3. Reasonable Alternatives

3.1 The EIA Regulations 2017 (**Ref.3.1**), Regulation 14(d), requires:

'A description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment.'

3.2 Schedule 4, Regulation 14(2),(2), provides further information, requiring:

'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'.

- 3.3 This Chapter of the Preliminary Environmental Information Report (PEIR) has been prepared to meet these statutory requirements. A full assessment of the alternative sites that have been considered is provided in the separate *'Alternative Site Assessment'* (**Ref. 3.2**) that will form part of the application for development consent and is included as a document to inform this S42 consultation.
- 3.4 With reference to alternative layouts and designs, there are a number of alternative layouts and design solutions that could have been identified, however, it is not necessary to identify and discount all possible alternatives. In addition, it is not necessary to identify the "best" development proposal but to indicate the main reasons for the option chosen, taking into account the effects of the development on the environment. This is assumed to mean that a justification should be provided that the Proposed Development is appropriate and acceptable in comparison to other potential options, and that an appropriate balance between environmental effects and commercial, technical and economic effects and implications has been reached.
- 3.5 The principal choices for the key design decisions are summarised below, and are explained and justified in the documents that support the application. The Proposed Development is considered to represent a well-considered response to the site and the comments provided during the evolution of the scheme.

Alternative Sites

- 3.6 Recent DCO applications for SRFI's have included an assessment of alternative sites. These studies have been reviewed and their findings and approach adapted to suit the current situation for the Proposed Development (i.e development within the Order Limits, comprising the Main SRFI Site, J15a and Other Highway Works).
- 3.7 The assessment of alternative sites has been undertaken in two main stages, which will inform the final application for DCO consent, and have informed this S42 consultation and the

previous consultation (Stage 1) and associated PEIR documentation. These stages link directly to the consultation process.

- 3.8 For the Stage 1 consultation, an Assessment of Alternatives was included in the PEIR for that Stage (**Ref.3.3**). The methodology adopted was simple and focussed on considering sites that local interest groups, stakeholders and the public had suggested could be possible alternatives.
- 3.9 It also included sites that had been shortlisted in the assessment undertaken for the Daventry International Rail Freight Terminal III (DIRFT) assessment, as these are potential rail freight sites already identified within a similar catchment area to the Rail Central proposal.
- 3.10 The *Alternative Site Assessment* (**Ref. 3.1**) prepared for this Stage 2 S42 consultation has been undertaken to supplement the earlier exercise described above. It adopts a more rigorous approach, using a defined methodology.
- 3.11 This assessment has applied several distinct stages of work to identify possible alternative sites. It has employed a sieve mapping technique using a GIS system over the East and West Midlands which is considered to cover an area of the UK rail network with similar geographical benefits and access to road and rail infrastructure as the Proposed Development. This was used to identify sites with good rail access, close to motorway junctions and with very few environmental constraints.
- 3.12 The sites were then scored using a common scoring matrix, which was designed to identify the best performing potential rail freight sites. The scoring prioritised factors including proximity to motorways, access to high gauge rail lines, local access routes, site levels, shape, size and proximity to sensitive land uses.
- 3.13 Further sites not identified in the screening exercise but which had been suggested by local representation or short listed in other similar studies were included in the analysis and scored using the same matrix.
- 3.14 The scores achieved by each of the sites identified were reviewed and the highest scoring sites selected from comparative analysis. This process was subjective and focussed around the topics identified as important in the scoring matrix.
- 3.15 In summary, the key stages of assessment were:

Stage 1: Area of Search and Sieving

- 3.16 The following factors were mapped using data from data.gov, Historic England, Natural England, Environment Agency and GIS software:
 - i. 5 km distance from Motorway Junctions.

This ensures that the sites selected for review accord with the National Policy Statement for National Networks (NN NPS) criteria of having good road access and being capable of accessing the supply chain routes and major urban areas which are likely to be the ultimate destination of many of the goods handled by the development. A 5 km distance is a subjective measure of an acceptable distance off the key motorway infrastructure for road traffic to travel, where the road network is likely to be designed to facilitate access to the motorway network.

It is not considered appropriate to consider the potential to create new motorway junctions, owing to both the cost associated with such an intervention rendering SRFI projects unviable. There are also significant time-scales associated with the delivery of new motorway junctions and, unless expressly identified in Local Plans to facilitate strategic growth or programmed, there is a Department of Transport's presumption against the construction of new junctions¹. No new motorway junctions are currently proposed in the search area.

ii. 5km distance from railway lines.

This ensures that the sites selected can accord with the NN NPS criteria for having adequate access to the rail network. A 5 km distance is a subjective measure of an acceptable distance for SRFI traffic to travel, without causing amenity impacts to the local road network or requiring additional road infrastructure to be developed over long distances. The 5km threshold has also used by previous alternative sites assessment undertaken for previous/existing SRFI proposals including Howbury, Radlett, DIRFT and West Midlands Interchange.

iii. Rail Gauge of W8 and above and contiguous track able to accommodate a 775m train.

This ensures that the sites selected can accord with the NN NPS criteria for having a suitable loading gauge and the ability to accommodate longer trains. Such trains allow interchange with the Trans-European Network (TEN-T), via the Channel Tunnel.

iv. Environmental designations based on www.magic.gov.uk datasets.

This ensures that the sites selected can accord with the NN NPS criteria for avoiding environmentally sensitive areas.

- 3.17 These datasets were used to identify locations where there is a combination of good access to the strategic road and rail networks (of appropriate gauge), with no or limited environmental constraints. The outputs were used to further reduce the area of search.
- 3.18 The next stage was to review the more detailed mapping to determine site boundaries which had the potential to offer train access with limited effects based on the physical infrastructure in the area, including roads, housing, canals, etc. This exercise was based on the professional judgment of the Applicant's project team.

¹ See DfT Circular 02/2013

- 3.19 Once the sites had been identified, topographical data, flooding data, agricultural land classification and environmental constraints data was used to inform the site specific assessment.
- 3.20 Following this, workforce availability data, in the form of JSA applicants and economically inactive people looking for a job², was obtained for the local authority area in which the site sits, and the immediately adjoining local authority areas. These were added to the qualitative discussion of the site scoring as a measure of whether labour availability would be likely to be a constraint to achieving a successful SRFI.

Stage 2: Site Assessment

- 3.21 Sites identified through the sieving process were combined with the sites identified in the initial alternatives assessment undertaken in 2016. These sites were then subject to a qualitative analysis, focussing on the following factors:
 - proximity to a motorway junction;
 - access to the rail network;
 - vehicle access routes;
 - site size;
 - site shape;
 - topography; and
 - proximity to and potential effects on residential or other sensitive land uses.
- 3.22 21 sites were identified and considered. Each was scored using a sliding scale of -2 (Very Low) to +2 (Very High) using a structured matrix. This scale was appropriate given the level of information available relating to potential sites and the specific NPS and NSIP thresholds which influence individual banding. Addressing the sites with a more finely grained scale would have required additional assumptions to be made, bringing in potential inaccuracies in grading and ranking. Following this, further qualitative analysis was used to check rankings using professional judgement. The purpose of this was to ensure that the scorings had produced a reasonable reflection of whether the scheme was suitable for use as a SRFI.

Stage 3: Assessment of previously short-listed sites

- 3.23 This stage considered those sites which were reviewed in the early alternatives assessment work undertaken. It discounts those sites without rail access, but scores the remaining sites utilising the same methodology applied to the wider search area.
- 3.24 A number of sites were identified by people living locally, who suggested that they should be considered as alternatives. A full list of these sites is presented within the *Alternative Site*

² Both taken from ONS data

Assessment along with confirmation as to whether they have been considered further in the assessment. Where sites are not considered further, clarification as to why is also provided.

- 3.25 Furthermore, sites considered by the DIRFT III scheme that did not feature within the initial stages of the *Alternative Site Assessment* were also considered. One of which was discounted for already forming part of committed DCO development as a SRFI.
- 3.26 This resulted in an additional 4 sites being assessed as alternatives against the scoring matrix utilised at Stage 2 of the *Alternative Site Assessment*. This was undertaken to ensure that every site considered by the Applicant had been scored against a consistent framework.

Stage 4: Assessment of Rail Central

- 3.27 This stage scored Rail Central (the Proposed Development) against the common scoring matrix, to allow comparative analysis of the considered sites. It should be noted that as this assessment was made prior to the detailed site design including identification of the J15a works and Other Highway Works, and assessment of environmental impacts (as outlined within this PEIR) the assessment was qualitative for the Main SRFI Site only based on the initial constraints assessment and preliminary site design considerations.
- 3.28 The scoring matrix has been utilised to produce the following results for Rail Central:

Factor	Score	Notes
Proximity to a motorway junction	1	The site is 1.9km from J15a of the M1
Access to Rail	2	The site has access to two W10 gauge route sections, the Fast Lines via Weedon and the Slow Lines via Northampton.
Vehicle access routes	2	Site access will be taken directly off the A43 with no need to travel through either Milton Malsor or Blisworth.
Site size	2	291Ha
Site shape	2	The site has large regular areas capable of accommodating multiple large floorplate buildings, with long straight sections of site adjacent to rail infrastructure
Topography	2	The site is largely flat with little earth working required to achieve level rail access.
Proximity to and potential effects on residential or other sensitive land uses	0	The site is close to residential properties along Northampton Road. However, the parameters plan, master plan and assessment work in this draft PEIR show that there is adequate provision to ensure potential effects can be mitigated.

