



Rugeley Power Limited

# Project Trent

## Transport Assessment

November 2018

Rugeley Power Limited

# Project Trent

## Transport Assessment

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## Executive Summary

This Transport Assessment considers transport and access and describes the assessment methodology; the baseline conditions at the site and surroundings; the potential environmental impacts; and the mitigation measures proposed.

Primary vehicular access to the proposed development in the west will be achieved from the A51 utilising the existing site access. In the east primary vehicular access will be provided from the A513 utilising the roundabout consented under planning permission 17/00453/FULM.

The site links into the extensive existing network of footways/cycleways in the surrounding area. Given the level of accessibility of the site and the existing pedestrian infrastructure, it is considered that the site is accessible to pedestrians, and there are good opportunities to walk between the site, access public transport services and local facilities/amenities within the vicinity of the site. The existing pedestrian infrastructures provide a comprehensive, direct, safe and convenient series of routes for pedestrians to use.

Public rights of way are remote from the site and accordingly are unlikely to be adversely affected by the proposals.

A number of bus services operate within Rugeley; however, the current bus provisions are mainly focused within existing residential areas rather than the more industrial Trent Valley area. The nearest bus stops to the site are situated on the A513 adjacent to the roundabout junction formed between the A513 and Priory Avenue towards the eastern end of the site.

Rugeley Town Railway Station is located c. 1.5km west of the development, this can be accessed via a 25-minute walk or an 8-minute cycle.

Rugeley Trent Valley Station is c. 2km to the northwest of the site and can be accessed within a 27-minute walk or nine-minute journey time by bicycle.

The highway safety record of the local highway network was considered as part of this analysis. A total of 123 accidents were recorded in the study area during the most recent five-year period for which data is available. 108 of the accidents that occurred were of 'slight' severity; 14 were classified as 'serious' and 1 was classified as 'fatal'. More detailed assessment of accident clusters has determined causations related to driver error rather than deficiencies in the existing highway layout. On this basis no mitigation measures are deemed to be necessary.

This assessment has been carried out in relation to traffic data collected during 2018 as agreed with SCC highways. This data has been growthed to a 2029 forecast year for the purposes of traffic assessment. The assessment also includes traffic generated by a number of agreed committed developments.

Development traffic has been calculated and distributed using industry standard tools and techniques. The parameters used in the assessment have been agreed with SCC highways as part of scoping discussions.

A total of four junctions are forecast to require mitigation following the introduction of development traffic and mitigation schemes are proposed in the following locations to achieve nil-detriment:

- Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane roundabout;
- A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road roundabout;
- A51/A513 Rugeley Road/A513 Armitage Road roundabout; and,
- A51 Rugeley Eastern By-Pass/RWE Access roundabout.

In addition to junction capacity improvements the proposed mitigation package includes a range of sustainable transport infrastructure and travel planning initiatives. A summary of the sustainable transport mitigation package is as follows:

- Pedestrian and cycle permeability with defined routes between the site, Rugeley Town Centre, Rugeley Town Railway Station, Rugeley Trent Valley Railway Station and surrounding residential areas;
- Cycle parking to be provided at the site in line with locally adopted standards;
- A network of pedestrian and cycle routes throughout the site;
- The layout allows for bus penetration to enable easy access to public transport services. It is envisaged that this will be delivered by either diversion of existing bus routes or provision of new bus route to better link the site with key destinations such as Rugeley Town Centre, Rugeley Town Railway Station, Rugeley Trent Valley Railway Station;
- Provision of electric vehicle charging; and,
- Framework Travel Plan to promote and stimulate modal shift.

On the basis of the information presented in this report it is considered that the proposed development can be accommodated within the local area. As such there should be no reason why the application cannot be recommended in terms of highways and transportation.

It is therefore concluded that the proposed development together with the package of mitigation measures being promoted will not have a significant adverse impact on the operation or safety of the surrounding highway and transportation network and therefore, in accordance with the NPPF and local planning policies, the proposal should be considered acceptable in transport terms.



# 1 Introduction

## 1.1 Overview

1.1.1 mode has been appointed by Rugeley Power Limited to prepare a Transport Assessment (TA) for an outline planning application for the redevelopment of Rugeley B Power Station, Rugeley, Staffordshire.

1.1.2 The site is situated to the northeast of Rugeley, circa (c.) 1km to the east of Rugeley town centre and c. 1.6km to the west of Armitage. The site is situated within two districts with the north-western half of the site located within the Cannock Chase District, and the south-eastern half of the site located within Lichfield District.

1.1.3 The site has therefore been considered in relation to planning policy and guidance adopted by Cannock Chase District Council (CCDC) and Lichfield District Council (LDC). The site is situated in the county of Staffordshire and accordingly the requirements of Staffordshire County Council (SCC), as Highway Authority have been taken into consideration in the preparation of this TA.

1.1.4 The location of the site is shown in **Figure 1.1** with all figures included in **Appendix A**. The site context in relation to both planning authority boundaries is also summarised in **Figure 1.1**.

1.1.5 The proposed development comprises:

“Outline planning application for the demolition of existing office building and environmental centre, site clearance, remediation and mixed-use development of land at the former Rugeley Power Station comprising:

- Up to 2,300 new dwellings (Use Class C3)
- Up to 1.2 ha of mixed-use (Use Classes A1, A2, A3, A4, A5, C1-C3, D1 and D2).
- Up to 5 Ha of employment (Use Class B1, B2, B8)
- 1 no. 2 Form Entry Primary School; and,
- Formal and Informal Publicly Accessible Open Space

Key Infrastructure including new adoptable roads within the site and the provision of a new primary access junction on to the A513, ground mounted solar panels and 2 No' sub stations (132 kV and 400 kV) retained.”

## 1.2 Purpose of this report

1.2.1 This TA will consider the impact of the proposed development on the local highway network and the key considerations are as follows:

- Access to the site for all users;
- Linkage of the site to the existing network of sustainable transport infrastructure and the potential for improvements to this to make the uptake of sustainable transport more attractive;
- Review of existing highway safety records in order to identify any issues that may be exacerbated by the proposals;

- Identification of the number of trips that the site is forecast to generate by all modes of transport;
- Collection of traffic data and its growth to a forecast year, including committed developments for the purposes of assessing development traffic impacts;
- Junction capacity modelling of the surrounding highway network during weekday peak hour periods and identification of mitigation measures where necessary;
- The required level of parking to serve the proposals to include electric vehicle parking, disabled users and cycles; and,
- The potential for measures to increase the likelihood of use of sustainable transport including the promotion of electric vehicle use and car sharing.

1.2.2 A Framework Travel Plan (FTP) has also been prepared in support of the proposals as a standalone document. The purpose of the FTP is to promote and encourage the uptake of sustainable modes of transport for future residents, employees and visitors of the site. This TA will make reference to the FTP where appropriate in later chapters.

### 1.3 Best Practice Guidance

1.3.1 The following best practice guidance documents have been followed when preparing this TA:

- Ministry of Housing, Communities and Local Government (MHCLG) “Travel Plans, Transport Assessments and Statements” (2014);
- SCC’s “Guidelines for Transport Assessments and Travel Plans” (2008); and,
- Department for Transport (DfT) Circular 02/2013 “The Strategic Road Network and the Delivery of Sustainable Development” (2013).

### 1.4 Summary of scoping discussions

1.4.1 Scoping discussions have been held with SCC, CCDC, LDC and Highways England (HE) during the preparation of this TA. The purpose of these discussions was to agree the methodology and parameters to be employed in the assessment of the proposals. A summary of scoping discussions held to date is provided in **Table 1.1**.

**Table 1.1 Summary of Scoping Discussions**

Date	Consultee	Parameters Considered
Nov 2018	SCC	Email correspondence regarding the off-site study area extent and the required traffic surveys to inform the assessment.
20 <sup>th</sup> Dec 2018	SCC	Preliminary scoping discussion.
26 <sup>th</sup> Feb 2019	SCC	Review of traffic generation and distribution methodology.
Feb/Mar 2019	HE	Email correspondence regarding the scope of assessment and whether it will be required to include the Strategic Road Network (SRN).

Technical notes covering traffic generation, distribution and impacts on the strategic road network were issued to HE.		
6 <sup>th</sup> Mar 2019	SCC	Site Access Options and Constraints
7 <sup>th</sup> Mar 2019	SCC, CCDC and LDC	Scheme overview and discussion on work completed to date, access options and constraints.
21 <sup>st</sup> Mar 2019	SCC	Confirmation of approach to traffic generation, distribution, forecast years, individual committed developments and mitigation strategy was agreed. Sustainable access strategy and EV charging strategy was also discussed.

1.4.2 Where specific parameters have been agreed during scoping discussions reference will be made to this agreement in the relevant sections of this TA.

## 1.5 Report Structure

1.5.1 Following this introduction, the TA will be structured as follows:

- **Chapter 2** describes the national and local transportation policy context and its relevance to the development proposals;
- **Chapter 3** describes the existing situation including the local highway network, sustainable transport infrastructure, current traffic conditions and the existing highway safety records;
- **Chapter 4** considers the existing highway safety records across the agreed study area;
- **Chapter 5** describes the development proposals, summarises the rationale behind the promoted access strategy for all modes of transport and considers parking standards for cars, electric vehicles, disabled users and cyclists;
- **Chapter 6** summarises the proposed sustainable access strategy for the site including an audit of existing infrastructure external to the site and how the proposals will tie into and improve the existing offer;
- **Chapter 7** describes the forecast year traffic scenario against which the development proposals will be considered. This includes a summary of the traffic growth methodology and also how various committed development have been considered in this analysis;
- **Chapter 8** describes the methodology and assumptions employed in the calculation of the vehicle trip generation of the development proposals. The resultant traffic generation of the proposals is summarised alongside a further analysis of trip generation by sustainable modes of transport;
- **Chapter 9** describes the methodology behind the proposed development traffic distribution and the resultant assignment of this traffic to the local highway network;
- **Chapter 10** provides a summary of output from the junction capacity modelling exercise across the agreed study area;
- **Chapter 11** considers the potential impacts of the development proposals on the strategic road network;
- **Chapter 12** describes the proposed mitigation package as a result of the junction capacity modelling exercise; and,

- **Chapter 13** summarises and concludes the findings of the report.

## 2 Policy Review

### 2.1 Overview

2.1.1 This chapter provides a review of the highways and transportation elements of both national and local planning policy.

2.1.2 The site is situated within the boundaries of LDC and CCDC; therefore, consideration has been given to the policy of each authority. In addition, the planning policy of SCC, as highways authority, has been considered as part of this policy review.

2.1.3 This chapter considers the adopted transport and land use policies that relate to the development proposals. This chapter will review the following documents:

- Ministry of Housing, Communities and Local Government (MHCLG), National Planning Policy Framework (2019);
- MHCLG, National Planning Practice Guidance (2014);
- LDC, Local Plan Strategy 2008-2029 (2015);
- Armitage with Handsacre Parish Council (AHPC) Neighbourhood Plan (2018).
- LDC, Sustainable Design SPD (2015);
- LDC, Lichfield Developer Contributions SPD (2016);
- Cannock Chase District Council (CCDC), Cannock Chase Local Plan Part 1 (2014);
- CCDC, Local Development Framework (2005);
- CCDC, Design SPD (2016);
- Staffordshire County Council (SCC), Staffordshire Local Transport Plan (2011);

### 2.2 MHCLG, National Planning Policy Framework (2019)

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government's key objectives for achieving sustainable development. The NPPF was published in March 2012 and revised in February 2019 in order to streamline the national planning policies set out in previous policy guidance and a number of related circulars. These have been combined into a single document to make the planning system more accessible, whilst still protecting the environment and promoting sustainable growth.

2.2.2 The NPPF sets out the government's planning policies for England, and how these are expected to be applied, stating that all developments generating significant amounts of movement should be supported by a TA or Transport Statement (TS), alongside a Travel Plan (TP). Within the NPPF it also sets out that in order to achieve sustainable development, the planning system has three overarching objectives; economic, social and environmental (paragraph 8). A presumption in favour of sustainable development is at the heart of the NPPF (paragraph 10).

2.2.3 Under Chapter 9 'Promoting Sustainable Transport', it is stated that transport issues should be considered from the earliest stages of plan-making and development proposals. By doing this the potential impacts of development on transport networks can be addressed and the appropriate transport infrastructure can be implemented. By considering transport at the earliest stages, it allows the opportunity to promote walking, cycling and public transport, and mitigate any problems.

2.2.4 Paragraph 103 of the NPPF states that significant developments should be focused on being sustainable, this can be done through limiting the need to travel and offering a genuine choice of transport modes.

2.2.5 The NPPF (paragraph 104) states that planning policies should:

- *"Support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;*
- *Be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;*
- *Provide high quality walking and cycling networks, supporting facilities such as cycle parking, local cycling and walking infrastructure."*

2.2.6 Within this context, new developments should:

*"...give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas... facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use"* (paragraph 110).

*"...create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards"* (paragraph 110).

2.2.7 The NPPF also recognises that *"opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making"* (paragraph 103).

2.2.8 The NPPF highlights that for developments that generate *"...significant amounts of movement"*, a TA and TP should be developed to support the application so that the likely impacts of the proposal can be assessed (paragraph 111). When assessing applications, it should be ensured that:

- *"the opportunity for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- *safe and suitable access to the site can be achieved for all people; and*
- *improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development."* (Paragraph 108).

2.2.9 Paragraph 109 states that:

*“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”*

2.2.10 The proposed development has been designed in accordance with NPPF guidelines and this TA and accompanying FTP demonstrate that the above objectives would be satisfied by the development proposals.

## 2.3 MHCLG, Planning Practice Guidance (PPG) (2012)

2.3.1 The National Planning Policy Guidance (NPPG) was published in 2012 and most recently revised in February 2019. The updated guidance aims to facilitate the development of a robust and well thought out site, enabling an assessment of the transport impacts of both existing and proposed developments. The guidance can inform sustainable approaches to transport. A strong assessment will establish evidence that may be useful in:

- Improving the sustainability of transport provision;
- Enhancing the levels of accessibility;
- Creating a choice amongst different modes of transport;
- Improving health and well-being;
- Supporting economic vitality;
- Improving public understanding of the transport implications of development;
- Enabling other highway and transport authority's/service providers to support and deliver the transport infrastructure that conforms to the Local Plan; and
- Supporting local businesses and the regional economy.

2.3.2 This TA and the accompanying FTP demonstrate that the PPG objectives will be wholly met.

## 2.4 LDC, Local Plan Strategy 2008-2029 (2015)

2.4.1 The LDC Local Plan Strategy 2008-2029 (LPS) was created to help shape the physical, economic, social and environmental characteristics of Lichfield District between 2008 and 2029. It states that *“any development proposals will need to demonstrate compliance with the general policies contained within the Local Plan Strategy.”*

2.4.2 Within the LPS, it states that the provision and enhancement of public transport links and improvements to the highway network are essential to encourage sustainable travel patterns. These enhancements are in terms of both vehicular and pedestrian / cyclist provision, with safety at the forefront.

2.4.3 The plan continues, stating that all new developments should be within 350m of a bus stop, this will not only allow choice, but promote smarter travel choices.

- 2.4.4 The document includes Core Policies, setting out what LDC aim to achieve within the plan period. Core Policy 1: The Spatial Strategy discusses how the LDC will contribute to the achievement of sustainable development whilst delivering a minimum of 10,030 dwellings between 2008 and 2029.
- 2.4.5 Core Policy 1 continues to state that:
- New developments should be delivered within the most sustainable settlements possible whilst using and improving existing infrastructure;
  - Throughout the District, growth should be located at the most accessible and sustainable locations;
  - Development proposals will be expected to make efficient use of land and prioritise the use of previously developed land;
  - Proposals will promote sustainability by minimising and/or mitigating pressure on the natural, built and historic environment, natural resources, whilst also reducing the need to travel.
- 2.4.6 Core Policy 3: Delivering Sustainable Development states that the LDC will require new developments to contribute to the creation (and maintenance) of sustainable communities, whilst making prudent use of natural resources. It states that to achieve this, developments should:
- Enable opportunities for the minimisation of environmental impacts;
  - Assist in the regeneration of towns and villages and surrounding areas, meeting the changing needs of their population over time;
  - Encourage the re-use of previously developed land in the most sustainable locations; and
  - Reduce the need to travel, whilst optimising choice of sustainable modes of travel, particularly walking, cycling and public transport.
- 2.4.7 Core Policy 4: Delivering our Infrastructure expresses the need for new developments to be supported by the required infrastructure at the appropriate stage. Continuing, Core Policy 4 states:
- The District Council will seek to protect and where appropriate, improve services and facilities that provide a key function in the operation of existing communities.
  - New facilities must be located and designed so that they are integrated, accessible and compatible with the character and needs of the local community.
  - New development will be required to provide the necessary infrastructure at a timely stage to meet the community needs arising as a result. Development will also be expected to contribute, as appropriate, to strategic projects that support sustainable development and the wider community.
- 2.4.8 Core Policy 5: Sustainable Transport states that improved accessibility and transport choices will reduce the use of the private car and promote healthier lifestyles. Development proposals, either individually or collectively, will have to make appropriate provisions for:
- Reducing the need to travel;
  - Widening travel choices;
  - Making sustainable travel more attractive than private car;



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- Improving road safety; and
- Reducing the impact of travel upon the environment.

2.4.9 Core Policy 10: Healthy & Safe Lifestyles sets out the need for LDC, alongside partners, to create an environment where the healthy choice is easy. Core Policy 10 discusses the importance of enabling healthy lifestyles, this is achievable by:

- Facilitating access to a range of high quality and well-maintained open spaces, such as playing pitches and recreational venues to suit local needs;
- New spaces and facilities should be designed to minimise opportunities for crime whilst maximising accessibility;
- New spaces should be integrated with surrounding communities and infrastructure, including green infrastructure; and
- Initiatives which support participation and volunteering will be supported where appropriate.

2.4.10 'Policy IP1: Supporting & Providing our Infrastructure' ensures that all new developments provide the necessary infrastructure facilities required to create and support sustainable communities. The requirement of the policy is:

- Provide the appropriate infrastructure on and off site, in line with other policies of the Local Plan and the Infrastructure Delivery Plan; and
- For the Strategic Development Allocations there will need to be reference to the relevant infrastructure requirements set out in the Concept Statements and Infrastructure Delivery Plan.

2.4.11 Policy ST1: Sustainable Travel identifies how LDC will seek to secure more sustainable travel patterns by:

- Supporting measures and schemes to improve services and facilities for non-car-based travel;
- Supporting the development of infrastructure for electric and hybrid vehicles;
- Requiring developments needing access by a large number of people to be located where it is or can be made accessible by non-car means of transport;
- Requiring TAs for all developments that are likely to have significant transport implications, to determine measures required on the surrounding highway network;
- Requiring all major development, including employers and educational institutions, to be accompanied by a site-specific Travel Plan to promote and achieve sustainable travel choices; and
- Only permitting traffic generating development where it is, or can be made compatible with, the transport infrastructure in the area and takes account of the capacity of the local transport network.

2.4.12 Policy ST1 sets out a range of measures designed to encourage more sustainable travel patterns across the District. Reducing the need to travel and successfully improving the sustainability of transport networks, through optimising the choice of sustainable travel modes are therefore priorities for transport policies within the Local Plan. Although there is a good public transport network, it often does not extend to the more

industrial areas of Rugeley. The policy also recognises the need to support the provision of infrastructure for electric and hybrid vehicles, as is advocated by the NPPF.

2.4.13 Policy ST2: Parking Provision is set out by LDC, it will require appropriate provision to be made for off-street parking in development proposals, this should be in accordance with its maximum parking standards set out in their Sustainable Design SPD and considered later in this chapter. In considering the level of provision, the LDC will pay consideration to:

- The anticipated demand for parking arising from proposed and surrounding land uses;
- Encouraging alternative means of travel to the development that would reduce the need for on-site parking, particularly relevant in areas well-served by public transport;
- Provision for alternative fuels, including electric charging points;
- The impact on safety and residential amenity from potential on-street parking and measures to overcome any problems; and
- The need to make adequate and convenient provision for disabled parking.

