APPENDIX 1

City of
Stoke-on-Trent

Transport Strategy and Delivery Plan

2022 - 2031

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Glossary

Abbreviation	Definition
BRT	Bus Rapid Transit
DfT	Department for Transport
LTA	Local Transport Authority
LTP	Local Transport Plan
PT	Public Transport
Railway Station	Stoke-on-Trent Railway Station
NuL	Newcastle-under-Lyme
NS	North Staffordshire
SoT	Stoke-on-Trent
SoTCC	Stoke-on-Trent City Council
VLR	Very Light Rail

Executive Summary

Introduction

Decisions made by the city council relating to transport investment and delivery are supported by the current policy document, Local Transport Plan 3 (2011-2026) (LTP3).

There have been some changes to local and national transport priorities since LTP3 was produced in 2011, although the main themes of investing in transport to support the economy, the environment and health, are still relevant.

A review of LTP3 has been undertaken as part of the Transport Strategy and Delivery Plan development work, and updates to legislation and national and local policies and priorities updated as required. This ensures that the LTP3 will continue to provide a robust policy basis.

A new LTP will be produced in the coming years to provide a new, fifteen-year transport policy document, with a greater focus on decarbonisation as the world moves towards net zero targets.

Our emerging Local Plan will set out the strategic priorities for the development of the area, and development management planning policies covering matters such as housing, employment, retail, leisure, transport, infrastructure, and the natural and historic environment. It will allocate sites for housing and employment development.

In the interim, the council requires a document to demonstrate that it has a focused transport strategy and delivery plan. This will assist decision makers at local and national level, clarifying the local transport priorities for our city. It aligns with new legislation and guidance.

The document outlines the current challenges relating to travel within the city; the disparity between life opportunities that is influenced by how people are able to travel; the barrier to economic growth that the current transport infrastructure can create; and the environmental and health opportunities of sustainable travel.

It will provide a strong foundation for the new LTP and remain complementary to the current LTP3.

The overall aim and ambition of city council is to identify a programme of transport improvements over the next ten years which are affordable, deliverable, and which will support economic growth, residents' mobility, and wellbeing, and support the environment. Transport connectivity and sustainability is a core theme of the city's Powering Up agenda.

The programme will require a multiple partner approach, and funding will be required from a variety of sources to develop the programme. Aligning elements of the programme to current national transport priorities will maximise the potential for funding to be available from government to deliver these schemes. But we also include some ambitious schemes which we know will benefit the city and where a strong case can potentially be made for either public or private investment.

The Current Position

The city has developed over the past century from one where housing and employment was focused on six town centres to one that now also includes multiple other residential, employment and local commercial locations. Development has spread beyond the six towns and the corridors that connect them, although these remain a focus. Continuing Investment in the highway network has ensured that the city is generally well connected, physically.

Whilst the long-term impact on travel of Covid-19 is to be seen, data has shown that traffic congestion in the city tends to be localised and often unpredictable, and the road network is particularly vulnerable to incidents on the local Strategic Road Network; the A50, A500 and M6. Access to the national road network however is particularly important to our local economy, with particular requirements from the logistics sector.

Currently the city has fewer electric vehicle owners and charge-points per 1000 residents than the regional and national average. There is only one fully electric vehicle in the taxi fleet.

Bus passenger numbers have continued to fall, with a resultant contraction of the bus network and increases in fares. Whilst exact causes of this have not been established, the growth in car ownership (or the easier access to car lease finance), the reducing bus network, the location of newer developments such as edge-of-town retail and residential sites, long journey times and a poor societal perception of bus travel are all likely to have contributed.

Rail services are limited for travel within the conurbation, but the city is well connected to the national rail network and major cities.

The impact to the public transport industry of Covid-19 remains, with significant government support and reduced services continuing to be provided, as passenger numbers remain significantly below pre-pandemic levels due predominantly to a change of lifestyle including flexible working and on-line shopping. The phased removal of government support is likely to require a re-set of provision in the bus and rail industry.

Walking and cycling increased during the pandemic but have since returned to their previous relatively low levels. There is a good network of traffic free routes along our greenways and canal and river paths, although personal security can be a barrier to their use, and they are often not the most direct route between locations. There are numerous on-street cycle lanes, although road safety concerns are a deterrent for less confident cyclists.

The result of the above narrative is that:

- Travel time delays due to congestion impact on the local economy, adding costs to road user, including transport providers
- Congestion contributes to poor air quality – the city is under a Ministerial Direction to improve air quality at selected locations
- The contribution to improved air quality though uptake low emission vehicles is not as advanced as it could be
- Public transport in the city is not attractive or practical to be a mode of choice

- The benefits of walking and cycling are not maximised due to cultural and practical barriers to cycling for many people – personal safety concerns, lack of comfort, poor facilities

Our Strategy - A Balanced Approach

Our Strategy aligns with local and national priorities, namely:

- **Economy** – removing transport barriers to support growth
- **Environment** – reducing transport pollution to support moving towards a Net Zero Carbon position
- **Levelling Up** – equal access for all
- **Health** – transport improvements to help improve physical health and well being

Road building alone will be unable to address the impacts of the current situation on economic growth, the environment and, crucially, more equitable travel opportunities for all. Nor can it meet all the above priorities.

This strategy and delivery plan, then, focuses on what is termed a balanced approach.

Increasing Road Capacity

Selective improvements to the road network will be required. That may be new roads being built to alleviate congestion elsewhere but is more likely to involve capacity enhancements where they can demonstrate an ability to improve traffic flow and reduce delays. The source of delays is usually at junctions, so creating additional lanes and the use of telematics to improve the ability of traffic signals to respond to traffic demand are two examples of how pinch points can be improved.

More efficient use of road space

However, road building is expensive, and the design and delivery process can be lengthy. Single occupancy car use is not the most efficient use of road space, so investing in schemes that will encourage more use of reducing the need to travel, changing the time of travel, car sharing, using the bus, and walking and cycling, will all play a role in enabling us to make the most of the existing road space.

Whilst the city's road network is relatively physically constrained, where possible the potential to re-allocate road space for buses and cyclists can be considered, if modelling suggests it will not adversely impact on the road capacity.

Reducing the demand for road space is an important element that the strategy identifies. Travelling outside peak times, or not travelling at all and using digital technology to work, shop etc., is an important part of the overall package of using road space efficiently.

Use of other transport networks

The local road network still requires significant investment by the city council in terms of maintenance and repair, so encouraging travel on other networks that incur fewer or no costs to the council is part of the overall aim of the strategy.

The greenway network – consisting mainly of former railway lines – is a low maintenance asset owned by the city council and provides good links for pedestrians and cyclists. Maintaining and improving these 'green lungs' of the city's transport network, to encourage increased use of them, is a good value investment.

Canal and river paths have been upgraded over the past two decades and provide excellent access to major employment destinations and to some of our town centres. More recent upgrades include wayfinding signage, resurfacing way-marking lighting. Whilst the city council continues to utilise grant funding for these routes, through agreements with the Canal and Rivers Trust, the maintenance remains with the CRT, so again this is a good value investment.

The Local Cycling and Walking Infrastructure Plan (LCWIP) is currently nearing completion. It identifies where the actual and potential travel demand routes are and indicates how any gaps in the existing network can be addressed.

The rail network can provide for the movement of large numbers of people, and thus has the potential to take the strain off the national and local road network. Whilst funding for rail infrastructure upgrades and maintenance is provided directly by Network Rail, the city council continues to play an important partnership role, whether that be through working with partners to seek improvements to rail services in and around the city; through bidding for funding to develop business cases for re-opening of rail lines and stations; or through complementary improvements to the areas around the rail stations, providing a more attractive gateway.

Uplifting local public transport

The strategy identifies several ways to encourage the switch of some trips from car to public transport:

- Making buses more practical to use – more frequent; more reliable; operating for longer hours; more cross-city services to reduce the requirement to interchange; simplified fares; better user information
- Making buses more affordable – reduced fares for young people; free travel for older and disabled people; fare capping; discounted tickets for frequent users and groups
- Improving the perception and quality of local public transport – lowering the age of the bus fleet; refurbishing of buses to good levels of comfort; good quality customer care; investing in new modes such as very light rail
- Increasing the use of rail services - improving frequency of the rail services in the city's travel to work area as a first step towards a metro system; station improvements; new stations to better facilitate cross-conurbation travel; integrated ticketing for rail and bus; multi-modal hubs to enable park and ride, rail, and bus etc.

The road towards net zero

Addressing congestion hotspots and improving infrastructure to encourage people to consider other travel options will go some way to mitigating transport's contribution to poor air quality.

However, to make a greater impact, single vehicle emissions also need to be reduced whether that be car, bus, commercial vehicle, or train. The strategy contains proposals that will seek to accelerate the greening of the wider fleet:

- Focus on low and zero emission buses and taxis – high mileage vehicles concentrated in urban areas and often operating in stop-start conditions

- A greener commercial fleet – identifying potential investments in the council's own fleet as part of a wider programme to encourage businesses to reduce their transport emissions
- Encouraging greener private cars – provision of public charging infrastructure; encouraging provision of charging infrastructure in new developments through the planning process
- Comparison of technologies – the strategy considers opportunities other than re-chargeable batteries, including the potential for hydrogen for commercial vehicles and buses

Connecting different modes of transport

Many of us use different modes of transport depending on the trip being made. Often a gap in transport provision for a small part of the door-to-door journey – often the 'last mile' - can make it time-consuming, difficult, or unfeasible. This can lead to end-to-end car journeys on parts of the road network that are under the most strain.

The strategy identifies how providing locations and opportunities for people to switch across different modes is important to address this.

The Delivery Plan

Whilst the delivery of some schemes over the ten years from 2022-2031 will be dependent on funding being available and satisfactory business cases being developed, others will be delivered from funding already awarded and/or as part of the council's ongoing delivery programme.

By aligning our strategy and delivery plan with national priorities we have the best opportunity of obtaining business case and funding approvals. The strategy though is also ambitious in wanting to explore less developed options such as the potential of hydrogen as an alternative to electric battery technology, and the potential for smaller cities to upgrade their public transport network at an affordable cost through the emerging very light rail product. We continue to work with partners who share our interest to develop these emerging technologies.

Phase 1 Delivery Plan 2022-2025

Transport Strategy Delivery Programme – Phase 1: 2022-2025

	Outcome	Core Outcome Improvement
Highways		
Newport Lane Link Road	Improving access to jobs and reducing journey times. To initially provide a direct pedestrian, cycle, and bus link between Etruria Valley and Tunstall/Burslem	Economy
A53/Waterloo Road	Reduce traffic delays by providing additional capacity on major bus corridor	Economy
Leek Road/Station Road	Mitigate impacts of traffic management scheme around rail station through additional capacity	Economy
Ongoing Minor Highway Improvements Programme	Delivery of schemes to provide improved efficiency, safety and to support sustainable transport modes	Economy; Environment; Health
Continuing development of information to road users	Use of Variable Message Signs and other media to better inform road users of traffic conditions	Economy; Environment
Effective management of network	Improved management of utilities and roadworks to reduce impact to road users and the resultant cost to the local economy	Economy; Environment
Active Travel		
Production of LCWIP	To identify gaps in the existing walking and cycling network and propose priority schemes for delivery, to provide incentive for more trips by active travel	Environment
Active Travel Fund 4 Programme (funding to be confirmed)	Delivery of priority schemes to provide improved connectivity for pedestrians and cyclists, contributing also to improved air quality and personal health. Included behaviour change programme	Economy; Environment; Health; Internal Levelling Up
Cycle Training	Delivery of Bikeability training to over 2000 school students per annum	Environment; Health
Road Safety		
Maintaining and evaluating collision	Staffordshire Safer Roads Partnership – identifying collision	Health

data and road safety initiatives and campaigns	sites and causes to inform priority safety schemes; balanced approach of education and information based around data on vulnerable users, with enforcement via review and upgrade (first phase) of safety cameras and speed awareness course provision	
Bus services		
Bus Service Improvement Plan	More frequent and connective bus network with more cross-city services and evening services, principally to improve access to education and employment. Lower and more simplified fares to improve affordability and ease of use. Bus priority predominantly through use of traffic signal technology	Economy; Environment; Internal Levelling Up
Bus pass management	Administration and promotion of concessionary fares and multi-operator ticket schemes	Economy; Environment
Rail services		
Stoke-on-Trent Rail Station improvements	First phase – improving public realm and connecting transport facilities	Economy; Environment
Local station reopening	Improved access to the national rail network and to provide fast cross city connections. Potential new stations at Meir and Trentham. Provide realistic alternative to car travel	Economy; Environment
Better bus and rail integration	Creation of city-region metro-style product, with ticketing integrated with bus and potentially parking, cycle hire etc. to provide a Mobility as a Service product	Economy; Environment
Light Rail	Focus on developing the Very Light Rail concept. Production of business case and funding identification	Economy; Environment
Community Rail Partnership	Funding for investment at local rail stations; volunteer groups to maintain and improve local station; liaison with TOCs	Economy
Reducing carbon emissions		
Clean Air Zone	A CAZ is proposed around the wider city centre area that will charge for entry by older vehicles but excluding private cars	Environment

EV Infrastructure	Delivery programme for public and on-street charge-point network, to facilitate move to EV and improve local air quality. Increased EV infrastructure requirements in new developments through planning process	Environment; Internal Levelling Up
Decarbonising bus, taxi, and council fleets	Identifying suitable funding opportunities to support operators to reduce emissions from their fleets to improve local air quality	Environment
Multi-Modal Hubs	Providing sites with good facilities to enable users to transfer to sustainable travel modes. First phases at Stoke-on-Trent Station and City Centre Bus Station	Economy; Environment
Freight		
Freight stabling	To position the city as a premium location for logistics provision, supporting economic growth	Economy
Digital		
5G Connectivity	To enable the city to be productive whilst reducing the need to travel	Economy; Environment; Internal Levelling Up

Phase 2 Delivery Plan 2026-2031

Transport Improvement Programme – Phase 2 (2026-2031)		
	Outcome	**Core Outcome Improvement**
Highways		
Completion of city centre ring road	To provide reduced journey times; to enable reallocation of road space in city centre to sustainable travel modes	Economy
City East Link Road	To improve access to the city centre, key employment and residential areas and better linkages to the main routes to the centres and the strategic road network whilst providing bus passenger and active travel benefits	Economy, Health, Internal Levelling Up
Ongoing Minor Highway Improvements Programme	Delivery of schemes to provide improved efficiency, safety and to support sustainable transport modes	Economy; Environment; Health
Continuing development of information to road users	Use of Variable Message Signs and other media to better inform road users of traffic conditions	Economy; Environment
Effective management of network	Improved management of utilities and roadworks to reduce impact to road users and the resultant cost to the local economy	Economy; Environment
A50/A500 Sideway Junction; A50 corridor	Capacity enhancements and route management signage to improve traffic flow; potential average speed cameras on A50 to assist traffic flow and air quality	Economy; Environment
M6 Junction 15	Capacity and safety improvements to tackle congestion and collision incidences	Economy; Environment
Active Travel		
Active Travel Fund	Based on LCWIP - delivery of priority schemes to provide improved connectivity for pedestrians and cyclists, contributing also to	Economy; Environment; Health; Internal Levelling Up

	improved air quality and personal health	
Behaviour Change Programme	Continued engagement with businesses, residents' groups, and schools to promote safe walking and cycling	
Cycle Training	Delivery of Bikeability training to over 2000 school students per annum	Environment; Health
Road Safety		
Maintaining and evaluating collision data and road safety initiatives and campaigns	Staffordshire Safer Roads Partnership – identifying collision sites and causes to inform priority safety schemes; balanced approach of education and information based around data on vulnerable users, with enforcement via review and upgrade (first phase) of safety cameras and speed awareness course provision	Health
Bus services		
Bus Service Improvement Plan	Stabilisation of the network post-BSIP Funding. Identifying further opportunities for bus priority measures, ticketing improvements, fleet upgrades. Focus in this phase on move to net zero fleet	Economy; Environment; Internal Levelling Up
Bus pass management	Administration and promotion of concessionary fares and multi-operator ticket schemes, ensuring technological advances are captured	Economy; Environment
Rail services		
Stoke-on-Trent Rail Station improvements	Second phase – development of station space for retail, workspace etc.; ensure station is HS2 ready and adapted for VLR and additional rail services	Economy; Environment
Local station reopening	Improved access to the national rail network and to provide fast cross city connections. Potential new stations on a re-opened Stoke to Leek line. Provide realistic alternative to car travel	Economy; Environment
Improved service frequency	To improve local connectivity with minimum 2 tph at all local stations	Economy; Environment

Light Rail	Further phase – move from business case to securing funding and delivering first VLR line	Economy; Environment
Maximise access to HS2 network	Minimum of 1 tph on HS2 timetable to serve Stoke (Manchester – London). Improved journey time and frequency of connecting service to Crewe HS2 Hub	Economy
Community Rail Partnership	Funding for investment at local rail stations; volunteer groups to maintain and improve local station; liaison with TOCs	Economy
Reducing carbon emissions		
Clean Air Zone	Planned removal of CAZ once emission levels have reduced to meet required standards	Environment
EV Infrastructure	Continue to seek funding to develop infrastructure in line with latest technology	Environment; Internal Levelling Up
Decarbonising bus, taxi, and council fleets	Identifying suitable funding opportunities to support operators to reduce emissions from their fleets to improve local air quality, moving towards 2050 net zero target	Environment
Multi-Modal Hubs	Subject to funding and business cases, developing second phase of sites with multi-mode facilities e.g., P&R, Bus-Rail-VLR interchange	Economy; Environment
Freight		
Road Freight provision	Continue to work with logistics sector to ensure Stoke-on-Trent is an attractive location to be based. Work with National Highways and Midlands Connect to identify Strategic Road Network freight stabling/fuelling opportunities	Economy
Digital		
5G Connectivity +	To enable the city to be productive whilst reducing the need to travel, continue to be at the forefront of technological advances in digital connectivity	Economy; Environment; Internal Levelling Up

In conclusion

Significant funding has already been secured through the Transforming Cities Fund and the Bus Service Improvement Plan. Between them, these programmes will provide:

- A high-quality city gateway at Stoke-on-Trent Railway Station
- An attractive route between the rail station and city centre
- Bus priority at pinch point locations
- More bus services
- Lower and simpler fares
- Improved bus service information
- Improved walking and cycling links to major employment sites

Government is also allocating significant funding to electric vehicle charging infrastructure and active travel, and potential schemes will be identified. Successful funding bids to date have enabled the delivery of the first rapid charge-points in the city, with the potential for a second phase of sixty additional charge-points.