Table 3.1: Matrix Scoring Results for Rail Central

Stage 5: Comparative Assessment

- 3.29 Once each site had been allocated a total score, the site scores were tabulated and ranked. Each site was then considered in more detail and finally compared to Rail Central. The performance of each site was then set out with a judgement being made on whether any alternative sites could perform better than Rail Central against the site selection criteria. The highest performing sites within the assessment were then considered further in comparison to Rail Central.
- 3.30 The *Alternative Site Assessment* identified the following sites as being notable high scores for further consideration. Other sites in the initial list of 25 were not addressed further, as they resulted in lower scores from this comparative assessment.

Site Number	Site Name	Site Score
-	Rail Central	11
15	Northampton Gateway	11
5	Land at Burbage Common	11
9	Kilsby North	9
25	West Midlands Interchange	9
24	Etwall Common (East Midlands Intermodal Park)	7

Table 3.2: Matrix scoring results for Comparative Assessment

3.31 Provided below is a summary of the conclusions reached in the *Alternative Site Assessment* within the comparative assessment.

Etwall Common (East Midlands Intermodal Park (EMIP))

- 3.32 The project was subject to informal consultation with a timeline for commencing formal consultation in May 2014, with submission of the application in Spring 2015. The development was subject to a screening request and opinion in Summer 2014 and screening opinion was issued by the PINS in September 2014.
- 3.33 The latest project update available on the PINS website confirms that the applicant has not yet set a timetable for the project. However previous updates on the PINS website dated September 2016confirmed that the developer was preparing a SOCC and intended to formally consult in late 2016 / early 2017. It noted that technical rail work (GRIP stages 1 and 2) were

complete and the submission of the application was to be anticipated in the first quarter of 2017. No further update on the project has been provided on the PINS website or the SRFI website. While this in itself is not problematic, it does suggest that the project remains in the initial phase of development, with the creation of SRFI facilities not likely to be delivered in the immediate future. Comparison with Rail Central suggests that it is at least eighteen months behind in programme terms.

- 3.34 In the alternatives assessment presented during the stage 1 consultation process for Etwall Common, it was noted that this site would address a more northerly market area than Rail Central, centred on an area of existing manufacturing (Toyota, JCB, Nestle, Rolls Royce, Bombardier). This is still considered to be the case, particularly in respect of Toyota whose factory is located immediately north of the site. The site also has limitations as it is more distance from the motorway network than Rail Central, despite there being good A Road access to the M1.
- 3.35 This site is considered to be a good SRFI site and it is being promoted by a reputable logistics developer. However, it is located significantly further north than Rail Central in the search area, and is therefore likely to attract interest from a more northern catchment (focussing upon Derby and Nottingham to the north) as well as catering for potential local demand from an existing cluster of operators. Furthermore, its distance from the strategic road network, and existing rail gauge issues, taken with the low score achieved on the scoring matrix in comparison to Rail Central, the site is not particularly high performing for SRFI development. Notwithstanding this, should the site come forward as a SRFI, it could become complementary to Rail Central due to its geographical differentiation.

Kilsby, North

- 3.36 This site scored 9 points on the scoring Matrix. It is clearly a strong site which has all of the characteristics of a good potential rail freight site.
- 3.37 This site was considered in detail in the DIRFT III assessment. That assessment considered a larger site, the northern part of which is included in this assessment. The southern part of the site assessed by the DIRFT III team was discounted from their analysis.
- 3.38 The DIRFT III assessment considered that this northern section of the site was considered to be capable of accommodating a limited form of rail freight development. However, it concluded that the shape of the site created limitations on rail layout which would affect path availability for other passenger and freight trains, and left little site capacity to accommodate warehousing as well as an intermodal facility.
- 3.39 This site clearly has merit as a SRFI location. However, this site scores lower than Rail Central and has acknowledged technical difficulties in delivering a similar quantum of rail served floorspace. Based on the scoring matrix and the above analysis, Rail Central may appear to be the better SRFI site; however Kilsby North still represents a good alternative and potentially complementary site for SRFI development.

West Midlands Interchange

- 3.40 On the scoring matrix, the site scored 9 points. Measuring 297Ha, the site is a considerable size and has minimal constraints that could restrict the future delivery of the site. Notwithstanding this, there is a significant level change between the West Coast Main Line and the surrounding site area. Gaining suitable rail access will therefore require significant levelling works to be undertaken. From recent consultation information it is understood that this level change can be addressed.
- 3.41 A SRFI proposal is currently coming forward on the site, whilst information provided within the draft PIER for this site has been used to inform this assessment and work is progressing on an application through the DCO process.
- 3.42 The key differences in the scoring of the site against the Rail Central scheme are that West Midlands Interchange has closer access to the Motorway, whilst Rail Central has access to two W10 rail lines.
- 3.43 Having access to two W10 railway lines allows Rail Central to offer services to the emerging Express Freight market, which allows it to better utilise the faster moving West Coast Main Line. This is a clear distinction between the two sites which suggests that Rail Central is more adaptable to anticipated future changes in the rail freight market.
- 3.44 Whilst access to the motorway is closer at the West Midlands Interchange scheme, this is only marginally better than the Rail Central scheme, where routes utilise A roads and do not pass through predominantly residential areas. Conversely, access to two W10 rail lines is considered to be a much greater advantage.
- 3.45 Furthermore, from a planning policy perspective, the WMI is located within the Green Belt. This sets a requirement on the forthcoming DCO application to demonstrate very special circumstances for the release of land from the Green Belt and subsequent departure from the development plan. This factor further separates WMI and the Rail Central scheme, with Rail Central again being preferable from a planning policy position.
- 3.46 Providing that the planning basis for providing an SRFI on land in the Green Belt can be adequately justified, WMI is a relatively high scoring site. Much like the sites assessed beforehand, WMI would operate in a relatively separate market area to Rail Central. Therefore, the site should be considered to be a complementary SRFI site, as opposed to an alternative to Rail Central.

Land at Burbage Common

- 3.47 The site generally scores well on most measures within the scoring matrix. It is at the early stages of being promoted as a SRFI by a reputable logistics developer. It is within close proximity of the strategic highway network, with proposals to secure access on to the M69, and has access to a W10 rail line.
- 3.48 Land at Burbage Common achieves the same score in the matrix as Rail Central, which is a reflection of the sites location in proximity to important transport infrastructure and the lack of environmental constraints identified on the site. Notwithstanding this, the site is only at the early stages of being promoted for SRFI development. As such, limited information regarding

the proposals has been available to fully assess the potential SRFI scheme at Burbage Common.

- 3.49 However, this analysis has highlighted a number of key issues that will need to be addressed through the detailed design of the scheme. These include the proximity to sensitive biodiversity designations, impact on the permanent caravan sites to the south and the ability to find a feasible access route to the site.
- 3.50 Notwithstanding this, although the site has been identified within this alternative site assessment exercise, it is almost 50km to the north west of Rail Central. It is therefore likely to function in a different market area, attracting from a more northern market.
- 3.51 Although the site at Burbage Common may be a good SRFI site on its own merits, this can only be confirmed upon the review of more detailed information when it is available. For these reasons and similarly to the other sites considered as part of this assessment, Land at Burbage Common could function as a complementary SRFI to Rail Central.

Northampton Gateway

- 3.52 This site scores well on most measures in the scoring matrix. It is currently being promoted as a SRFI by a reputable logistics developer. It has good access to the motorway network and access to a W10 rail line.
- 3.53 Northampton Gateway achieves the same score in the scoring matrix as Rail Central which is a reflection of the strategic nature and strength of this area as a location for rail freight development. This also reflects one of the limitations of the adopted methodology, in that it does not allow a fine grained enough analysis of sites in comparable areas, or adjacent to each other. This is why this qualitative analysis is provided for in the methodology. We also note that the national policy aim is not to select the best SRFI site; it is to create a network of SRFI's and to ensure the growth of rail freight capacity and the associated economic and environmental benefits of this sector.
- 3.54 In assessing the degree and scale of environmental impact, it is important to note that Rail Central is almost 30% larger in site size than Northampton Gateway. Despite this, both Rail Central and Northampton Gateway will generate broadly the same degree and magnitude of environmental impact. There are, however, some variations and these are summarised below and based on information publicly available to date:

(a) Landscape and Visual

We would not agree with the conclusions of the Northampton Gateway draft PEIR, which confirms that the Northampton Gateway scheme does not give rise to significant residual landscape character effects to its site and its immediate context; we consider, upon our review, that the landscape effects are comparable to Rail Central.