2.4.14 LDC will require the provision of sufficient, safe, weatherproof, convenient and secure cycle parking and associated facilities within all new developments to assist in promoting cycle use. LDC recognises the need to balance parking requirements in order to maximise highway safety whilst promoting sustainable transport choices and reduce carbon emissions.

2.4.15 Policy Arm 2: Armitage with Handsacre Services and Facilities is about how Armitage with Handsacre will function as a Key Rural Centre, with a range of services and facilities which serve the local community. New schemes and facilities should create improvements to traffic and pedestrian safety appropriate to current local needs and the local environment.

2.4.16 The village plays an important role in the rural community, with a range of services and facilities which serve residents and the wider rural hinterland. Due to the linear nature of the settlement, access to services and facilities is not consistent throughout the community and local provision should be improved where needed.

2.4.17 It is important that this role is not only protected but enhanced to maximise the use of existing facilities and services in the village. Some of these improvements may include improving bus services or delivering a local rail station in line with local aspirations. Furthermore, there is a wider need to improve the health of the local community, a wide range of initiatives can help to encourage healthier lifestyles such as sport and recreational facilities, walking and cycling and these should be supported.

2.4.18 Initiatives related to sustainable transport improvements within the District will be supported, these include proposals for:

- Railway facilities and access improvements;
- Improved walking and cycling facilities within urban areas, securing connections within and to new developments; and
- The extension of bus services, and high-quality facilities, that promote public transport use.

2.4.19 The Borrow Pit lake is part of the 'East of Rugeley' allocation within the LPS. There are Strategic Objectives set out for the site, those which are relevant are as follows:

- To integrate the development of up to 1130 homes and associated facilities within the landscape setting;
- To provide convenient walking and cycling links between the new and existing developments; and
- Building on existing transport networks and enhancing the sustainable transport options.

2.4.20 Appendix G East of Rugeley SDA Concept Statement is in line with Core Policy 6: Housing Delivery allocates land east of Rugeley as a Strategic Development Allocation (SDA) to provide up to 1,130 dwellings and appropriate social, green and physical infrastructure.

2.4.21 Development to the East of Rugeley places emphasis on the physical and social integration of new developments with the adjacent committed residential schemes of Rugeley. This takes a particular alignment with creating strong linkages with services and facilities in Brereton and Armitage with Handsacre. Sustainable development principles should be balanced with the need to make best use of land and having regard to the character of the surrounding area. With specific reference to transport, the design strategy should include:

- The scale of new development to be determined through a balanced view of the physical capacity of the site, including the topography, number of dwellings required to support local services, and a requirement to provide a mix of dwelling types and sizes, including affordable housing;
- The development to regard the semi-rural setting, to ensure the development is integrated into the landscape, taking account of natural features and making provision for appropriate landscaping; and
- Sustainable transport principles, with the promotion of walking and cycling links to the existing settlement and provision/links to public transport facilities.

## 2.5 LDC, Sustainable Design SPD (2015)

2.5.1 This Supplementary Planning Document (SPD) details how the Council will explore the integration of alternative and improved transport provisions in new and existing communities. The sustainable forms of transport include improvements to public transport, the promotion of sustainable transport and improving walking and cycling infrastructure.

## 2.6 LDC, Lichfield Developer Contributions SPD (2016)

2.6.1 This SPD sets out the Council's approach to planning obligations, the document sits alongside the Council's Community Infrastructure Levy (CIL) charging schedule.

2.6.2 The Council works closely with SCC and HE to ensure any required transport infrastructure, identified in the Local Plan Strategy is delivered. In Appendix B it lists "*Infrastructure to be funded in whole or in part by CIL*" this includes:

- The completion of the Lichfield Southern Bypass via provision of new underbridge section;

- Bus network improvements;
- Cycle and walking routes within the city;
- Electric Charging Points;
- Delivery of local traffic routing scheme; and
- Real Time Passenger Information.

## 2.7 CCDC, Local Plan Part 1 (2014)

2.7.1 The Local Plan Part 1 was adopted in June 2014 and seeks to shape the way in which the physical, economic, social and environmental characteristics of Cannock Chase District will change between 2006 and 2028. The Cannock Chase Local Plan Part 1 is a development plan document produced under the Planning and Compulsory Purchase Act 2004.

2.7.2 The Local Plan sets out transportation goals, one of which is an enhanced rail service between Rugeley and Birmingham, alongside Chase rail line improvements. Furthermore, the plan calls for considerations into bus service and station improvements, alongside better walking and cycling opportunities.

**2.7.3** Policy CP2 'Developer Contributions for Infrastructure' sets out how all housing, employment and commercial development will be required to contribute towards providing affordable housing and/or the infrastructure necessary for delivery of the Local Plan informed by viability assessment.

2.7.4 Policy CP2 states that contributions will be secured primarily via either rates set out in a Community Infrastructure Levy (CIL) charging schedule, or under Section 106 planning obligations. Where appropriate, contributions may be required by more than one of these methods, and a number of developments may be pooled to address a cumulative impact.

2.7.5 Policy CP3 'Chase Shaping - Design' details the need for high standards of design. Specifically, in relation to transport, the promotion of easy access/mobility within the development and from its surroundings will contribute to a network of attractive, well-connected spaces in sustainable locations with the safety of pedestrians, cyclists and other road users in mind.

2.7.6 Policy CP5 'Social Inclusion and Healthy Living' details how CCDC will work with public, private and third sector partners to ensure that appropriate levels of infrastructure are provided to support social inclusion and healthy living in the District.

*"Subject to viability, development proposals will be required to have regard to the wider determinants of health and make a positive contribution to provision of infrastructure, design and layout which supports social inclusion and healthy living for sustainable communities."*

2.7.7 The key elements of this infrastructure include health facilities; educational facilities; parks/open spaces; cycling and pedestrian routes; local shopping facilities and cultural/community facilities.

2.7.8 Policy CP9 'A Balanced Economy' states that priority will be given to employment uses, this is due to employment uses adding value to and strengthening the local economy. By prioritising employment, it will

build economic resilience and restructuring. The Council will continue to work with key partners to deliver this, particularly as a member of Local Enterprise Partnerships.

2.7.9 Proposals which help to raise the District's job density will generally also be supported, alongside proposals to enhance the District's overall education.

2.7.10 The following key measures will be considered favourably in support of increased employment opportunities:

- Sustainable and co-ordinated transport links; and
- Appropriately located places to live and work.

2.7.11 Policy CP10 'Sustainable Transport' states that developments will be expected to promote sustainable transport. This ranges from physical infrastructure to TAs, Statements and Plans, prepared in accordance with Department for Transport (DfT) for all developments that are likely to generate significant amounts of movement. This will ensure that the surrounding highway network can be accessed by all transport modes.

2.7.12 CCDC will work with bus and rail operators such as SCC, the West Midlands Integrated Transport Authority (now Transport for West Midlands (TfWM)), Local Enterprise Partnerships (LEPs), local transport bodies and developers to help develop and promote sustainable transport modes that provide realistic alternatives to the car, and which help contribute to achieving national climate change targets and reduce air pollution.

2.7.13 The retention and development of conventional and demand responsive public transport options will be supportive of all people, including the disabled, those without cars, and disadvantaged groups to gain access work, shopping, health, leisure, education and other facilities

2.7.14 Policy CP10 also sets out the importance of rail improvements, these improvements include the upgrade of the Chase Line. The improvements of the line consist of increased line speed, re-signalling and electrification and the promotion of the Crewe-Rugeley Trent Valley-London rail service.

2.7.15 The rail improvements go beyond the Chase Line, with improvements also being made to local rail services with advanced frequency, increased capacity and restoration of the trains themselves. The improvements to rail all extend to the scheduling and station infrastructure with plans to have more staffed offices and better accessibility for disabled passengers at stations including Rugeley Town.

2.7.16 The improvement of the bus and rail will allow an improved and integrated bus/rail service, allowing for interchange facilities to be created. There is also conditional support for High Speed 2, subject to improvements to the Chase Line services and infrastructure to improve connectivity with Birmingham.

2.7.17 The improvement of walking and cycling infrastructure is discussed, and measures to improve or provide facilities for pedestrians that are safe, secure, direct, convenient and attractive are supported. This will be promoted through Public Rights of Way, a network of pedestrian routes linked to the Green Space Network, giving pedestrians priority, pedestrianisation and traffic-calming schemes.

2.7.18 Priority will be given to improve or provide pedestrian facilities that:

- Link town centres, rail and bus stations, residential and employment areas, and public open space;

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- Access to recreational purposes in the countryside; and
- Meet the needs of people with impaired mobility.

2.7.19 When considering cycling, the council is working in conjunction with Sustrans, the SCC and developers to add to the District's strategic cycle network. The authorities plan to provide facilities and introduce measures to improve travel for cyclists, this includes:

- The provision of segregated cycling routes within new developments, both residential and commercial (in excess of 200 dwellings);
- The provision of cycle corridors and crossings in existing highways, new road schemes and traffic management and calming schemes;
- The provision of secure cycle parking facilities in town centres, railway stations and new retail development; and
- The provision of showers and lockers at all major employment sites (as part of a TP submitted under the requirements of a planning application).

2.7.20 Policy CP16 'Climate Change and Sustainable Resource Use' states how CCDC working with partners, will tackle climate change and ensure the use of sustainable resource via the promotion and positive consideration of initiatives and development proposals.

2.7.21 The initiatives and proposals consider:

- Improved accessibility of services and sustainable transport networks; and
- Reduced or mitigated pollution based upon air quality modelling where necessary.

2.7.22 Policy RTC3 'Urban Design Principles' states that all new developments should either conserve or enhance significant buildings, their settings and the public realm. In addition, the Council will develop and promote a Rugeley Town Centre Improvement Scheme *"to help revitalise Rugeley town centre. The scheme will undertake or support appropriate projects which regenerate the historic core and actively promote the urban design principles."*

2.7.23 Some of the design principles for the Rugeley Town Centre Improvement Scheme include:

- Encouraging active frontages and enhanced boundary treatment to surrounding roads; and
- Extend and enhance pedestrian links between the town centre, parks, the canal, public transport links and surrounding residential areas to encourage sustainable travel.

2.7.24 Policy RTC9 'Public Realm' discusses how Rugeley's public realm will be enhanced, in particular the town centre, canal, paving, street furniture and environmental improvements.

2.7.25 The canal improvements will involve improving surface and gradient to the towpath access, making it more pedestrian friendly/accessible. There will also be improvements to signage, seating, and sanitary station facilities for boaters and additional mooring facilities in conjunction with the Canal and River Trust. A

summary of the council's proposals is provided in later Chapters of this TA and is considered in relation to the sustainable access strategy for the proposals.

- 2.7.26 Paving improvements include opportunities to renew, relay and improve the paving throughout the town centre using sustainable, high quality, durable materials.
- 2.7.27 Street furniture improvements include opportunities to replace and refurbish existing street furniture together with removal of 'clutter'.
- 2.7.28 Environmental improvements in key locations include enhancements of car park frontages; updated design of Market Square; improvement of 'left over' open space around edge of town centre and the use of natural vegetation in new planting schemes in view of the biodiversity benefit.
- 2.7.29 Policy RTC10 'Transport' details new pedestrian and cycling links that will improve access and movement for all sections of the community including the impaired. The new links will connect into the Chase Heritage Trail to maximise accessibility through the District where possible. There will also be measures to enhance existing cycle storage facilities in the town centre through provision of additional secure covered storage in a central location with good surveillance will be pursued. A new bus station will be provided as part of the redevelopment of the existing Market Hall/Bus Station site. The revised bus station facility will provide parking bays and covered waiting area, providing shelters, bus service information and small-scale food and drink provision.
- 2.7.30 The proposed development has been designed in accordance with the Local Plan and this TA and accompanying FTP demonstrate that the objectives can be met.

## 2.8 CCDC, Local Development Framework (2005)

- 2.8.1 The Cannock Chase Local Development Framework was adopted in 2005 in response to new national parking standards, the document states that creating car parking to meet demand is "*no longer acceptable on environmental grounds or as part of any meaningful sustainable transport policy*".
- 2.8.2 The document claims that local authorities should work together to manage their car parking in order to reduce congestion and encourage more sustainable methods of travel. This is achievable by managing the supply, location and price of parking in town centres/cities; avoid using car parking charges as a competition between centres; supporting the development of more sustainable forms of travel; securing an adequate supply of parking at interchanges e.g. railway stations and developing park and ride sites.
- 2.8.3 The framework discusses the objectives of the parking standards, the reasoning includes:
- To reduce traffic congestion in urban areas;
  - To provide effective access to town;
  - To achieve an effective balance between car-based travel and more sustainable alternatives such as walking or cycling; and
  - To improve the aesthetic quality of towns and villages.

2.8.4 CCDC's maximum parking standards will be a blanket policy for the whole district, the Council will however be prepared to offer lower levels of on-site parking for new developments if:

- The development is located in a town or local centre, with access to frequent public transport;
- The development is providing housing for the elderly or is student accommodation; or
- There is an enforceable Travel Plan in place secured by a S106 Agreement.

2.8.5 CCDC's parking standards for various land uses will be applied across the entire site. A comprehensive review of parking requirements is provided in later chapters of this TA demonstrating that the policy objectives can be met.

## 2.9 CCDC, Design SPD (2016)

2.9.1 This SPD has been prepared to help deliver design quality in new developments in Cannock Chase District, these developments should enhance the District's townscapes and landscapes. This SPD seeks to build upon and provide a more detailed guidance document than the Cannock Chase Local Plan (Part 1).

2.9.2 Another main aim of the document is to promote high quality design through local design and sustainable building guidelines, recognising good practice principles to set the context for consideration of development proposals.

2.9.3 The guidance provides specific criteria for the management of new developments, providing a basis for consistent decision making. It assists with the management of long term, high quality solutions, addressing past and current issues.

2.9.4 The design principles include not only the style of buildings, but the spaces in and around them alongside the quality of the relationship between buildings and their surroundings. This factors in how places work in their environment as well as how they look. High design quality can enhance the quality of the built and natural environment whilst adding to the quality of life for the whole community.

2.9.5 High design quality can revitalise and regenerate places by promoting a positive image and contribute to enhancement of health and wellbeing. By making areas more attractive, it can enhance the local economy too.

2.9.6 Within Chapter 4 'Design Principles' it states that there are enhancement opportunities, one of these is air quality management. An enhancement that could be made is improved attractiveness for pedestrian/cycles to encourage sustainable travel. There is also an aim to keep traffic free-flowing to minimise pollution at 'pinch points.'

2.9.7 These design guidelines are set out to contribute to conserving local distinctiveness as the District evolves into the future.

## 2.10 SCC, Staffordshire Local Transport Plan (2011)



- 2.10.1 The Staffordshire Local Transport Plan (LTP) sets out proposals for transport provision in the county from 2011-2026. The LTP plans for local transport provision and maintenance, the plan intends to complete this through a number of strategies including:
- Enabling economic growth through transport without causing congestion;
  - Creating opportunities for residents and visitors to access jobs and education;
  - Maintaining the current highway;
  - Improving travel safety;
  - Responding to current and future climate issues;
  - Encouraging and providing active travel choices; and
  - Minimising the negative impacts of transport on the environment.
- 2.10.2 Transport plays a vital role in helping to ensure that both areas, and residents, can reach their potential. Transport can stimulate areas of deprivation and support regeneration and tourist activity, reducing disparities between rural and urban areas.
- 2.10.3 The Local Plan states that local authorities have a clear mandate to manage expected growth through a mixture of hard and soft measures, integrating into existing transport networks.
- 2.10.4 Policy 1.1 states that:
- Ensuring that the local transport network should contribute to the vibrancy of towns;
  - New developments should support good public transport links, or be well connected to existing links;
  - Ensuring that new developments are well connected to walking and cycling networks/facilities;
  - Place and movement should be considered together;
  - Ensuring that transport investment opportunities are maximised;
  - Provide tailored transport services and travel incentives for those with access barriers; and
  - Maintaining and expanding the local public transport network.
- 2.10.5 Policy 3.1 details how good design principles should be encouraged in new developments to create smarter travel choices, by using smart designs to work towards a reduction in private motor vehicle use.
- 2.10.6 Policy 3.4 discusses how the council will seek to improve and integrate transport services by working with bus and rail operators to create a more integrated system. An integration between coaches and other methods of travel, for example timing; infrastructure; information and ticketing, will allow a more cohesive journey for passengers. The integration can also stem between linking public transport services and regional airports.
- 2.10.7 Policy 5.1 describes putting pedestrian travel at the forefront of travel. This can be achieved through:
- Investing in improvements for pedestrians and cyclists;

- Encouraging major employers to develop travel plans as a way of creating and managing sustainable travel;
- Promoting and running schemes that encourage smarter travel; and
- Traffic-regulation orders (such as low-emission zones, no stopping zones).

2.10.8 The proposed development has been designed in accordance with the Local Transport Plan and this TA and accompanying FTP demonstrate that the objectives can be met.

## 2.11 CCDC and LDC, Rugeley Power Station Development Brief SPD (2018)

2.11.1 The Rugeley Power Station Development Brief sets out the joint aspirations of LDC and CCDC for the redevelopment of the Rugeley Power Station site and was adopted in February 2018.

2.11.2 This SPD aims to assist with the delivery of Lichfield District Council's Local Plan Strategy Core Policy 1, specifically the delivery of 10,030 dwellings over the plan period to 2029, and Cannock Chase Council's Local Plan Part 1, particularly Core policies 1 (Strategy) and 3 (Design).

2.11.3 According to the SPD, the overall aim for the site is to create a well-designed mixed-use development which incorporates market housing, affordable housing, employment provision, education provision and open space. It is envisaged that the new development will become a popular residential neighbourhood alongside being a place of work, creating a network of pedestrian and cycle routes and open spaces which connect the site with the surrounding area and respond to the local context.

2.11.4 Chapter 2, Site Analysis and Chapter 4, Development Proposals collectively provide commentary on the opportunities for vehicular and sustainable access for the site that should be explored, namely:

- Form and number of access points;
- Connectivity to public transport by bus and also to/from both Rugeley railway stations;
- The requirement for appropriate levels of car and cycle parking; and,
- Provision of safe pedestrian and cycle linkages and crossings to link the site with employment and amenities within Rugeley, both Rugeley railway stations and leisure opportunities such as the Trent and Mersey Canal.

2.11.5 Commentary on the development proposals, including option appraisals for vehicular, pedestrian and cycle access to the site are provided in later Chapters of this TA.

2.11.6 The document states under road hierarchy, where possible, development proposals should utilise the existing road network to maintain easements and way-leaves. This will help establish a primary route through the site.

2.11.7 The proposals should seek to integrate with the access points provided as part of the recent residential development to the south of the site, and also provide designated safe crossing points to ensure safety and encourage usage of pedestrian and cycle links.

2.11.8 Safe and secure cycle parking should be provided on site where appropriate, encouraging residents to travel via bicycle.

2.11.9 The application has been designed to ensure full compatibility with the Rugeley Power Station SPD.

## 2.12 AHPC, Armitage With Handsacre Neighbourhood Plan (2018)

~~2.11.10~~2.12.1 The eastern part of the site within the LDC area is located within the Armitage with Handsacre Neighbourhood Plan Area. The Armitage with Handsacre Neighbourhood Plan (NDP) was made in October 2018 and forms part of the Development Plan within Lichfield.

~~2.11.11~~2.12.2 Under the NDP there is Policy AH5 – Better Design, the policy states that new residential development should be of a good quality design.

~~2.11.12~~2.12.3 Furthermore, where appropriate development proposals should take account of the character of the historic village centre, alongside their proximity and accessibility to the Trent and Mersey Canal Conservation Area.

~~2.11.13~~2.12.4 Development proposals will be supported if their design responds positively to accessibility and appropriate parking standards.

~~2.11.14~~2.12.5 This TA and accompanying FTP demonstrate that the site is compatible with the Neighbourhood Plan.

## 2.12.13 Summary

~~2.12.12~~2.13.1 In summary, the planning policy described above collectively seeks to ensure that development is located to ensure future residents, employees, pupils and visitors are provided with genuine modal choice by situating development in locations that reduce the need to travel, reduces average journey lengths and benefits from local infrastructure to enable use of modes of transport other than the single occupancy private car.