The focus, however, will equally be on developing innovative solutions to provide a step-change in how people travel around the city. Indicative business cases for three specific initiatives have been developed

The Very Light Rail (VLR) proposal has the potential to change the image of public transport in the city, whilst reducing travel time and improving air quality. A strong public transport offer has a correlation with economic growth.

A number of hubs are also proposed, enabling easy interchange between modes. Some of these may be a more traditional park and ride offer, connecting with the rail, bus and VLR network, but many will also connect the different public transport and active travel modes.

Whilst it is acknowledged that there will be a growth in the use of electric vehicles and the need for infrastructure, we recognise the global impacts of battery production and the limitations it has in some transport sectors. We believe that there are alternative technologies such as hydrogen that can green commercial fleets, particularly in the bus sector.

This strategy is intended to provide a clear focus to the council's transport investment priorities in the next ten years. It is critical that the council continues to develop and deliver this programme to ensure that the progress made to date is maintained and to ensure that all stakeholders, and particularly city residents and businesses, have clarity on what we are trying to achieve.

1 Introduction

1.1 Background

As a Local Transport Authority (LTA) Stoke-on-Trent City Council (SoTCC) has responsibility for the maintenance and operation of its highway network and has other transport duties and functions. Each LTA is required to have a transport strategy in place that identifies how they will ensure that people and goods are able to move around the authority area, in line with local, regional, and national objectives and policies.

Stoke-on-Trent's Local Transport Plan 3 (2011-2026) is the current transport strategy. It outlines how the authority will develop and deliver transport proposals in line with three overarching objectives relating to the economy, the environment and health.

1.2 Purpose

This Transport Strategy and Delivery Plan document provides a review of progress towards delivering the LTP3 proposals and identifies evolving transport priorities, opportunities and challenges which have emerged in the years since LTP 3 was developed.

Using this refreshed context, the document is intended to be a ten-year strategy document to inform delivery priorities through to 2031. This document also provides an up-to-date foundation for current challenges and priorities to facilitate the drafting of LTP4, in 2023-24, as required by the government's Department for Transport (DfT). Whilst new guidance is emerging, it is known that LTP 4 will require LTAs to provide an assessment of carbon lifecycle emissions and reductions, as part of commitment for decarbonising the transport network.

In addition, it will also inform the emerging Local Plan. The proposals for developing specific transport hubs or corridors can help in identifying complementary sites for development, and safeguarding sites where applicable. Equally, the Local Plan identifies where development is likely to be focussed and there is a need to ensure that any transport strategy supports these proposals.

The overall aim and ambition of the City Council is to deliver a better-connected city with transport options that currently do not exist, delivered within a ten-year period. The key focus of the strategy will be to improve the public transport offer, including the opportunities for introduction of light rail; better integration of different modes of travel, through the development of a multi-modal hub network in the city; and developing a net-zero emission pathway that will have a focus on major contributors to transport based pollution and includes electric and hydrogen fleet opportunities in the city.

1.3 Spatial themes

Stoke-on-Trent is conveniently located in the West Midlands region, approximately halfway between Birmingham and Manchester with good road and rail links to both

cities and to London, as well as to Scotland and the south of England (Figure 1.1). East-west connectivity is slightly more constrained, but the A50 and rail services connect the city with the transport hubs of Crewe, Derby, and Nottingham. Stoke-on-Trent's accessibility is a significant factor in the growth of the logistics and distribution sector in the city, as well as being a convenient location for national headquarters, and will play a key role in helping realise the levelling up of the region and the city.

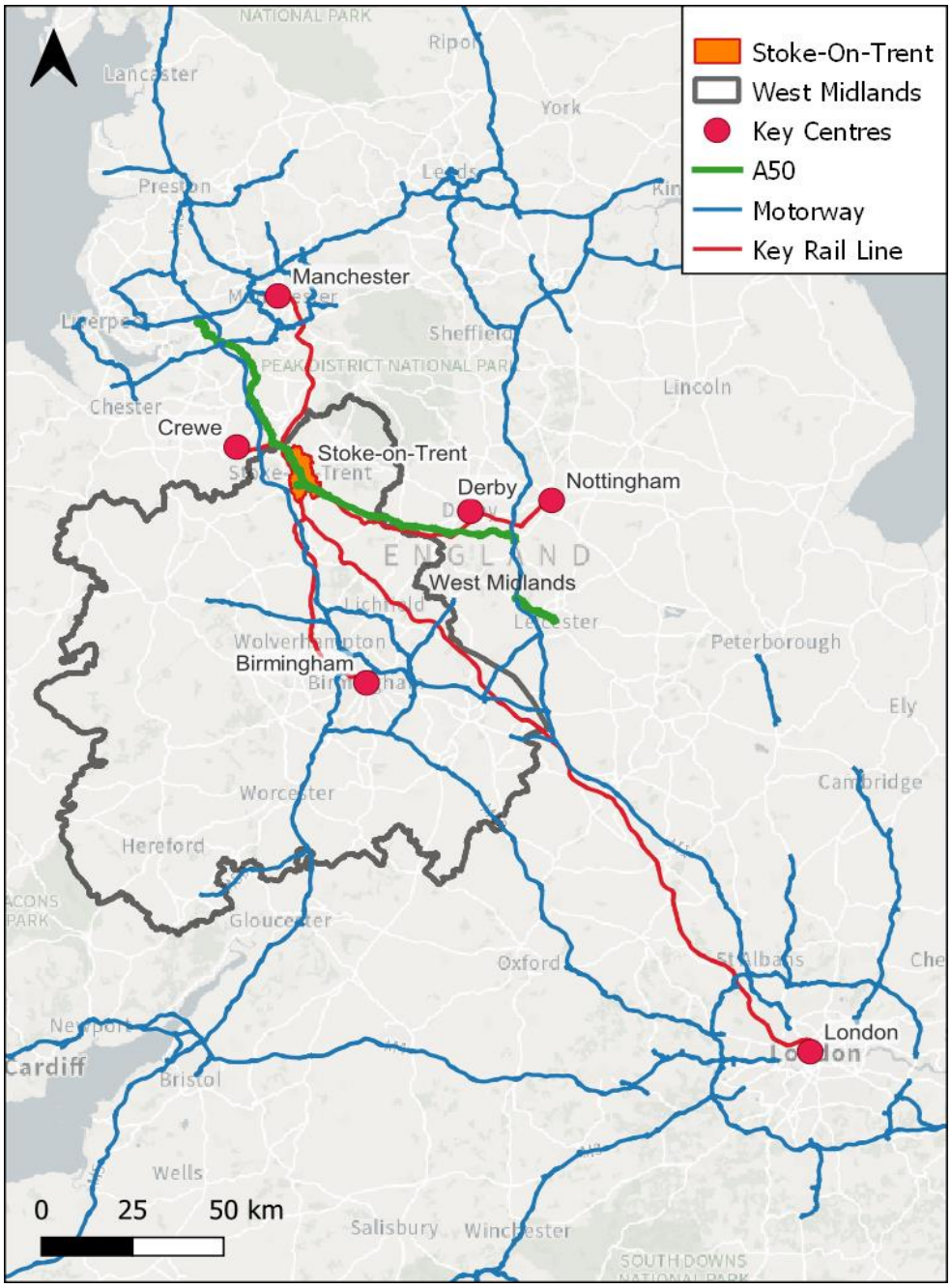

Figure 1.1 Stoke-on-Trent's location and national connectivity

The geographical area covered by the city's Transport Strategy is shown in Figure 1.2 which incorporates the 'six towns' centres within the City of Stoke-on-Trent, including the City Centre (Hanley), Stoke, Tunstall, Burslem, Fenton and Longton[1]. The

[1] LTP3 (2011 – 2026)

polycentric nature of the city provides some challenges. There is reasonable transport connectivity between the five towns and the City Centre.

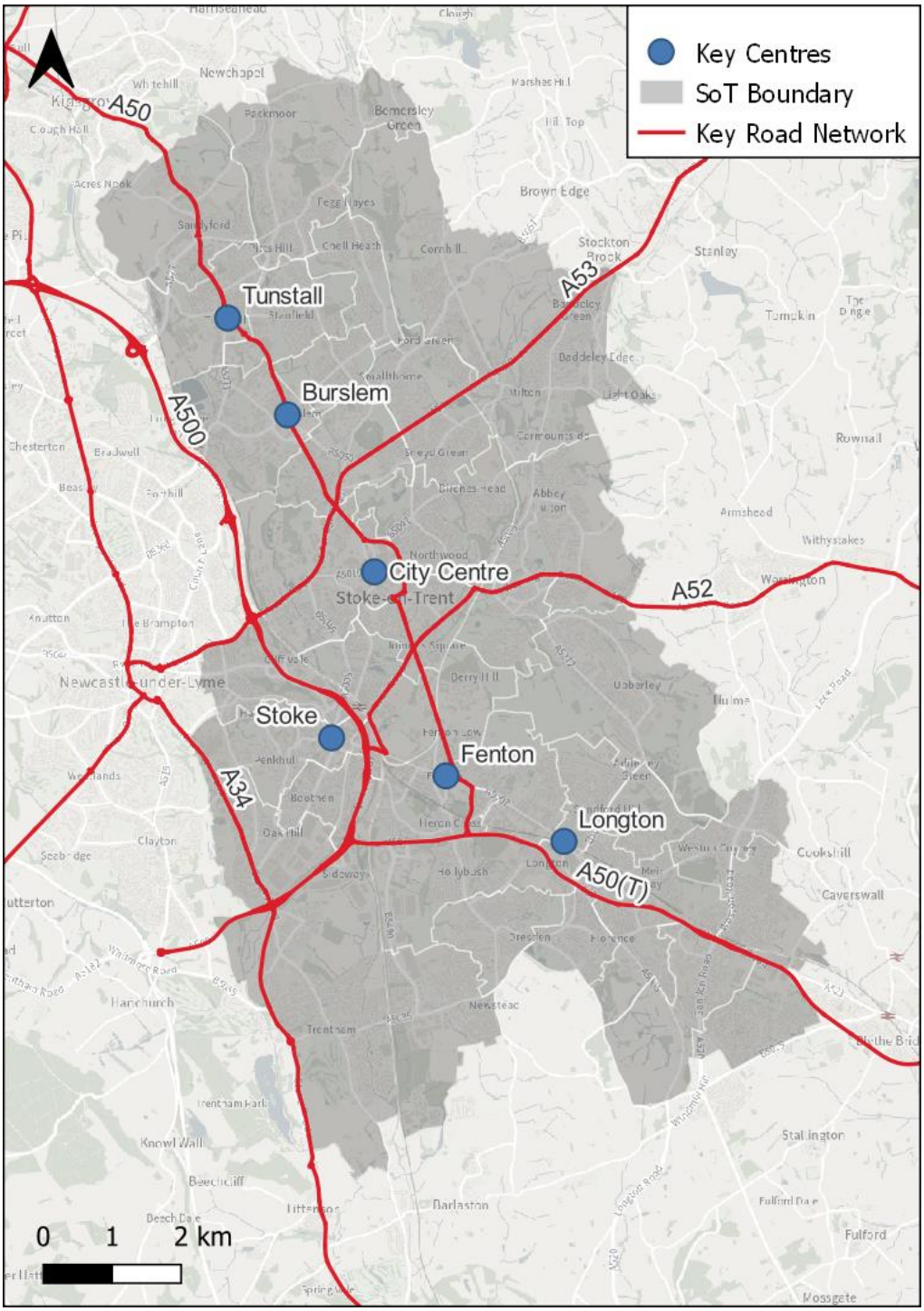

Figure 1.2 Stoke-on-Trent Administrative Boundary and Road Connections

Development outside these traditional centres however has led to a dispersed, low-density land use pattern. Whilst the A500 and A50 within the city play a role in providing for local travel demand along those corridors, there is a general need to improve connectivity between the Outer and Inner urban areas. For this reason, we have identified and divided the city into three spatial themes – City Centre (Hanley), Inner Urban Core, Outer Urban Core as demonstrated in Figure 1.3.

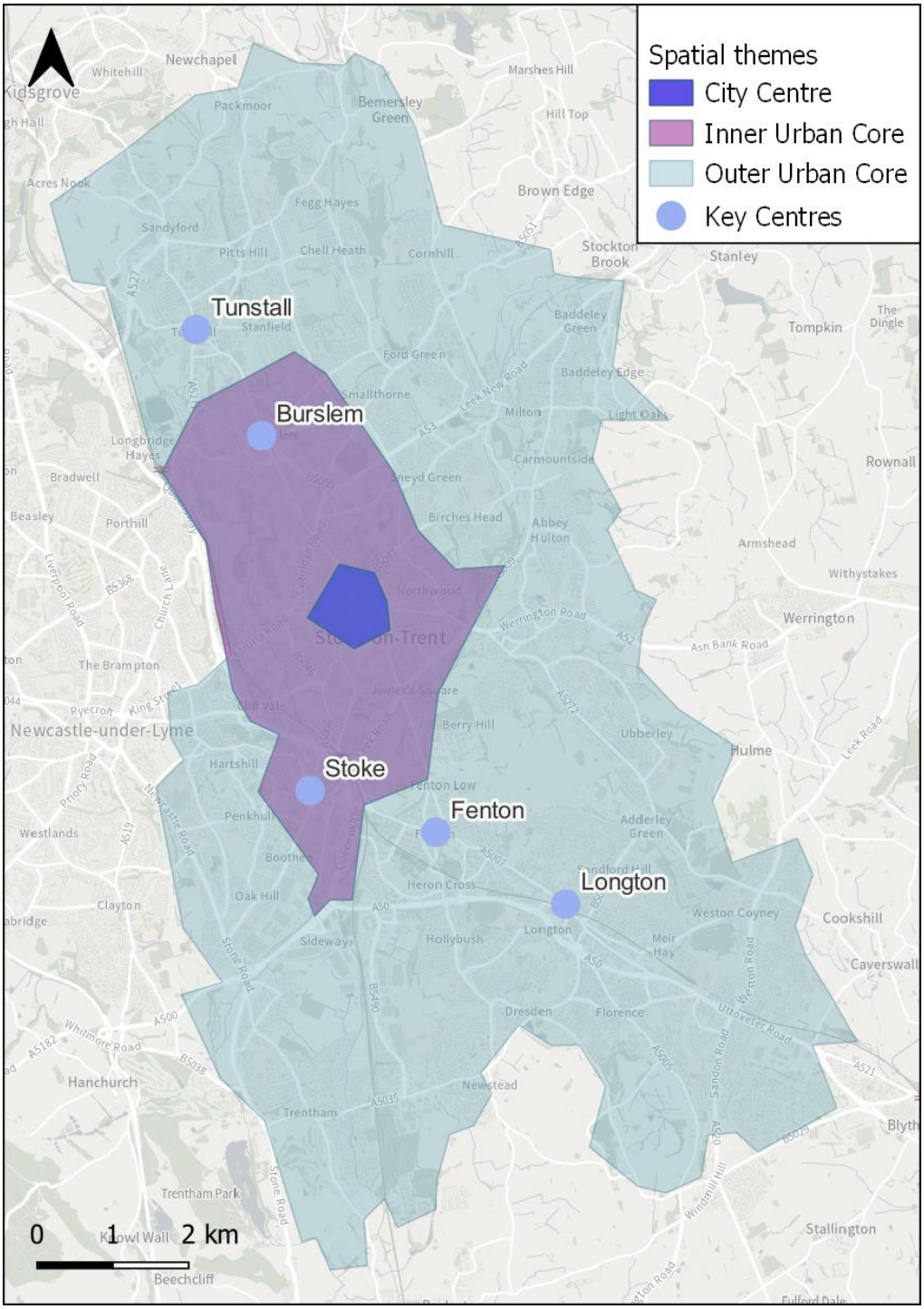

Figure 1.3 The three Spatial Themes of the city

The proposed targeted improvements aim to address key issues in each area of the city. As shown in Table 1.1, the Transport Strategy is developed around the three spatial themes to allow for appropriate transport improvements to be implemented in different parts of the city to encourage investment in the local economy and facilitate regeneration to create accessible opportunities for all.