In terms of visual effects, Northampton Gateway is relatively more remote from residential properties and settlements than Rail Central and, as such, Rail Central is the more prominent and larger development. Northampton Gateway is likely to affect fewer receptors overall, although there is not a material difference between the two schemes.

It is acknowledged that Rail Central will likely affect more residential receptors than Northampton Gateway and will result in some, albeit relatively few, significant residual effects. Northampton Gateway reports none, from detailed analysis undertaken at the Rail Central site, it is considered unlikely that the proposals will lead to no significant residual effects. Rail Central affects fewer public rights of way and fewer roads.

Rail Central residual effects are reliant on agreeing adaptive mitigation. It is not clear at this stage due to the lack of detailed information, what Northampton Gateway relies upon and this presents difficulties in providing a direct comparison. However, in general terms, Rail Central is likely to give rise to a greater degree of impact but taking all matters into account, the overall level of and extent of effects are very similar.

(b) Ecology

The baseline ecological conditions are similar for both Rail Central and Northampton Gateway, as are the predicted impacts. Both schemes consider that their impacts can largely be mitigated for, leaving only a few residual minor adverse impacts as well as beneficial impacts. The ecological impact assessment for Northampton Gateway indicates that the majority of impacts are not considered significant and that the majority of adverse effects will be off-set in the mid- to long-term by the creation and favourable management of ecological habitat. It acknowledges that the loss of arable fields will lead to the unavoidable displacement of some specialist farmland birds (the Northampton Gateway site is used by Golden Plovers, which the Rail central site is not). The impacts associated with Rail Central will be similar.

The principal difference is that Northampton Gateway is not offering any off-site or large area of dedicated ecological mitigation or compensation habitat (as distinct from landscape planting provision having a dual role). For Rail Central, we consider that due to the larger site area, the impacts (particularly on farmland birds and hedgerows), cannot be adequately mitigated or compensated for by the provision of new habitat in the on-site landscape planting alone (though this will redress a substantial part of the impact). The Rail Central assessment identifies adverse residual impacts on veteran trees which are an irreplaceable resource (the Northampton Gateway assessment only has one veteran tree, whereas the Rail Central site has 44). Rail Central will also affect a Potential Wildlife Site (PWS) at J15a however, the additional off-site mitigation area provided at J15a allows Rail Central more scope to compensate for these few differences through net gains to biodiversity.

(c) Cultural Heritage

The Northampton Gateway scheme is likely to result in a number of 'moderate adverse' effects on heritage assets within the immediate area, which are considered to result in 'significant environmental effects'. The draft PEIR for Northampton Gateway identifies that this principally relates to the Milton Malsor Conservation Area and the listed buildings within it, together with Collingtree and Courteenhall Conservation Areas and Registered Parks and Garden. This is as a result of the construction and operation of the main development site. It does not however identify any effects on heritage assets

as a result of the highway works. Given the proposed route bypass, it is likely that this will give rise to some adverse effects on heritage assets around Courteeenhall and Roade. The draft PEIR for Northampton Gateway concludes that there are 6 heritage assets which are considered to be affected by the scheme.

The Rail Central schemes results in 'moderate adverse' effects on a number of heritage assets. These principally relate to Milton Malsor Conservation Area and the listed buildings within it (as a result of the Main SRFI Site) together with the Grand Union Canal Conservation Area and the listed locks within it (as a result of the J15a Works). The PEIR for Rail Central concludes moderate adverse effects on six heritage assets which are considered to be affected by the scheme, together with lower / less significant effects to other heritage assets.

Both schemes affect heritage assets within their immediate vicinity but due to their differing locations, it is different assets which are affected. An example of this is where the Rail Central scheme involves adverse effects to heritage assets along the Grand Union Canal (as a result of the J15a Works) and the Northampton Gateway scheme does not. The Northampton Gateway scheme does however have the potential to affect heritage assets such as the Courteenhall Registered Park and Garden and Collingtree Conservation Area whereas Rail Central does not adversely affect these. Overall, the proposals are likely to have a similar level of environmental impacts on heritage assets, albeit the assets affected would differ.

(d) Agriculture

Northampton Gateway would involve the loss of 195ha of agricultural land, of which 33ha (17%) is best and most versatile (BMV) land in Grades 2 and 3a, with the remainder classified as moderate quality Subgrade 3b. This loss is assessed as a moderate adverse effect. Rail Central would involve 298ha of agricultural land, of which 89ha (30%) is BMV. This loss is also assessed as a moderate adverse effect.

(e) Transport

Based on information contained within the Northampton Gateway Phase Two Consultation materials, the site is forecast to result in a total of 1,044 two-way vehicle movements during the AM peak hour and 1,303 two-way vehicle movements during the PM peak hour.

In comparison, Rail Central is forecast to result in a total of 1,233 two-way vehicle movements during the AM peak hour and 1,566 two-way vehicle movements during the PM peak hour. Therefore, in general terms, it can be seen that Rail Central is likely to result in a higher trip impact than Northampton Gateway before any mitigation schemes are taken into account. This is due to the fact that Rail Central is a larger scheme than Northampton Gateway.

With regards to reducing freight distance covered per year, it is estimated that Rail Central would lead to a reduction of just under 53 million HGV-km per annum when compared with a road only connected development with the same quantum of floorspace at the same location. This is approximately a 20% reduction. The current Mode Shift Benefit value used by the DfT to value its MSRS grants are £0.36 per HGV-km on a weighted average basis, This implies that Rail Central will generate around £19 million of wider environmental benefits per annum.

The proposed mitigation associated with Rail Central is appropriate to minimise the residual impact of the proposals. It is not clear whether the impact of Northampton Gateway on the local highway network has been fully assessed and mitigated as appropriate, from the information available within the public domain.

The distribution of traffic set out in the Northampton Gateway Phase Two Consultation material indicates that there is forecast to be a large number of vehicle movements along the A45. It is not clear from the publicly available information whether the impact of the development on junctions along the A45 to the north of the Queen Eleanor Roundabout has been considered.

In contrast, the impact of Rail Central at junctions along the A45 to the north of the Queen Eleanor Roundabout has been assessed, and these junctions are shown to be under significant stress in the 2021 and 2031 baseline scenarios (i.e. without either proposed development). It would be reasonable to assume, therefore, that the impact of Northampton Gateway at these junctions requires assessment, and potentially the provision of improvement schemes. Improvements are proposed at these junctions to address the impact of the Rail Central proposals.

In addition, the Northampton Gateway traffic distribution indicates that a large number of vehicles would 'rat-run' along minor roads to the west of the A508 and through local villages. Whilst mitigation is proposed by Northampton Gateway to improve capacity at some (but not all) of the junctions at either end of these minor roads, the links themselves are narrow and unlikely to be appropriate to accommodate additional traffic. Mitigation has not been proposed to improve these links, or alternatively to discourage the use of these routes.

The impact of Rail Central on perceived 'rat-run' routes has been assessed. Traffic modelling work indicates that there is no significant impact on these routes as a result of Rail Central. However, in response to local residents' concerns about Rail Central traffic routing through local villages, environmental enhancement schemes have been developed and discussed with Northampton County Council for the villages of Milton Malsor and Blisworth, which the aim to discourage the use of these routes by through traffic. These schemes are to be the subject of additional consultation.

Based on the on information available within the public domain, following the implementation of their respective highway mitigation schemes, the residual traffic impact of Rail Central is likely to be lower than the residual traffic impact of Northampton Gateway.

- 3.55 With regards to the variations on environmental impact, despite Rail Central being significantly larger in site area, the environmental effects are deemed to be largely comparable to those of Northampton Gateway.
- 3.56 The variations in environmental impact, despite Rail Central being significantly larger do not suggest that Rail Central is an inferior site compared to Northampton Gateway in environmental impacts terms.
- 3.57 It is also important to consider both schemes in respect of the operational and technical aspects being proposed within each SRFI proposal; these are presented below.
- 3.58 The table below (Table 3.2) presents a number of key differences. Rail Central offers significantly more commercial floorspace than Northampton Gateway, it is also anticipated to generate more jobs (over 8,000) and has the potential to transfer more road freight to rail. Rail Central also provides direct access to two W10 railway lines and full connectivity between them. This enhanced flexibility and resilience in its infrastructure puts Rail Central at a distinct advantage. This allows direct and quick access to its Express Freight Interchange as opposed to Northampton Gateway which requires more time through the need to shunt within the site.
- 3.59 Rail Central also provides a range of additional facilities which aid the attractiveness of the SRFI as well providing positive consequences to the efficiency of the rail network.