~~2.12.22~~2.13.2 The policy builds upon this to ensure that appropriate infrastructure is provided as part of development in order to link the site with surrounding infrastructure and to provide enhancement of existing facilities for the benefit of all.

~~2.12.32~~2.13.3 Furthermore, the planning policy considered also seeks to ensure that the impacts of the development are properly considered and mitigated via the preparation of appropriate transportation reports to accompany the planning application and where necessary the provision of mitigation in order to temper the impacts of a given development to ensure that any residual impacts are not 'severe'.

~~2.12.42~~2.13.4 This TA and the accompanying FTP have been prepared in line with current best practice guidance and methodologies and take into account:

- The sustainable access credentials of the site in relation to the surrounding area;

- Opportunities to enhance the existing sustainable transport infrastructure surrounding the site and to provide linkages to integrate the proposals with key trip attractors within Rugeley;
- Consideration of the traffic impacts of the proposals and where appropriate mitigation measures to alleviate these impacts;
- Appropriate levels of parking for each proposed land use, including consideration of electric vehicle parking; and,
- Detailed consideration of the highway safety record of the surrounding highway network and the potential impacts on this by the development proposals.

## 3 Existing conditions

### 3.1 Overview

3.1.1 This chapter describes the site and its extant use and history, existing local transport infrastructure for all modes of transport, the location of local facilities and amenities and surveyed traffic conditions to set the proposals into the local context.

### 3.2 Site Description

3.2.1 The Rugeley B Power Station site is situated to the north-east of Rugeley, circa 1km to the east of Rugeley town centre and circa 650m to the west of the closest extent of Armitage.

3.2.2 The site is bound to the south by the A51, A513 and a new residential development known locally as the Hawksyard Estate (LDC ref: 03/00627/OUT). To the north the site is bound by the River Trent, north of which lies open country side and the West Coast Mainline. The site is bound to the east by open countryside and at its south-eastern corner allotments which are leased by the applicant to the Hawkesyard Allotment Society. The westernmost extent of the site is bound by the A51 and railway sidings that spur off the Chase Line.

3.2.3 The built form of Rugeley is situated to the south-west of the site with the nearest elements on the urban form situated on the south and western sides of the A51. These elements are largely employment land uses comprising a range of B use classes. Heading further into Rugeley the character of the area becomes more residential in nature and also incorporates a range of retail and leisure land uses.

3.2.4 Circa 650m to the east of the site the built form comprising the settlements of Armitage and Handsacre begins; these settlements are relatively linear in nature and largely spur off the A513 as it runs through their centre. Both settlements comprise a range of land uses including residential, employment, education, retail and leisure.

3.2.5 Despite the large extent of site frontage there are a limited number of access opportunities to the site as a result of the requirement to control access and security of the former use.

3.2.6 The main vehicular access to the site is via a roundabout junction formed between the site, the A51 and Power Station Road. Access for pedestrians and cyclists is also afforded via this access. This access is barrier controlled with staff and visitors expected to pass a security checkpoint as they enter and leave the site.

3.2.7 A second existing point of vehicular access can be achieved from a priority junction formed with Priory Avenue, which comprises the main estate road into The Hawkesyard development and forms a roundabout junction with the A513 at its southernmost extent. This access is again gated and is currently closed to all users and secured by a bund.

- 3.2.8 The site up until recently (June 2016) was used for the generation of electricity and the process of decommissioning and demolition is ongoing. The site historically benefitted from various recreational uses for the benefit of employees and other approved groups, these include a golf course, a sports and social club, a model railway club and fishing.
- 3.2.9 Furthermore, access rights are retained for Network Rail and National Grid for maintenance access to their assets that will remain on site as part of the redevelopment.
- 3.2.10 A new secondary vehicular access to be formed with the A513 was consented under application LDC ref: 17/00453/FULM. The new access is situated circa 250m to the east of the existing roundabout formed between the A513 and Priory Avenue and takes the form of a three-arm roundabout. The approved site access drawings are included in **Appendix B**.
- 3.2.11 The site is predominately brownfield in nature and accordingly consideration of the typical traffic generation of the site during its operational years has been provided by Rugeley Power Limited. In summary:
- Average daily HGV movements for coal, ash, coal slurry, chemicals, recorded at the site weighbridge between March and November 2015 – 99 weekday, 20 weekend;
  - Peak daily HGV movements for coal, ash, coal slurry, chemicals, recorded at the site weighbridge between March and November 2015 – 285 weekday, 77 - weekend;
  - Circa 300 staff including contractors working at the site, with shift patterns an average of 200 staff on site at any one time, many of whom will have driven to the site; and,
  - Potential for anybody accessing the Sports & Social club, for activities on site such as golf, fishing, football, cricket and socialising. There were approximately 1,500 members of the sports and social club at its peak.

### 3.3 Local Highway Network

- 3.3.1 The relationship of the site to the local highway network is summarised on **Figure 3.1**. The A51 is located along the western and southwestern boundary of the overall power station site and forms the eastern bypass to Rugeley. It was opened in 2007 to facilitate the development of new employment areas and to reduce congestion to the town centre. The road is subject to a 50mph speed limit along sections of the carriageway that reduces to 30mph and 40mph on the approaches to the various junctions along the link.
- 3.3.2 The main Rugeley Power Station site access is located on the A51 at the four-arm roundabout junction with Power Station Road/A51 and the site access itself. Power Station Road to the west provides access to the Amazon distribution centre, Premier Inn Hotel and McDonald's restaurant and an alternative route to the centre of Rugeley to the northwest via Station Road.
- 3.3.3 To the north, the A51 continues and provides access to Rugeley Trent Valley Railway Station (via Colton Road), Little and Great Hayward and Stafford via the A513 and A34.
- 3.3.4 To the south, the A51 forms a newly constructed access to the consented 'The Pippins' scheme (Ref:03/00627/OUT) and a further roundabout junction with Wheelhouse Lane which provides access to a

number of industrial units within the Towers Business Park. The A51 continues south and forms a bridge crossing over the Trent and Mersey Canal on the approach to the four-arm roundabout with Armitage Road and the A513.

3.3.5 Armitage Road is residential in nature and forms an alternative route into the centre of Rugeley to the northwest via Brereton Road and Horse Fair. To the east, the A513 (Rugeley Road) is a single carriageway road, is street-lit and is subject to a 40mph speed limit.

3.3.6 The A513 forms a three-arm roundabout junction with Priory Avenue which is the primary access to 'The Pippins' residential scheme. There is an additional access road to the power station from Priory Avenue that is limited to emergency access and access to the sports and social club only.

3.3.7 To the east of this, the A513 abuts the Rugeley B Power Station site along its southern perimeter. This section of the carriageway is lit and subject to a 40mph speed limit which reduces to 30 mph as the road rises prior to the approach to Armitage Village.

3.3.8 The A51 extends south beyond the roundabout junction with A513/Armitage Road and forms an additional three arm roundabout junction with Brereton Hill that provides an alternative access to the centre of Rugeley and Rugeley Town Railway Station. To the south of this, the A51 continues to Lichfield where links to the A5, A38 and M6 Toll can be accessed.

## 3.4 Existing Traffic Conditions

3.4.1 Traffic survey data was collected during November 2018 to inform this analysis. The area over which data has been collected is summarised in **Figure 3.2**. The survey extents, dates and timing of the surveys were agreed with SCC.

3.4.2 Specific traffic surveys of the A51/RWE site access roundabout and the A513/Rugeley B Power Station access roundabout were not carried out as part of this exercise. The reasoning behind this is as follows:

- The A51/RWE site access roundabout was not fully open to traffic at the time of the traffic surveys; and,
- The A513/Rugeley B Power Station access roundabout has not been constructed.

3.4.3 The Manual Classified Count (MCC) data was collected on 28<sup>th</sup> November 2018 and covers the typical weekday AM and PM peak periods of 0700-1000 and 1600-1900. Maximum queue length surveys were also collected as part of the data collection exercise for the purposes of junction model validation.

3.4.4 The Automatic Traffic Count (ATC) data was collected over a seven-day period between 24<sup>th</sup> and 30<sup>th</sup> November 2018 and recorded volumetric flow and speed data for each direction of travel.

3.4.5 A copy of all raw traffic survey data is included in **Appendix C**. Network peak hours of 07:30 to 08:30 and 17:00 to 18:00 have been identified and are reported as the 2018 AM and PM base traffic turning flows for the entire network are summarised in **Figures 3.3** and **3.4**.

## 3.5 Existing Walking and Cycling Infrastructure

- 3.5.1 The site is bound by both the A51 and A513 to the west and south of the site, respectively. In terms of the existing pedestrian infrastructure, the A51 provides a dedicated shared footway/cycleway within the immediate vicinity of the development. This extends along the site's frontage on the western side of the carriageway and is street-lit. This route currently links to the site via the power station access roundabout, where dedicated dropped kerb crossing points (with tactile paving) and central refuge islands are provided.
- 3.5.2 The A51 provides the primary route to access the extensive cycle network that comprises of a number of on-carriageway, off-road, signed and advisory cycle links that are located in the vicinity of the site and throughout Rugeley. **Figure 3.5** illustrates the existing pedestrian infrastructure in the area surrounding the site, whilst the Rugeley cycling map is included at **Appendix O** to demonstrate the existing cycling infrastructure in the area.
- 3.5.3 The shared A51 footway/cycleway extends north along the western side of the carriageway to the A51/Station Road/Colton Road roundabout junction. This junction provides dedicated crossing facilities (dropped kerbs with tactile paving) across all arms of the junction which can be used to access Rugeley Trent Valley Railway Station to the northeast and an alternative route to the centre of Rugeley via Station Road to the south.
- 3.5.4 There are additional footway/cycleway links that can be accessed from the A51 via Power Station Road immediately to the west of the main site access. A shared footway/cycleway is located on the eastern side of Power Station Road that is linked to the A51 via the dropped kerb crossing points (with tactile paving) and central refuge islands at the A51 and Amazon access roundabout junctions. In addition to this, there is a footway provided on the western side of the Power Station Road carriageway. This footway facility extends north to the Tesco Store which provides a newly constructed pedestrian and cycle only route towards the centre of Rugeley via Leathermill Lane and to Station Road; providing an alternative access to Rugeley Trent Valley Railway Station and the centre of Rugeley.
- 3.5.5 A further pedestrian/cycle link is provided along Love Lane located to the north of the Power Station Road/Amazon access roundabout. This is a surfaced link that extends from Power Station Road to Leathermill Lane in a southeast/northwest alignment; this route has recently been upgraded through public realm improvements as part of the Tesco scheme. This also provided links to the Trent and Mersey Canal towpath network throughout Rugeley.
- 3.5.6 To the south of the site, the shared footway/cycleway continues on the western side of the A51 carriageway and extends along Wheelhouse Road, providing direct access to the employment land uses along this section of the network. Crossing facilities (dropped kerbs with tactile paving) are provided across the Wheelhouse Road arm of the junction with a central refuge island to aid pedestrian/cycle crossing movement. This route extends to Armitage Road where a footway provides another route to the centre of Rugeley and Rugeley Town Railway Station via Horse Fair.
- 3.5.7 To the south of the Armitage Road/A513/A51 roundabout junction, the shared footway/cycleway continues along the western side of the carriageway towards the roundabout junction with Brereton Hill; a footway



continues northbound along the eastern side of Brereton Hill with an on-carriageway cycle lane on the western side.

- 3.5.8 Along the A513 Rugeley Road, a footway is provided along the northern side of the carriageway that extends towards 'The Pippins' development and connects with Armitage and Handsacre to the east.
- 3.5.9 In terms of Public Rights of Way (PRoW), a review of SCC's Definitive Online Map has been undertaken and an extract is provided as **Figure 3.6** in **Appendix A**. This indicates that the local PRoWs are remote from the site and would ultimately be used for leisure/recreation rather than everyday utility/commuting purposes.
- 3.5.10 The site links into the extensive network of road side footways/cycleways surrounding the site. Given the level of accessibility of the site and the existing pedestrian infrastructure, it is considered that the site is accessible to pedestrians, and there are good opportunities to walk between the site, access public transport services and local facilities/amenities within the vicinity of the site. The existing pedestrian infrastructures provide a comprehensive, direct, safe and convenient set of routes for pedestrians to use.
- 3.5.11 The proposed scheme will link into this existing network and improve provision where required. These routes provide access to local facilities and amenities and increase the overall permeability of the site.
- 3.5.12 The topography of the local area suggests that this would not be a limiting factor in people choosing to cycle. As a result of the above, it is concluded that there is an excellent opportunity, with no real physical barriers, for cycle travel between the site and the local surrounding areas.

### 3.6 Existing Bus Services and Infrastructure

- 3.6.1 A number of bus services operate within Rugeley; however, the current bus provisions are mainly focused within existing residential areas and not the more industrial Trent Valley area.
- 3.6.2 The nearest bus stops to the site are situated on the A513 adjacent to the roundabout junction formed between the A513 and Priory Avenue towards the eastern end of the power station site. There are no bus stops on the A51 frontage nor within the vicinity of the existing power station access junction formed with the A51. Much of the site is therefore outside of the acceptable 350m walking distance to bus stops as described in the Rugeley Power Station Development Brief SPD.
- 3.6.3 The bus stops on the A513 are flagpole stops with timetable information and serve the 825, 826 and 829 bus services and their location is illustrated on **Figure 3.7**.
- 3.6.4 The typical peak hour frequency of the bus services is summarised in **Table 3.1**.

**Table 3.1 Frequency of Local Bus Services**

Service No.	Route	Peak Hour Freq (Weekdays)	Peak Hour Freq (Weekends)	Days of Operation
825	Rugeley – Stafford Hospital	2 per hour	2 per hour on Saturday and no Sunday service	6 days a week

826	Lichfield – Rugeley - Staffordshire	1 per hour	1 per hour on Saturday and no Sunday service	6 days a week
829 (School service)	Rugeley – Lichfield	2 per day	No weekend	5 days a week

3.6.5 Further bus services can be caught from Rugeley bus station, situated on the B5013 Elmore Lane to the west of the site. The bus station is circa 1,300m from the existing power station site access junction formed with the A51 and can be reached within a circa 17-minute walk from the site. The 825, 826 and 829 services all stop at Rugeley Bus Station.

3.6.6 From the bus station it is possible to make connections to other bus services operating in Rugeley, including the 22, 23, 24, 26, 63, 828 and 842 services.

### 3.7 Existing Rail Services and Infrastructure

3.7.1 Rugeley Town Railway Station is located c. 1.5km west of the development, this can be accessed via a 25-minute walk or an 8-minute cycle.

3.7.2 Rugeley Trent Valley Station is c. 2km to the northwest of the Site and can be accessed within a 27-minute walk which may not be seen as an attractive walking distance from the Site, the station can be accessed using other sustainable modes such as by bicycle within a nine-minute journey time. The location of the railway stations is shown in **Figure 3.7**.

3.7.3 Both stations are located on the newly electrified 'Chase Line' and Rugeley Trent Valley is situated on the West Coast Mainline Railway, these lines provide access to West Midlands Train Services that travel frequently to destinations including Birmingham New Street, Crewe, Stoke-on-Trent, Stone, Rugby and London Euston; however, direct rail access to Stoke-on-Trent and Stone will no longer be possible from May 2019.

3.7.4 The typical frequency of train services that serve the railway stations within Rugeley is summarised in **Table 3.2**.

**Table 3.2 Frequency of Train Services**

Destination	Fastest Journey Time	Typical Frequency
Rugeley Town Railway Station		
Birmingham New Street	51 minutes	Every 30 minutes
Cannock	11 minutes	Every 30 minutes
Walsall	28 minutes	Every 30 minutes

## Rugeley Trent Valley Railway Station

London Euston	1 hour 35 minutes	Every 60 minutes
Birmingham New Street	55 minutes	Every 60 minutes
Crewe	59 minutes	Every 60 minutes
Rugby	46 minutes	Every 60 minutes
Stoke-on-Trent	37 minutes	Every 60 minutes
Tamworth	14 minutes	Every 60 minutes
Lichfield Trent Valley	7 minutes	Every 60 minutes

3.7.5 Rugeley Town Railway Station is operated by West Midland Trains, providing frequent services to locations including Cannock, Walsall and Birmingham New Street. The station has a 30-space car park for rail users.

3.7.6 Rugeley Trent Valley Railway Station is operated by West Midland Trains, providing frequent services to key destinations including London Euston, Birmingham New Street, Rugby and Northampton. The station's facilities include 16 bicycle parking spaces with CCTV and a 24-space car park with one disabled parking bay.

### 3.8 Local Amenities and Facilities

3.8.1 The majority of trips that will be made by walking are for the purpose of short shopping trips, access to leisure/retail facilities, trips to school and trips to public transport stops as part of linked trips to other destinations. Not all facilities and services, not to mention job opportunities will be within a reasonable walking distance and therefore it is important to ensure that there are public transport services that are accessible from the site.

3.8.2 Of particular interest are the levels of facilities and services that can be accessed locally. This is important in reducing the intensity of car use. An assessment of the accessibility of the site in relation to local amenities and facilities has been undertaken and a plan is provided in **Figure 3.8**.

3.8.3 **Figure 3.8** demonstrates, the site is located within close proximity to existing local residential, employment, retail and leisure opportunities throughout Rugeley town centre.

3.8.4 **Table 3.3** provides a summary of the distance from the site (both proposed accesses) to each facility, with an approximate journey time for both walking and cycling.

Table 3.3: Local Facilities &amp; Amenities

Facility/Amenity	A51 Northern Access			A513 Rugeley Road Southern Access		
	Distance	Walk Time (min)	Cycle Time (min)	Distance	Walk Time (min)	Cycle Time (min)
Ash Tree Pub	1.8km	23 mins	7 mins	645m	8 mins	3 mins
Colliers Table	320m	4 mins	2 mins	2.6km	33 mins	10 mins
McDonalds	320m	4 mins	2 mins	2.7km	34 mins	11 mins
La Terrazza Ristorante Italiano	965m	12 mins	4 mins	2.9km	36 mins	12 mins
Hob Hill Primary School	2.4km	30 mins	10 mins	1.1km	14 mins	5 mins
Redbrook Hayes Primary School	2.1km	26 mins	8 mins	2.2km	28 mins	9 mins
Tesco Super Store	645m	8 mins	3 mins	3km	38 mins	12 mins
Morrisons	800m	10 mins	3 mins	3.2km	40 mins	13 mins
Aldi	965m	12 mins	4 mins	3.4km	43 mins	14 mins
Serenity Dental Care	965m	12 mins	4 mins	2.9km	36 mins	12 mins
Avondale House Dental Surgery	1.1km	14 mins	5 mins	3.4km	43 mins	14 mins
Sandy Lane Surgery	1.6km	20 mins	7 mins	3.2km	40 mins	13 mins
The Horsefair Practise	1.6km	20 mins	7 mins	3.2km	40 mins	13 mins
Rugeley Post Office	1.1km	14 mins	5 mins	3.2km	40 mins	13 mins
Lea Hall Social Club	1.6km	20 mins	6.5 mins	3.2km	40 mins	13 mins
Rugeley Community Centre	1.45km	18 mins	6 mins	3km	38 mins	12 mins
Anytime Fitness Rugeley	965m	12 mins	4 mins	3km	38 mins	12 mins
Legends Gym	1.6km	20 mins	7 mins	1.45km	18 mins	6 mins

3.8.5 Furthermore, there are a range of educational facilities, within an acceptable commuting/school walking distance (2km) of the proposed site.

### 3.9 Existing Modal Share

3.9.1 In order to forecast the modal share for the various land uses at the site, the National Travel Survey (NTS), Journey to Work (JtW) 2011 Census data and the 2011 School Census data has all been used.

3.9.2 NTS trips by main mode (Table: NTS9903) for the West Midlands Region has been used to forecast the modal share for the residential element of development, a summary of the mode share is provided in **Table**

#### 3.4.

Table 3.4: Residential Modal Share – National Travel Survey (NTS) Trips by Main Mode (NTS9903)

NTS Trips by Main Mode (NTS9903)	% Mode Split
Car Driver	43.5%
Passenger in a car or van	24.5%
On foot	23.1%
Bicycle	1.1%
Bus, minibus or coach	5.2%
Train	1.0%
Taxi	1.3%
Motorcycle	0.3%
Other	0%

3.9.3 2011 JtW Census data for the employment population of the Cannock Chase MSOAs; E02006119 & E02006120), covering the area of Rugeley, has been used to forecast modal share for the employment element of development, a summary of the mode share is provided in **Table 3.5**.