Spatial Theme	Targeted Improvements
City Centre	• Development of public transport routes linking key employment and education sites • Improving active travel links to the city centre and integrated transport hubs • Improve public transport connectivity to the six town centres • Route to Net Zero (cleaner bus and taxi network, electric vehicle charging infrastructure, cycle parking facilities) • Walking and cycling improvement • Bus priority measures to improve journey times and reliability • Very Light Rail • Movement of freight (last-mile delivery)
Inner Urban Core	• Development of public transport routes linking to key employment sites • Improve public transport connectivity to outer urban core and city centre • Route to Net Zero (cleaner bus and network, electric vehicle charging infrastructure, cycle parking facilities) • Walking and cycling improvements • Transport Hubs (multi-modal hubs, P&R) • Bus priority measures • Very Light Rail • Movement of Freight (use of HS2)
Outer Urban Core	• Development of public transport routes linking to key employment sites • Improve public transport connectivity to inner urban core and city centre • Route to Net Zero (cleaner bus network) • Walking and cycling route improvements and promotion • Transport Hubs (multi-modal hubs, park & ride) • Bus priority measures • Very Light Rail • Movement of Freight (HGV stabling)

Table 1.1 Spatial Themes

1.4 Policy Context

Current national priorities for transport are driven by the policy context. Key policies and strategies are described in the Local Transport Plan Review (May 2022) and are set out in Figure 1.4 below.

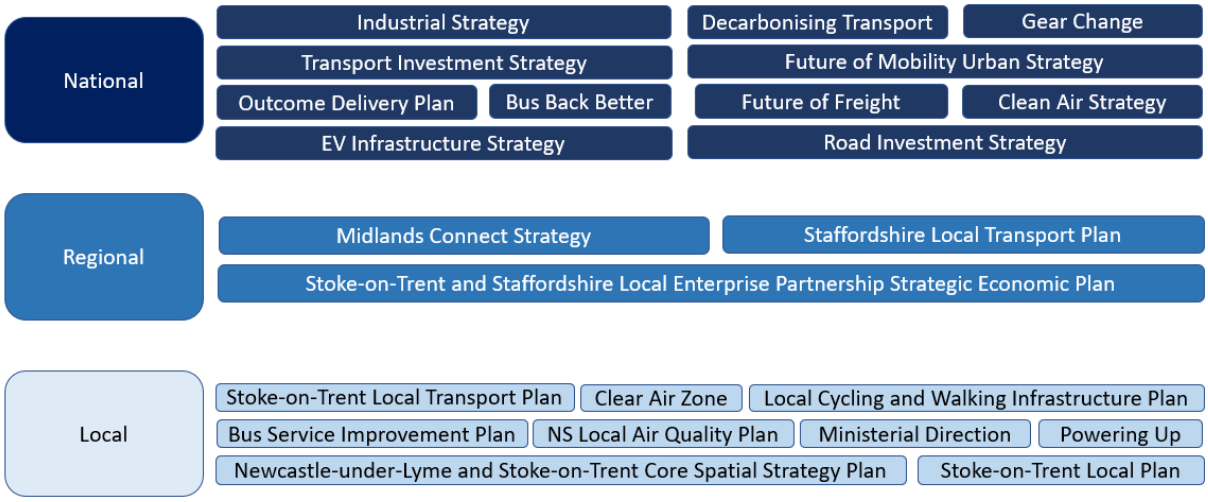

Figure 1.4 Policy diagram

The following briefly outlines the various national, regional, and local policies outlined in Figure 1.4.

National Policies:

Industrial Strategy/Build Back Better (2017/2021): The strategy Build Back Better followed the 2017 Industrial Strategy which had set out a long-term plan to boost the productivity and earning power of people throughout the UK with a focus on ideas, people, infrastructure, business environment and places.

Decarbonising Transport (2021): The plan sets out how to deliver the required emission reductions as well as the associated benefits. The plan sets a series of actions and timings to decarbonise transport by 2050. This includes plans to accelerate modal shift to public transport, decarbonising the freight system, making the UK a hub for green transport technology and innovation, implementing place-based solutions to emission reductions, and reducing carbon in the global economy.

Gear Change (2020): Gear Change is a Department for Transport policy document that sets out the government's strategy to increase walking and cycling. The document presents a vision for active modes to make up half of all journeys in towns and cities by 2030.

Transport Investment Strategy: Moving Britain Ahead (2017): This strategy sets out the Department for Transport's priorities and approach for future transport investment decisions and explains how transport investment can deliver a stronger, fairer Britain. It describes what we are trying to achieve through investment in transport infrastructure, investment priorities, institutional frameworks, and actions we are taking to help us meet our ambitions.

DfT Outcome Delivery Plan (2021-22): Both COVID-19 and Brexit have provided challenges over the past year to the transport industry. To address these changing circumstances, on 15 July 2021 the DfT withdrew the previous Single Departmental Plan and published the Outcome Delivery Plan2 which sets out in detail how the DfT and the UK will continue to deliver the priority outcomes and how success will be

[2] Department for Transport Corporate Report - Outcome Delivery Plan: 2021 to 2022 (July 2021)

measured. The three priority outcomes are to improve connectivity across the UK and build confidence in the transport network.

Bus Back Better (2021): The aim of this strategy is to make buses more frequent, more reliable, easier to understand and use, better co-ordinated and cheaper.

EV Infrastructure Strategy (2021): The decarbonisation of the UK's Road transport is moving forward at a fast pace. Taking this into account along with the rapid developments in battery and charging technology, the electric vehicle infrastructure strategy was formed in 2021 with the main goal being the rollout of electric vehicle charging infrastructure in the UK.

DfT Future of Mobility: Urban Strategy (2019): The 'Future of mobility: urban strategy' outlines the Government's approach to maximising the benefits from transport innovation in cities and towns.

Clean Air Strategy (2019): The Clear Air Strategy sets out the comprehensive actions required across all parts of government and society to improve air quality, protect nature, and boost the economy.

Road Investment Strategy 2 (2020-2025): The Road Investment Strategy 2 (RIS2) is a five-year strategy for investment in and management of the strategic road network from April 2020 to March 2025[3]. Its vision specifies the performance standards National Highways must meet; lists planned enhancement schemes expected to be built; and states the funding available during the second Road Period (RP2), covering the financial years 2020/21 to 2024/25.Through this investment the road network will become safer, more reliable, and sensitive to the places it runs through.

Regional Policies:

Midlands Connect Strategy (2017-2022): The delivery of the Midlands Connect strategy will help to secure a £1 billion-a-year boost to the regional economy, create 300,000 additional jobs and save businesses £500 million. The Strategy has identified North Staffordshire including Stoke-on-Trent as one of four Strategic Economic Hubs. Furthermore, Stoke-on-Trent forms part of two Intensive Growth Corridors, towards Birmingham and towards Derby and Nottingham. The updated challenges of this plan are levelling up and strengthening the region and UK, decarbonising transport, and adapting to climate change and driving resilient economic growth.

Staffordshire Local Transport Plan 2011 (SLTP): This the Strategy Plan for Staffordshire's third Local Transport Plan. It sets out the County Council's proposals for transport provision in the county including walking, cycling, public transport, car-based travel, and freight, together with the management and maintenance of local roads and footways.

Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) and Strategic Economic Plan (SEP)(2011): The SSLEP SEP identifies the City of Stoke-on-Trent as the focus for innovation-led economic growth, founded on competitive connectivity, sector growth and a skilled workforce. This SEP is designed to bring

[3] Road Investment Strategy 2, Department of Transport, 2020

businesses and local authorities together to drive economic growth, create jobs and raise skills levels. Its vision is to create 50,000 jobs and increase the size of the economy by 50% by 2024, for which the region is on course to meeting these key goals. The key goals are to support Stoke-on-Trent in becoming a Core City with one of the strongest performing economies in the UK, create competitive urban centres, ensure globally competitive enterprise-led expansion in businesses across priority sectors, and finally, to develop a modern and flexible skills system to support the needs of growth sectors.

Local Policies:

Stoke-on-Trent Local Transport Plan (2011-2026): Stoke-on-Trent's Third Local Transport Plan (LTP3), published in 2011, reflects on some of the key transport achievements in the local authority under LTP2, such as the Cycle Stoke initiative, a new community rail partnership, a Bus Partnership initiative, and bus priority measures at the A34 Stone Road/Mayne Street junction. The three goals of the LTP 3 are to improve the local economy through increasing business productivity, improving the local environment through reducing the impact of traffic and moving towards more sustainable transport technology, and caring for local health by improving access to transport, improving transport safety and the encouragement of walking, and cycling.

Local Cycling and Walking Infrastructure Plan (LCWIP): The LCWIPs are a new government initiative and approach to identify cycling and walking improvements of local authorities. Local transport authorities are required to develop Local Cycling and Walking Infrastructure Plans (LCWIPs) to help the government deliver their Cycling and Walking Investment Strategy (CWIS) with the objectives to have better safety, mobility, and streets.

Bus Service Improvement Plan (BSIP): The BSIP is part of the Enhanced Partnership agreement between Stoke-on-Trent Council and the Bus Operators. The plan's main goals are to improve the bus network across the city and encourage more people to use it with a focus on delivering sustainable and inclusive transport.

North Staffordshire Local Air Quality Plan: The plan will help to protect and promote the health of the local population by improving air quality and reducing the impact of air pollution on the environment. In so doing, the local authorities are complying with the UK Air Quality Plan and bringing NO2 air pollution within statutory limits in the shortest possible time.

Powering Up: The Powering Up prospectus identifies the partnership that could be formed between the council and the government departments to reach certain agreements that could drive the city's economic growth and regeneration. Their main priorities include transport, economic development, education and skills and health and productivity.

Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (2006 – 2026): The Core Spatial Strategy sets out a broad framework for the future development of the whole of Newcastle-under-Lyme and Stoke-on-Trent. This approach helps to make sure that the two councils are working together to achieve the best results. This strategy sets out the overarching spatial planning framework for the long-term regeneration of the Borough of Newcastle-under-Lyme and City of Stoke-on-Trent, up

to the year 2026. It seeks to ensure that public and private investment is properly co-ordinated, with a focus on promoting the principles of sustainable development. Whilst the Core Spatial Strategy is still the adopted development plan, several initiatives and principles are no longer applied. The CSS will be replaced by a new Local Plan.

Stoke-on-Trent Local Plan (2020-2040); The Local Plan (2020-2040) is currently being developed and looks to ensure that long term policies and plans are in place to make sure that the city manages and meets the needs of local people and businesses in the future.

Policy Context Overview

Across these policies and strategies, the key themes of economic development, decarbonisation, and health feature strongly and provide direction for this Transport Strategy and Delivery Plan. This policy direction is particularly evident in the DfT's Transport Investment Strategy, Outcome Delivery Plan and Transport Decarbonisation Plan. Mode specific national strategies (such as Bus Back Better and Gear Change) provide further direction to how bus and active travel can support economic development, decarbonisation, and improved health.

Within Stoke-on-Trent's levelling up prospectus, these themes follow through with transport and connectivity seen as a necessity to enable Stoke-on-Trent to achieve its growth ambitions.

The three goals of the Stoke-on-Trent City Council LTP3 are aligned with current emerging policy:

1. Economy - improving the local economy through increasing productivity for existing businesses and encouraging new investment by making Stoke-on-Trent more attractive.
2. Environment - improving the local environment through reducing the impact of traffic (air and noise) and moving towards more sustainable transport technology and modes, coupled with improving the appearance of local areas.
3. Health - caring for local health through improving access to transport, transport safety and encouraging walking and cycling.

1.5 Balanced Approach

The Transport Strategy and Delivery Plan aims to set out a balanced approach to delivering the economic, environmental and health goals for Stoke-on-Trent. It considers the need to support economic growth by providing the necessary infrastructure to accommodate and manage travel demand in a sustainable way. A 'balanced approach' will comprise of:

- Targeted road capacity enhancements to support development
- Efficient use of roads (car share, bus priority, cycle, and pedestrian facilities) throughout the network
- Use of other networks such as the rail network, greenways, and canal/river paths to increase overall transport capacity and accessibility for the area
- Use of behaviour change techniques to generate modal shift from car and take up of greener modes

Improving opportunities for decarbonisation of the transport network, such as EV infrastructure and other alternative fuelled vehicles and associated infrastructure, will support net zero carbon and air quality goals. Enhanced active travel infrastructure further supports these environmental goals while also improving health outcomes through increased levels of physical activity and better air quality.

The Transport Strategy and Delivery Plan explores Stoke-on-Trent's current situation and future development to ensure the balanced approach considers local challenges and opportunities. It sets out a range of committed and aspirational transport schemes that will be developed further to overcome these challenges including Very Light Rail, Transport Hubs and Decarbonisation which are currently subject to Strategic Outline Case development.

1.6 Document Structure

The remainder of the document is structured as follows:

Section 2 – Current Local Situation

Section 3 – Growth and Planned Interventions

Section 4 – Strengths, Weaknesses, Opportunities and Challenges

Section 5 – Vision & Objectives

Section 6 – Targeted Improvements

Section 7 – Delivery Plan

Section 8 – Summary

Appendix A – Very Light Rail SOC

Appendix B – Multi-modal Hubs SOC

Appendix C – Route to Net Zero Options Assessment

Appendix D – SoT LTP3 2011-26 Review

Appendix E – Accessibility Mapping

Appendix F – Bus Network Frequency

2 Current Local Situation

2.1 Introduction

The following section sets out the current local transport context in Stoke-on-Trent in terms of **people, place,** and **connectivity.**

- **People** considers the key demographic characteristics of the area that influence travel demand such as population, employment distribution, car ownership and levels of deprivation.
- **Place** provides the local environmental and economic context of Stoke-on-Trent with respect to transport.
- **Connectivity** examines how “People” and “Place” are connected across Stoke-on-Trent and to what extent needs are met.

These themes are used to explore the existing issues and the challenges and opportunities that have evolved or emerged since LTP 3 was drafted and which need to be addressed via the Transport Strategy and Delivery Plan and the forthcoming LTP 4.

The identification of challenges and opportunities (summarised in blue boxes) will be addressed through targeted improvements in further detail in section 6 of this Transport Strategy.

2.2 People

2.2.1 Population

The population of Stoke-on-Trent is approximately 258,400 (ONS 2021). The population size has increased by 3.8%, from around 249,000 in 2011. Stoke-on-Trent's population increase is lower than the increase for the West Midlands (6.2%) and the overall increase for England where the population grew by 6.6%.

As shown in **Figure 2.1**, resident population has fallen between 2011 and 2019 in several parts of the city but mainly in northeast and south of Stoke-on-Trent. The largest growth population in the city has been in the surrounding area of the City Centre and around key centres such as Tunstall, Burslem and Stoke. However, other areas of significant growth are in the Outer Urban Core. There is significant growth south of Sideway which could be explained by the employment zones located in that area, providing a future opportunity to serve that local population

It is worth mentioning that according to the latest census figures there has been an increase in age groups traditionally more reliant on state support, with a 14.1% increase in people aged 65 years or over and an 8.5% increase in children aged 15 years or under. These groups will also be more reliant on non-private car modes of travel.

The primarily working age population aged 15 to 64 years has remained static creating a potential productivity gap for the city and an indication that inward commuting will be increased if the local economy is to continue to grow.