	Rail Central	Northampton Gateway
Rail Connections	Rail Central has 4 main line access points onto two separate branches of the WCML (Fast and Slow Lines)	2 main line access points onto one branch of the WCML (Slow Lines)
Rail Inter- Connectivity	Full inter-connectively provided which Rail Central benefits from a range of routing options ensuring rail services are resilient and efficient. This also enables main line access to be maintained throughout when either the WCML Fast Line or Slow Line is closed for maintenance.	No direct interconnectivity provided between WCML Fast and Slow lines, access to Fast lines only available via at-grade crossings 4 miles to the south (Hanslope Junction) and 20 miles to the north (Hillmorton Junction) Northampton Gateway will lose main line access when
		WCML Slow Lines facing the site.
Overall Commercial Floorspace	c.7.4m sqft warehousing space	5 million sqft warehousing space + 1.6m sqft through mezzanine provision
Trains per day and capacity for growth	First phase of rail operations with 4 trains per day in and out of site, growing commensurate with warehousing and interchange	Rail Operation Report suggests that 4 trains per day each way will be achieved growing to up to 16 trains per day as the critical mass

Table 3.2 : Rail Central and Northampton Gateway Comparison

	facilities.	of development grows.
	The GB Freight Model (used in NR Freight Market Study as endorsed by NPS) indicates that 7.4m sqft of floorspace would generate the equivalent of 13 intermodal trains per day in and out of site.	On a like-for-like comparison, the GB Freight Model output suggests the equivalent level of rail freight traffic from 5m sqft of floorspace would be 9 trains per day in and out of the site.
Rail Connected Floorspace	Approximately 2.22m sqft	Approximately 3.3m sqft
Electrification	Electrified access at an early stage of development	The draft Rail Ops Report, submitted in support of the Stage 2 Consultation confirms that Northampton Gateway "will be able to accommodate electric freight trains when the [] market requires".
Express Freight Terminal	Rail Central has direct and dedicated electrified access on WCML (Fast Lines) for express freight trains, allowing trains to arrive and depart in either or both directions with no intermediate shunting. Internal electrified access to the WCML Slow Lines provides continuity of access when the Fast Lines are closed for maintenance.	Northampton Gateway requires intermediate shunting of all express freight trains between the main line and the terminal, significantly slowing the processing of trains through the terminal.
Sidings	Rail Central has 8 x 775m sidings (6 accessible by cranes with 2 electrified)	Northampton Gateway has 6 x 775m sidings (5 accessible by cranes assuming outer line in electrified)
Other rail-related facilities	Rail Central proposes a Train Maintenance Depot allowing trains to be stabled, maintained and fuelled on site rather than at off-site locations. This reduces the need for trains to be moved off site, maximising the efficient use of available mainline capacity Operational Control Room	Operational Control Room
Aggregate Rail- head	Not provided	Provided
GRIP Feasibility	Network Rail has informed the design of the rail infrastructure and main line connections; the assessment to GRIP2 validating technical and	No reference has been currently been provided to any GRIP feasibility work having been undertaken with/by Network Rail

	operational feasibility of the main line connections	
Transport Access	Direct access onto the A43 (T) and then onto J15 of the M1. The A43(T) provides alternative strategic route on the trunk network to surrounding towns such as Towcester	Direct access on the J15a of the M1
Road to Rail	Rail Central would lead to reduction of just under 53 million HGV-km per annum when compared to a road connected development with the same quantum of floorspace at the same location; this approximately is a 20% reduction. Rail Central will generate around £19 million of wider environmental benefits per annum.	Once operational, the SRFI could accommodate an average maximum throughput of around 1,384 containers a day which would equate to a mode shift from road freight to rail freight of 928 HGV loads or 1,856 two way HGV movements per day. ³
Economic Benefits	Estimated 8,100 gross full time equivalent (FTE) jobs. This takes account of: The lower employment densities typically seen in rail-connected warehouses, due to the need to accommodate rail infrastructure; and The absence of detailed design and layout information at the current point in time, with internal arrangements dependent upon the operational requirements of the end user.	Estimated 7,547 FTE jobs accommodated through provision of 623,000sqm floorspace. This takes account of: The absence of rail-connected warehouses from the published masterplan, which has enabled the application of higher employment densities in warehouses which are not directly connected to the rail line; and
		The proposed mezzanine, albeit a lower employment density has been assumed for this space (155,000sqm).

3.60 The other difference between these two sites is their distance to the strategic highway. Whilst Northampton Gateway is closer to J15 than Rail Central is to J15a, the differences in distance are very limited (J15 is located directly adjacent to the Northampton Gateway site and Rail Central is c.2km from Junction 15a) and in practical terms both routes have good connections to the strategic road network. Both routes are on higher class roads and will not involve passing through residential communities. Indeed Rail Central, being positioned on the A43

³ Directly comparable information is not available in respect of Road to Rail. In relation to the Rail Central scheme a recognised freight model to forecast the expected traffic for Rail Central and the expected mode shift against the comparator scenario (the GB Freight Model) has been utilised. This is approach is currently being used to update Network Rail's long term freight forecasts and was previously used to forecast freight for their Freight Market Study in 2013 (ultimately used to underpin conclusions contained within the NPS). Information prepared for Northampton Gateway has not used this recognised approach.

(T), benefits from significant highway resilience offering alternative access arrangements if necessary.

- 3.61 Bringing all the analysis together, Northampton Gateway is a strong SRFI site with very good access to the strategic road network. However, whilst it is closer to the motorway than Rail Central, this in itself is not a major distinguishing factor between these two sites. Rail Central does however, have the ability to connect to the West Coast Main Line, as well as the Northampton Loop and presents additional operational and technical advantages over Northampton Gateway which make it more resilient, flexible and more adaptable to the changing rail freight market.
- 3.62 On this basis, it is concluded that the Rail Central site is a preferable SRFI site. However, it is recognised that there is potential for Northampton Gateway to be pursued in addition to the Rail Central site. Both schemes could meet the required demand, especially given the great national need for SRFIs and the clustering of such infrastructure. This scenario has therefore been the subject of cumulative impact assessment in the PEIR

Assessment of Alternative Sites Conclusions

- 3.63 The Assessment of Alternative Sites study concludes that despite the large area of search, the development opportunities for SRFI proposals are limited. A total of 25 locations were identified as satisfying key SRFI characteristics as defined by the NN NPS. Of these, only five locations present realistic SRFI opportunities and were identified for further comparative analysis. Within this context, it is not surprising, therefore, that four of the five alternative sites assessed for further comparative analysis are the subject of on-going DCO applications for SRFI proposals and each has the potential to provide SRFI facilities.
- 3.64 Indeed, this in itself demonstrates the rigour of the assessment methodology and is a reflection of the East and West Midlands being a significant area of developer interest to deliver a network of SRFI to meet burgeoning demand. It is also reflective of the NN NPS which makes it clear it is for the market to determine the viability of particular proposals. All shortlisted sites comprise greenfield and all would result in the loss of agricultural land and various elements of biodiversity. Comparison of environmental benefits is difficult due to the size and scale of SRFI development and the individualistic nature of each candidate site. Environmental impacts vary but are of broadly the same magnitude and it is not the case that one site is clearly preferable to another, in terms of development effects. Three of the short-listed locations are the subject of SRFI DCO proposals which, if consented, are considered to operate and serve a different core catchment area of the East and West Midlands to that of Rail Central.
- 3.65 The study concludes that there are two clear top performing sites Rail Central and Northampton Gateway that would seek to serve broadly the same core catchment area. They score the same using the scoring matrix. There are differences in performance between these two sites which allow them to be distinguished.
- 3.66 Northampton Gateway is a strong SRFI site with very good access to the strategic road network. However, whilst it is closer to the motorway than Rail Central, this in itself is not a major distinguishing factor between these two sites. Environmental impacts, whilst varied, are

broadly of the same magnitude. Rail Central does however, have the ability to directly connect to the WCML, as well as the NLL and this presents, along with its additional infrastructure, enhanced operational and technical advantages over Northampton Gateway which make it more resilient, flexible and more adaptable to the changing rail freight market.

- 3.67 On this basis, it is concluded that the Rail Central site is the better performing SRFI site. However, it is recognised that there is potential for Northampton Gateway to be pursued in addition to Rail Central. This scenario has therefore been the subject of cumulative impact assessment in the PEIR.
- 3.68 Similarly, a preliminary assessment of the technical capability of the rail network to accommodate both sites (not included within this chapter, but addressed in the Rail Report in Appendix 8.1) has concluded that the two sites would be compatible. The close or co-location of SRFI is not unique to this area, and elsewhere SRFI and RFI already operate alongside each other, and in some cases collaborate operationally despite being run by separate otherwise competing commercial undertakings. The NN NPS confirms the compelling need to create an expanded network of SRFI facilities, but does not set out requirements for the proximity or dispersal of these SRFI. The overall objective is to significantly expand the level of rail-served distribution floorspace as a share of total distribution floorspace. As rail-served floorspace in the Midlands is relatively small compared to other non rail-served floorspace, more SRFI capacity will be required to link to key supply chain routes, to match the changing demands of the market. In terms of operational compatibility, the combined results of the work undertaken with Network Rail on main line access and network capability on Rail Central have not identified any design issues which would otherwise prevent both sites from being able to operate as SRFI in line with the Planning Act 2008 and the NN NPS.
- 3.69 Overall, therefore, it is the conclusion of this preliminary report that there are limited SRFI opportunities with the broad search area. Comparisons of environmental impacts are difficult, due to contrast in scale of each site but none of the other sites creates development opportunities that are of clear environmental, operational or market benefits when compared to Rail Central.
- 3.70 Four of the five sites which present realistic development SRFI opportunities are the subject of developer interest and are being pursued through the DCO process. Three of these locations would serve a different core catchment area to that of Rail Central and do not present realistic alternatives. They would, however, provide complementary facilities to Rail Central and contribute to the required network of SRFI facilities as required by the NPS with the overriding objective of securing access to the rail network and fostering the transfer of freight from road to rail to support economic growth in an environmentally responsible manner.