Table 3.5: Employment Modal Share – 2011 JtW Census Data

Method of Travel to Work	% Mode Split
Car Driver	69.7%
Passenger in a car or van	6.3%
On foot	16.4%
Bicycle	2.6%
Bus, minibus or coach	3.0%
Train	0.7%
Taxi	0.5%
Motorcycle	0.6%
Other	0.3%

3.9.4 2011 School Census travel data for the local primary schools located within Rugeley has been used to forecast modal share for the education element of development, a summary of the mode share is provided in **Table 3.6**.

Table 3.6: Education Modal Share – 2011 School Census Data (Pupils)

Method of Travel to School (Pupils)	% Mode Split
Car	40.9%
On foot	58.5%
Bicycle	0.2%
Bus, minibus or coach	0.4%
Train	0%
Other	0%

### 3.10 Summary

- 3.10.1 The site links into the extensive network of road side footways/cycleways surrounding the site. Given the level of accessibility surrounding the site and the existing pedestrian/cycle infrastructure, it is considered that the development is accessible, and there are good opportunities for sustainable travel between the site, public transport services and the local facilities within the vicinity of the site. The existing pedestrian/cycle infrastructure provides a comprehensive, direct, safe and convenient route for pedestrians/cyclists to use.
- 3.10.2 The proposed scheme will link into this existing network and improve where required. These routes provide access to local facilities and amenities and increase the overall permeability of the site.

## 4 Personal Injury Accident Data Analysis

### 4.1 Introduction

4.1.1 Personal Injury Accident (PIA) data has been obtained from SCC; for the most recent five-year period available, between July 2013 and June 2018, this data has been obtained for a study area consistent with the agreed TA study area and has been expanded to include the A513 through Armitage and Handsacre at the request of SCC, as illustrated on **Figure 4.1**.

4.1.2 The full outputs of the accident data, including plot map, and the severity and summary table are attached at **Appendix D** for reference.

### 4.2 Analysis

4.2.1 In total, 123 accidents were recorded in the study area of which 108 were classified as being of 'slight' severity; 14 were classified as 'serious' severity and 1 was classified as 'fatal'.

4.2.2 The recorded accidents are spread throughout the study area, as demonstrated via the plot map included in **Appendix D**. More detailed assessment of cluster locations has been carried out for locations at which five or more accidents have occurred in the last five years. The detailed assessment also includes the location at which the fatal accident occurred. The detailed assessment covers the following locations:

- A460/ Elmore Lane/ Horse Fair/ Sandy Lane roundabout;
- Wolseley Road/Market Street link; and,
- Hagley Road/Western Springs Road link.

4.2.3 These locations are explored in further detail in the following sections with PIA plot maps of each location provided in **Figure 4.2**.

#### **A460/ Elmore Lane/ Horse Fair/ Sandy Lane roundabout**

4.2.4 A total of six accidents have occurred at this junction, of which five were classified as being of 'slight' severity, and one was classified as 'serious' severity.

4.2.5 Three of the accidents involved cyclists, one of which was the serious accident, with the remaining accidents involving motor vehicles only.

4.2.6 The causation factor for the 'serious' accident was due to 'failed to look'. The causation factors cited in relation to the remaining 5 accidents include 'failed to look', 'failed to judge speed or path' and 'poor manoeuvre'. The range of causation factors indicates driver error as a predominant accident cause rather than any issues with the existing highway layout.

4.2.7 The location of the recorded accidents varies in terms of the roundabout approach with one accident recorded on the Horse Fair arm, one on the Elmore Lane Arm, three on the Western Springs Arm and the

last on the A460 arm. The three accidents on the Western Springs arm had no commonality in terms of the manoeuvre being carried out.

4.2.8 A further review of the three accidents involving cyclists was carried out. This indicates that the driver of the vehicle involved failed to look properly in each incidence and in one of those incidents the cyclist being in the driver's blind spot was cited. One accident was partially attributed to the inclement weather conditions (snow, sleet and fog) with another being partially attributed to the driver being dazzled by the low sun.

4.2.9 A review of the accidents that have occurred within this search area has indicated that the cause of the accidents was not attributable to the geometry of the existing junction. There have been no recorded accidents at this location since January 2017 and no mitigation measures are considered to be warranted in relation to the existing highway safety record.

#### **Wolseley Road/Market Street**

4.2.10 A total of five accidents were recorded on the Wolseley Road/Market Street link, all accidents were classified as 'slight' severity. One accident involved a cyclist with the remainder involving motor vehicles only.

4.2.11 The causation factors stated include 'failed to look' and 'following too close' indicating driver error as a predominant accident cause rather than any issues with the existing highway layout. There have been no recorded accidents within this area since May 2017 and no mitigation measures are considered to be warranted in relation to the existing highway safety record.

#### **Hagley Road/Western Springs Road**

4.2.12 A total of four accidents have occurred on the Hagley Road/Western Springs Road link, one was identified as 'fatal' and three as 'slight' severity.

4.2.13 The fatal accident involved the driver being impaired by alcohol and cannot be directly related to the highway layout. When the slight accidents are considered the causation factors indicate driver error rather than issues with the highway layout.

4.2.14 A review of the accidents that have occurred within this search area has indicated that there are no clusters of accidents and the cause of the accidents were not attributable to the geometry or layout of the existing highway network. There have been no recorded accidents within this area since November 2014 and no mitigation measures are therefore considered to be required.

### **4.3 Summary**

4.3.1 To summarise, the review of the recorded accident data on the adjacent highway network indicates that there is not a specific highway safety concern that would warrant mitigation as part of the proposals.



## 5 Development Proposals

### 5.1 Overview

5.1.1 This chapter describes the development proposals and provides details on the access strategy for all modes of transport and the proposed approach to parking. Parameter plans, included in **Appendix E**, describe the development proposals.

### 5.2 Proposed Development

5.2.1 The proposed development comprises:

“Outline planning application for the demolition of existing office building and environmental centre, site clearance, remediation and mixed-use development of land at the former Rugeley Power Station comprising:

- Up to 2,300 new dwellings (Use Class C3)
- Up to 1.2 ha of mixed-use (Use Classes A1, A2, A3, A4, A5, C1-C3, D1 and D2).
- Up to 5 Ha of employment (Use Class B1, B2, B8)
- 1no. 2 Form Entry Primary School; and,
- Formal and Informal Publicly Accessible Open Space

Key Infrastructure including new adoptable roads within the site and the provision of a new primary access junction on to the A513, ground mounted solar panels and 2 No' sub stations (132 kV and 400 kV) retained.”

5.2.2 Parameter plan 01585\_PP\_02\_Land Use\_D7, included in **Appendix E**, illustrates the proposals and their relationship to each other.

### 5.3 Vehicular Access

5.3.1 The site access strategy is summarised on parameter plan 01585\_PP\_01\_Access\_D7, included in **Appendix E**.

5.3.2 Primary vehicular access to the proposed development in the west will be achieved from the A51 utilising the existing site access. In the east, primary vehicular access will be provided from the A513 utilising the roundabout consented under LDC planning permission 17/00453/FULM.

5.3.3 The site access junctions will be linked via an internal spine road. A corridor of 20m width has been allowed for in the preparation of the masterplan. This allows for:

- Carriageway width of 7.3m;
- 2 x 3m width shared foot/cycleways; and,
- 2 x 3m width verges to allow for tree planting.

5.3.4 It is intended that the spine road provide primary access to the site, also allowing the road to be used as a bus route. From the spine road accesses to individual development parcels will be formed with a hierarchy of lower order roads formed from these.

## 5.4 Servicing

- 5.4.1 The main site access junctions are able to accommodate refuse and emergency vehicle movements and the internal road network will be designed to accommodate refuse and emergency service vehicles throughout the site. All servicing vehicles will be able to enter and exit the site in forward gear.
- 5.4.2 The detailed design of the spine road and remainder of the internal road network will be carried out at the reserved matters stage to include vehicle tracking.

## 5.5 Sustainable Access Proposals

- 5.5.1 The sustainable access strategy is summarised on parameter plan 01585\_PP\_01\_Access\_D7, included in **Appendix E**.
- 5.5.2 The sustainable access proposals are discussed in greater detail in **Chapter 6** including proposed improvements to sustainable transport infrastructure in the wider area to better connect the site with Rugeley, Armitage and Handsacre villages and both railway stations in Rugeley.
- 5.5.3 As previously stated, the design parameters for the spine road will allow bus penetration into the site with the intention of providing access to bus stops within 350m of the majority of the development in accordance in the Rugeley Power Station Development Brief.
- 5.5.4 Pedestrian and cycle access to the site will be provided from a number of locations as follows:
- Via the primary site access formed with the A51;
  - Via the primary site access formed with the A513; and,
  - Via the existing link between the power station site and Priory Avenue.
- 5.5.5 A number of potential future linkages are also identified on the parameter plans; however, these currently involve land owned by third parties. Whilst these additional linkages are of potential benefit to increase permeability they cannot be explicitly committed to at this stage. It is intended that discussions are held with third parties as the application progresses to explore the feasibility of providing these linkages.
- 5.5.6 The potential future linkages are as follows:
- Path of the railway sidings over the A51 to link with Power Station Road;
  - From the A51 at the north-western extent of the site to link with the proposed network of paths across the natural open space; and,
  - Link between the site and the Hawkesyard development to allow permeability between the two developments.
- 5.5.7 Within the site pedestrian and cycle permeability will be provided in an east-west direction using the spine road, the greenway that follows the alignment of the existing railway sidings through the site and the network of paths across the natural open space.

5.5.8 The primary routes will be connected via a series of interconnected shared use foot/cycleways orientated in a north to south alignment at intervals throughout the site.

## 5.6 Parking

5.6.1 The Cannock Chase Local Development Framework sets out the level of parking required for new residential developments within Cannock Chase District. CCDC and LDC have agreed that these standards will be applied across the entire site.

5.6.2 There are no adopted standards relating to Electric Vehicle (EV) parking for CCDC, LDC nor SCC but there is general support for electric vehicle charging from each body in their adopted planning policy guidance, as summarised in **Chapter 2**.

5.6.3 Recognising this point during pre-application discussions, the planning and highway authorities agreed that the applicant propose a strategy for the incorporation of EV technology within the proposals.

5.6.4 The strategy for EV vehicles and parking is therefore as follows:

- Residential: All homes have potential to have an EV charging point installed. Actual installation to be carried out by the home owner, with subsidies and grant schemes promoted as part of the Travel Plan.
- Residential visitor spaces in public areas: 5% provision with passive infrastructure provided to allow up to 20% provision (to be monitored by the Travel Plan.)
- Residential: seek to set up a lease system with EV provider, (to be monitored by the Travel Plan.)
- Publicly accessible land uses such as local centres: 5% provision with passive infrastructure provided to allow up to 20% provision (to be monitored by the Travel Plan.)
- Employment uses: 5% provision with passive infrastructure provided to allow up to 20% provision (to be monitored by the Travel Plan.)
- All land uses: Explore provision of a car club for the site and specify that the vehicle(s) should be EV with associated charging infrastructure in designated parking bays.

5.6.5 It is important to recognise that the provision of EV infrastructure is phased and monitored via the FTP. This approach is intended to provide flexibility as the technology is emerging and what is considered suitable for installation in today's climate may not be suitable for later phases of the development.

## 5.7 Phasing

5.7.1 The development will be delivered over a number of phases with construction forecast to commence in 2020 and completion in 2040. Dwelling construction is expected to commence in 2021. The anticipated phasing of the development is illustrated on parameter plan 01585\_PP\_06\_Illustrative Phasing\_D3, included in **Appendix E**.

- 5.7.2 The initial phases of the development are forecast to comprise residential parcels at the north-western and south-eastern ends of the site with the construction of both ends of the development working towards the centre of the site.
- 5.7.3 In pre-application discussions with SCC they described how they would not accept development of more than 300 dwellings from a single point of access. Accordingly, it is envisaged that the spine road linking the two site accesses will be delivered early in the delivery programme.
- 5.7.4 It is currently envisaged that construction access will be taken from the main site access formed with the A51 with material moved between parcels using the existing network of roads on the power station site.

## 6 Sustainable Travel Strategy

### 6.1 Overview

- 6.1.1 This chapter sets out the sustainable travel strategy for the development. The proposals support the sustainable development principles of the site and have been designed to ensure that all site users can access a high quality and well-integrated sustainable transport network.
- 6.1.2 This chapter sets out the sustainable travel strategy for the development. Promoting sustainable transport for new sites is a key policy test within the NPPF. The proposals support the sustainable development principles of the site and have been designed to ensure that all site users can access a high quality and well-integrated sustainable transport network.
- 6.1.3 The sustainable travel strategy for the development proposals is predicated upon the following key items:
- Development of a comprehensive network of pedestrian and cycle routes within the site, linking with existing footways on the A51 and Power Station Road from the northern site access; and the A513 Rugeley Road from the southern site access;
  - Provision of a new bus service and associated bus stops within the site providing access to bus services within a walking distance of all areas of the site; and,
  - Development of a comprehensive Framework Travel Plan to promote sustainable modes of transport from initial occupation.
- 6.1.4 An overview of the opportunities presented by the site to develop a sustainable residential development are summarised in the following paragraphs.

### 6.2 Walking and Cycling Improvements

- 6.2.1 The site is in a good location with opportunities for residents to travel towards the Town Centre from the northern site access via Love Lane and from the southern site access along the canal towpath and along Armitage Road or Brereton Road.
- 6.2.2 In terms of walking and cycling routes, the site will be developed with a focus on prioritising pedestrian activity and cycle movements within the site to encourage non-car modes. In accordance with Manual for Streets (1 & 2), the internal layout will be designed by:
- Promoting an inclusive environment that recognises the needs of people of all ages and abilities;
  - Creating a network of streets that provide permeability and connectivity to main destinations and choice of routes;
  - Designing to keep vehicle speeds below 20mph on residential streets unless there are overriding reasons for accepting higher speeds; and,
  - Using the minimum number of highway design features necessary to make streets work properly.

6.2.3 Links to wider routes will be provided by linking with existing off-site routes from the northern and southern site access junctions. The principal desire line is to the south-west/west towards the Town Centre. Additionally, there is also a desire line towards the north-west where Rugeley Trent Valley Railway Station can be accessed.

#### Existing Network

6.2.4 The local walking and cycling network surrounding the site ranges in quality, with some severed routes and routes of varying quality. Where shared-use paths are provided these are of relatively good quality; however, a lack of maintenance has resulted in overgrowing vegetation and the build-up of debris along the edge of paths and at dropped kerb crossings. There are existing links between surfaced road side paths and canal towpaths, although these are typically unsurfaced trodden paths rather than formal connections. The existing walking and cycling network is shown on **Figures 3.4** and **3.5**, attached at **Appendix A**.

#### Committed Network

6.2.5 A number of improvements to the local walking and cycling network have been identified by SCC and are expected to be funded through S106 contributions associated with a number of local planning approvals. Plans illustrating the proposals are provided in **Appendix F**. The key elements of the schemes are listed below:

- Proposed cycleway link from Power Station Road to Love Lane;
- Access through railway arch between Love Lane and Power Station Road restricted to pedestrians and cyclists only;
- Canal access improvements from Love Lane;
- Resurfacing of canal towpath between Rugeley Road and Town Centre Station Road; and,
- Direct footpath between Rugeley Town Centre Railway Station and Horse Fair along the northern side of the railway embankment;

6.2.6 The improvements identified above have been considered in the context of the existing network and offer a significant benefit, particularly for users to access to the canal towpath and to Rugeley Town Centre Railway Station. The committed walking and cycling network based on the existing and proposed infrastructure is shown on **Figure 6.1**, attached at **Appendix A**.

#### Proposed Improvements

6.2.7 The future network was then reviewed in context of the development site and links between the site access locations, walking and cycling network and key local destinations, including crossing locations and canal access locations. This identified a number of gaps in the network that would need to be improved in order to provide a comprehensive and unbroken network to promote walking and cyclist for shorter trips in Rugeley.

6.2.8 A summary of the proposed routes and improvements are listed below with drawings showing the schemes included in **Appendix G**.

### **In proximity of northern site access**

- New Toucan crossing at northern site access / A51 roundabout;
- New Toucan crossing at A51 / Power Station Road roundabout;
- Widening of uncontrolled crossing on Power Station Road south of Railway line;
- Widening of existing path east of Power Station Road south of Railway bridge;
- Widening of existing path west of Power Station Road linking with Love Lane improvements; and,
- New shared-use path from Power Station Road connecting to proposed shared-use path along the disused Power Station railway line.

### **In proximity of southern site access**

- New shared-use path along the northern side of A513 Rugeley Road between the A51/Armitage Road Roundabout and the southern site access;
- Surfacing of the canal towpath between the southern site access and location where canal towpath passes under the A513 Rugeley Road;
- Improved canal access (hard surfacing) from A513 Rugeley Road (east of A51/ Armitage Road roundabout);
- New Toucan crossing on A513 Rugeley Road east of southern site access;
- New shared-use path from Toucan crossing to canal towpath via car park south of A513 Rugeley Road; and,
- New shared-use path along A513 Rugeley Road from the southern site access to the canal access east of southern site access.

### **In proximity of Armitage Road**

- New Toucan crossing on northern arm at A51 / Armitage Road roundabout;
- New uncontrolled crossing on western arm at A51 / Armitage Road roundabout;
- Formalised on-road cycle provision (on-road cycle markings, formalisation of on-street parking bays and removal of centreline) along Armitage Road; and,
- Recognise existing footpath from Armitage Road through Ravenhill Park for shared-use by pedestrians and cyclists.

### **In proximity of Brereton Hill**

- Improved cycle crossing provision on Brereton Hill west of A51 / Brereton Hill roundabout.

### **In proximity of Rugeley Trent Valley Railway Station**

- New Toucan crossings on southern and eastern arms at A51 / Colton Road roundabout.
- Formalised on-road cycle provision (on-road cycle markings and removal of centreline under railway bridge) along Colton Road; and
- Widening of existing path east of A51 / Colton Road Roundabout.

### **In proximity of Rugeley Town Railway Station**



- Shared use cycle provision along Wharf Road to access Rugeley Town Railway Station from Brereton Road; and
- New cycle storage facility in car park at Rugeley Town Railway Station.

6.2.9 The proposed improvements (comprising new routes, surfacing/formalisation of existing routes and new/improved crossing and canal access provision) are shown in isolation from the existing network in **Appendix F**. These improvements will offer a significant benefit to future residents at the site by providing key connections to the existing network and committed improvements, creating a comprehensive network of footways/footpaths and cycle routes that cater for trips to the key attractors within Rugeley. In conjunction with promotional measures detailed within the associated Travel Plan, the improvements offer an excellent opportunity to influence future travel habits for trips to and from the site, encouraging walking and cycling for local trips within Rugeley and for multi-modal travel comprising walking or cycling and use of public transport. The future walking and cycling network based on the existing, committed and proposed infrastructure is shown on **Figure 6.2**, attached at **Appendix A**.