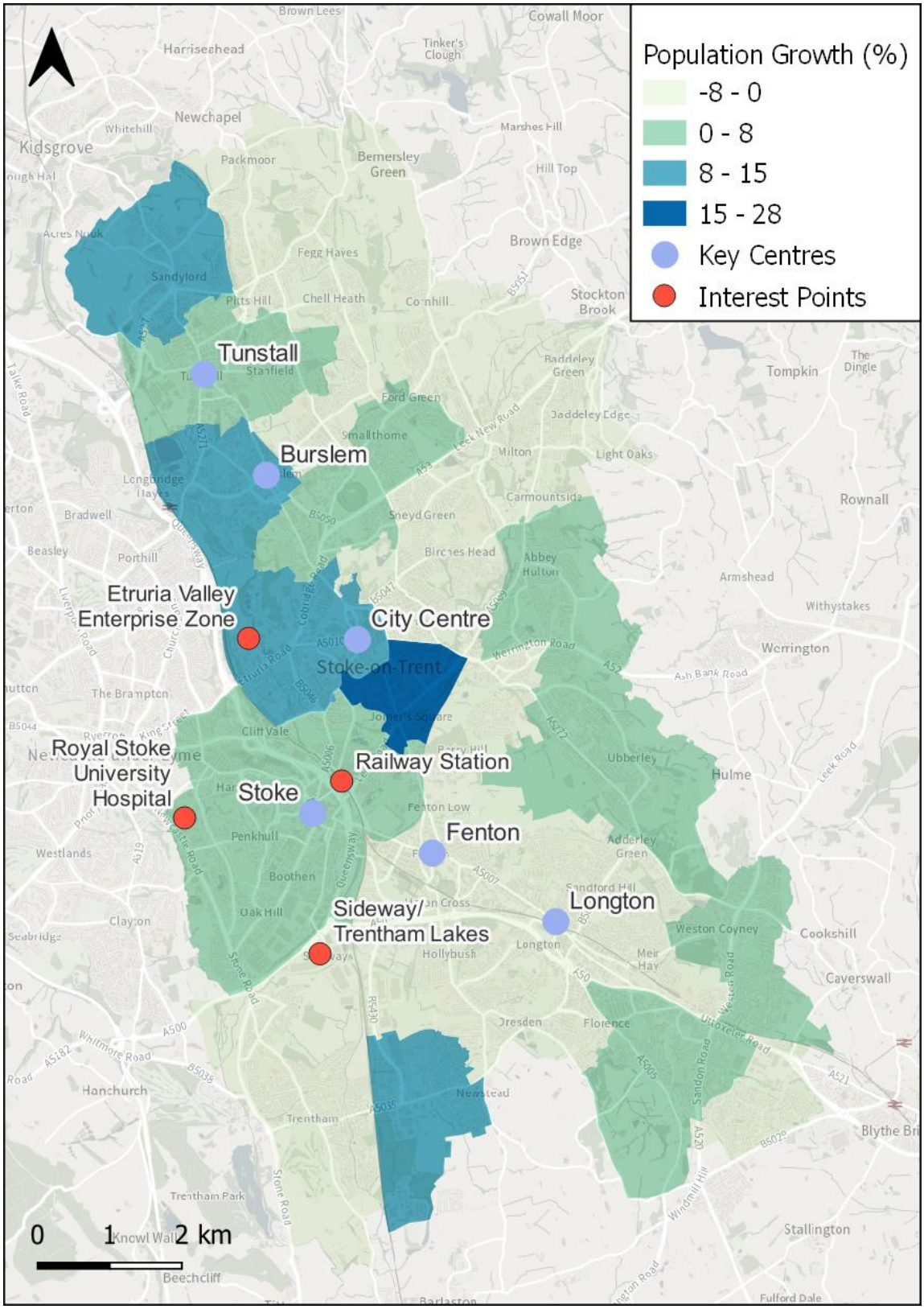

Figure 2.1 Population Growth 2011-2019[4]

[4] Source: ONS, 2019

Challenge 1 – Accommodating population growth and associated transport needs: Stoke-on-Trent is a growing city with over 250,000 people living within the Local Authority area. Population growth will lead to increased demand on the highway network if current levels of car use are maintained. A substantial proportion of the population growth is focused around the already congested City Centre. The growth areas in the south and north of Stoke-on-Trent Outer Urban Core currently have fewer alternatives to car travel.

Opportunity 1 – Improve active travel connectivity around the City Centre to encourage sustainable travel.

Opportunity 2 – Increase connectivity to the Outer Urban Core through improved cycling links, improved public transport links such as bus and potentially light rail and improve connectivity in this area to the existing rail network.

As shown in **Figure 2.2**, there remains significant population density in and around the town centres and city centre. Each town centre is distinctive and to a lesser or greater degree creates travel demand into the town centre from the adjacent residential areas. Each contributes independently and collectively to the area's economy and movement patterns to the key interest points (i.e., employment zones, Stoke-on-Trent Railway Station, Staffordshire University).

Smaller clusters of population are formed around employment areas such as the Royal Stoke University Hospital and the Sideway employment zone.

However, there are also some densely populated areas in the Outer Urban Core, most on main transport corridors. Much of the Outer Urban Core remains low density, however. Overall, half the resident population of Stoke-on-Trent reside in suburban residential areas and are generally not well-connected by public transport as discussed in 2.4.4.

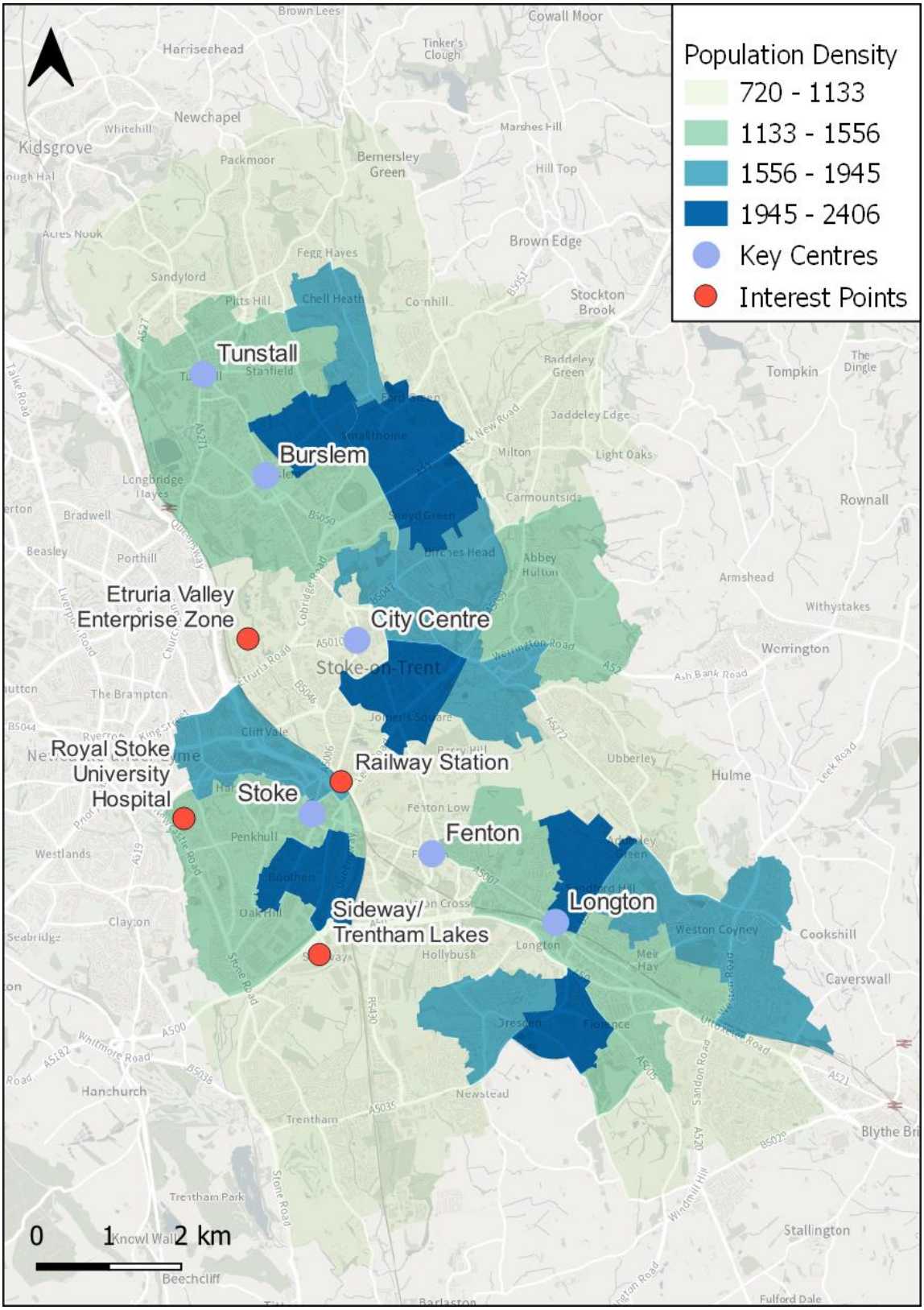

Figure 2.2 Population Density[5]

[5] Source: SoTCC from MOSAIC-7, Experian 2020

Challenge 2 – Providing connectivity for a dispersed population: Stoke-on-Trent is polycentric with a chain of six towns that has low population density. Half the resident population of Stoke-on-Trent reside in suburban areas and are generally not well-connected by public transport to any of the six towns.

Opportunity 3 – Interventions to deliver improved public transport connectivity

Opportunity 4 – Interventions to support sustainable access for those in less dense peripheral areas.

Opportunity 5 – Improve public transport to tackle demand in denser central areas as well as active travel connectivity to encourage short local trips by alternative modes.

2.2.2 Workplace population

The workplace population of Stoke-on-Trent was approximately 132,000 in 2020 (ONS) with an employment density of 0.83 (The density figures represent the ratio of total jobs to population aged 16-64) which is very similar to the average for both the West Midlands' and England at 0.8 and 0.84 respectively.

Figure 2.3 shows that the workplace population centres are concentrated around the City Centre (Hanley), Etruria (Etruria Valley Enterprise Zone including large trip attractors such as bet365 corporate offices), Stoke (which includes the Civic Centre) and the Royal Stoke University Hospital as well as Burslem and Longton. These areas include large retail centres, council offices, commercial high streets, hospitals, and healthcare provision. The area between Stoke and the City Centre hosts several large educational facilities including Staffordshire University, which are major sources of employment.

There are pockets of high employment within more peripheral areas of Stoke-on-Trent such as in the southwest where the Sideway/Trentham Lakes Employment Zone is located. This includes significant logistics employment, being adjacent to the Strategic Road Network.

Overall, though, employment centres are dispersed across the city which results in car dependence. Few residents travel to work by train or bicycle – or work at home – compared with both regional and national averages. Almost two-thirds (65.6%) of Stoke-on-Trent's working population usually travel to work by car or van compared with 57% nationally.

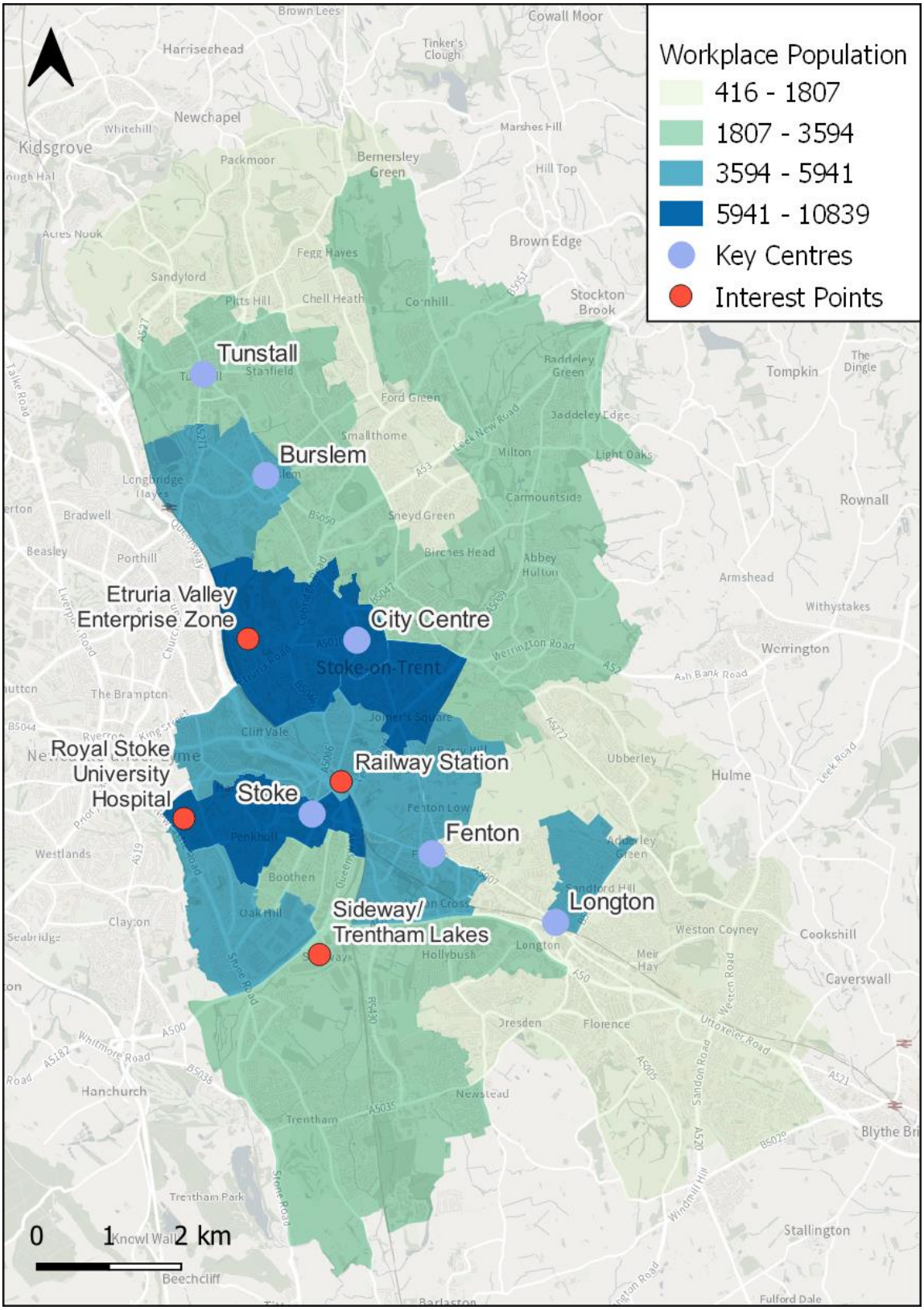

Figure 2.3 Workplace Population[6]

[6] Source: ONS 2011 from WP101EW

Challenge 3 – Improving sustainable transport access to dispersed employment centres: The employment centres are dispersed across the city which results in car dependence.

Opportunity 6 – Improved pedestrian and cycling routes to major employment sites, particularly from nearby residential areas and connecting to the wider network

Opportunity 7 – Targeted improvements to public transport around key commuting times

2.2.3 Local Employment

Stoke-on-Trent is known as “the Potteries” for its rich heritage as the centre of the British pottery industry. It was formerly an industrial urban area that has now moved towards distribution and service industries. The region is characterised by a unique combination of health services, wholesale, and manufacturing, resulting in a skilled workforce with potential to better retain talent in the areas of innovation and technology due to its universities and their innovative departments.

Table 2.1 shows the breakdown of employment across Stoke-on-Trent by sector, with retail, health and manufacturing activities being the most significant sectors, accounting for over 51,712 jobs. Over 47% of jobs within Stoke-on-Trent fall into these industries, higher than the 42% for the West Midlands region and the 37% for England as a whole.