Options Appraisal

3.71 The NN NPS requires all projects to be subject to an options appraisal⁴, but makes clear that it is not necessary for the examining authority to reconsider this process, as opposed to satisfying themselves that this assessment has been undertaken. Footnote 61 acknowledges that investment decisions on SRFI's will be made in the context of a commercial framework. This SRFI project is privately funded and is not subject to any funding bid or process that requires a formal Options Appraisal Report to be prepared as part of the business case to

⁴ Paragraph 4.27 of the NN NPS

secure public funding. NN NPS notes that the appraisal should consider viable modal alternatives. The options appraisal is provided within section 3 of the preliminary *Alternative Site Assessment*.

- 3.72 A number of potential options aside from the development of alternative sites summarised above exist to meet the need for a network of SRFI's. These are:
 - (a) The no development scenario;
 - (b) Focussing on road only distribution schemes;
 - (c) Relying on existing SRFI's;
 - (d) Relying on more, smaller rail freight interchanges; and
 - (e) Alternative forms of development on the Rail Central site.
- 3.73 These are considered further below.

(a) The no development scenario

- 3.74 This is not an option. The NN NPS confirms that the overriding government objective is to shift freight from road to rail to help reduce transport's carbon emissions and provide economic benefits⁵. The NN NPS establishes there is a compelling need for an expanded network of SRFIs throughout the country and that "SRFI capacity needs to be provided at a wide range of locations, to provide the flexibility needed to match the changing demands of the market." A no development scenario would also not meet the identified need for a network of SRFI's across the UK, and would leave freight movements on the strategic road network, with the associated greater level of emissions and cost of delays caused by congestion.
- 3.75 In terms of Rail Central, this option would not result in any environmental change and would leave the Main SRFI Site in productive agricultural use. However, it would have major opportunity costs in the form of unrealised economic and job growth opportunities.

(b) Focussing on road only distribution schemes

3.76 This option has similar disadvantages to the no development scenario. The economic benefits of growth in the logistics industry would be secured, but this would be in a manner which is, relatively speaking, less environmentally acceptable. NN NPS recognises⁶ that even with significant road infrastructure investment, forecast freight levels would lead to increasing congestion at ports and on the road network, and lead to increased transport related carbon emissions. It recognises that a modal shift to rail needs to be encouraged and that this will require investment in the rail network and having suitable freight terminals to serve the growing need.

⁵ Paragraph 2.40 of the NSNN

⁶ Table 4: Options to address need, paragraph 2.55

3.77 This option is not considered to be an acceptable option as it would not meet policy objectives and would result in a less environmentally acceptable alternative being adopted.

(c) Relying on existing SRFI's

3.78 NN NPS recognises that while small parts of the country area served by existing SRFIs, it clearly indicates that relying on the existing network of rail freight interchanges to manage demand is neither a viable nor desirable option citing: "perpetuating the status quo...is simply not a viable option"⁷. Road congestion would increase, ports would have increasing difficulties moving goods inland causing congestion and both costs and delays for shippers. This would constrain economic growth, investment and job creation.



Image 3.1: Proposed and Operational SRFI Sites

3.79 This option is not considered to be an acceptable option as it would not meet policy objectives, would have economic opportunity costs and would result in a less environmentally acceptable alternative being adopted.

(d) Relying on more, smaller rail freight interchanges

⁷ Table 4: Options to address need, paragraph 2.55

- 3.80 Whist this would achieve a modal shift to rail, smaller RFI's would not have the capacity or efficiency to deal with forecast levels of freight growth. NN NPS recognises that smaller RFI's have a place in the network of rail freight interchanges, but that they cannot provide the scale, efficiencies and the related business facilities and linkages offered by SRFI's⁸.
- 3.81 In order for the rail network to operate efficiently, larger SRFI's are required in addition to smaller RFI's or single rail served warehouses. Each of these has a role to play in removing traffic from the road network and can deliver economic opportunities and environmental benefits compared to a road only solution. However, to be efficient, these types of rail freight facilities must operate together and the SRFI's have a key role to play in bulk handling of goods and clearing port capacity.
- 3.82 This option is a partial solution and would still have economic dis-benefits in terms of port congestion and effects on costs to shippers. This option is not considered to be acceptable as it only deals with part of the reason for the policy requirement for a network of rail freight facilities, and therefore doesn't meet policy need.

(e) Alternative forms of development on the Rail Central site

- 3.83 There are other potential development scenarios for the Rail Central site. These include:
 - (a) A lesser extent of rail freight terminal;
 - (b) A non- rail connected / served logistics development; and
 - (c) Residential or other non-employment related development.
- 3.84 The non-rail related development options have not been pursued, primarily because they will not meet the established need for a network of SRFI's across the UK. Evidently there is a need for residential development across the UK, although the suitability of the Rail Central site has not been assessed for such a use by the Applicant. There are a limited number of sites in the UK (and in the identified Midlands region) suitable for a SRFI, as identified by the initial sieving exercise carried out (land with the appropriate proximity to the rail and road networks, with the capacity to accommodate appropriate trains, and with an absence of sensitive environmental designations), use of the land for other development would effectively sterilise it for this nationally significant use. Land for residential development is not so tightly constrained by requirements, and several smaller sites can potentially be brought forward to meet the same overall need.
- 3.85 In the case of a reduced scale of development on this site, this option would not maximise the opportunity from creating such a development. Furthermore, the position of the railway infrastructure relative to the strategic highway access means that creating a smaller development should naturally occur around the rail infrastructure. This would create the need to provide significant new access infrastructure without providing the development associated with that infrastructure which would provide its funding. This option therefore represents an opportunity cost and creates a potential project viability issue.

⁸ Table 4: Options to address need, paragraph 2.55

- 3.86 Consideration has also been given to alternative layouts of the selected form of development. These were considered as part of the iterative process of site design and environmental assessment. These early iterations of the masterplan can be viewed in the draft Design and Access Statement. These are discussed in further detail in the Design Evolution section of this PEIR chapter.
- 3.87 However, there are key factors which have guided the general form of the Proposed Development. These fixed parameters are; the locations at which rail connections can be achieved, both on the WCML and the NLL; the location at which access to the strategic road network can be achieved, on the A43; and the need to cross the old Northampton Road. These elements of the development are fixed and are all essential elements of the scheme. These dictate the general extent of the development as well as factors such as the location of the intermodal and express freight facilities and the positioning of the directly rail connected units to the eastern side of the site. The difficulties of securing a rail link to the western side of the site, past the old Northampton Road also dictates the position of the rail served properties to the western side of the site. These parameters have therefore formed the general form and nature of the Proposed Development and each of the alternatives has had to work within these limits.

Design Evolution of the Proposed Development

- 3.88 The evolving design of the Proposed Development has had regard for the opportunities and constraints highlighted in the above Alternative Sites Assessment throughout. In addition, ongoing influences including the overarching site design principles and ongoing consultation have informed the design. The process of the site design has had three key stages, all underpinned by the opportunities and constraints, site design principles and consultation with relevant stakeholders:
 - Initial feasibility studies
 - Phase 1 consultation
 - Subsequent modifications following Phase 1 consultation
- 3.89 These are addressed in the sections below. The work focuses primarily on the design of the Main SRFI Site, and this is the key aspect of the Proposed Development, influencing the design of the highways works, including J15a works. These latter aspects of the Proposed Development, forming part of the proposed Development (described in detail in **Chapter 5: The Proposed Development**) are considered at the end of the Chapter.

Ongoing Influence in Site Design - Opportunities and Constraints

- 3.90 As indicated in the above assessment, key opportunities offered by the chosen SRFI site include:
 - Access to and from J15a of the M1 This proximity provides direct and easy access for transferring goods and freight from the proposed Intermodal terminal on to the wider national road infrastructure;

- Access to two stretches of railway, the NLL and the WCML the WCML is a major part of the fast moving countrywide rail network and the NLL a local rail line that allows slower moving rail freight, which in turn allows access to the intermodal terminal without impacting the faster moving trains of the WCML;
- Access directly off the A43 this will provide the site with exclusive access and egress for vehicles within the Proposed Development. This gives the opportunity for transport to avoid the small local roads network and therefore conserving the traffic flow through the nearby villages of Milton Malsor and Blisworth; and
- The site size and topography –allowing development of a nationally strategic SRFI and large distribution park with the same site, therefore reducing the distance between each and subsequently reducing carbon emissions. The topography would permit development of large plateaus, upon which storage and distribution facilities can be built that are big enough to service the adjacent intermodal terminal.
- 3.91 These opportunities were considered sufficient to be able to meet the key market requirements of the SRFI, including the ability to:
 - connect freight traffic from the WCML and NLL, and road traffic along infrastructure corridors allowing safe and efficient vehicle flow;
 - develop direct rail-connected warehousing,;
 - develop a rail terminal capable of accommodating 775m length trains and with the capacity to store and process containers; and
 - develop zones capable of accommodating buildings of appropriate size and height to accommodate the latest warehouse mechanical handling equipment and extra-long trailers.
- 3.92 However, constraints were also identified, including:
 - Visual and landscape impact –especially from key viewpoints which could be affected by the visual impact of the development;
 - Public Rights of Way those that cross the site would require diversion or modification as part of the development;
 - Areas of Flood Zone 2 and 3 running along the Milton Malsor brook corridor, which would require to be accommodated by the Proposed Development;
 - Roade Cutting SSSI at the southern end of the site, and other areas of ecological interest, including Potential Wildlife Sites – these would require mitigation within the strategy of the development;
 - A listed railway bridge to the south of the site, which would require consideration in terms of vehicle routeing, and in the site design; and

• A number of listed buildings in Milton Malsor which would require consideration in terms of their setting during design and construction.