### 6.3 Public Transport Access Improvements

- 6.3.1 Rugeley is served by a number of existing bus services, providing connections to local and regional destinations. The existing bus service routes have been plotted on **Figure 6.3** attached at **Appendix A**. This shows that although the Town Centre and southern areas of Rugeley are well served, the site is quite remote from the Town Centre, severed by the canal towpath, and is not well served by bus. Only the National Express A51 service runs past the site, operating at a frequency of three services per day.
- 6.3.2 Rugeley Town Railway Station is on the West Midlands Railway line and provides connections to local destinations including Cannock, Walsall and Birmingham. The station is located c. 1.0km from the site but is not currently accessible by bus from the site. The station can be reached on foot; however, the route is slightly disjointed and does not follow the desire line. The potential to improve the route are limited by land ownership constraints.
- 6.3.3 Rugeley Trent Valley Railway Station is on the London Northwestern Railway line and so offers more regional services to Stoke, Lichfield, Nuneaton and Northampton along with the same local services provided by Rugeley Town Station. There are existing cycle connections to Rugeley Trent Valley Railway Station along the A51; however, a new circular bus service connecting the site with the Town Centre and Rugeley Trent Valley would appeal to future residents and reduce reliance on private cars from the outset. This route is shown in **Figure 6.4** and would offer a circular service connecting the site with Rugeley for commuters and leisure trips and connecting with Rugeley Town Railway Station (within 350m) and also providing a service for rail commuters to Rugeley Trent Valley (just beyond 350m).
- 6.3.4 Based on 350m catchment areas around bus stops, the site could be served by a minimum of three stops within the site and the majority of the site would be within a reasonable distance of the stops. However, this

could be increased to four stops but would have a slight detriment on journey times. The proposed new bus service route and illustrative locations of bus stops are shown on **Figure 6.4**, attached at **Appendix A**.

- 6.3.5 The delivery of the spine road linking the northern and southern site access junctions, allowing a circular bus service to pass through the site, is key to implementing a cohesive public transport strategy. Based on the scale of the development and anticipated timescales for delivery of the development along with completion of the spine road through the site, it would be impractical to provide a single bus service as this would face issues in terms of routing, frequency and patronage during the early stages of construction. Furthermore, the bus service needs to be convenient in terms of frequency and journey times in order to promote travel by bus from the outset of occupation for residents and employees on the site in the early stages of build-out.
- 6.3.6 The bus strategy was discussed in detail during a pre-application meeting with SCC and CCDC with a view to developing a solution that could be offered in the early stages of build-out in order to ensure that sustainable travel habits could be promoted and adopted from initial occupation. Prior to completion of the spine road the site could be served by smaller buses from either access that can more easily turn within the site and would loop within the site and route via Rugeley Town Centre Railway Station, Rugeley Bus Station and Rugeley Trent Valley Railway Station. In the longer term, following completion of the spine road, the site could be served by a standard bus service, operating at a 20-minute frequency in the peak periods. The potential options identified at this meeting are detailed below:

#### **Short Term - ArrivaClick**

- 6.3.7 ArrivaClick is an intelligent, on-demand and flexible minibus service that takes multiple passengers heading in the same direction and books them into a shared vehicle that collects them where and when they want it.
- 6.3.8 The system uses an application for iPhone or Android where a user selects the pick-up and drop-off points and the application plans the journey. The system is a corner-to-corner service, whereby the vehicle will pick users up at a nearby corner and then drop users off within a couple of streets of the requested destination. This helps to ensure that even with multiple pickups, trip times are as efficient as they can be in order to promote use of the service.
- 6.3.9 This offers a demand responsive service to users that may be travelling between the site, the two railway stations and other origins/destinations between these locations. As the service would be a locally focused service, this has the potential to become a community focused service with regular drivers.
- 6.3.10 Furthermore, the smaller minibus vehicles used for such a service would make access to the two railway stations much easier, as a standard sized bus would not be able to enter the respective car parks at either station, therefore providing a lower level of accessibility. Additionally, prior to completion of the spine road these vehicles can turn within the site, meaning these can service the site from either site access whilst the site is constructed from either end.

#### **Short Term - The Oxfordshire Comet**

- 6.3.11 The Oxfordshire Comet is a bookable transport service for the community; the Oxfordshire model is focused on providing access for users who can't access suitable public transport; however, this could be refined to offer a practical service for this site. The service utilises vehicles that normally take children to school and adults to day care centres, so there is no need for the purchase of dedicated vehicles to provide the service.
- 6.3.12 This option is ideal at times of the day when the vehicles are not being used and therefore reduces the idle time of the vehicles, making them available to users. Because the vehicles are already owned for other community uses, the service only has to cover the running costs and contribute towards maintenance, meaning costs can be kept down for passengers.
- 6.3.13 Similarly, to the ArrivaClick service, the smaller vehicles would make access to the two railway stations much easier, as a standard sized bus would not be able to enter the respective car parks at either station and would therefore provide a lower level of accessibility. Additionally, prior to completion of the spine road these vehicles can turn within the site, meaning these can service the site from either site access whilst the site is constructed from either end.

### Long Term – Circular Bus Service

6.3.14 Once the internal spine road is completed a standard bus service could be provided that follows the same principal route as set out previously; however, the bus would be able to route through the site, removing the need for the bus to turn within the site, offering a reduced journey time. Furthermore, as the scale of the development increases throughout the build period patronage is expected to similarly increase, offering the potential to provide intermittent clockwise and anticlockwise services meaning users can board the most convenient service based on their origin/destination.

## 6.4 Framework Travel Plan

6.4.1 A TP has been prepared in line with local Government policy and guidance to ensure the efficient sustainable operation of the site. The aim of this document is to reduce single occupancy private car trips to/from the site in favour of more sustainable modes of transport. This includes incentives to encourage sustainable travel from the onset of occupation.

6.4.2 The main objective of the TP is to reduce car travel to and from the site. It aims to do this by promoting and increasing awareness of alternative sustainable travel options e.g. walk, cycle, low emission vehicles and public transport. By providing incentives, this minimises the potential barriers to using sustainable modes of transport. Where car travel does take place, an aim will be to limit the number of single occupancy car journeys.

6.4.3 Good Practice Guidelines 'Delivering Travel Plans through the Planning Process' produced by the Department for Transport (2009) state that a TP is:

*“a long-term management strategy for an occupier or site that seeks to deliver sustainable transport objectives through positive action and is articulated in a document that is regularly reviewed.”*

6.4.4 The TP sets out the ways in which site users can reduce the number of vehicle trips to a site by promoting sustainable travel options. It is site specific and, in this instance, considers the unique needs and interests of all residents in the context of the local environment and transport network.

6.4.5 The Travel Planning process involves the development of agreed targets and outcomes which are linked to an appropriate package of measures aimed at reducing the need to travel; encouraging more sustainable travel, and reducing single occupancy car use, for all trips to and from the development.

6.4.6 The process includes continuous monitoring, review and refinement over time. This is due to it using travel survey data to identify correlations and trends in the travel choices of site users. A TP is therefore a 'living document' that will be continually updated.

## 6.5 Summary

6.5.1 Walking and cycling routes will be delivered to accentuate the cultural and recreational heritage of Rugeley. Further transport infrastructure (e.g. bus stops, bus routes, EV charging points, tactile paving and signalised

crossing facilities) will be provided to ensure that the development is suitably connected to amenities such as schools, shops and employment centres.

## 7 Traffic Growth and Committed Developments

### 7.1 Introduction

7.1.1 This chapter describes the methodology and assumptions employed in order to derive the future forecast year traffic flows to inform the junction capacity assessment exercise summarised in **Chapter 10**. The key approach and assessment parameters were agreed in principle at a scoping meeting with SCC highways, dated 21 March 2019. Minutes of this meeting are included in **Appendix H**.

### 7.2 Forecast Year

7.2.1 The forecast year for assessment has been agreed in pre-application discussions with SCC as 2029. The rationale behind this is that it is the most distant of the end of plan periods for either local planning authority. The impacts of development traffic will therefore be considered in relation to a 2029 Future Baseline Scenario.

7.2.2 The 2029 Future Baseline Scenario has been calculated by applying a general growth factor to the surveyed 2018 traffic data and then considering the impacts of specific committed developments in addition.

7.2.3 This is considered to represent a robust analysis as the general growth factor includes for a degree of growth in terms of residential and employment land uses in a given area.

### 7.3 Traffic Growth (TEMPro)

7.3.1 The surveyed 2018 traffic flows have been growthed to the 2029 forecast year using growth factors derived using TEMPro. TEMPro (V.7.2) has been used to obtain traffic growth factors specific to the local area.

7.3.2 Within the TEMPro settings, the 'urban all' road classification was selected to provide growth factors that typified the number of journeys and projected scale of development for the local highway network up to 2029.

7.3.3 **Table 7.1** summarises the growth factors that were calculated for the site, given its district and highway location.

**Table 7.1 2018 to 2029 TEMPro Growth Factors**

Local Authority	Road Type	AM (0700-1000)	PM (1600-1900)
Cannock Chase	Urban All	1.143 (14.3%)	1.14 (14%)
Lichfield	Urban All	1.156 (15.6%)	1.16 (16%)

7.3.4 For robustness, the highest TEMPro growth factors in **Table 7.1** (Lichfield) have been applied to the 2018 baseline traffic flows to generate a 2029 future year traffic base to assist in assessing the overall vehicular

impacts of the development. The forecast 2029 traffic flows across the agreed study area are illustrated on **Figures 7.1 and 7.2**.

## 7.4 Committed Developments

7.4.1 A number of committed developments have been identified as part of pre-application discussions with CCDC, LDC and SCC, these are as follows:

- Wheelhouse Road (ref: 14/01018/FULM);
- Rugeley Quarry, Wolesley Road (ref: CH.16/05/709M);
- Former Ultra Electronics Site, Armitage Road, Rugeley (ref: CH/14/0293);
- Former Pear Tree Primary, Wharf Road (ref: CH/15/0084);
- Land Adjacent Hayes Meadow Primary, Spode Avenue, Handsacre (ref: 15/01198/OUTM);
- RWE Employment Site, A51 (ref: 03/00627/OUT); and,
- HS2 Construction Traffic.

7.4.2 The location of each committed development relative to the power station site is illustrated on **Figure 7.3** with the following sections describing how each committed development has been incorporated into the forecast year traffic flows.

## 7.5 Wheelhouse Road

7.5.1 The committed development at Wheelhouse Road, Rugeley was consented in December 2015 under application reference 14/01018/FULM. The proposals comprise 72 dwellings, all of which are proposed to comprise social housing. The scheme is bisected by the Trent and Mersey canal with 16 dwellings accessed from Armitage Road and 56 accessed from Wheelhouse Road.

7.5.2 The application was supported by a Transport Statement, dated September 2014, which summarised the trip generation per access at **Table 5.1**. a summary of the forecast trip generation is provided in **Table 7.2**.

**Table 7.2 Summary of Trip Generation**

Time Period	Armitage Road		Wheelhouse Road	
	Arrivals	Departures	Arrivals	Departures
AM Peak	2	6	7	21
PM Peak	5	2	19	7

7.5.3 It has been agreed with SCC during scoping discussions that this development was constructed and occupied at the time of the November 2018 traffic surveys and accordingly it has been discounted from further analysis.

## 7.6 Rugeley Quarry, Wolsley Road

7.6.1 Planning permission was awarded for the revised phasing and working of Rugeley Quarry under application reference CH.16/05/709M. Access to the quarry is formed with Stafford Brook Road, from which traffic can route north to meet the A460 Wolesley Road, from which access can be achieved to the A51 via the A51/A460 Wolesley Road roundabout. The A51/A460 Wolesley Road roundabout comprises the nearest extent of the study area to that considered in the quarry application.

7.6.2 It is also possible for traffic to head south from the quarry to meet with Penkrigde Bank Road; however, traffic routing in this direction is remote from the study area of this assessment.

7.6.3 The quarry planning application was supported by a TA, dated November 2017. *Figure TA17* of the TA summarised 85%ile traffic flows generated by the quarry. In the AM peak only 28 two-way trips are forecast to route to/from the north of the quarry and may impact on the agreed study area. The PM peak for the quarry is identified as 14:00 to 15:00 and the TA at paragraph 6.1.2 identifies how there are “virtually zero movements after 17:00”, accordingly no assessment of the PM peak can be carried out.

7.6.4 Traffic associated with this committed development has been assigned to the A51/A60 Wolsley Road Roundabout beyond which impacts at junctions further afield are likely to be negligible.

7.6.5 Committed development traffic flows are summarised on **Figure 7.4** for the AM peak hour.

## 7.7 Former Ultra Electronics Site, Armitage Road, Rugeley

7.7.1 Planning permission was awarded for this site at outline for up to 120 dwellings under application reference CH/14/0293. A subsequent reserved matters application was consented under application reference CH/15/0492.

7.7.2 The site is known as Ravenhill Park and mode are the appointed travel plan co-ordinator. The last round of monitoring surveys for this site took place in June 2018 where 98 of the 103 dwellings were occupied. On this basis the majority of traffic associated with this scheme is already accounted for in the traffic surveys collected during November 2018. The volume of development traffic that would be generated by the balance of the development (5 dwellings) would be imperceptible across the wider study area and accordingly this committed development has been considered no further.

## 7.8 Former Pear Tree Primary, Wharf Road

7.8.1 The committed development at the Former Pear Tree Primary, Wharf Road was consented in May 2015 under application reference CH/15/0084. The proposals comprise 76 dwellings to be accessed via Wharf Road that in turn accesses the wider highway network via a priority junction formed with Horse Fair.



7.8.2 The application was supported by a TS, dated February 2015, which summarised the forecast traffic generation at **Table 6.1**. This reported the traffic generation over three-hour peak periods. In order provide a consistent basis for assessment with the power station proposals the agreed AM and PM peak hour trip rates summarised at appendix B of the approved TS have been applied to the development quantum as summarised in **Table 7.3**.

**Table 7.3 Summary of Trip Generation**

	AM Peak			PM Peak		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way
Trip Rates	0.149	0.408	0.557	0.373	0.216	0.589
Trips	11	31	42	28	16	44

7.8.3 The approved TS did not include details of traffic distribution; however, the nearest junctions in the study area for this TA are as follows:

- Horse Fair/A460 Sandy Lane/A460 Western Springs Road/Springfields Road roundabout; and,
- A51/Brereton Hill roundabout.

7.8.4 Traffic associated with this committed development has been assigned to both junctions based upon the directional flow of traffic on Horse Fair as recorded in the November 2018 traffic surveys. Beyond these specific locations impacts at junctions further afield are likely to be negligible.

7.8.5 Committed development traffic flows are summarised on **Figures 7.5** and **7.6** for the AM and PM peak hours respectively.

## 7.9 Former Hayes Meadow Primary, Spode Avenue, Handsacre

7.9.1 The committed development at the Former Hayes Meadow Primary School was consented under application reference CH/15/0084. The proposals comprise up to 250 dwellings to be accessed via Tuppenhurst Lane, Handsacre.

7.9.2 The application was supported by a TA, dated May 2015, which summarised the forecast traffic generation and distribution at *Figure 7*. This shows a total of 59 and 66 two-way trips in the AM and PM peak hours respectively routing via the A513 that could potentially also affect the agreed study area of this TA.

7.9.3 The closest extent of the study area is the new access roundabout to be formed between the A513 and the site.

7.9.4 It has been agreed with SCC that traffic impacts associated with this committed development will be considered specifically at the A513/Site Access, the A513/Priory Avenue and A513/A51 roundabouts, beyond which impacts are likely to be marginal.

7.9.5 Committed development traffic flows are summarised on **Figures 7.7** and **7.8** for the AM and PM peak hours respectively.

## 7.10 Rugeley A Power Station

7.10.1 The redevelopment of the Rugeley 'A' Power Station site was consented under application reference (03/00627/OUT) for a mixed-use scheme comprising residential and employment land uses.

7.10.2 The residential elements of the scheme have been delivered (the Hawkesyard development) and are accessed via a roundabout junction formed between the A513 and Priory Avenue. The site's second access formed with the A51 opened in early 2019 and comprises a three-arm roundabout junction.

7.10.3 The residential element of the proposals is already accounted for in the traffic surveys carried out in November 2019 and is considered no further.

7.10.4 The permission for the remainder of the development has now lapsed and accordingly this committed development is considered no further in this assessment.

## 7.11 HS2 Construction Traffic

7.11.1 HS2 construction traffic volumes are summarised in the Transport Assessment Addendum – Part 1 (dated February 2019) submitted as part of the Supplementary Environmental Statement 2. HS2 construction traffic will affect the TA study area along the A51 which is designated as one of the HS2 haul routes to and from the SRN. The peak of HS2 construction activity is forecast in 2023; however, the line is forecast to be open during 2027.

7.11.2 The temporal scope of HS2 construction therefore does not correlate with the agreed forecast year for this assessment (2029) and accordingly this committed development has been discounted from this assessment.

## 7.12 Summary of Committed Development Traffic Flows

7.12.1 The total committed development traffic flows are summarised in **Figures 7.9** and **7.10**. The total committed development traffic flows have been combined with the 2029 Baseline forecast traffic flows, as summarised in **Figures 7.1** and **7.2** to create the 2029 Baseline + Committed Development Scenario. The 2029 Baseline + Committed Development Scenario traffic flows are summarised on **Figures 7.11** and **7.12** for the AM and PM peaks respectively.

## 8 Travel Demand

### 8.1 Overview

8.1.1 This chapter describes the forecast travel demand for the development proposals and the methodology and assumptions employed in its calculation. This analysis calculates the total traffic generation of the proposals assuming completion of the entire development. The proposed development comprises:

“Outline planning application for the demolition of existing office building and environmental centre, site clearance, remediation and mixed-use development of land at the former Rugeley Power Station comprising:

- Up to 2,300 new dwellings (Use Class C3)
- Up to 1.2 ha of mixed-use (Use Classes A1, A2, A3, A4, A5, C1-C3, D1 and D2).
- Up to 5 Ha of employment (Use Class B1, B2, B8)
- 1 no. 2 Form Entry Primary School; and,
- Formal and Informal Publicly Accessible Open Space

Key Infrastructure including new adoptable roads within the site and the provision of a new primary access junction on to the A513, ground mounted solar panels and 2 No' sub stations (132 kV and 400 kV) retained.”

### 8.2 Traffic Generating Land Uses

8.2.1 The traffic associated with site clearance, demolition and remediation is temporary and as a result is considered in detail in the Transport and Access chapter of the EIA.

8.2.2 It has been agreed with SCC that traffic associated with the 1.2 ha of mixed-use development (Potential Use Classes A1-5, C1-2, D1-2) can be considered as ancillary to the main proposed land uses. On this basis these land uses are not forecast to generate a significant enough volume of external traffic to warrant more detailed assessment and are considered no further.

8.2.3 Within the LDC part of the site there is a policy requirement (Local Plan Strategy Policy E1) that requires a retail assessment to be submitted with applications for more than 100sqm of retail use in 'other centres'. This application does not propose more than 100sqm of A1 use within the LDC mixed use centre.

8.2.4 It has also been agreed with SCC that traffic associated with the open space, formal areas of play, and associated facilities and amenity space is unlikely to have a significant impact on the local highway network during the weekday AM and PM peak hour periods and accordingly has been considered no further in terms of trip generation.

8.2.5 The traffic generation exercise therefore considers the following as the primary traffic generating land uses:

- Up to 2,300 dwellings comprising a mix of market and affordable housing (Use Class C3);
- Up to 5 ha of employment land (Potential Use Classes B1, B2, B8); and,
- A 2 Form Entry Primary School.

## 8.3 Vehicular Trip Rates

8.3.1 To forecast the total number of vehicle journeys for the proposed land uses, the TRICS database (Version 7.5.4) was reviewed to obtain average trip rates for the residential, employment and education elements of the scheme.

8.3.2 For the trip rates, the search parameters within TRICS were refined in order to find sites that, as closely as reasonable, are representative of the locale of the development. The broad parameters that were used are summarised below:

- Sites in England only, excluding London;
- Sites in suburban and edge of town locations only; and
- Sites including TPs were excluded for the purposes of robustness.

8.3.3 Full copies of the TRICS reports for each land use (including all search parameters) are attached at **Appendix I**, for reference. The calculation of trip rates was subject to pre-application discussions with SCC and the agreed trip rates are summarised in **Table 8.1**.

**Table 8.1 Summary of Agreed Vehicle Trip Rates**

Land Use	Factor	AM Peak Hour			PM Peak Hour		
		Arrive	Depart	Two-way	Arrive	Depart	Two-way
Residential	dwelling	0.121	0.39	0.511	0.338	0.188	0.526
Employment (B1a)	100sqm	1.113	0.134	1.247	0.077	0.794	0.871
Employment (B2)	100sqm	0.43	0.232	0.662	0.095	0.342	0.437
Employment (B8)	100sqm	0.127	0.063	0.19	0.034	0.101	0.135
Primary School	pupils	0.326	0.248	0.574	0.021	0.033	0.054

8.3.4 The 5ha employment area has been estimated to yield circa 58,000sqm floorspace assuming three storey building heights in line with parameter plan 01585\_PP\_03\_Building Heights\_D3, included in **Appendix E**. The application seeks an open consent and accordingly the most robust case in terms of trip generation for the employment land uses has been considered using the approved trip rates for B1a land use (offices).