	Stoke-on-Trent		West Midlands		England	
Industry	**Number**	**%**	**Number**	**%**	**Number**	**%**
Agriculture, Forestry & Fishing	140	0.10%	23825	0.90%	203789	0.80%
Mining, Quarrying & Utilities	173	0.20%	2232	0.10%	43302	0.20%
Manufacturing	14704	13.60%	311586	12.30%	2226247	8.80%
Electricity, gas, steam, and A/C supply	1020	0.90%	17369	0.70%	140148	0.60%
Water supply, sewerage, waste	696	0.60%	21002	0.80%	175214	0.70%
Construction	8619	8.00%	189878	7.50%	1931936	7.70%
Wholesale & Retail (motor trade)	21274	19.70%	434269	17.10%	4007570	15.90%
Transport & Storage	7059	6.50%	133003	5.20%	1260094	5.00%
Accommodation & Food Service	5852	5.40%	132532	5.20%	1399931	5.60%
Information & Communication	2238	2.00%	72913	2.90%	1024352	4.10%
Finance & Insurance	2890	2.70%	78920	3.10%	1103858	4.40%
Real Estate	1087	1.00%	34397	1.40%	367459	1.50%
Professional, Scientific & Technical Activities	3164	2.90%	129011	5.10%	1687127	6.70%
Admin & Support Services	5262	4.90%	119833	4.70%	1239422	4.90%
Public Admin & Defence	4282	4.00%	135384	5.30%	1483450	5.90%
Education	8300	7.70%	257782	10.20%	2490199	9.90%
Health	15734	14.60%	327852	12.90%	3121238	12.40%
Arts, Entertainment & Recreation	5576	5.20%	113213	4.50%	1206021	4.80%
Domestic Personnel	34	0.03%	1437	0.10%	30356	0.10%
Extraterritorial organisations	5	0.01%	438	0.02%	21008	0.10%
Total	**108,109**	**100%**	**2,536,876**	**100%**	**25,162,721**	**100%**

Table 2.1 Residents aged 16 to 74 in employment by industry[7]

The high growth, high skills employment is particularly focussed on a number of enterprise zones which facilitate industrial clustering and the productivity benefits this generates. Prominent employment locations include (**Figure 2.4**):

[7] Source: ONS 2011, from QS605EW

- Staffordshire University - a leading institution in science and media. Its research impact has been rated outstanding in the Research Excellence Framework 2021[8] with main research themes business, crime, culture, engineering, technology, and environment. Additionally, there is high benefit from their Innovation Enterprise Zones - specialist laboratories in numerous areas (e.g., advanced manufacturing, advanced materials, and health innovation)
- Etruria Valley Enterprise Zone
- Sideway Employment Zone
- Royal Stoke University Hospital
- Trentham Lakes Employment Zone (Logistics hub)

It is important to note Stoke-on-Trent's role as a logistics hub on the national highway network given its central location, good highway links and low cost for distribution hubs. This has led to a shift towards distribution and service industries, leading to increasing freight needs and home deliveries, the latter further developed due to the covid-pandemic and increase in home working. This has affected the employee journey patterns and shift style employment as there are several warehouse style employees with 24hr shift employment in the City. Thus, transport and freight interventions that provide alternative travel options to single occupancy car usage should consider the new work patterns and congestion issues that can occur in the peak hours.

[8] Staffordshire University website

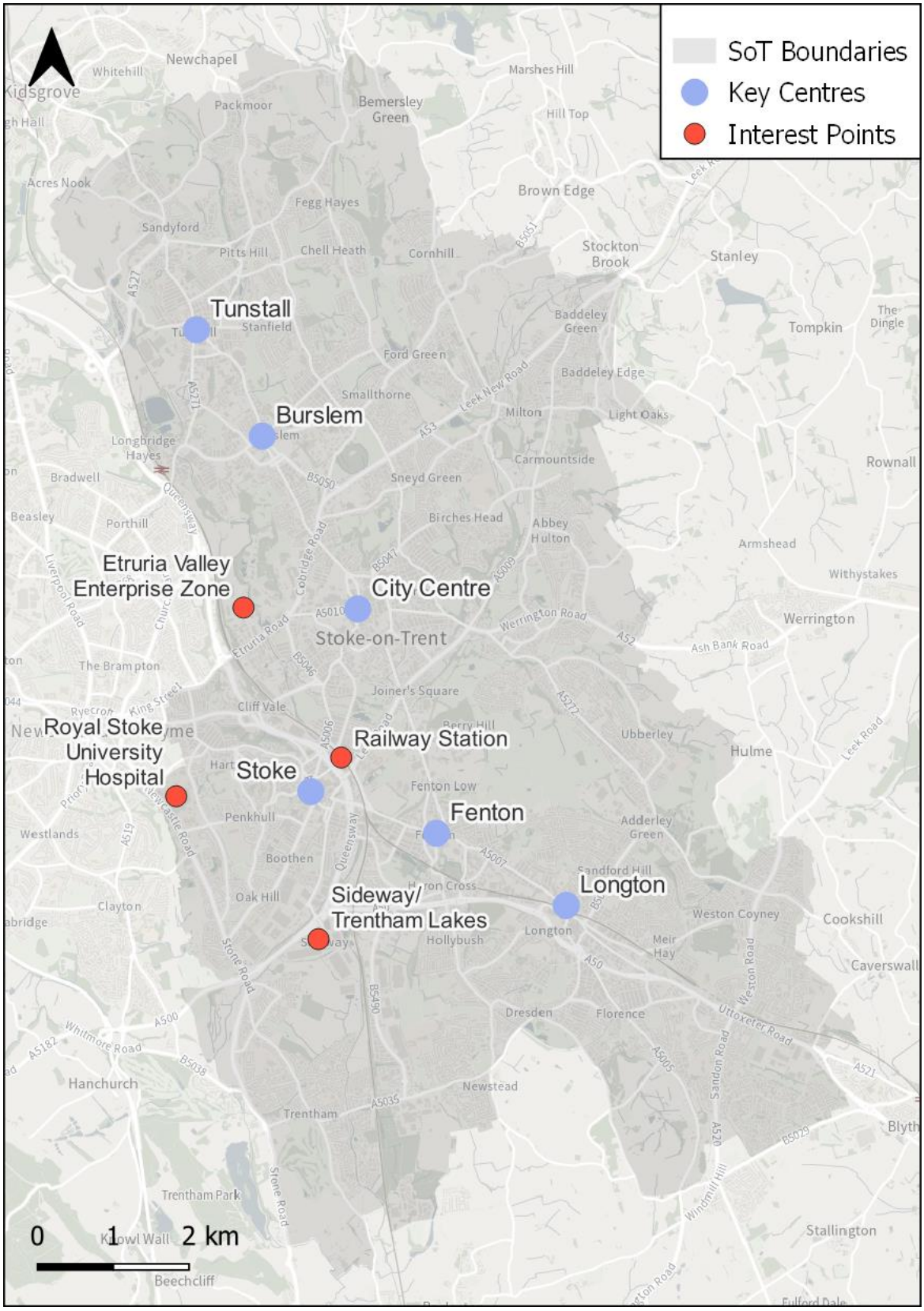

Figure 2.4 Key Locations

Challenge 4 – Delivering a transport network that supports Stoke-on-Trent's diverse industrial needs: With an employment sector dominated by wholesale, manufacturing, and health services, the main employment locations are quite dispersed.

Challenge 5 – Delivering a transport network that support the changing travel pattern of workers: The move towards distributional services has resulted in a change towards 24-hour shift employment and different travel patterns.

Challenge 6 – Supporting the increasing need of retail and home deliveries: Freight issues could derive from the high demand on deliveries.

Opportunity 8 – Transport interventions to support the movement of workers to key employment destinations.

Opportunity 9 – Transport interventions to facilitate the new journey patterns

Opportunity 10 – Alternative transport options to keep up with the freight demand such as rail and water transport freight.

2.2.4 Index of Deprivation

The Index of Multiple Deprivation (IMD) includes seven weighted factors - Income, Employment, Health Deprivation and Disability, Education, Skills Training, Crime, Barriers to Housing and Services, Living Environment - influencing the level of affluence in an area. Deciles are calculated by ranking the 32,844 neighbourhoods in England from most deprived to least deprived and dividing them into 10 equal groups.

Stoke-on-Trent is the 14th[9] most deprived local authority area in England out of 317, with almost one-third of the population living in areas classified in the 10% most deprived in England (IMD2019). In contrast, its neighbouring borough Newcastle-under-Lyme is ranked 151st. It is the 3rd most deprived local authority in the West Midlands out of 30. It contains varying levels of deprivation, as can be seen in **Figure 2.5**, which results in a mix of transport needs and challenges.

Transport connectivity is a recognised barrier to employment for residents on low incomes in parts of the city that are currently not served well by public transport networks. For Stoke-on-Trent to overcome these long-standing challenges, significant transport improvement schemes are required to support regeneration and signal the city's repositioning nationally and internationally to attract new residents and businesses. Interventions are necessary that focus on levelling up within the city and uplifting the more deprived areas by offering efficient public transport and access to key economic opportunities (employment zones).

[9] Rank (where 1 = most deprived)

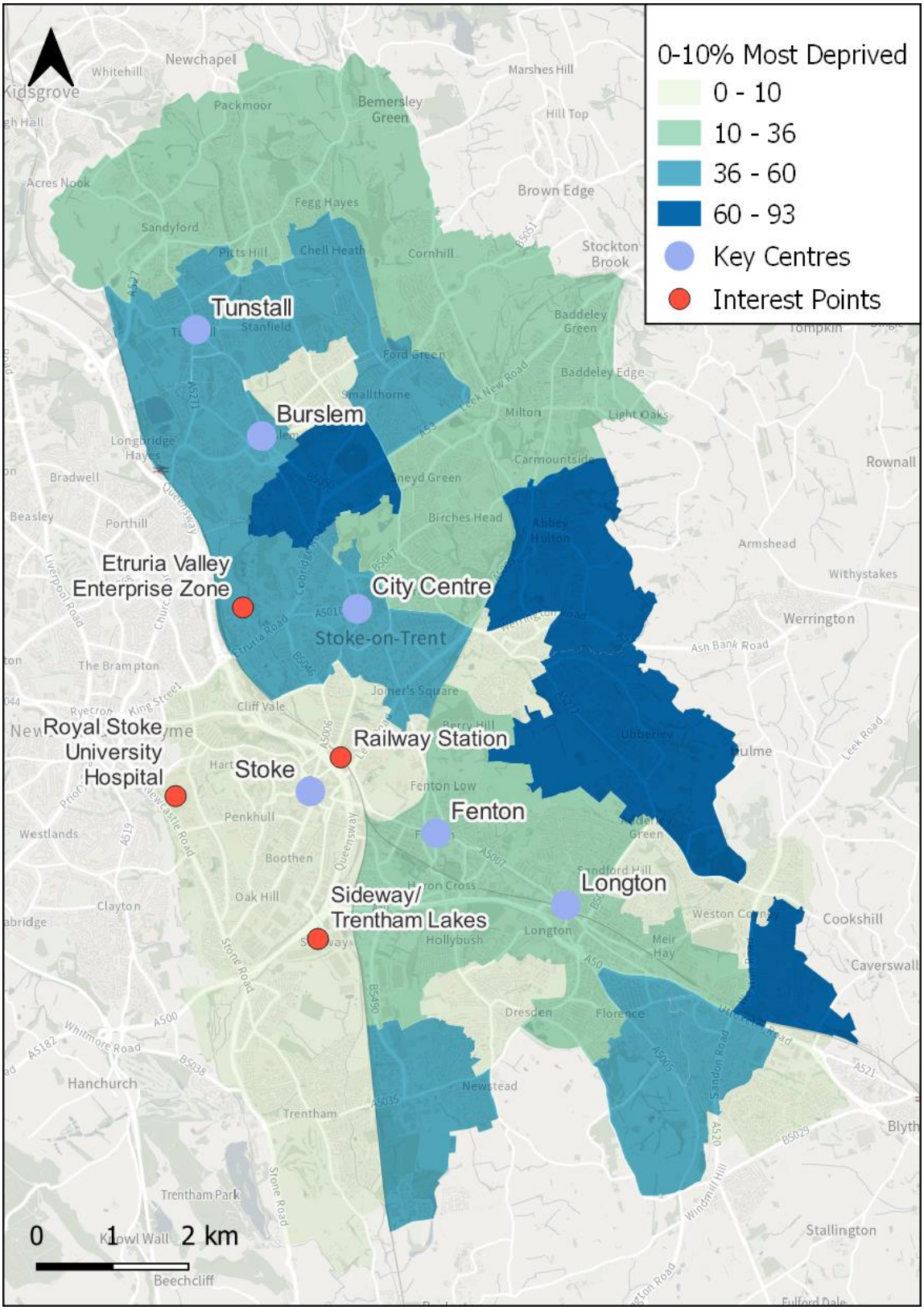

Figure 2.5 Index of Deprivation 0-10% Most Deprived[10]

[10] Source: SoTCC from Indices of Deprivation, MHCLG 2019

Challenge 7 – Improving access to opportunities from areas of deprivation: It is evident that the social geography of Stoke-on-Trent is diverse with the highest levels of deprivation predominately occurring around Burslem, Bentilee, Fenton and Meir. This pattern broadly aligns with areas of low annual income and car ownership (see Figure 2.7).

Opportunity 11 – Improve accessibility to employment in areas of deprivation through better public transport services and active travel links.

2.2.5 Health

The UK is currently facing several public health issues, including growing rates of obesity, diabetes and heart disease that are all linked to physical inactivity. This is associated with deprivation (consumption of non-healthy cheaper food) and deprived areas that are often located in proximity to busy road corridors which also suffer from poor air quality contributing to adverse health impacts.

As mentioned in the previous section, "Health, deprivation and disability" is a significant driver of IMD. The study area ranks 11th[11] for this metric, thus underscoring that health issues are prevalent in Stoke-on-Trent (43.9% of the population is classified in the 10% most deprived decile, for this metric).

Studies have shown that access to public transport increases the mobility of individuals, which can improve health deprivation and reduce health related disability. The majority of the Local Authority is facing health deprivation challenges, as well as the prevalence of obesity, as shown in **Figure 2.6**.

Areas of the city that are most health deprived are more likely not to have access to a car, thus would benefit from transport options including improved accessibility to public transport services and active travel infrastructure. This would result in greater physical activity and help to address the health issues.

The physical access to transport facilities such as bus stops, and the facilities themselves, should be considered in terms of how people with limited mobility and/or other disabilities can utilise them.

[11] Rank (where 1 = most deprived)

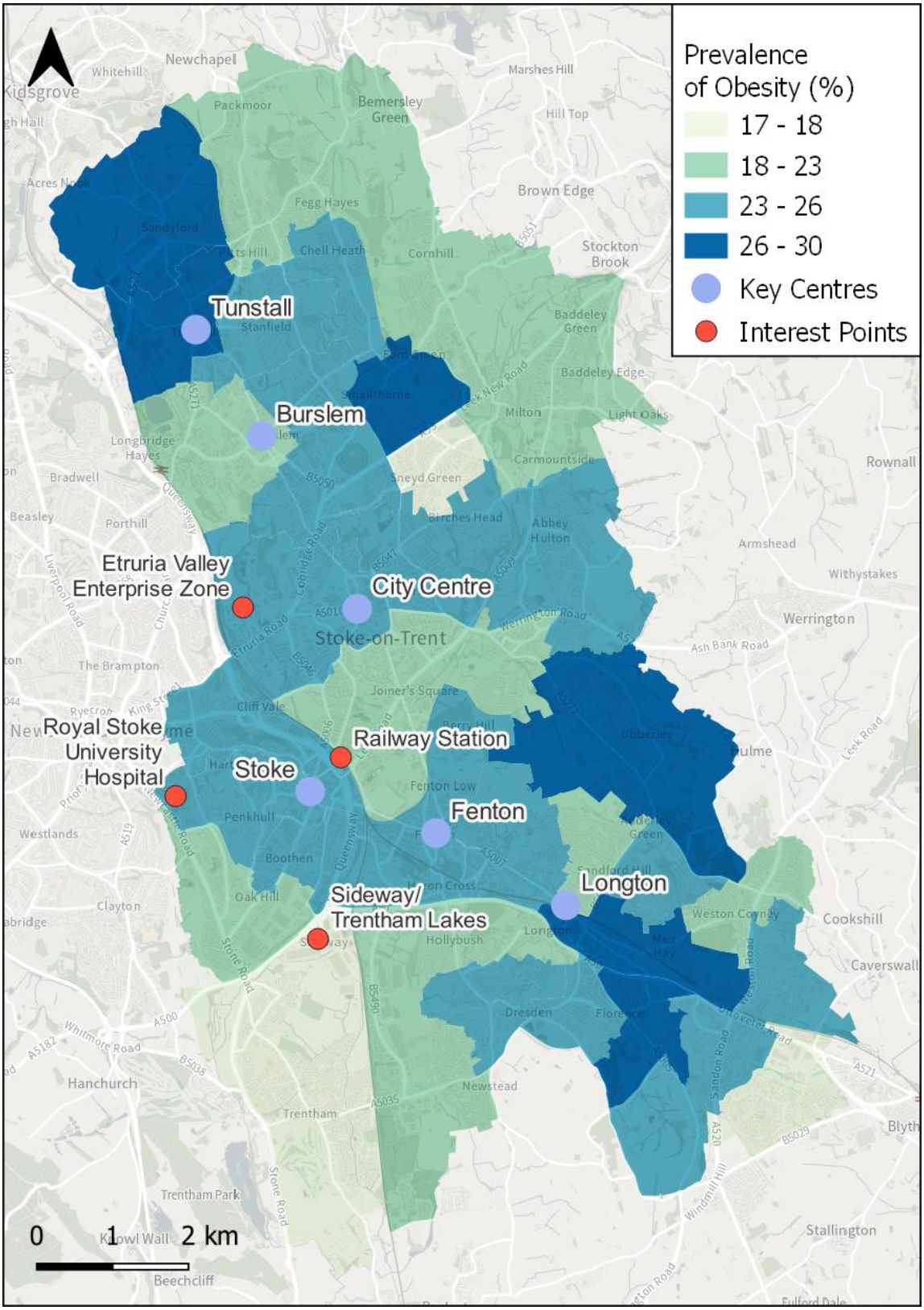

Figure 2.6 Prevalence of Obesity[12]

[12] Source: SoTCC from Public Health Data, Office for Health Improvement & Disparities

Challenge 8 – Improving health and wellbeing through increased active travel: The majority of the Local Authority is facing health deprivation and obesity challenges.