Ongoing Influence in Site Design – Consultation

- 3.93 The Proposed Development has been developed following dialogue with a number of stakeholders over a period of several years, including the outcome of the scoping exercise from January 2016 (as summarised in **Chapter 4: Overview of Consultation and Scoping** and in the separate **Report to Inform the Statement of Community Consultation** prepared for the S42 Consultation).
- 3.94 These discussions took in order to establish basic scheme feasibility. They included substantial and ongoing engagement with Network Rail to assess feasibility, capacity and viability matters (the opportunity to connect into the existing rail network being a core aspect for the scheme), and Highways England, to discuss and agree highways works on the M1 (including J15a and J15 and J16) and the strategic road network (including the A43 and A5). Northamptonshire County Council was also engaged with regard to highway matters. Natural England, Historic England and the Environment Agency were also consulted regarding their areas of responsibility, in particular to discuss scope and preliminary findings of assessments. The Canal and Rivers Trust was also consulted regarding the Grand Union Canal.
- 3.95 These engagement meetings initially established awareness of the scheme and started a dialogue which could then continue into the formal, statutory consultation stage.
- 3.96 Relevant stakeholders (non-statutory and statutory) were also briefed and consulted on the evolving proposals. Consultations have continued into early 2018. These included (in addition to those mentioned above):
 - Officers and councillors from South Northamptonshire Council (SNC) Northampton Borough Council (NBC) and Northamptonshire County Council (NCC)
 - Local MPs (Daventry, South Northamptonshire)
 - Parish Councils including meetings open to the public and telephone conversations (Milton Malsor Parish Council, Blisworth Parish Council, Tiffield Parish Council, Shutlanger Parish Council, Stoke Bruerne Parish Council, Collingtree Parish Council, West Hunsbury Parish Council, Hunsbury Meadows Parish Council, Rothersthorpe Parish Council, Grange Park Parish Council, Courteenhall Parish Council, Wootton & East Hunsbury Parish Council, and Easton Neston Parish Meeting)
 - Local Enterprise Partnerships (Northamptonshire Enterprise Partnership, South East Midlands Local Enterprise Partnership
 - Local press (print, broadcast and online media) including Northampton Chronicle & Echo
 - Landowners and Occupiers

- Representatives from the community group Stop Rail Central.
- Towcester Primary School
- 3.97 A series of project leaflets was produced (from January 2016 to September 2017, with more proposed) to provide information to local residents and businesses about the project, ongoing surveys and assessments, the approach to consultation and information about forthcoming consultation events. These were sent to more than 2,500 local addresses near the site including all postal addresses in Milton Malsor, Blisworth and Roade, and was made available on the project website.
- 3.98 A local liaison group was established in February 2016, to continue throughout the preapplication, submission and examination period. Membership was invited from a selection of the stakeholders listed above. This was developed to discuss detailed issues relating to the Proposed Development and to share and coordinate information about the evolving and emerging proposals.
- 3.99 Stage 1 Consultation (S47) took place from April October 2016. The proposals consulted on are shown in **Figure 3.1** and discussed in further detail below. Updated illustrative plans and new visual material were produced within the consultation period.
- 3.100 Informal consultation with the above stakeholder groups has fed back on the Phase One Consultation, providing updates on the development of the plans and answering enquiries.
- 3.101 Since formal consultation for Rail Central started in 2016, emerging proposals from Roxhill Developments (Roxhill) were introduced for land on a separate site to the east of the Main SRFI Site called Northampton Gateway. This is for a SRFI of approximately 468,000 sq m as described in the Alternative Sites Assessment summarised above. Roxhill conducted informal consultation in December 2016 and formal consultation from October 2017. Roxhill is being kept informed of the planned consultation dates for Rail Central, and exchange of information to allow cumulative assessment is anticipated prior to DCO submission.

Ongoing Influence in Site Design - Development Principles of Design

- 3.102 Key principles for the development, as outlined in the draft Design and Access Statement accompanying this S42 consultation include:
 - a well-integrated development contextually sensitive proposals that recognise and protect local factors as much as possible such as neighbouring uses and environments whilst capturing the economic potential of the strategic location
 - a sustainable place a balance of social economic and environmental factors that combine to create a truly sustainable environment;
 - connected and legible Rail Central needs to be linked to existing routes of all modes ensuring convenience, integration and safety for all users of the development.

- protecting residential amenity Rail Central is located between two residential villages. The principle is to demonstrate a solution that respects the amenity of neighbours.
- respecting the landscape the Main SRFI Site is in large part undeveloped open land within a range of natural farmland and landscape features. The design process is intended to strengthen and diversity the identity and structure of the landscape and minimise any adverse effects.
- recreation and ecological enhancements the guiding principle is mitigation of impacts and to facilitate an enhancement of recreational opportunities and ecological diversity
- 3.103 The masterplan proposed as an illustrative way in which the Main SRFI Site could be developed **(Appendix 5.2)** requires to take account of market expectations for modern industrial and logistics buildings in terms of shape, height, the proportions of buildings and arrangements for access, loading and parking. However, the height and massing of the Proposed Development will also need to consider the surrounding context whilst providing future tenants the opportunity for a bespoke building to cater for their operations.
- 3.104 The visual appearance of future buildings within the surrounding context was considered critical, given the proximity to residential areas and potential key viewpoints. Good quality and sustainable materials, and sensitive design were therefore integral to the approach. Sustainable development was important, to ensure future buildings are capable of reducing CO₂ emissions. In addition, accessibility to occupiers and visitors, with safe vehicular and pedestrian access around the development was important. In particular, linking to existing footpaths outside of the site to provide convenient links to local public transport and the wider community was an important part of the design.
- 3.105 Robust structural landscaping zones to the perimeter of the site along with strategic planting to the estate road and the development zones was also a principle of the initial design.
- 3.106 As summarised in the rest of this Chapter, the design of the Main SRFI Site has met these overarching principles of design. The site is integrated into the surrounding environment and respects the landscape using a mixture of structural landscaping and screening bunds, with strategic planting proposed, using an appropriate mix of native species to minimise visual impact. The massing and design of buildings, including their shape, height and proposed colour scheme has also been designed to integrate with the surrounding landscape and environmental context. This is addressed in the Design and Access Statement, and in **Chapter 17: Landscape and Visual Impact Assessment**.
- 3.107 Existing watercourses and public rights of way will be diverted and integrated into the Proposed Development. Social, economic and environmental factors are balanced through the proposed Local Employment Scheme (as addressed in **Chapter 20: Socioeconomics**) ecological mitigation proposed and improvement of sustainable transportation schemes, including a new cycleway along Northampton Road. As addressed in **Chapter 19: Highways and Transportation**, the site is connected to the existing road network, using the main routes of the A43 and M1, with works proposed to improve capacity and safety of critical junctions.

The rail network will be seamlessly integrated into the Proposed Development through development of a new intermodal terminal and Rail Freight Terminal as a primary part of the Proposed Development.

- 3.108 Residential amenity will be protected through measures in place to avoid visual impact from nearby settlements, and to ensure noise, lighting and air quality impacts do not adversely affect the communities. Vehicle access to the Main SRFI Site will be via the A43 and not Northampton Road, which will preserve amenity of the road network in Blisworth and Milton Malsor. Recreation will be promoted through the development of publicly available spaces (such as the Pocket Park at Arm Farm) and improvements to the existing footpath and cycleway network. In particular, the proposed footpath network links to existing footpaths outside of the site to provide convenient links to local public transport and the wider community.
- 3.109 Biodiversity (as addressed in **Chapter 16: Biodiversity**) will be supported in the Main SRFI Site through native planting, a diverse range of structural and strategic planting and renovation of existing barns for bat and bird roosts. Measures such as lighting have been designed to minimise impact on wildlife using the site, as well as to protect residential amenity. In addition, a 26 ha area of "off-site" mitigation has been allocated, within the Order Limits at the J15a site, which will provide a diverse range of habitat types including hedgerows, grassland, ponds, wetland areas and woodland adjacent to the Grand Union Canal, to enhance that ecological corridor.