8.3.5 In order to calculate development traffic volumes for the primary school an assumption of 420 pupils has been applied. The resultant traffic generation is summarised in **Table 8.2**.

**Table 8.2 Summary of Traffic Generation**

Land Use	Factor	AM Peak Hour			PM Peak Hour		
		Arrive	Depart	Two-way	Arrive	Depart	Two-way
Residential	2,300 dwellings	278	897	1175	777	432	1210
Employment (B1a)	58,000sqm	646	78	723	45	461	505
Primary School	420 pupils	137	104	241	9	14	23
	Total	1061	1079	2140	831	907	1738

## 8.4 Trip Internalisation

8.4.1 The trip rates calculated using the TRICS database provide an estimate of the number of trips that could be generated by a development; however, they do not provide an indication of journey length nor purpose.

8.4.2 In considering the scale and form of the development, there is clear potential for some trips for specific journey purposes to be made internally as future residents will have access to employment, education, and community uses within the site and therefore the need to travel externally is negated in some cases.

8.4.3 The National Travel Survey (NTS), "Table 0308 cites "6% of car journeys as being under 1 mile in length". Therefore, and in agreement with SCC, this statistic has been used as an internalisation factor to be applied to and removed from the calculated trip generation for the site's residential and employment land-uses.

8.4.4 A separate internalisation factor has been calculated for the proposed primary school based on the anticipated primary age pupil yield for the residential element of the proposals.

8.4.5 By using this factor, all vehicle trips that are linked to a primary age pupil living at the development have been removed from the calculated school trip generation as they do not affect the external highway network. The balance of calculated trips are therefore those trips that are forecast to be made by staff and students living outside of the site. This analysis has only been carried out in relation to trips made in the AM peak hour as all trips associated with the primary school in the PM peak hour are assumed to be staff trips.

8.4.6 **Table 8.3** provides a summary of the total number of internal two-way trips for the differing land uses at the site.

**Table 8.3 Summary of Internal Vehicle Trips**

Land Use	AM Peak Hour			PM Peak Hour		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way
Residential	17	54	71	47	26	73
Employment (B1a)	39	5	43	3	28	30
Primary School	104	104	208	0	0	0

## 8.5 External Trip Generation

8.5.1 The resultant external trip generation is summarised in **Table 8.4** and represents the traffic that will be considered in the junction capacity assessment in **Chapter 9**.

**Table 8.4. Summary of External Vehicle Trips**

Land Use	AM Peak Hour			PM Peak Hour		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way
Residential	262	843	1105	731	406	1137
Employment (B1a)	607	73	680	42	433	475
Primary School	33	0	33	9	14	23
Total	902	916	1818	782	853	1635

8.5.2 The highest trip generation is anticipated to be in the AM peak hour with 1,818 vehicles trips forecast.

8.5.3 The traffic generation calculations are considered to be robust as they take no account of the benefits afforded by Travel Plan initiatives. An FTP will be submitted as part of the suite of planning application documents.

## 8.6 Modal Share and Trips Made by Sustainable Transport

- 8.6.1 The forecast volume of trips made to and from the site by sustainable means has been calculated proportionately by applying the total vehicular trip generation, as summarised in **Table 8.2** to the existing modal splits for residential, employment and primary schools, as summarised in **Tables 3.4** to **3.6** respectively.
- 8.6.2 **Tables 8.5** to **8.7** summarise the calculated volume of trips forecast to be made by each mode of transport from the residential, employment and education land uses.

Table 8.5 Summary of Multimodal Trips – Residential Modal Share

NTS Trips by Main Mode (NTS9903)	% Mode Split	Resultant Two-way Trips	
		AM Peak	PM Peak
Car Driver	43.5%	1175	1210
Passenger in a car or van	24.5%	662	682
On foot	23.1%	624	643
Bicycle	1.1%	30	31
Bus, minibus or coach	5.2%	141	145
Train	1.0%	27	28
Taxi	1.3%	35	36
Motorcycle	0.3%	8	8
Other	0%	0	0
<b>Total</b>	<b>100%</b>	<b>2702</b>	<b>2783</b>

Table 8.6 Summary of Multimodal Trips – Employment Modal Share

Census 2011 JTW data	% Mode Split	Resultant Two-way Trips	
		AM Peak	PM Peak
Car Driver	69.7%	723	505
Passenger in a car or van	6.3%	65	46
On foot	16.4%	170	119
Bicycle	2.6%	27	19
Bus, minibus or coach	3.0%	31	22
Train	0.7%	7	5
Taxi	0.5%	5	4
Motorcycle	0.6%	6	4
Other	0.3%	3	2
<b>Total</b>	<b>100%</b>	<b>1037</b>	<b>706</b>



Table 8.7 Summary of Multimodal Trips – Education Modal Share

School Census 2011 (Primary Schools in Rugeley)	% Mode Split	Resultant Two-way Trips	
		AM Peak	PM Peak
Car	40.9%	241	23
On foot	58.5%	345	33
Bicycle	0.2%	1	0
Bus, minibus or coach	0.4%	2	0
Train	0%	0	0
Other	0%	0	0
<b>Total</b>	<b>100%</b>	<b>589</b>	<b>56</b>

## 9 Traffic Distribution and Assignment

### 9.1 Introduction

9.1.1 This chapter describes the methodology and assumptions employed in the calculation of development traffic distribution. The distribution has been discussed and agreed with SCC as part of pre-application discussions. The key approach and assessment parameters were agreed in principle at a scoping meeting with SCC highways, dated 21 March 2019. Minutes of this meeting are included in **Appendix H**.

### 9.2 Distribution

9.2.1 To identify the future-year vehicle flows for the development, a zone-based traffic distribution model has been used to calculate the number of residential and employment journeys to/from various destinations and the site.

9.2.2 The zones for the distribution model were classified based on the primary routes leading into/out of Rugeley and the routes leading to/from the site to internal origins/destinations within the town. The zones and study area of the distribution model are illustrated on **Figure 9.1**.

9.2.3 The number of vehicles travelling to/from the site via each zone was established by initially deriving a traffic distribution (%) for the residential and workplace population based on Census 2011, JtW data for the Middle Layer Super Output Areas (MSOAs), **E02006119**: Cannock Chase 002 and **E02006120**: Cannock Chase 003 and fastest route data from Google maps.

9.2.4 By using the same method, trips to all internal zones were then analysed more locally (for a distribution pattern) by breaking down the origin MSOAs (Cannock Chase 002 and Cannock Chase 003) into Lower Layer Super Output Areas based on their workplace and residential populations.

9.2.5 A summary of the forecast zonal trip distribution and associated number of development trips for the residential element of the site is shown in **Table 9.1** and the trip distribution and generation for all employment land-uses is shown in **Table 9.2**. The employment distribution has been applied to the primary school traffic also as it has been calculated that this is largely accounted for by staff trips.

Table 9.1 Residential Distribution Summary

Zone		%	%
External Zones	A	15.6%	81.3%
	B	19.1%	
	C	24.4%	
	D	18.5%	
	E	3.8%	
	F	0.0%	
Internal Zones	G	2.7%	18.7%
	H	1.7%	
	I	3.3%	
	J	4.4%	
	K	4.1%	
	L	2.5%	
Total		100.0%	100.0%

Table 9.2 Employee Distribution Summary

Zone		%	%
External Zones	A	10.9%	69.7%
	B	10.2%	
	C	27.5%	
	D	16.0%	
	E	5.1%	
	F	0.0%	
Internal Zones	G	3.1%	30.3%
	H	1.1%	
	I	1.0%	
	J	3.7%	
	K	13.4%	
	L	7.9%	
Total		100.0%	100.0%

### 9.3 Assignment

- 9.3.1 The forecast development traffic has been assigned to each site access point based upon the geographical proximity of individual parcels to the access point. In broad terms all development situated to the north-west of the recreation area and substations at the centre of the site has been assigned to the site access formed with the A51. All development situated to the south-east of the recreation area and substations at the centre of the site has been assigned to the site access formed with the A513.
- 9.3.2 There is also potential for development traffic to route through the site using the spine road before emerging onto the external highway network. An assumption has been made that all trips to and from zone A (the A513 to the east of the site) will be assigned via the A513 access.
- 9.3.3 Similarly, all trips to and from zones D, E, F and J (all situated to the west of the site) are assumed to be assigned via the A51 access.
- 9.3.4 A summary of the proportional assignment of development traffic to each site access is provided in **Tables 9.3** and **9.4**.

**Table 9.3 Assignment of Development Traffic at Site Accesses (Residential)**

Zone	A51 Access	A513 Access	Total
A	0%	100%	100%
B	46%	54%	100%
C	46%	54%	100%
D	100%	0%	100%
E	100%	0%	100%
F	100%	0%	100%
G	46%	54%	100%
H	46%	54%	100%
I	46%	54%	100%
J	100%	0%	100%
K	46%	54%	100%
L	46%	54%	100%

Table 9.4 Assignment of Development Traffic at Site Accesses (Employment and Education)

Zone	A51 Access	A513 Access	Total
A	0%	100%	100%
B	100%	0%	100%
C	100%	0%	100%
D	100%	0%	100%
E	100%	0%	100%
F	100%	0%	100%
G	100%	0%	100%
H	100%	0%	100%
I	100%	0%	100%
J	100%	0%	100%
K	100%	0%	100%
L	100%	0%	100%

9.3.5 The resultant AM and PM peak hour development traffic flows are summarised in **Figures 9.2** and **9.3**.

## 10 Junction Capacity Analysis

### 10.1 Overview

10.1.1 This chapter provides a summary of the junction capacity assessments that have been completed to understand the impacts of development, future-year and committed development traffic on the operation of the local highway network. The key approach and assessment parameters were agreed in principle at a scoping meeting with SCC highways, dated 21 March 2019. Minutes of this meeting are included in **Appendix H**.

### 10.2 Geographical Scope of Assessment

10.2.1 The agreed extent of the geographic extent of the junction study area is summarised in **Figure 3.1**.

10.2.2 A total of 12 junctions are included in the agreed study area as follows:

1. A51/A60 Wolsley Road Roundabout;
2. A60 Wolsley Road/Wolsley Road/A460 Western Springs Road/Springfield Road Roundabout;
3. A51/Colton Road/Station Road Roundabout;
4. A460 Western Springs Road/Elmore Lane/Horse Fair/Sandy Lane Roundabout;
5. A51/Wheelhouse Road Roundabout;
6. A51/A513/Armitage Road Roundabout;
7. A51/Brereton Hill Roundabout;
8. A513/Priory Avenue Roundabout;
9. A51/Power Station Access/Power Station Road/Amazon Access Double Roundabout;
10. B5013 Colton Road/Blithbury Road/Rugeley Trent Valley Station Access Priority Junctions;
11. A51/RWE Access Roundabout; and
12. A513/Rugeley Power Station Access Roundabout.

10.2.3 Of these junctions 9 and 12 comprise the site access junctions for the proposals.

### 10.3 Assessment Scenarios

10.3.1 During the scoping of this TA, it was agreed that the following traffic scenarios would be used to model and assess the impact of the development proposals, on the performance of each of the junctions:

- 2018 Base Traffic (Surveyed) (**Figures 3.2 and 3.3**);
- 2029 Base Traffic + Committed Development Traffic (**Figures 7.9 and 7.10**); and

- 2029 Base Traffic + Committed Development Traffic + Development Traffic (**Figures 10.1** and **10.2**).

## 10.4 Junction Capacity Assessments

- 10.4.1 The industry standard software package, Junctions 9 (ARCADY & PICADY modules) has been used to assess the capacity of each junction; particularly when impacted on by development traffic. A summary of the modelling results is presented within this section, and full model output reports are provided in **Appendix J**.
- 10.4.2 Validation of the 2018 Baseline scenario models has been considered relative to observed queue surveys carried out simultaneously with the traffic surveys at the request of SCC highways. A summary of this analysis is provided in **Appendix K**. This analysis indicates some differences between modelled and observed queues in a number of locations; however, this is not considered to be of material concern for the following reasons.
- 10.4.3 The DMRB Volume 12, Section 2, Part 1 describes how *“precise validation of queue lengths can be difficult because of the volatility of the observed data”* and nor does it provide an acceptable threshold for modelled versus observed queue lengths.
- 10.4.4 Similarly, the Transport Research Laboratory’s (TRL) Knowledge Base document entitled ‘Measuring queues – is it all a waste of time?’ describes how *“during peak periods there is a large daily variation in queue lengths even if the average flow for each time segment does not vary from day to day”*. The junction model forecasts in ARCADY are based on an infinite number of days.
- 10.4.5 Additionally, the TRL Knowledge Base document describes that *“if the flows and capacity predictions are correct, the queue predictions will be correct”*. In considering the robustness of traffic models, this confirms the software developer’s advice that when considering the validity of junction models more weight should be applied to the review of demand flows and geometric inputs than queuing.
- 10.4.6 Accordingly, and with reference to the difficulties in queue validation as noted by the DMRB and TRL, the analysis relies upon an assessment of the relative differences in the operation of each junction between development scenarios in order to forecast development traffic impacts.
- 10.4.7 When assessing junction capacity, a Ratio of Flow to Capacity (RFC) value of below 0.85 is typically representative of a junction that is considered to be operating satisfactorily and with reserve capacity; above 0.85 the junction is getting close to its practical capacity, with very little reserve capacity available and queuing can start to occur. Conversely, an RFC value of 1.00 or above, reflects a junction that is operating over theoretical capacity and where small increases in capacity may result in exponential queuing and/or delay at the junction.
- 10.4.8 Therefore, junctions operating close to or above 1.00 should be carefully reviewed to ensure that queuing and delay is not significantly impacted upon, and to ensure that the new development will not have a ‘severe’ or ‘detrimental’ impact upon the existing highway infrastructure.

**Junction 1: A51/A460 Wolseley Road**

10.4.9 ARCADY assessments; based on site observations and CAD measurements, have been completed for this three-arm roundabout junction at the north 'gateway' to Rugeley and to the northwest of the development site. Each arm has a two-lane entry and a two-lane exit.

10.4.10 The results of the model assessment scenarios are summarised in **Table 10.1**.



Table 10.1: Junction 1 – A51/A460 Wolseley Road, Three-Arm Roundabout

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A51 (E)	0.37	3.31	1	0.63	5.89	2
A460 Wolseley Road	0.52	4.56	1	0.35	3.60	1
A51 (NW)	0.58	4.36	1	0.61	4.45	2
2029 Base + Committed Development						
A51 (E)	0.45	3.91	1	0.76	9.61	3
A460 Wolseley Road	0.64	6.30	2	0.42	4.31	1
A51 (NW)	0.68	5.75	2	0.71	5.94	2
2029 Base + Committed Development + Development						
A51 (E)	0.55	4.75	1	0.87	16.49	6
A460 Wolseley Road	0.69	8.05	2	0.46	4.96	1
A51 (NW)	0.76	7.68	3	0.78	7.94	4

10.4.11 **Table 10.1** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered with the exception of the 2029 PM Base + Committed Development + Development scenario where an RFC value of 0.87 is forecast.

10.4.12 The required mitigation to reduce this RFC value to 0.85 will likely comprise very minor amendments to the kerbline on the A51(E) to improve the geometry of this arm and will comprise a mathematical modelling fix rather than a tangible improvement to road users.

10.4.13 The development traffic calculations are considered to be robust as they do not account for any reduction in development traffic as a result of the proposed FTP. Reductions in development traffic volumes as a result of sustainable transport initiatives are likely to result in an improved level of forecast junction operation.

10.4.14 The associated level of forecast queue (6 vehicles) and delay (16 seconds) is not excessive and on this basis the impact of the development proposals in this location is considered to be acceptable and accordingly no mitigation is deemed to be necessary.

#### Junction 2: A460 Wolseley Road/B5013 Wolseley Road/A460 Western Springs Road/Springfields Road

10.4.15 ARCADY assessments; based on site observations and CAD measurements, have been completed for this four-arm roundabout junction to the north of Rugeley and to the northwest of the development site. Each arm has a two-lane entry and a single-lane lane exit.

10.4.16 The results of the model assessment scenarios are summarised in **Table 10.2**.

**Table 10.2: Junction 2 – A460 Wolseley Road/B5013 Wolseley Road/A460 Western Springs Road/Springfields Road, Four-Arm Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A460 Wolseley Road (N)	0.21	2.45	0	0.27	2.55	0
B5013 Wolseley Road (SE)	0.15	2.70	0	0.33	3.53	1
A460 Western Springs Road	0.29	3.11	0	0.25	3.15	0
Springfields Road	0.20	3.26	0	0.15	2.91	0
2029 Base + Committed Development						
A460 Wolseley Road (N)	0.25	2.61	0	0.31	2.75	1
B5013 Wolseley Road (SE)	0.18	2.86	0	0.40	4.00	1
A460 Western Springs Road	0.34	3.38	0	0.30	3.45	0
Springfields Road	0.25	3.56	0	0.18	3.11	0
2029 Base + Committed Development + Development						
A460 Wolseley Road (N)	0.26	2.75	0	0.32	2.81	1
B5013 Wolseley Road (SE)	0.20	2.93	0	0.45	4.42	1
A460 Western Springs Road	0.36	3.49	1	0.32	3.63	1
Springfields Road	0.32	3.96	1	0.21	3.21	0

10.4.17 **Table 10.2** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

### Junction 3: A51/B5013 Colton Road/A51 Rugeley Eastern By-Pass/B5013 Station Road

10.4.18 ARCADY assessments; based on site observations and CAD measurements, have been completed for this four-arm roundabout junction at the northeast 'gateway' to Rugeley and to the northwest of the development

site. Each arm has a two-lane entry and a single-lane exit from the main roundabout; and, the A51 northern entry arm provides a bypass lane for left-turning vehicles.

10.4.19 The results of the model assessment scenarios are summarised in **Table 10.3**.

**Table 10.3: Junction 3 – A51/B5013 Colton Road/A51 Rugeley Eastern By-Pass/B5013 Station Road Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
B5013 Colton Road	0.37	4.21	1	0.41	4.13	1
A51 Rugeley Eastern By-Pass	0.32	2.70	1	0.48	3.58	1
B5013 Station Road	0.38	4.03	1	0.42	4.75	1
A51	0.45	3.92	1	0.35	3.10	1
2029 Base + Committed Development						
B5013 Colton Road	0.45	5.23	1	0.49	5.06	1
A51 Rugeley Eastern By-Pass	0.38	3.10	1	0.58	4.55	1
B5013 Station Road	0.47	4.96	1	0.52	6.21	1
A51	0.54	4.96	1	0.41	3.53	1
2029 Base + Committed Development + Development						
B5013 Colton Road	0.66	11.31	2	0.60	7.57	2
A51 Rugeley Eastern By-Pass	0.59	4.60	2	0.84	12.05	5
B5013 Station Road	0.82	15.63	4	0.74	12.58	3
A51	0.76	11.19	3	0.54	4.90	1

10.4.20 **Table 10.3** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

#### **Junction 4: A460 Western Springs Road/Elmore Lane/Horse Fair/Sandy Lane**

10.4.21 ARCADY assessments; based on site observations and CAD measurements, have been completed for this four-arm roundabout junction at the centre of Rugeley and to the west of the development site.

10.4.22 Each arm has a two-lane entry and the A460 Western Springs Road, western entry arm provides a bypass lane for left-turning vehicles. The A460 Sandy Lane and the A460 Western Springs Road arms have two-lane exits from the main roundabout. Horse Fair and the B5013 Elmore Lane provide single-lane exits from the junction.