Opportunity 12 – Transport interventions in walking, cycling and passenger transport to increase levels of active travel for end-to-end journeys or as part of a longer trip by public transport. Active and sustainable transport investments to improve the health and wellbeing of residents, whilst also addressing health inequalities across the study area.

2.2.6 Car ownership

In 2011, an average of almost 25% of the city's households owned two or more vehicles compared with just over 32% nationally. In the City Centre and Inner Urban Core households had low car ownership levels. In the inner urban core and Tunstall, we see the lowest car ownership (12.1% on average) which is likely to be due to a mix of age, deprivation, and cultural background profiles.

Conversely, multiple car ownership levels can be seen in **Figure 2.7** in the Outer Urban Core areas south and west of Longton (51.1% access to 2-4 cars or vans) as well as in the northeast and southwest.

Higher car ownership and rising car dependency is a challenge in parts of Stoke-on-Trent, that contributes to traffic congestion, parking pressures, air quality issues, health, and road safety risks.

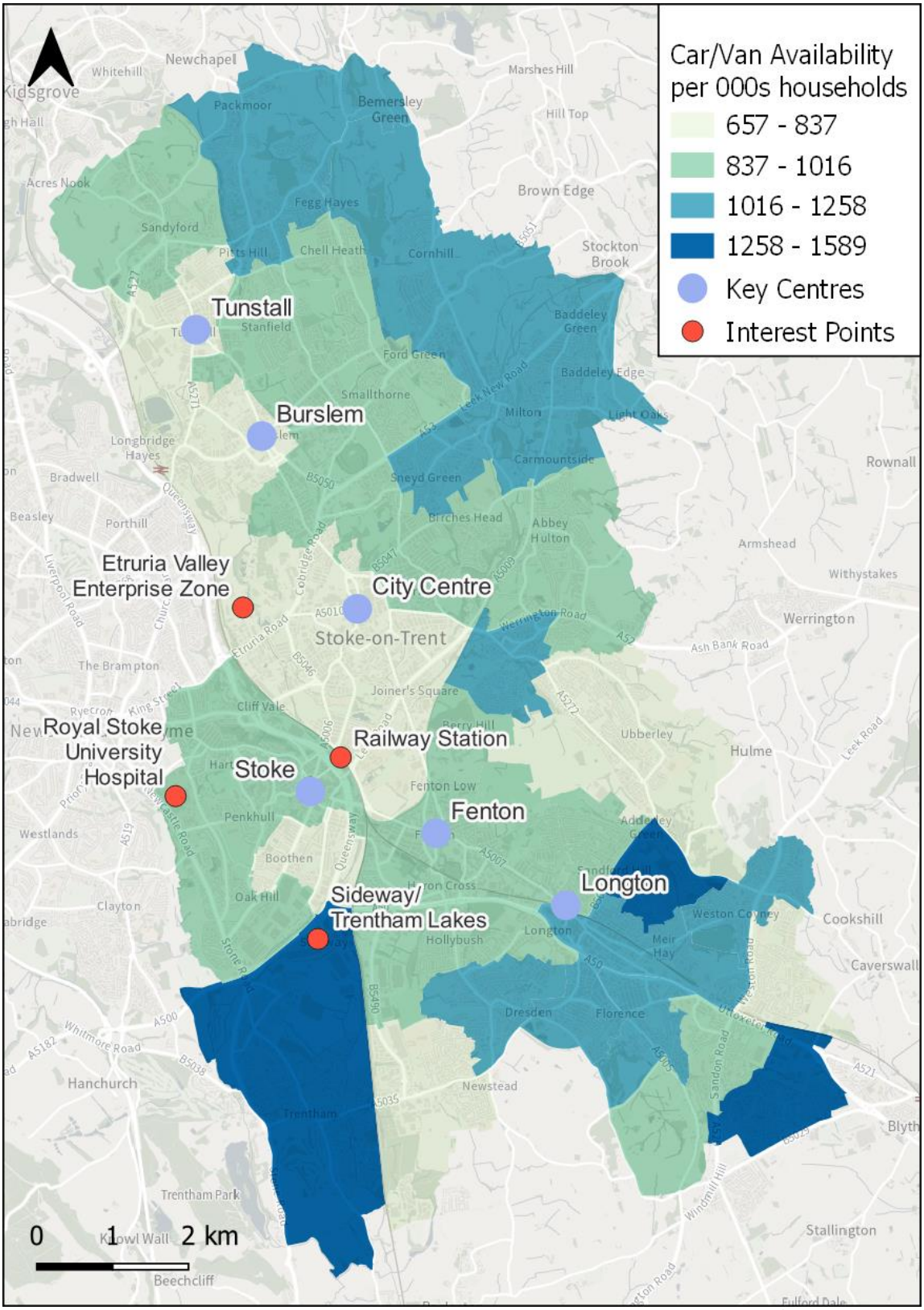

Figure 2.7 Car/Van Availability per 000s households[13]

[13] Source: SoTCC from ONS 2011

Challenge 9 - Providing attractive alternatives to private car travel: There are high levels of multiple car ownership per household in the Outer Urban Core (northeast, southeast and southwest).

Challenge 10 - Providing alternative transport options to areas with low car access: The Inner Urban Core, Tunstall and Bentilee have low levels of car ownership and car accessibility, therefore, need access to alternative modes of travel.

Opportunity 13 – To reduce multiple car ownership, particularly where attractive public and active transport options and fast digital infrastructure already exists.

Opportunity 14 – Improve transport options to areas with low car availability.

2.2.7 Road Safety

238 road collisions occurred in 2020[14] from which 83.2% were classified as "slight" and 16.4% as "serious". Compared to the national average (78.3% and 20.1% respectively) Stoke-on-Trent's serious incidents are lower, while the collisions classified as slight are higher.

13% of road traffic incidents in 2020 in Stoke-on-Trent involved cyclists, of these incidents 40% were classified as "serious", with 12% pupils travelling to/from school. Most of these incidents occurred on A roads and at junctions.

As shown in **Figure 2.8**, the volume of collisions increases in urban areas, with the highest concentration occurring in the Inner Urban Core as well as around key corridors that provide access to the City Centre. Half of the accidents have occurred on class 3 roads meaning roads that distribute traffic between the principal residential, industrial, and business districts of the town such as the A34, A50 and A53 etc. The increased concentration of collisions in the inner urban areas is likely to reflect the presence of more traffic, more junctions, and a higher number of vulnerable road users.

The Transport Improvement Plan (see Summary Chapter 8) gives details on road safety elements to be implemented at Phase 1 (2022-25) and Phase 2 (2026-2031). The two phases include maintaining and evaluating collision data and road safety initiatives and campaigns through the Staffordshire Safer Roads Partnership. This is achieved through identifying collision sites and causes to inform priority safety schemes; balanced approach of education and information based around data on vulnerable users, with enforcement via review and upgrade (first phase) of safety cameras and speed awareness course provision.

[14] Road Safety Data (Casualties, Vehicles, Accidents) 2020, DfT

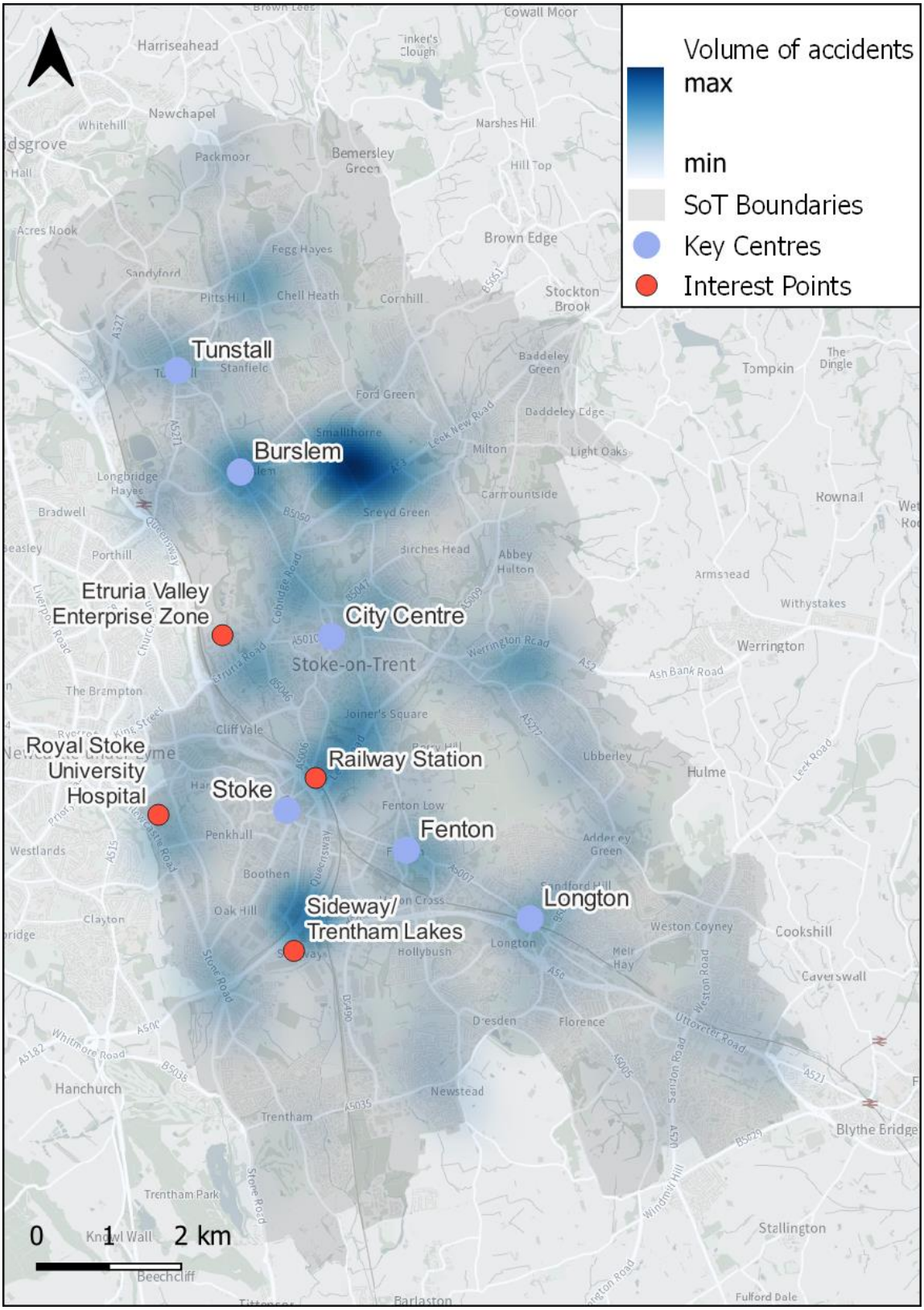

Figure 2.8 Road Collisions Heatmap[15]

[15] Road Safety Data (Casualties, Vehicles, Accidents) 2020, DfT

Challenge 11 – Improving highway safety through corridor improvement packages: A future increase in road users, particularly pedestrians and cyclists, is likely to increase the number of road collisions and casualties in the city.

Opportunity 15 – Corridor improvement packages for specific roads, especially in the Inner Urban Core, could help reduce the number of road collisions and casualties.

2.2.8 People summary

Stoke-on-Trent is a polycentric city with a chain of six towns. It has a low population density with half the resident population located in 'suburban sprawl' and not well connected to any of the six town centres and other key destinations. Population growth between 2011 and 2022 for Stoke-on-Trent has been 3.8% whereas nearby areas like Cheshire East and Stafford have seen their populations increase by around 7.7% and 4.5%, respectively. The overall population increase for Stoke-on-Trent are lower than West Midlands average.

A key, positive trend is the densification of the urban centres in recent times. However, major developments in the Outer urban Core continue to increase.

In 2021, Stoke-on-Trent ranked 69th for total population levels out of 317 local authority areas in England, which is a fall of six places from the previous decade. A key problem for Stoke-on-Trent is that according to the latest census figures there has been an increase in age groups which are typically more reliant on state support, with a 14.1% increase in people aged 65 years or over and an 8.5% increase in children aged 15 years or under. Whereas the primarily working age population aged 15 to 64 years has remained static. This puts pressure on economic growth. Further, Stoke-on-Trent is ranked as the 14th most deprived local authority in England out of 317.

While employment rates have over recent years moved towards - and occasionally exceeded- regional and national levels - jobs created have largely been low-value, low-skill in occupations and in industries more susceptible to economic downturns and technological advancements. The area has moved away from its historical manufacturing industries towards service-based industries which employ nearly half of the population (47%). There are also some highly skilled employment hubs in Stoke-on-Trent including the Staffordshire University, Etruria Valley Enterprise Zone, and Royal Stoke University Hospital. The area has dispersed employment centres. With over 30% of the population without access to a car, there is a two-tier society in Stoke-on-Trent – those with and those without access to a vehicle. For those with a vehicle, its low urban density spreads the demand on road space and makes it relatively easy to get around, thus assisting the economy – particularly edge of town, shift-based employment. For those without a vehicle, the same things that are good for car users are a barrier to them – long public transport journey times, often with the need for interchange, and heavily reduced or lack of any public transport service outside core daytime hours. Road safety and air quality externalities are also then more concentrated in the central area of Stoke-on-Trent where car ownership is lowest, thus exacerbating issues for non-car owners as well as negatively impacting the general population.

It should be noted that Sheffield is the smallest Built-Up-Area (BUA) in England with a mass-transit (tram) system (population of c.690K), followed by Nottingham c.730K.

This is significantly above the population levels of Stoke-on-Trent and its surrounding area. Thus, it points to a need to a 'balanced approach' for transport, whereby access for non-car transport is significantly improved but that it is acknowledged that car access will remain key into the future. Overall, in transport terms, it is the lack of connectively for a dispersed population rather than chronic congestion that is the key driver for the need for change in Stoke-on-Trent.

Going forward, Stoke-on-Trent and its strategies need to place higher importance on the need to access good quality public transport services and active travel links to access opportunities across the city. To overcome its long-standing growth and deprivation challenges, significant transport improvement schemes are required to help regenerate the city.

2.3 Place

2.3.1 Climate emergency and carbon targets

To address the UK's Greenhouse Gas (GHG) emissions, the Government has set a legally binding target of reaching net zero carbon emissions by 2050. There is also an interim target of reducing emissions by 78% by 2035. The City Council has declared a climate emergency on the 4th of July 2019 with a net zero target by 2030.

To assess progress against this, it is important to understand the total carbon emissions in Stoke-on-Trent. In 2019, the total amount of CO_2 emissions from transport were 323 (kt CO_2)[16]. This makes up roughly 25.2%[17] of all the CO_2 emissions within Stoke-on-Trent.

In 2019 the average transport carbon emission per capita within Stoke-on-Trent was 1.25 tonnes[18]. This compares with an average of 1.86 tonnes[19] for the UK. This data for Stoke-on-Trent does not however include through trips on the Strategic Road Network (A500, A50), but these do contribute significantly to carbon emissions of the area.

Challenge 12 – Reducing carbon emissions from local transport to support the net zero target: Local transport is a significant contributor to carbon emissions.

Opportunity 16 – Support behavioural shift towards sustainable transport modes through improved sustainable transport offers combined with a better digital infrastructure to reduce the need to travel.

Opportunity 17 – creation of lower emission bus, taxi, and other commercial fleets.

Opportunity 18 – provision of EV charging infrastructure – residential, business, and public.

2.3.2 Air Quality

The impact of vehicle emissions on people's health from poor air quality has become a prominent issue in recent years. The main pollutant of concern for Stoke-on-Trent is

[16] Source: National Statistics, UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2019
[17] ibid
[18] ibid
[19] ibid

nitrogen dioxide (NO2) emitted from road traffic (busy and congested roads)[20]. In **Figure 2.9**, we can see that the high NO2 levels in the city are concentrated in the Inner Urban Area as well as along Primary and A roads and the areas adjacent to them.