Stages in Site Design - Feasibility Studies

- 3.110 Various feasibility studies were completed early in project design (pre-April 2016) to show how the site could be developed with access to the rail network. These were gradually informed by various specialist disciplines, as preliminary survey information became available. Key iterative changes included the location of the intermodal area and rail access to the west and east of Northampton Road, following development of a spine road; allowances for potential earthworks accounting for the topography of the land; and various locations and layouts for the rail layout and building positions and sizes having regard for site topography and visual impact. Various locations for flood attenuation were considered, as the drainage strategy and capacity were established. The iterations of the site (as shown in the Design and Access Statement (Figures 12-14) were designed in order to maximise the opportunities for trainload-quantity freight activity from units around the intermodal area, while minimising potential environmental and amenity impact as such impact became apparent from ongoing surveys and assessments.
- 3.111 In terms of topography, although the site is relatively flat, the main aim of the earthworks design 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 get each individual phase of construction to have 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.

Stages in Site Design - Initial Design for Phase 1 Consultation

- 3.112 A preliminary design was prepared, in accordance with the above design principles, and having regard for the identified opportunities and constraints and comments received from various stakeholders through informal consultation. This is shown in **Figure 3.1**. This formed the design for Section 47 Consultation ("Phase 1") in April October 2016.
- 3.113 Key features of this design included:
 - Access taken from the A43
 - Inclusion of a truck park and hotel/ conference facilities at the site entrance close to the A43 Junction to serve the potential requirements from the park, and prevent parking of HGVs on local roads.
 - Landscaped buffer zones between Milton Malsor village and the development to create a visual screen and assisting in ecological mitigation and flood mitigation.
 - Diversion of Milton Malsor Brook to allow for an optimum sized development.
 - Location of the rail facility at the eastern edge of the site next to the NLL, to facilitate faster access of trains between the main line and the Intermodal Area, and minimising visual impact
 - A train maintenance depot adjacent to the Intermodal area to encapsulate as much of the rail-related activities on site as possible, to minimise off-site movements of trains to and from other maintenance facilities.
 - Development of an express freight platform as an extra facility for loading/ unloading express freight trains. This was positioned on the western edge of the site, linked directly to the WCML fast lines at each end.
 - Development of flood attenuation in the northern part of the western site in accordance with the drainage strategy, allowing for the necessary capacity required to contain surface water run-off.
 - An underpass crossing beneath Northampton Road, rather than a roundabout, to connect the east and west sites and prevent disruption to traffic flowing north-south.
 - An earthworks balance 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 either for landscaping purposes or within the screening bunds.

Stages in Site Design - Evolution of Design following Phase 1 Consultation (Main SRFI Site)

3.114 Various comments were made on the initial design following Phase 1 consultation. These were considered as the design has progressed towards the "Phase 2" Section 42 and 47 consultation in March-April 2018. These changes have had regard for further consultation

with statutory and non-statutory consultees in relation to the scope of the technical assessments and the methods to be used. These are outlined elsewhere in this PEIR. It should be noted that the final design forming the "Proposed Development" for the purpose of this S42 consultation, shown in Figure 3.2, has been reviewed in several stages. In particular work on the highway necessary to support operation of the Main SRFI Site has involved iterative modelling assessments and extensive consultation with Highways England.

- 3.115 Changes made have included:
 - Northampton Road Greenway enhancement of a corridor parallel to Northampton Road to create a landscape and walking route linking the villages of Blisworth and Milton Malsor. This is set back from the existing road to provide a landscape buffer to reduce the potential impact on landscape character between the two villages. Mitigation mounding aids screening of views towards the proposed units. Existing hedgerows and hedgerow trees along Northampton Road will be protected and retained. The footpath link between the two villages will be upgraded to a combined cycleway / footpath providing an 'off road' cycle link between the two villages and into the proposed development.
 - Arm Farm Pocket Park development to the west of the A43 (hotel/ conference facilities) was removed, and safeguarded to provide landscaping and ecological mitigation and an informal pocket park for use by local residents. The proximity of this land parcel to the canal makes it of particular importance for bat mitigation with the potential to construct purpose made features. The proposed park will be low key and kept informal with native planting.
 - Improvement of proposed ecological and landscape mitigation these include publically accessible structural landscaping (largely following the rerouted public footpaths around the periphery of the site), structural landscaping along the southern boundary with the WCML and Grand Union Canal (managed as a dark zone) and along Milton Malsor Brook, and landscaping along the spine road within the Main SRFI Site. These zones will create a rich mosaic of differing habitats, providing ecological mitigation (native species planting, species rich neutral grassland, calcareous grassland, woodland and woodland edge habitat, along with new hedgerow planting, scrubland and wetland areas), and improve the setting of footpaths and views. An additional area for ecological mitigation to mitigate habitat/ agricultural land at the Main SRFI Site has been developed at the J15a site. Publicly accessible land will include interpretation boards that explain local heritage features and also provide opportunities for use as an educational and recreational resource for the local community. Natural England have been consulted regarding the proposed mitigation for bats and general mitigation proposals and are supportive of the proposals in principle.
 - **Lorry Park** The capacity of the lorry park to the south of Unit 10 was increased from 89 spaces to 149 spaces to further alleviate concerns over HGVs parking on local roads as they waited to gain access to the Rail Central site.
 - Update of Building Locations Reorientation of Warehouse Units In an effort to reduce the visual impact on the Railway cottages and Northampton Road, the distance between the closest buildings (Units 3 and 4) and these receptors has

been increased. Unit 4, which is closest to the Railway Cottages has also been reduced in size. In addition, locations have been modified to allow for safe access from the spine road, and to accommodate Rights of Way.

- **Public Rights of Way** Comments at the Phase 1 consultation suggested that the proposed diversions of rights of way did not offer the best options for access around the site. Therefore changes were made to ensure these link into existing routes, around and alongside the site, including new routes to ensure that circular routes are maintained, especially along the eastern side of the NLL to link the existing footpath route back into Milton Malsor. Diversion or rerouting of rights of way has taken care to preserve their accessibility and character. The approach to rerouting has had regard for consultation with Natural England, Northamptonshire Ramblers and the Ramblers Association, as well as local residents. Approximately half of the structural landscape around the periphery of the site, will become publicly accessible amenity land. Proposed field edge hedgerow and the rerouted right of way to the east of the NLL will encourage views out to adjacent open countryside.
- Retention of agricultural land to the east of the NLL this area has been retained within the Order Limits to allow for footpath diversion, and it will be retained as managed agricultural land that will not be otherwise affected by the Proposed Development.
- **Landscaping bunds** The size and amount of landscaped bunds have been increased, particularly to the north of the site, to further screen the development visually from Milton Malsor and Blisworth.
- Public Car Park and Parking provision This has been introduced to improve accessibility for employees, with access from the A43. Parking numbers were amended to accord more precisely with Local Authority Standards. Car park areas, where practicable, will be screened through the use of fencing and/or planting. Soft landscaping will be integrated into the car parking areas to enhance the visual appearance. Car parking, motorcycle and cycling provisions will be provided in accordance with the local authority standards.
- **Colouring of buildings** Elements of green colour shades and gradations have been incorporated to give the effect of blending in with natural surroundings, to minimise visual impact.
- Gatehouse removal and widening of spine road- the main gatehouse was removed to allow a free flow of traffic, and the spine road widened to ensure it can accommodate the necessary traffic.
- **Shuttle bus turning area incorporated** this will assist visitors to the site. Positioning of bus stops and shelters will not obstruct the continuity of footway and cycle path routes.
- No motor vehicle access from Northampton Road, except for emergency access – this was introduced to preserve the integrity of the villages and passage between them. Two emergency access points will be provided onto

Northampton Road and Towcester Road between the two villages. These access points will be controlled only by the emergency services with barriers and used by vehicles only in the event of an emergency at the discretion of the emergency services.

- **Promotion of sustainable travel** Bike storage, showers, changing facilities and lockers will be provided to encourage non-car travel.
- Extension of cycleway/footway running along Northampton Road this links the eastern site into the cycle network. The emergency access points on Northampton Road and Towcester Road will be open to pedestrians and cyclists facilitating access to both sections of the site either side of Northampton Road and the bus terminal located within the site.
- **Relocation of Parking at Barn Lane** this will avoid conflict with the existing bus stops along this road.
- Improving drainage on site the drainage strategy ensures the increase in surface water runoff rates and volumes due to the provision of buildings, highways and other hardstanding areas will be managed within the proposed development infrastructure drainage systems such that there will be no detrimental impact to third parties downstream of the site. Storage will be a combination of surface water lagoons, ditches, oversized pipes and underground tanks. Attenuation ponds/basins will provide additional storage and deliver the ability to improve water quality before discharging to the existing watercourses within the site. It is also intended to include swales or similar features as conveyance systems and to provide water treatment benefits. Discharge from the site will be restricted to mimic the existing greenfield runoff rate with attenuation being provided to cater for the 1 in 200 year plus 40% allowance for climate change storm event. This has been discussed with the Environment Agency.
- **Diversion of Milton Malsor Brook** a more "natural" route for the diversion is proposed, with features to provide changes in flow and ecological benefit. This has been discussed with the Environment Agency.
- **Improved noise mitigation** earth bunding around the boundary of the proposed site is proposed, particularly to provide screening to Milton Malsor to the north and to the nearby residential properties on Northampton Road. Additional acoustic screening will also be installed, and orientation of buildings has been considered to provide additional noise screening from yards.
- Addition of an electricity substation to serve the power needs of the site. This has been discussed with WPD. In addition, the potential routeing of the electricity supply to the site (assessed as a cumulative project as addressed in Chapter 15: Utilities) has been discussed with WPD. Provision and routeing of other utilities is also discussed in that chapter.
- **Incorporation of sustainability measures –** potential for the use of renewable sources of energy, along with conscientious specification of material and construction techniques have been incorporated into the site design.