10.4.23 The results of the model assessment scenarios are summarised in **Table 10.4**.

**Table 10.4: Junction 4 – Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane, Three-Arm Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
Horse Fair	0.47	4.02	1	0.52	4.83	1
A460 Sandy Lane	0.60	5.26	2	0.54	4.17	1
A460 Western Springs Road	0.54	5.69	1	0.58	6.17	1
B5013 Elmore Lane	0.61	15.07	2	0.79	27.09	3
2029 Base + Committed Development						
Horse Fair	0.58	5.19	1	0.64	6.67	2
A460 Sandy Lane	0.72	8.09	3	0.65	5.67	2
A460 Western Springs Road	0.66	8.38	2	0.73	10.18	3
B5013 Elmore Lane	0.82	36.70	4	1.11	211.14	35
2029 Base + Committed Development + Development						
Horse Fair	0.69	7.20	2	0.68	7.23	2
A460 Sandy Lane	0.89	19.16	7	0.76	8.38	3
A460 Western Springs Road	0.77	14.19	3	0.83	18.04	5
B5013 Elmore Lane	1.09	182.45	30	1.70	1036.37	171

10.4.24 **Table 10.4** demonstrates that this junction is forecast to operate outside of acceptable capacity parameters without the introduction of the development proposals in the 2029 PM Base + Committed Development scenario where an RFC value of 1.11 is forecast on the B5013 Elmore Lane.

10.4.25 The addition of development traffic in the 2029 Base + Committed Development + Development scenario exacerbates the already forecast capacity issues with an increase in RFC on the B5013 Elmore Lane to 1.70 in the PM scenario. In addition, capacity issues are forecast in the AM peak on the A460 Sandy Lane and B5013 Elmore Lane with RFC values of 0.89 and 1.09 respectively forecast.

10.4.26 A mitigation scheme has been designed for this junction in order to achieve nil-detriment and is summarised in **Chapter 12**.

10.4.27 ARCADY assessments; based on site observations and CAD measurements, have been completed for this three-arm roundabout junction to the southeast of Rugeley and to the south of the development site. Each arm has a two-lane entry and a single-lane exit from the main roundabout.

10.4.28 The results of the model assessment scenarios are summarised in **Table 10.5**.

**Table 10.5: A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A51 Rugeley Eastern By-Pass (N)	0.50	3.64	1	0.49	4.07	1
A51 (S)	0.48	3.83	1	0.61	4.81	2
Wheelhouse Road	0.09	3.83	0	0.63	10.08	2
2029 Base + Committed Development						
A51 Rugeley Eastern By-Pass (N)	0.59	4.47	1	0.58	5.10	1
A51 (S)	0.57	4.68	1	0.70	6.38	2
Wheelhouse Road	0.11	4.19	0	0.81	21.86	4
2029 Base + Committed Development + Development						
A51 Rugeley Eastern By-Pass (N)	0.65	5.27	2	0.69	6.76	2
A51 (S)	0.68	6.23	2	0.76	8.07	3
Wheelhouse Road	0.16	4.79	0	0.91	40.69	8

10.4.29 **Table 10.5** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered with the exception of the 2029 PM Base + Committed Development + Development scenario where an RFC value of 0.91 is forecast on the Wheelhouse Road arm. A mitigation scheme has been designed for this junction in order to achieve nil-detriment and is summarised in **Chapter 12**.

#### **Junction 6: A51 Rugeley Eastern By-Pass/A513 Rugeley Road/A513 Armitage Road**

10.4.30 ARCADY assessments; based on site observations and CAD measurements, have been completed for this four-arm roundabout junction to the east of Brereton and to the south of the development site. Each arm has a two-lane entry and a single-lane exit from the main roundabout.

10.4.31 The results of the model assessment scenarios are summarised in **Table 10.6**.

**Table 10.6: Junction 6 – A51 Rugeley Eastern By-Pass/A513 Rugeley Road/A513 Armitage Road, Four-Arm Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A51 (N)	0.62	6.31	2	0.79	11.12	4
A513 Rugeley Road	0.55	5.85	1	0.67	8.87	2
A51 (S)	0.50	5.17	1	0.78	12.55	4
Armitage Road	0.34	4.98	1	0.40	6.37	1
2029 Base + Committed Development						
A51 (N)	0.76	10.46	3	0.96	43.52	16
A513 Rugeley Road	0.71	9.87	2	0.86	21.56	6
A51 (S)	0.62	7.25	2	0.98	58.93	19
Armitage Road	0.45	6.75	1	0.56	10.02	1
2029 Base + Committed Development + Development						
A51 (N)	0.87	19.32	6	1.17	287.66	122
A513 Rugeley Road	0.99	61.76	20	0.96	50.32	15
A51 (S)	0.82	16.19	4	1.16	255.68	104
Armitage Road	0.58	10.23	1	0.73	16.41	3

10.4.32 **Table 10.6** demonstrates that this junction is forecast to operate outside of acceptable capacity parameters without the introduction of the development proposals in the 2029 PM Base + Committed Development scenario where RFC values in excess of 0.85 are forecast on the A51(N), A513 Rugeley Road and A51(S) arms.

10.4.33 The addition of development traffic in the 2029 Base + Committed Development + Development scenario exacerbates the already forecast capacity issues with increases in RFC on each affected arm. In addition, capacity issues are forecast in the AM peak on the A51(N) and A513 Rugeley Road arms with RFC values of 0.87 and 0.99 respectively forecast.

10.4.34 A mitigation scheme has been designed for this junction in order to achieve nil-detriment and is summarised in **Chapter 12**.



### Junction 7: A51/A460 Main Road/A460 Brereton Hill

10.4.35 ARCADY assessments; based on site observations and CAD measurements, have been completed for this three-arm roundabout junction to the southeast of Brereton and to the south of the development site. Each arm has a two-lane entry and a single-lane exit from the main roundabout.

10.4.36 The results of the model assessment scenarios are summarised in **Table 10.7**.

**Table 10.7: Junction 7 – A51/A460 Main Road/A460 Brereton Hill**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A51	0.45	3.49	1	0.43	3.02	1
A51 Main Road	0.32	2.56	1	0.57	4.05	1
A460 Brereton Hill	0.41	3.20	1	0.31	3.08	0
2029 Base + Committed Development						
A51	0.55	4.38	1	0.51	3.55	1
A51 Main Road	0.37	2.81	1	0.68	5.51	2
A460 Brereton Hill	0.49	3.85	1	0.38	3.64	1
2029 Base + Committed Development + Development						
A51	0.66	5.76	2	0.59	4.27	2
A51 Main Road	0.43	3.11	1	0.77	7.83	3
A460 Brereton Hill	0.55	4.61	1	0.43	4.28	1

10.4.37 **Table 10.7** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

### Junction 8: A513 Rugeley Road/Priory Avenue

10.4.38 ARCADY assessments; based on site observations and CAD measurements, have been completed for this three-arm roundabout junction to the south of the 'Pippins' development and to the southeast of the development site. Each arm has a single-lane entry and a single-lane exit from the main roundabout.

10.4.39 The results of the model assessment scenarios are summarised in **Table 10.8**.

Table 10.8: Junction 8 – A513 Rugeley Road/Priory Avenue

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
Priory Avenue	0.35	6.80	1	0.15	4.94	0
A513 Rugeley Road (E)	0.36	3.79	1	0.51	4.72	1
A513 Rugeley Road (W)	0.50	5.15	1	0.56	5.86	1
2029 Base + Committed Development						
Priory Avenue	0.45	8.91	1	0.19	5.71	0
A513 Rugeley Road (E)	0.46	4.61	1	0.61	6.00	2
A513 Rugeley Road (W)	0.60	6.51	2	0.69	8.17	2
2029 Base + Committed Development + Development						
Priory Avenue	0.49	10.21	1	0.23	7.33	0
A513 Rugeley Road (E)	0.65	7.05	2	0.70	7.71	2
A513 Rugeley Road (W)	0.66	7.68	2	0.86	18.22	6

10.4.40 **Table 10.8** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered with the exception of the 2029 PM Base + Committed Development + Development scenario where an RFC value of 0.86 is forecast.

10.4.41 The required mitigation to reduce this RFC value to 0.85 will likely comprise very minor amendments to the kerblines on the A513 Rugeley Road (W) to improve the geometry of this arm and will comprise a mathematical modelling fix rather than a tangible improvement to road users.

10.4.42 The development traffic calculations are considered to be robust as they do not account for any reduction in development traffic as a result of the proposed FTP. Reductions in development traffic volumes as a result of sustainable transport initiatives are likely to result in an improved level of forecast junction operation.

10.4.43 The associated level of forecast queue (6 vehicles) and delay (18 seconds) is not excessive and on this basis the impact of the development proposals in this location is considered to be acceptable and accordingly no mitigation is deemed to be necessary.

#### Junction 9: Site Access A - A51 Rugeley Eastern By-Pass/ Site Access/Power Station Road/Amazon Site Access Roundabouts

## Rugeley B Power Station

### Transport Assessment

10.4.44 ARCADY assessments; based on site observations and CAD measurements have been completed for this double roundabout junction to the east of Rugeley and at the northwest of the development site. The junction has been modelled as two separate roundabouts referred to as junctions 9a and 9b with the level of queueing interaction on the Power Station Road arm between the two junctions considered in detail.

10.4.45 The A51 Rugeley Eastern By-Pass/Site Access/Power Station Road four-arm roundabout (A) forms the east section of the junction. The A51 Rugeley Eastern By-Pass (N) arm has a three-lane entry to the roundabout and the A51 Rugeley Eastern By-Pass (S) arm has a two-lane entry. The site access and Power Station Road have single-lane entries; also, all arms of the junction have single-lane exits.

10.4.46 The results of the model assessment scenarios; for the east roundabout are summarised in **Table 10.9**.

**Table 10.9: Junction 9a – Site Access A – A51 Rugeley Eastern By-Pass/Site Access/Power Station Road, Four-Arm Roundabout (A)**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A51 Rugeley Eastern By-Pass (N)	0.42	2.92	1	0.34	2.61	1
Site Access	0.00	0.00	0	0.02	3.53	0
A51 Rugeley Eastern By-Pass (S)	0.35	2.51	1	0.57	3.78	1
Power Station Road	0.12	2.22	0	0.20	2.67	0
2029 Base + Committed Development						
A51 Rugeley Eastern By-Pass (N)	0.50	3.42	1	0.40	2.92	1
Site Access	0.00	0.00	0	0.03	3.86	0
A51 Rugeley Eastern By-Pass (S)	0.41	2.81	1	0.67	4.87	2
Power Station Road	0.14	2.38	0	0.25	2.99	0
2029 Base + Committed Development + Development						
A51 Rugeley Eastern By-Pass (N)	0.82	9.99	4	0.60	4.59	2
Site Access	0.61	10.02	2	0.72	13.04	3
A51 Rugeley Eastern By-Pass (S)	0.59	4.63	1	0.87	14.70	6
Power Station Road	0.21	3.33	0	0.37	4.86	1

10.4.47 **Table 10.9** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered with the exception of the 2029 PM Base + Committed Development + Development scenario where an RFC value of 0.87 is forecast.

10.4.48 The required mitigation to reduce this RFC value to 0.85 will likely comprise very minor amendments to the kerblines on the A51 Rugeley Eastern Bypass (S) to improve the geometry of this arm and will comprise a mathematical modelling fix rather than a tangible improvement to road users.

10.4.49 The development traffic calculations are considered to be robust as they do not account for any reduction in development traffic as a result of the proposed FTP. Reductions in development traffic volumes as a result of sustainable transport initiatives are likely to result in an improved level of forecast junction operation.

10.4.50 The associated level of forecast queue (6 vehicles) and delay (15 seconds) is not excessive and on this basis the impact of the development proposals in this location is considered to be acceptable and accordingly no mitigation is deemed to be necessary.

10.4.51 The Power Station Road/Amazon Site Access, three-arm roundabout (B) forms the west section of the double roundabout junction. The Power Station Road (W) and Amazon Site Access arms provide single-lane entries to the roundabout and the Power Station Road (N) arm has a two-lane entry. All arms of the junction have single-lane exits.

10.4.52 The results of the model assessment scenarios; for the west roundabout are summarised in **Table 10.10**.

**Table 10.10: Junction 9b – Site Access A – Power Station Road/Amazon Site Access, Three-Arm Roundabout (B)**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
Power Station Road (E)	0.10	1.63	0	0.21	1.90	0
Amazon Site Access	0.08	2.29	0	0.18	2.63	0
Power Station Road (N)	0.09	2.05	0	0.18	2.21	0
2029 Base + Committed Development						
Power Station Road (E)	0.12	1.66	0	0.25	2.01	0
Amazon Site Access	0.09	2.35	0	0.21	2.78	0
Power Station Road (N)	0.11	2.10	0	0.21	2.32	0
2029 Base + Committed Development + Development						
Power Station Road (E)	0.13	1.68	0	0.26	2.05	0
Amazon Site Access	0.10	2.38	0	0.22	2.83	0

Power Station Road (N)	0.12	2.12	0	0.22	2.38	0
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10.4.53 **Table 10.10** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

#### **Junction 10: B5013 Colton Road/Blithbury Road/Rugeley Trent Valley Station Access**

10.4.54 PICADY assessments; based on site observations and CAD measurements, have been completed for this staggered crossroads junction to the south of Rugeley Trent Valley Station and to the northwest of the development site. The Rugeley Trent Valley Station access forms a south priority junction; and Blithbury Road forms a north priority junction, within the staggered crossroads layout.

10.4.55 The results of the model assessment scenarios are summarised in **Table 10.11**.

**Table 10.11: Junction 10 – B5013 Colton Road/Blithbury Road/Rugeley Trent Valley Station Access, Staggered Crossroads**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
Blithbury Road (LT)	0.17	7.11	0	0.19	7.36	0
Blithbury Road (RT)	0.02	13.66	0	0.01	12.77	0
B5013 Colton Road (SB)	0.01	6.76	0	0.01	4.37	0
Rugeley Trent Valley Station	0.12	12.04	0	0.11	11.38	0
B5013 Colton Road (NB)	0.36	7.37	1	0.20	6.58	0
2029 Base + Committed Development						
Blithbury Road (LT)	0.20	7.58	0	0.22	7.91	0
Blithbury Road (RT)	0.02	15.26	0	0.01	13.85	0
B5013 Colton Road (SB)	0.01	6.34	0	0.01	4.20	0
Rugeley Trent Valley Station	0.15	13.56	0	0.13	12.63	0
B5013 Colton Road (NB)	0.46	8.36	1	0.24	6.71	1
2029 Base + Committed Development + Development						
Blithbury Road (LT)	0.20	7.78	0	0.22	8.08	0
Blithbury Road (RT)	0.02	16.22	0	0.01	14.51	0

## Rugeley B Power Station

### Transport Assessment

B5013 Colton Road (SB)	0.01	6.08	0	0.01	4.15	0
Rugeley Trent Valley Station	0.16	14.37	0	0.14	13.29	0
B5013 Colton Road (NB)	0.48	8.54	2	0.25	6.59	1

10.4.56 **Table 10.11** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

### Junction 11: A51 Rugeley Eastern By-Pass/RWE Access

10.4.57 ARCADY assessments; using ARCADY geometric inputs obtained from the RWE consent have been completed for this three-arm roundabout junction to the southeast of Rugeley and to the south of the development site. Each arm has a single-lane entry and a single-lane exit from the main roundabout.

10.4.58 The results of the model assessment scenarios are summarised in **Table 10.12**.

**Table 10.12: Junction 11 – A51 Rugeley Eastern By-Pass/RWE Access Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
RWE Site Access	0.00	0.00	0	0.00	0.00	0
A51 Rugeley Eastern By-Pass (SE)	0.50	4.59	1	0.78	10.29	4
A51 Rugeley Eastern By-Pass (NW)	0.51	3.70	1	0.43	3.18	1
2029 Base + Committed Development						
RWE Site Access	0.00	0.00	0	0.00	0.00	0
A51 Rugeley Eastern By-Pass (SE)	0.58	5.59	1	0.90	22.13	8
A51 Rugeley Eastern By-Pass (NW)	0.59	4.51	1	0.50	3.60	1
2029 Base + Committed Development + Development						
RWE Site Access	0.00	0.00	0	0.00	0.00	0
A51 Rugeley Eastern By-Pass (SE)	0.71	7.91	2	0.97	46.01	19
A51 Rugeley Eastern By-Pass (NW)	0.65	5.29	2	0.58	4.31	1

10.4.59 **Table 10.12** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered with the exception of the 2029 PM Base + Committed Development and 2029 PM Base + Committed Development + Development scenarios where RFC values of 0.90 and 0.97 respectively are forecast on the A51 Rugeley Eastern Bypass (SE) arm. A mitigation scheme has been designed for this junction in order to achieve nil-detriment and is summarised in **Chapter 12**.

### Junction 12: Site Access B - A513 Rugeley Road/Site Access

10.4.60 ARCADY assessments; based on site observations, CAD measurements and ARCADY geometric inputs obtained from approved application 17/00453/FULM have been completed for this three-arm site access roundabout junction at the southeast of the development site. The site access arm has a single-lane entry and a single-lane exit from the main roundabout with both A513 arms having two lane entries and exits.

10.4.61 The results of the model assessment scenarios; for the west roundabout are summarised in **Table 10.13**.

**Table 10.13: Junction 12 – Site Access B – A513 Rugeley Road/Site Access Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2018 Base						
A513 Rugeley Road (W)	0.58	6.55	1	0.49	5.95	1
Site Access	0.00	0.00	0	0.00	0.00	0
A513 Rugeley Road (E)	0.45	5.73	1	0.60	6.95	2
2029 Base + Committed Development						
A513 Rugeley Road (W)	0.69	8.59	2	0.59	6.56	2
Site Access	0.00	0.00	0	0.00	0.00	0
A513 Rugeley Road (E)	0.54	6.53	1	0.68	8.43	2
2029 Base + Committed Development + Development						
A513 Rugeley Road (W)	0.81	13.42	3	0.84	18.17	5
Site Access	0.70	18.05	3	0.36	7.54	1
A513 Rugeley Road (E)	0.59	8.15	2	0.72	9.84	3

10.4.62 **Table 10.11** demonstrates that this junction is forecast to operate within acceptable capacity parameters in all scenarios considered and accordingly no mitigation is required as a result of the development proposals.

## 10.5 Summary

10.5.1 In summary the majority of junctions considered in this analysis are forecast to operate within acceptable capacity parameters in all scenarios considered. The exceptions to this are as follows:

- Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane roundabout;
- A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road roundabout;
- A51/A513 Rugeley Road/A513 Armitage Road roundabout; and,
- A51 Rugeley Eastern By-Pass/RWE Access roundabout.



10.5.2 Mitigation schemes for each of the above junctions have been design and presented in detail in **Chapter 12**.

# 11 Traffic Impacts on the Strategic Road Network

## 11.1 Introduction

11.1.1 This chapter has been prepared in order to consider the re-development proposals at Rugeley Power Station in relation to potential traffic impacts on the Strategic Highway Network (SRN) following initial communication with Highways England (HE). This chapter therefore:

- Describes the development proposals and their context in relationship to the SRN;
- Identifies the sections of the SRN that may be impacted upon by the proposals;
- Summarises the trip generation exercise;
- Summarises the traffic distribution exercise and how this has been extended to consider the SRN;
- Summarises the level of traffic forecast to route via the SRN; and,
- Considers the level of development traffic forecast to route via the SRN in the context of existing SRN mainline traffic flows.

11.1.2 The nearest extents of the study area are summarised in **Figure 11.1** to the SRN are as follows:

- A51 (N) – provides a route towards the M6 via Stafford;
- A460 – provides a route towards the A5 and M6 Toll via Cannock;
- A513 – provides a route towards the A38 via Armitage and Alrewas; and,
- A51 (S) – provides a route to the A38 via Lichfield.

## 11.2 Relationship with the SRN

11.2.1 The SRN assets closest to the development proposals are as follows:

- M6 – circa 14 miles from the site, accessed at junctions 13 and 14;
- A5 – circa 9 miles from the site, accessed at A460/A5/Walsall Road roundabout; and,
- A38 – circa 9 miles from the site, accessed at the A38/London Road roundabout or the A38/A513 grade separated roundabout.

11.2.2 Typical journey times (derived using google route finder) between the site and the SRN vary between 20 to 30 minutes. Given the distances involved, traffic generated by the development proposals is likely to reach the SRN in a staggered fashion as it has to traverse a number of non-SRN junctions en-route.