The Ministerial Direction from the Joint Air Quality Unit (JAQU) - formed from the Department for Food, Environment and Rural Affairs (DEFRA) and Department for Transport (DfT) in 2018 - is directed to both SoTCC and Newcastle-under-Lyme Borough councils. The direction mandated the authorities to reduce roadside NO2 emissions within legal limits. Both councils worked together to develop the North Staffordshire Local Air Quality Plan (NSLAQP) to find solutions in the quickest possible time.

The modelling work for the NSLAQP identified three-future year (2023) exceedances, namely the A53 at the top of Basford Bank, Victoria Road near Fenton, and Bucknall New Road near the City Centre. The following solutions are being progressed with JAQU to mitigate these exceedances, namely:

- A bus gate at A53 Etruria Road at the bottom of Basford Bank limiting traffic heading in the westbound direction during peak times reducing pollution on the A53. This is coupled with improvements to signal timings along the A53 to maximise air quality benefits and to provide pedestrian crossing facilities.
- Bus retrofitting to Euro VI emission standards, for buses travelling along Bucknall New Road.
- Cleaner goods vehicles and taxis through the implementation of a Charging Clean Air Zone Type C to reduce emissions at Victoria Road.

The measures will improve air quality, especially in the Inner Urban Area and better the quality of life of the local population. Any further sustainable transport options and measures to reduce air pollution should be considered as this will benefit the health and wellbeing of Stoke-on-Trent’s residents.

The city council is seeking funding support through JAQU to implement a complementary range of measures to the above proposals, including a behaviour change programme and additional bus (clean engine) retrofits.

[20] 2018 Air Quality Annual Status Report (ASR), SoTCC 2018

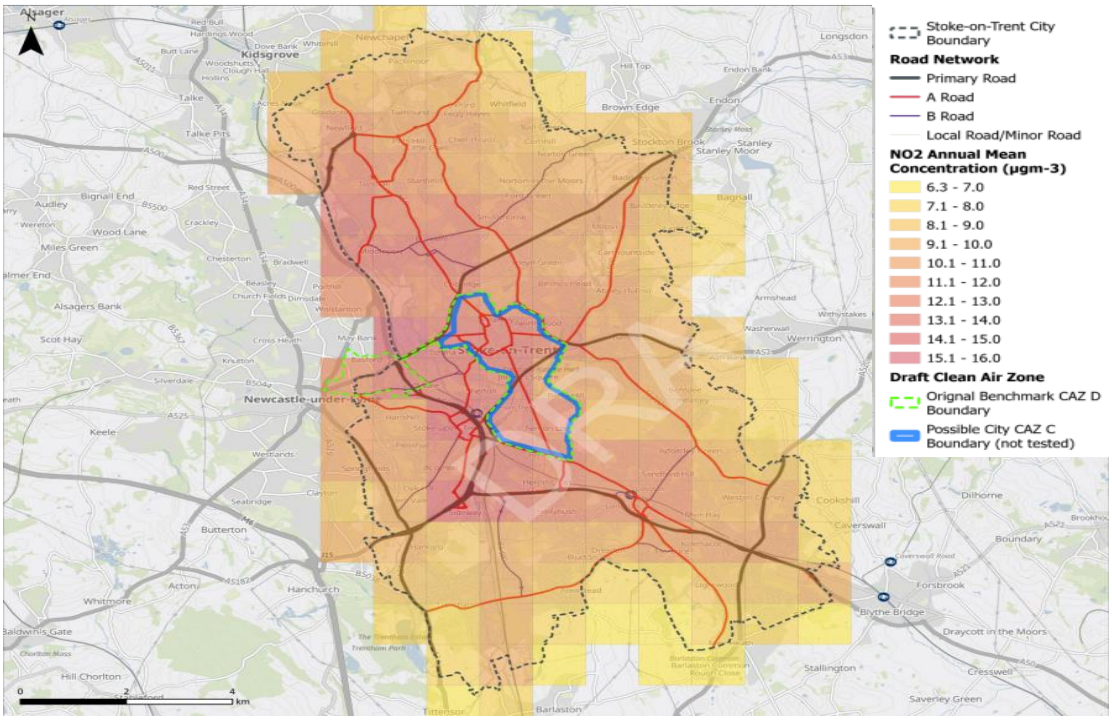

Figure 2.9 NO2 Annual mean concentration[21]

Challenge 13 – Improving air quality through emissions reduction: High NO2 levels in the city are mainly concentrated in the Inner Urban Area as well as along A roads and the areas adjacent to them.

Opportunity 19 – Investment in transport measures that help deliver improved air quality in addition to what is planned for the NSLAQP which includes a charging CAZ C. The introduction of ultra-low and zero-emission propulsion technologies to improve air quality in Stoke-on-Trent should be considered including greening the bus and the Council's vehicle fleet.

2.3.3 Flood risk

Stoke-on-Trent is not considered to be as vulnerable to the effects of changing weather patterns as some parts of the country (coastal regions and large flood plains).

However, areas of Stoke-on-Trent are vulnerable to flooding, with 4% of the city in Flood Zone 3 (1 in 100 or greater annual probability of flooding) and an additional 1.4% of the city in Flood Zone 2 (1 in 1000 or greater annual probability of flooding). Additionally, 8,907 residential and 1,629 non-residential properties are at risk from surface water flooding[22].

As shown in **Figure 2.10**, there are areas of Stoke-on-Trent susceptible to surface water flooding due to the presence of the River Trent, Fowlea Brook and the Canals[23], especially around Trentham lakes and Stoke.

[21] Source: SoTCC LCWIP
[22] Stoke-on-Trent Preliminary Flood Risk Assessment (PFRA)
[23] Stoke-on-Trent Preliminary Flood Risk Assessment (PFRA)

Recent severe weather has increased the likelihood of flooding, and there is a consensus in the scientific community that climate change will only increase incidents of extreme weather, further worsening the problem. Key actions, such as the Milton Road improvement are imperative to improve the area's roads and tackle known flooding hotspots.

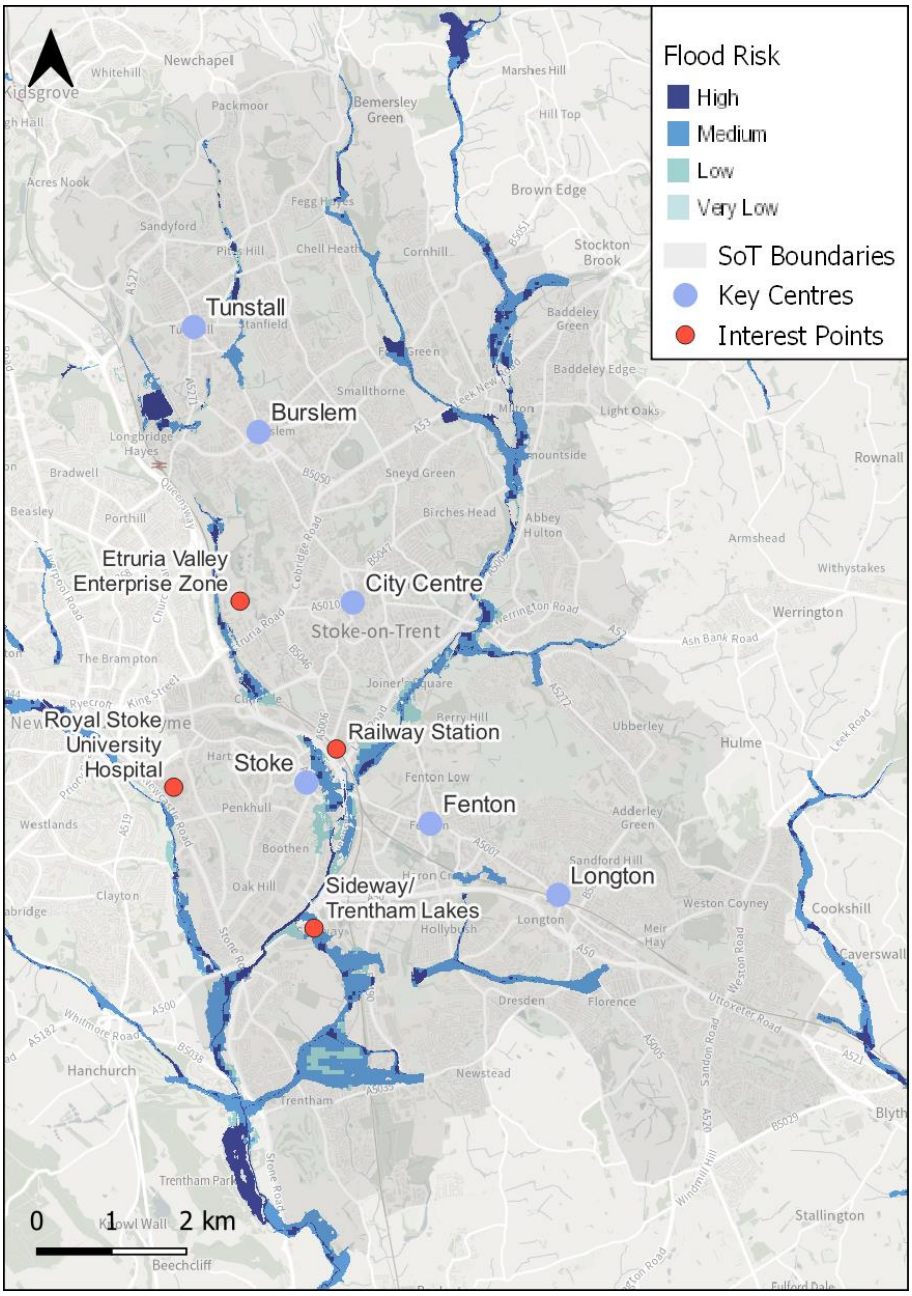

Figure 2.10 Risk of Flooding from Rivers and Sea

Challenge 14 – Developing a local transport network that is resilient to the impacts of climate change: The delivery of large-scale transport infrastructure, such as new mass rapid transit schemes, may be challenging due to the inherent flood risk in central parts of Stoke-on-Trent.

Opportunity 20 – Delivering new infrastructure with includes flood mitigation.

2.3.4 Protected areas

There are numerous protected areas and other heritage and ecological assets in Stoke-on-Trent as shown in **Figure 2.11**. There is opportunity to protect and enhance those areas through delivery of local transport schemes, which could improve accessibility. Additionally, there is an opportunity to improve the sustainable transport connectivity of parks, gardens, and nature reserves through new and improved walking and cycling routes. This will create new opportunities for recreation and exercise for the city's residents.

Heritage: Historic England has a list of heritage sites which is at risk. There are currently 11 buildings/ structures/ monuments on the list in the Stoke-on-Trent area. These are[24]:

- Former Wedgewood Institute (Public Library), Queen Street, Burslem
- Bethesda Methodist Chapel, Albion Street, Hanley
- Bottle oven and factory, Price and Kensington Teapot Works, Newcastle Street, Longport
- Mausoleum, Stone Road, Trentham
- Chatterley Whitfield Colliery, Biddulph Road, Stoke-on-Trent
- Pithead baths and canteen, Biddulph Road, Stoke-on-Trent
- Hutton Abbey, Leek Road, Stoke-on-Trent
- Church of St John the Evangelist, High Street, Goldenhill
- All Saints Church, Leek Road, Hanley
- Church of St John the Baptist, Cross Hill, Burslem
- Roman Catholic Church of St Joseph, Hall Street, Burslem

Ecology: Approximately 3%[25] of the land area in Stoke-on-Trent is Greenbelt. Greenbelts are designated areas to stop urban sprawl.

Stoke-on-Trent is one of the greenest cities in the UK with green corridors, rivers, and canals as its signature landscape[26].

Stoke-on-Trent has parks, gardens, and nature reserves along with notable Heritage buildings in rural areas. The rivers and canals, whilst providing pedestrian and cycle access, could be utilised further, to better support active travel through routes alongside the waterway and to be used by water transport to enhance connectivity between the outer urban areas and the City Centre.

[24] English Heritage (2014) Heritage Counts 2014 West Midlands
[25] CPRE's report with ADAS, Nature Conservation and Recreational Opportunities in the Green Belt (2016)
[26] Green Space Strategy, 2018 SoTCC

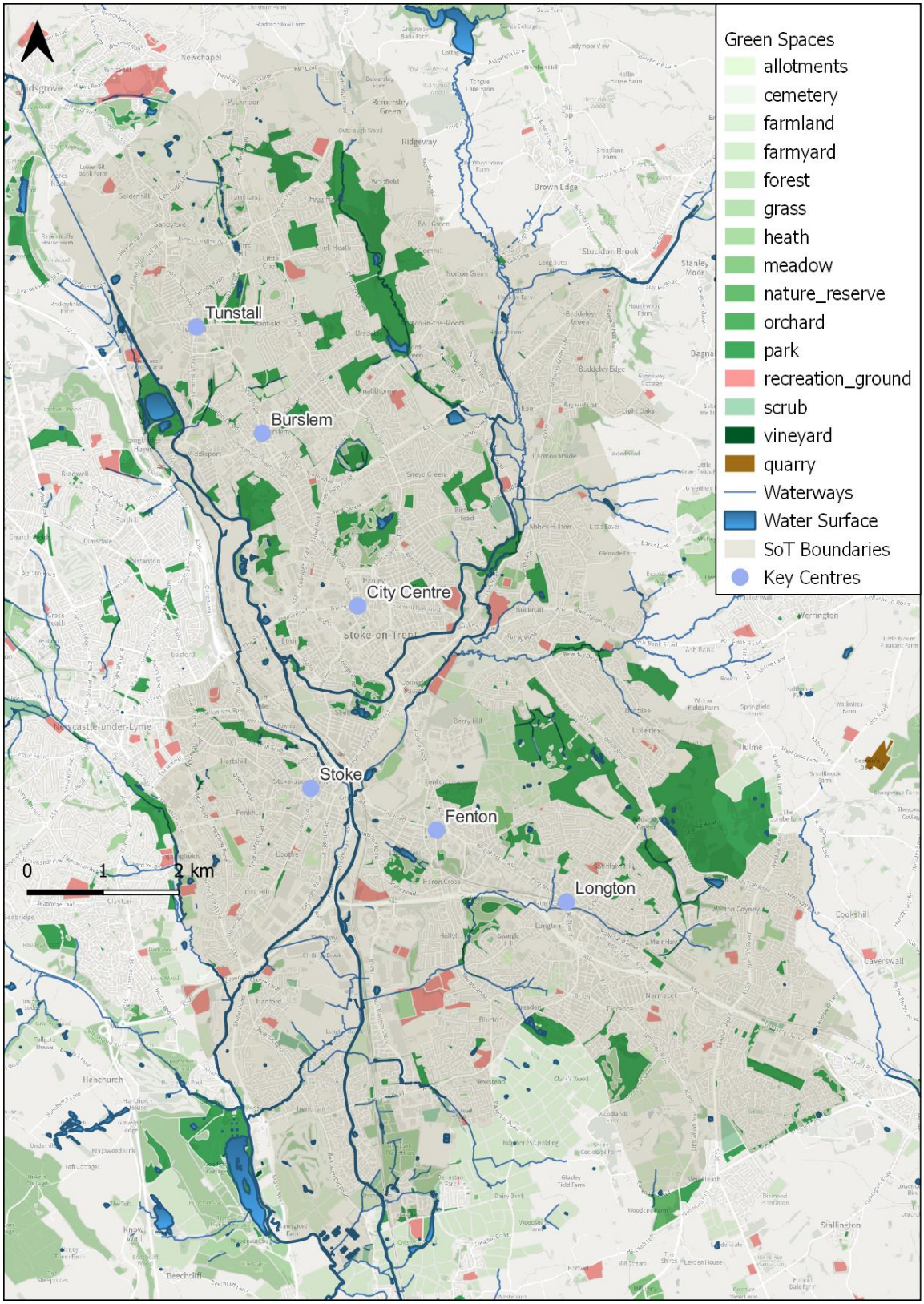

Figure 2.11 Green Spaces, Waterways and Water Surfaces[27]

[27] OpenStreetMap data from Geofabrik

Challenge 15 – Ensuring Stoke-on-Trent's natural and heritage assets are protected: There are numerous protected areas and other heritage and ecological assets in Stoke-on-Trent. The delivery of large-scale transport infrastructure will need to take them into consideration.

Opportunity 21 – Complementing existing heritage sites and green corridors with sustainable transport (i.e., transport corridors – active travel, green bridges, and eco-tunnels) as well as with active travel schemes to expand their utilisation.

Opportunity 22 – Use of Stoke-on-Trent's waterways for both local transport and freight.

Opportunity 23 – Transport interventions to facilitate the new journey patterns.

Opportunity 24 – Alternative transport options to keep up with the freight demand such as rail and water transport freight.