- Operation of the site as a "Restricted Zone" these operational processes will ensure security of movement of freight via the Channel Tunnel. Principles associated with this also provide security to the rest of the site, including removing risks posed by concealed entrances, ensuring manned security and monitoring around the site, and designing the highway and footpaths to ensure that the risk to injury to road users is reduced to a minimum.
- Definition of minimum finished floor levels and maximum building heights for each Zone.
- Introduction of a "landscaping fund" this is a fund put in place by the Applicant that local residents can call on to develop planting or other landscaping in their gardens to further mitigate visual effect of the Proposed Development. As this will evidently not be obligatory, the assessments contained in this PEIR have not relied on it in terms of mitigation of the Proposed Development. Nevertheless, it has the potential for local residents to reduce the visual effect from their properties further, as a result of concerns that views would be altered.
- 3.116 These changes ensure that the Proposed SRFI meets the design principles of the overall development, and address concerns raised by stakeholders throughout the consultation process.
- 3.117 The current parameters plans and illustrative masterplan reflects the latest position in the iterative design process and is the subject of the assessment work in this PEIR. They represent the current optimal solution based on the assessment work undertaken to date.

Stages in Site Design - Evolution of Design following Phase 1 Consultation (J15a Works)

- 3.118 The current design of the J15a works has been informed by the requirement to mitigate traffic arising as a result of the Proposed Development in a way that is acceptable in highways terms, and also commercially acceptable. Therefore the design is largely constrained by Highways England requirements and extensive discussion has been held to agree an appropriate design in consultation over several months. However, there is also opportunity to improve the existing junction in terms of landscape and ecological benefit, and ensure that existing features, such as the Grand Union Canal are not adversely affected by the works.
- 3.119 The works involve widening and signalisation of existing northern roundabout, widening the A5123 approach and the M1 southbound off-slip approach, and widening the A43 northbound approach to the northern roundabout. The southern roundabout would be reconfigured to provide a signalised T-Junction, with provision of a two lane free flow slip onto the A43 (southbound), provision of a new link road between the southern junction to the M1 northbound on and off slips (with a crossing of the Grand Union Canal), and widening the A43 northbound approach to the southern junction.
- 3.120 A number of alternative options have been considered as part of the design process including:
 - Removing both roundabouts and replacing them with signalised T-Junctions;

- Relocating the southern roundabout to the south, signalising both roundabouts and providing a two lane free flow slip onto the A43 (southbound); and
- Signalising both roundabouts, with widening of the existing M1 underpasses.
- 3.121 These options were discounted for various reasons, including land-take, safety and the complexity of the engineering solutions leading to construction costs that would make the scheme unfeasible commercially. The current scheme design has been agreed with Highways England and Northamptonshire County Council to be an appropriate design in terms of the operational capacity and geometry.
- 3.122 Additional features of the works include:
 - Provision of approximately 32ha for landscape and ecological mitigation works (26ha specifically for ecological mitigation) adjacent to the Junction, including retention of existing vegetation, and development of new habitats, including native trees and shrubs, hedgerows, grassland and marshland, including water bodies. The principles of ecological mitigation have been agreed with the Council biodiversity officer and Natural England. This area is to mitigate habitat loss at the Main SRFI Site, not J15a itself. It is also intended to bring material from the Main Site, such as seeds or deadwood from veteran trees to incorporate into the proposals;
 - Development of a new footpath to link to an existing path in the area, to join the canal towpath network;
 - Renovation of derelict buildings for bats and barn owls;
 - Provision of screening planting alongside the A43, with native trees and shrubs;
 - Incorporation of habitats such as tree stumps from the Main SRFI Site to compensate for loss of habitat in that area;
 - Improvement of the ecological status of the current site, which is an agriculturally managed field.
- 3.123 There are no alternative landscape proposals, though the current illustrative landscape plan is subject to modification following additional surveys and design work at the junction, to best benefit particular ecological features in the area.

Stages in Site Design - Evolution of Design following Phase 1 Consultation (Minor Highway Works)

3.124 The principle of design of the Minor Highway Works is to mitigate traffic impacts at the identified junctions, as a result of increased traffic flows caused by the Proposed Development. This is by a variety of works, including widening of carriageways, signalisation, and reconfiguration of lanes; in some cases by amendments of existing road markings. These works have been developed through an extensive traffic modelling exercise undertaken as part of the transport assessment (**Chapter 19: Highways and Transportation**).

- 3.125 A study area of 38 junctions (as set out in **Chapter 19**) was identified in discussion with Highways England and Northamptonshire County Council within which the impact of the Proposed Development was to be considered. The junctions identified for mitigation within this has developed as the project has evolved – however, the current proposals reflect the requirements of the Proposed Development as outlined in this PEIR.
- 3.126 The mitigation proposed at each junction has been designed to ensure that there is nil detriment to the operation of the junction as a result of the Proposed Development in comparison to the forecast baseline situation. They have also been designed to be delivered within land in highway control, or available to the applicant, as far as possible. Alternative design solutions were explored as part of the transport modelling process, although the current proposals represent the best and most cost efficient overall solution to meet the above criteria.

Conclusion and Next Steps

- 3.127 This Chapter has outlined the process by which the Order Limits for the Proposed Development were defined. It has justified that the site selected for the Main SRFI Site from other possible sites in the East and West Midlands Region, based on proximity to road and rail infrastructure, suitability of the rail network for appropriate trains, and avoidance of surface sensitivities such as designations. The selected site was justified against other possible sites in the area; some of which could be developed as acceptable SRFI sites in their own right. However, the selected site brought forward as the Main SRFI Site in the Proposed Development is considered to have exceptionally good rail links, due to having access to two rail lines of appropriate gauge, excellent site access directly from the A43 and less than 2 km from the M1 and owing to the size, topography and location of the site, potential for sensitive landscaping and mitigation to ensure that environmental impacts are minimised. This makes the Rail Central site unique amongst other possible sites in the area, including the adjacent Northampton Gateway site (which has similar locational benefits, but only has access to one rail line and less direct road access).
- 3.128 Having selected the site, the design of development within the Main SRFI Site (and highways works required to deliver the SRFI) has evolved since 2015 in response to overarching design principles and consultation with relevant stakeholders. The Proposed Development brought to this S42 consultation is considered to be an appropriate and acceptable option for development within the site and makes the best use of the resources available. It has had regard for constraints in terms of:
 - landscape and visibility through design of screening, proposed planting and size, massing and location of development within the site);
 - public rights of way through development of an improved network of footpaths and cycleways, and "informal" publically accessible areas, such as the "pocket park" at Arm Farm;
 - flood risk through diversion of the Milton Malsor brook and development of an appropriate flood mitigation and drainage system on site including attenuation ponds;

- biodiversity through proposed planting, landscaping and development of "informal" recreational areas, mitigation at J15a to mitigate habitat loss in the Main SRFI Site and restoration of existing derelict buildings to benefit bats and birds;
- proximity to residences and listed buildings through development of screening bunding and acoustic screens on site, and allowing for planting in gardens through a "landscaping fund", in addition to the binding and screening forming part of the site design; and
- access by ensuring the traffic accesses the Main SRFI Site from the trunk road network and not Northampton Road (or the identified listed railway bridge), and that currently constrained junctions on the surrounding network have their capacity and hence safety and free-flow of traffic improved.
- 3.129 Following the S42 consultation, site design will continue to prepare detail required for the final DCO submission, with changes to the Proposed Development presented herein made as appropriate.

References

- Ref. 3.1 Statutory Instrument 2017 No. 572 'The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
- Ref. 3.2 Turley (2017), 'Alternative Site Assessment'
- Ref. 3.3 Turley (2016), 'Rail Central Preliminary Environmental Information Report (PEIR) Preliminary Environmental Information Report (PEIR): Stage 1 April 2016'
- Ref.3.4 The Planning Inspectorate, East Midlands Intermodal Park, Available at: <u>https://infrastructure.planninginspectorate.gov.uk/projects/east-</u> <u>midlands/east-midlands-intermodal-park/</u>) Accessed 28 March 2017.
- Ref 3.5 Michael Sparks Associates (2017) Rail Central: Design and Access Statement