational Workforce

- 5.144 Based on the application of employment densities and an allowance for the train maintenance depot, the additional floorspace proposed at the Main SRFI Site can be

expected to accommodate approximately 8,111 gross FTE jobs. Further information on job creation is set out at **Chapter 20: Socioeconomics**.

Vehicle Movements and Access

- 5.145 The number, movements and parking of operational vehicles (both HGVs and staff vehicles) is forecast at approximately 23,400 movements at full build-out⁵. These figures include both HGVs and staff movements (approximately 6,700 HGVs and 16,700 other movements including staff, visitors and non-HGV deliveries).

J15a Works

- 5.146 Operation of J15a will be undertaken in a manner as any roadway, in that there will be no restrictions placed on use. There will be no required plant and equipment or operational workforce during operation.

Maintenance Requirements

- 5.147 The ecology and landscape mitigation areas at J15a will have a management regime that will be specific to the aims and objectives of that mitigation. For example, in farmed/agricultural areas, this will include cropping regimes and grazing plans as well as for any particular habitat features (such as hedgerows, waterbodies etc. as described for the Main SRFI Site). These will be agreed with the tenants/farmers, where appropriate.
- 5.148 The surface water drainage regime will comprise of a mix of formal underground drainage features such as pipes and tanks, and above ground features such as ditches, swales and attenuation basins. It will be managed as for the Main SRFI Site.

Vehicle Movements and Access

- 5.149 The traffic assessment in **Chapter 19: Highways and Transportation** indicates that in 2031, traffic flows at J15a (the busiest arm being the A43S) at the morning peak would increase from 4,563 vehicles without the development to 6,345 including the Proposed Development as improvement of existing junctions can pull traffic from other parts of the road network.

Minor Highway Works

- 5.150 Operation of the junctions will be undertaken in a manner as any roadway, in that there will be no restrictions placed on use. There will be no required plant and equipment or operational workforce during operation. Maintenance of verges etc. will be undertaken by the relevant Highways Authority.
- 5.151 Vehicle movements at the different mitigated junctions are outlined in **Chapter 19: Highways and Transportation (Tables 19.33 onwards)**.

⁵ Assumption made from Table 7.2 (Rail Central Person Movements) and 7.5 (HGV movements) in Transport Assessment - Appendix 19.1

Decommissioning

All Development within Order Limits

- 5.152 Decommissioning includes all works and processes required to undertake the closure, dismantling and removal of the Proposed Development.
- 5.153 The operational life of the Proposed Development is long-term such that decommissioning requirements are not reliably known at this stage. Established SRFI across mainland Europe have been in continuous operation since the 1970's.
- 5.154 The design life of the warehousing buildings will be in the order of 60+ years (approximately), which is the assumption made for operation (see **Table 5.3**) and the rail infrastructure and civil engineering works will be significantly longer than this. Similarly, it is not intended to decommission the highways works including J15a and the Minor Highway Works. It is not, therefore, known when there will no longer be a need for the Proposed Development and many elements of the development are unlikely to be decommissioned at all. Once the warehouses reach their design life, it is entirely feasible that they will be re-provided in a modern form.
- 5.155 Predicting the baseline so far into the future to enable a meaningful assessment of the sensitivity of the environment, and the significance of effects from the decommissioning of the Proposed Development is extremely difficult. It is assumed that a decommissioning and restoration plan would be produced at the time of any required decommissioning, in accordance with best practice of the time. This will have regard for the potential that only part of the site is decommissioned, in parallel with the continued operation of the remainder of the site. However, for the purposes of this assessment, an assumption can be made that any decommissioning effects would be of a similar magnitude to that outlined for construction.
- 5.156 This is set out in more detail at **Chapter 7: EIA Assessment Methodology** and within the technical chapters.

References

- Ref. 5.1. Planning Act 2008 - <https://www.legislation.gov.uk/ukpga/2008/29/contents>
- Ref 5.2 Infrastructure Planning Commission, 2011, *'Using the 'Rochdale Envelope', Advice Note Nine: Rochdale Envelope, February 2011'*.