## 11.3 Trip Distribution

11.3.1 A further iteration of the traffic distribution summarised in **Chapter 9** was carried out to consider potential impacts on the SRN.

11.3.2 The calculations are summarised in **Appendix L** with the following assumptions employed to extend the approved study area to the SRN:

- Development traffic assigned to distribution zones A, B, C and D (as defined in the Technical Note, dated 14 February 2019) was identified for more detailed consideration in relation to the SRN;
- Those trips assigned to each zone were reviewed in relation to either the MSOA, ward, or district boundary that traffic is calculated to travel to/from and the likelihood of trips impacting on the SRN. This included trips that could use the SRN or those trips that would route through an SRN junction en-route to a more local destination; and,
- Those trips that could impact on the SRN were then aggregated to give a total proportion of residential and employment trips that could impact on the SRN for each distribution cordon zone.

11.3.3 The resultant proportion of residential and employment trips that could impact on the SRN is summarised in **Table 11.1**.

**Table 11.1 Proportion of Trips That Could Impact on the SRN**

Zone	Residential Trips	Employment Trips
A – A513	6.5%	5.3%
B – A51 (east)	8.8%	3.7%
C – A460	12.7%	6.1%
D – A51 (west)	2.8%	3.6%

## 11.4 Impacts on the SRN

11.4.1 The calculated development traffic volumes (2-way) assigned to each cordon zone and forecast to utilise the SRN are summarised in **Tables 11.2** and **11.3**.

**Table 11.2 Summary of Development Traffic on the SRN (AM Peak)**

Zone	Residential Trips	Employment Trips	Total Trips
A – A513	71	36	108
B – A51 (east)	97	25	123
C – A460	141	42	182
D – A51 (west)	31	25	56

**Table 11.3 Summary of Development Traffic on the SRN (PM Peak)**

Zone	Residential Trips	Employment Trips	Total Trips
A – A513	73	25	99
B – A51 (east)	100	18	118

C – A460	145	29	174
D – A51 (west)	32	17	49

## 11.5 SRN Traffic Flow Context

11.5.1 In order to consider the development traffic volumes, forecast to route via the SRN in context, traffic data for the SRN has been obtained from the HE Webtris Database. A summary of this data is provided in **Appendix L**.

11.5.2 **Tables 11.4 to 11.6** summarise the average weekday peak hour flow on each link during this time period as well as the maximum and minimum flow recorded by direction in order to understand the level of daily variation. This summary excludes data recorded on the 7<sup>th</sup> and 28<sup>th</sup> May as these are bank holidays.

**Table 11.4 Summary of Existing SRN traffic flows (M6)**

Hour	NB Average	NB Max	NB Min	NB Variation	SB Average	SB Max	SB Min	SB Variation	Variation (2-way)
0800-0900	3688	3978	3226	752	3286	3779	1870	1909	2661
1700-1800	3637	4319	3024	1295	3707	4231	2385	1846	3141

**Table 11.5 Summary of Existing SRN traffic flows (A5)**

Hour	NB Average	NB Max	NB Min	NB Variation	SB Average	SB Max	SB Min	SB Variation	Variation (2-way)
0800-0900	853	926	714	212	902	979	713	266	478
1700-1800	957	1064	869	195	869	1033	718	315	510

**Table 11.6 Summary of Existing SRN traffic flows (A38)**

Hour	NB Average	NB Max	NB Min	NB Variation	SB Average	SB Max	SB Min	SB Variation	Variation (2-way)
0800-0900	2702	2908	2393	515	2544	2827	2259	568	1083
1700-1800	2770	2964	2500	464	2734	2970	2097	873	1337

11.5.3 The proportional impact of the development proposals on the average SRN link flow is summarised in **Table 11.7** and demonstrates that impacts are typically low (varying between 1 and 10%).

Table 11.7 Summary of Proportional Traffic Impacts on the SRN

SRN	Distribution Zone	AM Peak	PM Peak
A38	A/B – A513/A51 (east)	4%	4%
A5	C – A460	10%	10%
M6	D – A51 (west)	1%	1%

11.5.4 It is also evident that the level of development traffic that could potentially use each SRN link is within the recorded daily variation as follows:

- On the M6 the level of daily variation is 50 to 70 times greater than the forecast development traffic;
- On the A5 the level of daily variation is 2 to 3 times greater than the forecast development traffic; and,
- On the A38 the level of daily variation is 5 to 6 times greater than the forecast development traffic.

11.5.5 It is also worth noting that recorded traffic on the M6, A5 and A38 links has been taken from single locations for purposes of comparison with development traffic flows. The proportional impacts of development traffic calculated are therefore extremely robust as development traffic will route in multiple directions on the SRN rather than all be assigned to one route as considered to date.

11.5.6 The impact of development traffic on the SRN is therefore forecast to be low and no further assessment is considered to be warranted.

## 11.6 Summary

11.6.1 In summary the development proposals are unlikely to have a material impact on the operation of the SRN for the following reasons:

- Development traffic has four major routes from the site to reach the SRN, M6 (via the A51), A5 (via the A460) and A38 (via the A51 and A513), thereby presenting motorists with a number of routes to reach the SRN;
- Recorded traffic on the M6, A5 and A38 links has been taken from single locations for purposes of comparison with development traffic flows. The proportional impacts of development traffic calculated are therefore extremely robust as development traffic will route in multiple directions on the SRN rather than all be assigned to one route;
- Despite this traffic volumes as a proportion of average peak hour flows are low (less than 10%);
- Development traffic volumes are comfortably within the recorded level of daily variation for each SRN link considered. The level of development traffic calculated to utilise the SRN on each link is therefore within the range of typical traffic flows recorded on each link;
- The journey distance and length between the site and the SRN will result in traffic being staggered across the AM and PM peak hours thereby limiting impacts. On the worst case affected route (A5) this equates to 3 two-way trips per minute;

- No account has been taken for the net traffic impacts of the proposals relative to historic traffic associated with the operational phase of the power station. Nor has any account of traffic associated with the decommissioning and subsequent demolition of the power station been taken into account in this analysis; and,
- No account of sustainable transport measures nor travel planning has been taken in the trip generation calculations, this would reduce calculated traffic volumes.

11.6.2 In conclusion it is not considered that the proposals will have a material impact on the operation of the SRN and accordingly no further assessment is deemed necessary.

## 12 Highway Mitigation Strategy

### 12.1 Introduction

12.0.1 This chapter summarises the mitigation proposals at the following off-site junction locations:

- Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane roundabout;
- A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road roundabout;
- A51/A513 Rugeley Road/A513 Armitage Road roundabout; and,
- A51 Rugeley Eastern By-Pass/RWE Access roundabout.

### 12.1 Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane roundabout

12.1.1 The capacity analysis summarised in **Chapter 10** demonstrates that this junction is forecast to experience capacity issues on the A460 Sandy Lane and B5013 Elmore Lane arms. A mitigation scheme has been designed for this junction, as illustrated on **Drawing J32-3955-PS-109**, included in **Appendix M**.

12.1.2 The mitigation proposals involve rearranging the junction form to provide an elongated roundabout and increase the circulatory carriageway width to improve operation through the junction. Furthermore, to specifically address the forecast capacity issues on Elmore Lane this approach has been realigned with removal of the priority left-turn lane from Western Springs Road to Elmore Lane. This allows the Elmore Lane approach to be widened with an extended flare to improve traffic flows on this approach.

12.1.3 The proposed mitigation scheme has been modelled using Junctions 9 (ARCADY module) and the results of the model assessment scenarios are summarised in **Table 12.1** with detailed outputs included in **Appendix N**.

**Table 12.1 Junction 4 – Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane, Three-Arm Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2029 Base + Committed Development + Development (Mitigation Scenario)						
Horse Fair	0.71	7.90	2	0.76	10.91	3
A460 Sandy Lane	0.75	10.06	3	0.76	10.79	3
A460 Western Springs Road	0.80	14.18	4	0.88	22.66	7
B5013 Elmore Lane	0.65	12.00	2	0.96	63.68	13



12.1.4 **Table 12.1** demonstrates that the mitigated junction is forecast to operate within theoretical capacity in the 2029 Base + Committed Development + Development scenario with maximum RFC values of 0.80 and 0.96 modelled in the AM and PM peaks respectively. Although this is above practical capacity (0.85) which ordinarily represents a junction operating to a satisfactory level, the mitigation proposals offer a significant improvement in operation when compared to the existing junction arrangement the mitigation scheme is forecast to result in the junction operation being improved when considered against the existing junction operation without the addition of development traffic; the residual queues of 7 and 13 vehicles during the PM peak hour are not considered 'severe'. Accordingly, the proposed mitigation scheme is considered to accommodate development traffic with a nil-detriment impact.

## 12.2 A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road roundabout

12.2.1 The capacity analysis summarised in **Chapter 10** demonstrates that this junction is forecast to experience capacity issues on the Wheelhouse Road arm. A mitigation scheme has been designed for this junction, as illustrated on **Drawing J32-3955-PS-107**, included in **Appendix M**.

12.2.2 The mitigation proposals involve widening of the Wheelhouse Road entry to the roundabout by realigning the central splitter island on the Wheelhouse Road approach to the junction. This in turn results in a slight increase in flare length on the approach, which will provide a longer distance over which vehicles can queue across two lanes.

12.2.3 The proposed mitigation scheme has been modelled using Junctions 9 (ARCADY module) and the results of the model assessment scenarios are summarised in **Table 12.2** with detailed outputs included in **Appendix N**.

**Table 12.2 Junction 5 - A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2029 Base + Committed Development + Development (Mitigation Scheme)						
A51 Rugeley Eastern By-Pass (N)	0.65	5.27	2	0.69	6.77	2
A51 (S)	0.68	6.23	2	0.76	8.07	3
Wheelhouse Road	0.14	4.37	0	0.83	23.40	5

12.2.4 **Table 12.2** demonstrates that the mitigated junction is forecast to operate within acceptable capacity parameters in the 2029 Base + Committed Development + Development scenario with maximum RFC values of 0.68 and 0.83 modelled in the AM and PM peaks respectively. Accordingly, the proposed mitigation scheme is considered to accommodate development traffic with a nil-detriment impact.

## 12.3 A51/A513 Rugeley Road/A513 Armitage Road roundabout

- 12.3.1 The capacity analysis summarised in **Chapter 10** demonstrates that this junction is forecast to experience capacity issues on both A51 arms and the A513 Rugeley Road arm. A mitigation scheme has been designed for this junction, as illustrated on **Drawing J32-3955-PS-108**, included in **Appendix M**.
- 12.3.2 The mitigation proposals involve increasing the effective width of the carriageway across the bridge north of the roundabout to include a two-lane approach to the roundabout from the north. Likewise, the southern exit to the A51 south is proposed to be widened to permit ahead movements from both lanes from north to south. Additionally, the A51 northbound approach is also proposed to be widened to two-lanes in order to better distribute traffic on approach and relieve queueing. The proposals also include widening of the entry and extending the flare to allow two-vehicles to queue side by side on the A513 Rugeley Road approach.
- 12.3.3 In addition, the sustainable transport strategy, as summarised in **Chapter 6**, proposes new toucan crossings on the A51(N) and A513 Armitage Road arms of the roundabout. These have been included in the capacity modelling.
- 12.3.4 The proposed mitigation scheme has been modelled using Junctions 9 (ARCADY module) and the results of the model assessment scenarios are summarised in **Table 12.3** with detailed outputs included in **Appendix N**.

**Table 12.3: Junction 6 – A51 Rugeley Eastern By-Pass/A513 Rugeley Road/A513 Armitage Road Roundabout**

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2029 Base + Committed Development + Development (Mitigation Scenario)						
A51 (N)	0.63	4.92	2	0.85	12.65	5
A513 Rugeley Road	0.91	28.02	9	0.98	57.57	17
A51 (S)	0.61	5.80	2	0.87	16.98	6
Armitage Road	0.51	7.85	1	0.74	17.44	3

- 12.3.5 **Table 12.3** demonstrates that the mitigated junction is forecast to operate within acceptable capacity parameters in the 2029 Base + Committed Development + Development scenario with maximum RFC values of 0.91 and 0.98 modelled in the AM and PM peaks respectively.

## 12.4 A51 Rugeley Eastern By-Pass/RWE Access roundabout

- 12.4.1 The capacity analysis summarised in **Chapter 10** demonstrates that this junction is forecast to experience capacity issues on the A51 Rugeley Eastern Bypass (SE) arm. A mitigation scheme has been designed for this junction, as illustrated on **Drawing J32-3955-PS-106**, included in **Appendix M**.

- 12.4.2 The mitigation proposals involve widening of the A51 eastern approach entry to the roundabout by realigning the central splitter island on the eastern approach to the junction. This in turn results in a slight increase in flare length on the approach, which will provide a longer distance over which vehicles can queue across two lanes.
- 12.4.3 The proposed mitigation scheme has been modelled using Junctions 9 (ARCADY module) and the results of the model assessment scenarios are summarised in **Table 12.4** with detailed outputs included in **Appendix N**.

Table 12.4 Junction 11 – A51 Rugeley Eastern By-Pass/RWE Access Roundabout

Arm	AM Peak (07:30-08:30)			PM Peak (17:00-18:00)		
	RFC	Delay (s)	Queue (Veh)	RFC	Delay (s)	Queue (Veh)
2029 Base + Committed Development + Development (Mitigation Scheme)						
RWE Site Access	0.00	0.00	0	0.00	0.00	0
A51 Rugeley Eastern By-Pass (SE)	0.65	5.97	2	0.89	17.86	7
A51 Rugeley Eastern By-Pass (NW)	0.65	5.29	2	0.58	4.31	1

12.4.4 **Table 12.4** demonstrates that the mitigated junction is forecast to operate within acceptable capacity parameters in the 2029 Base + Committed Development + Development scenario with maximum RFC values of 0.65 and 0.89 modelled in the AM and PM peaks respectively. Accordingly, the proposed mitigation scheme is considered to accommodate development traffic with a nil-detriment impact.

## 12.5 Plan, Monitor, Manage, Approach

12.5.1 The junction capacity analysis and subsequent derivation of the mitigation strategy have been based upon a robust assessment of the potential traffic generation for the development proposals. This calculation is considered to be robust as no account has been taken of the potential for reduction in development traffic as a result of the FTP.

12.5.2 In addition, the application seeks an open consent and accordingly the most robust case in terms of trip generation for the employment land uses has been considered using the approved trip rates for B1a land use (offices). Should a range of employment use, for example B2 and/or B8, ultimately be delivered the level of traffic generated by the development is likely to be lower than that considered in this TA.

12.5.3 Accordingly, the junction mitigation measures derived in relation to the robust case may either not be required or may not need to be of the same scale in the fullness time. A Plan, Monitor, Manage (PMM) approach is therefore proposed to provide flexibility, the principles behind this assessment are as follows:

- The overarching mitigation scheme for the development proposals has been identified as summarised on drawings in **Appendix M**;
- As reserved matters applications come forward for the various development parcels, if they propose a lesser quantum of development or less intensive form of development in terms of trip generation the overarching mitigation scheme is revisited in light of these amendments;
- The FTP also provides opportunity to monitor the traffic generation of the various components of the development. This provides opportunity to revisit the approved trip rates used in the derivation of the overarching mitigation scheme; and,

- The overarching mitigation scheme is then revised in line with the revised trip generation calculations.

12.5.4 In the event that traffic generated by the development does not reduce from the levels forecast and assessed in the preparation of the overarching mitigation scheme in this TA, the overarching mitigation scheme will be implemented.

## 13 Summary and Conclusions

### 13.1 Summary

- 13.1.1 This TA has been prepared by mode transport planning on behalf of Rugeley Power Limited to accompany an outline planning application for the redevelopment of Rugeley B Power Station for approximately: 2,300 residential dwellings; 5 hectares (ha) of employment land, the associated access, landscaping, green infrastructure, sustainable drainage systems and community facilities including education and supporting amenity space. The proposals also involve some remediation and site re-profiling and the retention of two existing substations.
- 13.1.2 Primary vehicular access to the proposed development in the west will be achieved from the A51 utilising the existing site access. In the east primary vehicular access will be provided from the A513 utilising the proposed roundabout consented under planning permission 17/00453/FULM.
- 13.1.3 The development proposals have been subject to scoping discussions with SCC, HE, CCDC and LDC during which the approach and assumptions employed in this analysis have been agreed.
- 13.1.4 An analysis of the existing transport infrastructure within the vicinity of the site has demonstrated that the site is highly accessible by car via the local highway network with access via the A51 and A513, with subsequent links to the wider strategic road network.
- 13.1.5 The site is accessible by sustainable modes of travel; existing pedestrian infrastructure and advisable cycle routes are located within the vicinity of the site and provide connections with local facilities/amenities and public transport access points within the local area. A sustainable access strategy has been proposed with the aim of linking the site with existing infrastructure and improving access to Rugeley Town Centre and both Rugeley railway stations.
- 13.1.6 Analysis of the accident records for the local highway network surrounding the development site has concluded that there are no historic or existing safety concerns that require mitigation, and therefore, no highway safety issues that might be exacerbated by the development proposals.
- 13.1.7 Traffic survey data has been collected to inform the analysis during November 2018. The survey extents and timing of the surveys was agreed with SCC. The 2018 traffic survey data has been growthed to a forecast year (2029) in line with the end of the LDC plan period using factors calculated using the TEMPRO database. A number of committed developments were also accounted for in the derivation of the forecast baseline as agreed with SCC.
- 13.1.8 The volume of operational traffic forecast to be generated by the development proposals has been calculated using trip rates derived using the TRICS database. The methodology has been agreed with SCC as part of pre-application discussions. The distribution of development traffic has been carried out using 2011 census data and has been agreed with SCC during scoping discussions.

13.1.9 The operation of the local highway network and proposed site accesses has been considered in a 2029 Baseline + Committed Development + Development Scenario. Both site accesses are forecast to operate at an acceptable level as well as a number of the off-site junctions considered. The following junctions are forecast to require mitigation following the introduction of the development proposals:

- Horse Fair/A460 Sandy Lane/A460 Western Springs Road/B5013 Elmore Lane roundabout;
- A51 Rugeley Eastern By-Pass/A51/Wheelhouse Road roundabout;
- A51/A513 Rugeley Road/A513 Armitage Road roundabout; and,
- A51 Rugeley Eastern By-Pass/RWE Access roundabout.

13.1.10 Mitigation schemes have been derived for each location to achieve at a minimum nil-detriment when compared to the 2029 Baseline + Committed Development scenario.

13.1.11 In addition to junction capacity improvements the proposed mitigation package includes as a range of sustainable transport infrastructure and travel planning initiatives. A summary of the sustainable transport mitigation package is as follows:

- Pedestrian and cycle permeability with defined routes between the Site, Rugeley Town Centre, Rugeley Town Railway Station, Rugeley Trent Valley Railway Station and surrounding residential areas to include formal crossing points on key desire lines;
- Cycle parking to be provided in line with locally adopted standards;
- Network of pedestrian and cycle routes throughout the Site;
- The layout allows for bus penetration to enable easy access to public transport services. It is envisaged that this will be delivered by either diversion of existing bus routes or provision of new bus route to better link the Site with key destinations such as Rugeley Town Centre, Rugeley Town Railway Station, Rugeley Trent Valley Railway Station;
- Provision of electric vehicle charging; and,
- Framework Travel Plan to promote and stimulate modal shift.

## 13.2 Conclusion

13.2.1 On the basis of the information presented in this report it is considered that the proposed development together with the package of mitigation measures being promoted, can be accommodated on the local highways and transportation network. As such there should be no reason why the application cannot be recommended in terms of highways and transportation.

13.2.2 It is therefore concluded that the proposed development will not have a significant adverse impact on the operation or safety of the surrounding highway network and therefore, in accordance with the NPPF and local planning policy, the proposal should be considered acceptable in transport terms as none of the residual impacts can be considered severe.

The Appendices to this study are available at  
[https://planning.agileapplications.co.uk/cannock/application-  
details/24125#documents](https://planning.agileapplications.co.uk/cannock/application-details/24125#documents)

or by going to the Cannock Chase Planning Application Portal at  
<https://planning.agileapplications.co.uk/cannock> and searching for Planning  
Application reference CH/19/201