2.3.5 Place Summary

Stoke-on-Trent's polycentric and dispersed nature has led to high levels of car usage in the area which results in high levels of carbon emissions and local air quality issues emanating from transport. More sustainable transport measures are needed to address issues from car traffic and encourage modal shift to non-car modes. Impacts from climate change such as flooding will need additional mitigation work on both existing and new infrastructure. However, the development of new infrastructure creates the opportunity to add in flood defences. With a high number of waterways in the area, there is an opportunity to harness the benefits of blue/green infrastructure to enhance not just movement but placemaking.

Stoke-on-Trent's emerging high growth, high skills employment is particularly focussed on several enterprise zones, underlining the need to deliver high quality transport infrastructure that connects these locations to both where people live within Stoke-on-Trent and surrounding areas as well as to key transport hubs. The change in employee patterns to 24-hour shift working shows that an enhanced transport network is required to deliver a high standard of performance throughout the day and night.

2.4 Connectivity

2.4.1 Digital

The rise of home working has increased the importance of digital connectivity.

Coverage of reliable, high speed mobile internet also varies across the city with gaps in coverage on the strategic road and rail network presenting issues.

Remote and hybrid working is likely to bring about other benefits such as a reduction in traffic congestion thereby underscoring the need for improved digital connectivity to residents' homes. However, the adoption and success of a hybrid style of working is also dependent upon workplace culture and how open individual businesses are to embrace such a change. The rollout of superfast and ultrafast broadband is imperative especially in areas with lower average download speeds to help harness the benefits of home working.

Stoke-on-Trent's Silicon Valley Prospectus has outlined a strategic vision and framework to enhance the digital connectivity of the city. The full-fibre gigabit network (113km citywide) is complete and has set the foundation for joining the network of Smart Cities[28].

Digital connectivity also provides real time travel information to inform the most suitable transport mode and route for the user's journey (via apps, Google maps, etc.). It also facilitates the ability to use car clubs/bikes, e-tickets for train/bus/tram travel and parking tickets, thus making multi-modal transport journeys much easier and efficient. This is an area that Stoke-on-Trent could improve upon.

Challenge 16 – Building on the full-fibre gigabit network to reduce the need to travel and/or enhance efficient journey times: Coverage of reliable, high speed mobile internet varies across Stoke-on-Trent with gaps in coverage on the strategic road and rail network presenting particular issues.

Challenge 17 – Building on the full-fibre gigabit network to provide digital connectivity: Real time travel information is limited in Stoke-on-Trent.

Opportunity 25 – The rollout of superfast and ultrafast broadband and mobile internet in areas with lower average download speeds.

Opportunity 26 – Create opportunities for multi-modal journeys through the development of apps that can be used for journey planning and ticketing (allowing for all the multi-modal routing options).

2.4.2 Walking and the Hierarchy of Road Users

Travel to work by walking has a mode share of 11.7%[29] in Stoke-on-Trent, close to the national average of 11%. 18.34%[30] of Stoke-on-Trent's population live within a 15-minute walk to their workplace and yet the main travel mode to work is driving by car, as shown in **Figure 2.12**.

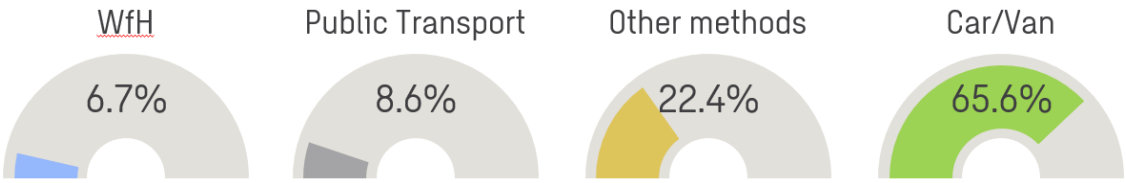

Figure 2.12 Method of travel to work Stoke-on-Trent[31][32]

The LTP highlights key barriers to making trips on foot in Stoke-on-Trent including:

- traffic speeds and illegal parking make walking unattractive
- fear of crime, partly associated with the poor quality of street lighting
- the A50 and A500 cause severance

[28] Silicon Prospectus V6, SoTCC
[29] ONS 2011, Location of usual residence and place of work by method of travel to work WU03UK
[30] Source: ONS 2011, Distance travelled to work QS702EW
[31] Method of travel to work by distanced travelled to work, 2011(LC7701EW)
[32] **Public transport includes:**
- Bus, minibus, or coach, train, underground, metro, light rail, or tram
Other transport types include:
- being a passenger in a car or van, cycling, walking
- other forms of transport, which includes using a motorcycle or moped, or using a taxi.

- footways are in a poor condition
- a poor pedestrian environment discourages walking
- there are inadequate crossing times at traffic lights
- there is a lack of safe, attractive pedestrian routes

Attractive walking environments are key for encouraging multi-modal journeys through providing safe access to bus stops and interchanges. Creating a healthy street concept attracts more local footfall and encourages local business trade and social interaction while elevating the visitor economy. It can also make people feel safer. Improving local street environments will increase walking, active travel and use of public transport which will in turn benefit health, wellbeing, and mental health, especially with the current shift on working patterns (i.e., Working from Home – WfH). This will need to be supplemented by the city council and partner organisations providing behaviour change encouragement programmes.

There is an element of pedestrianisation in most of the town centres. In 2020, due to covid social distancing measures, a pedestrian priority scheme was delivered in the centre of Hanley. This scheme saw bollards installed to stop vehicles driving through pedestrian zones, and to support efforts by traders to create more of a street café culture. This kind of project could be implemented across the six towns but will need support of local businesses. As shown in **Figure 2.13**, the key walking desire lines are located around Tunstall, Burslem, Longton and the general inner urban core, as such, pedestrian interventions to improving these locations similar to that trialled in Hanley, would benefit the local population.

When considering local interventions, it is important to consider recent changes to The Highway Code especially in relation to the hierarchy of road users. This hierarchy places road users who are at the most risk of being injured in a collision at the top of the hierarchy but does not remove the need for all road users to be responsible. This set out that drivers and motorcyclists must give way to pedestrians crossing or waiting to cross a road and must not cut across cyclists when turning into or out of a junction or changing lane.

A Local Walking and Cycling Implementation Plan (LCWIP) is being developed which provides a basis for introducing improvements where they will be of greatest benefit.

As walking is the first and last part of most journeys then consideration should be given to how those with reduced mobility can undertake that within their capabilities. This also applies for those who require assistance through mobility scooters or wheelchairs, so the public realm should be designed to accommodate as many people as possible.

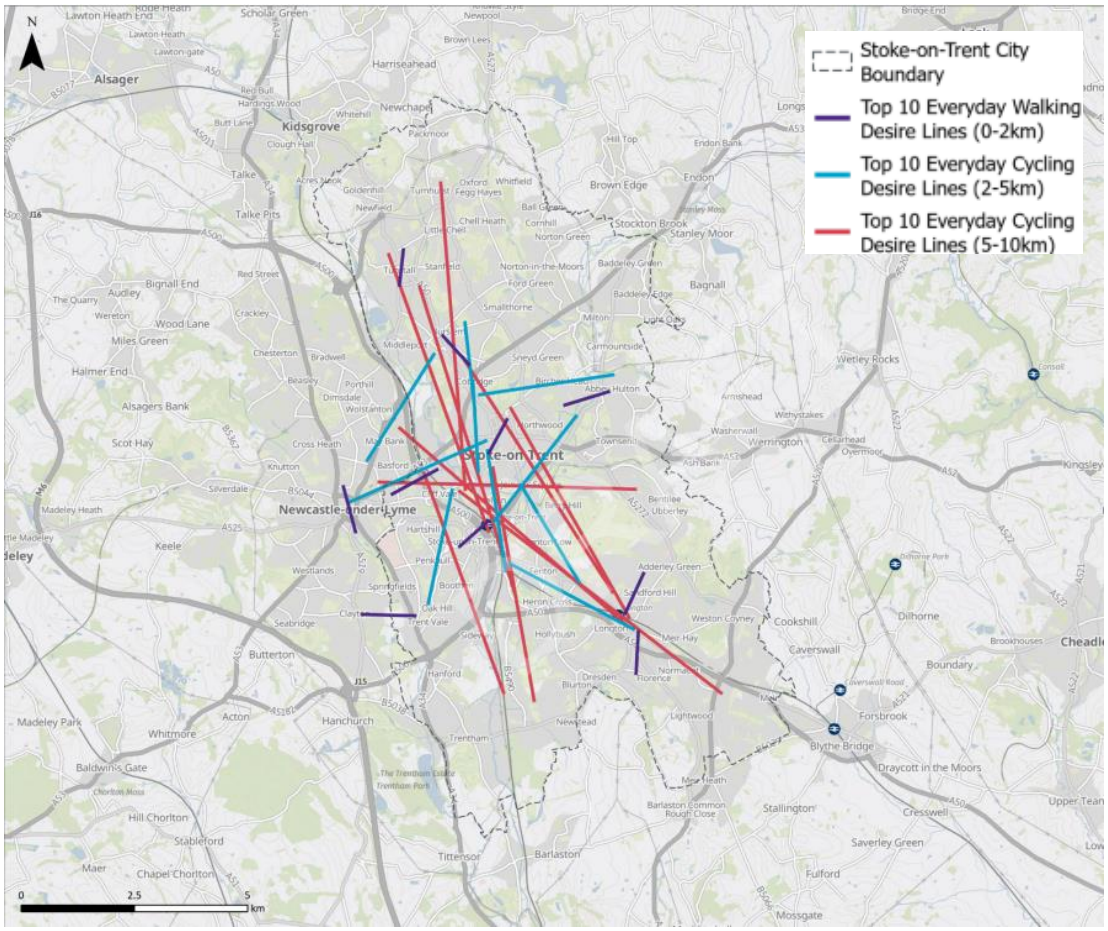

Figure 2.13 Top 10 Everyday Desire Lines from SoTCC LCWIP (Walking, Cycling)[33]

Challenge 18 – Increasing local walking trips: Severance, conflict with vehicular traffic and a poor pedestrian environment presents key challenges for the city, as does an ingrained travel behaviour that often discounts walking as a viable option, even for short trips.

Opportunity 27 – With 18% of Stoke-on-Trent's residents living within a 15-minute walk of key destinations, there is opportunity to encourage increased trips on foot, particularly along key pedestrian desire lines located both in the City Centre and Outer Urban Core (Tunstall, Longton). Encouraging more local journeys to be undertaken by sustainable modes, including walking or cycling will enhance opportunities to develop 15-minute neighbourhoods, where key services and amenities can be accessed within a 15 minute walk.

2.4.3 Cycling

According to Census data[34], only 1.45% of those travelling to work in Stoke-on-Trent do so by bicycle, lower than the national average of 2.8%.

Figure 2.14 shows key cycle routes and local cycleways which run through Stoke-on-Trent and how they connect to the centres of Tunstall, Burslem, City Centre (Hanley)

[33] Source: SoTCC
[34] ONS 2011 from WP703EW

and Stoke. There is also a cycle path along the river Trent that connects Trentham, Trentham Lakes, and Stoke-on-Trent Railway Station. The network of greenways shared use paths provide sections of traffic free, off road routes through green spaces and sections of canal tow path.

The LTP identified a range of barriers to cycling in Stoke-on-Trent, including poor road surface condition, obstruction from illegal parking, lack of cycle parking facilities, disjointed routes, poor weather, poor driver behaviour and cycle routes which are badly lit and unsafe. The topography of Stoke-on-Trent also presents a barrier to cycling particularly around Stoke and Burslem which have steep roads which may discourage journeys by bicycle. These aspects come together to create an environment that is not conducive to cycling.

The existing greenways network, including sections of canal towpath require a regular and consistent maintenance programme, to remove overgrown vegetation, littered sections and uneven or broken surfacing. Without regular maintenance some of those routes can become unwelcoming for active travel users.

The delivery of Stoke-on-Trent's Local Cycling and Walking Infrastructure Plan (LCWIP) is a key part of improving the active travel network, which will improve connectivity to key employment, education, retail, leisure, and healthcare opportunities. It will also integrate with key public transport interchanges such as Stoke-on-Trent's rail and bus station to make a more integrated transport network. These changes will also link into the national Gear Change policy which aims to transform the role cycling and walking can play in the UK's transport system.

It is important that cycle networks provide high quality connections between residential areas, employment areas and public transport interchanges to help facilitate multi-modal journeys by public and active transport. There are no cycle routes which allow for direct, segregated cycle journeys between key destinations which would promote commuting by bicycle which is a key weakness. Improving cycle infrastructure to provide direct, safe connections, particularly where there are key cycle desire lines present an opportunity to increase cycle mode share.

Due to the hilly terrain and steep gradient, promoting use of electric bicycles could be an alternative option. It is important to provide opportunities for cycling as well as to offer an emission free alternative to motorised transport, cycling provides health benefits.

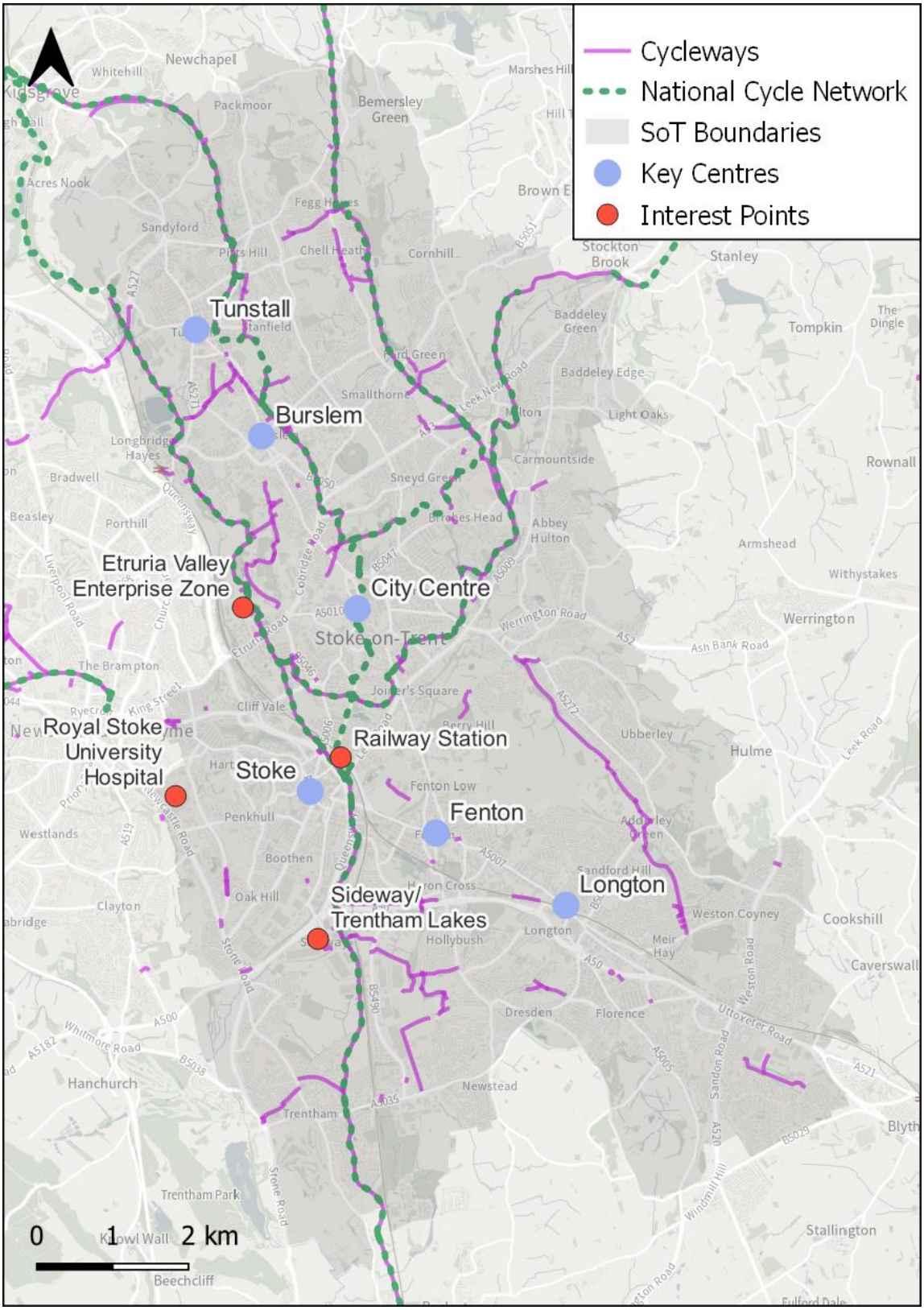

Figure 2.14 Cycling Network[35]

[35] Source: Staffordshire open data

Challenge 19 – Improving cycle connectivity to facilitate an increase in trips by bike: Environment that discourages cycling (poor road surface condition, lack of complete segregated cycle network, poor quality cycle parking facilities, disjointed routes, hilly terrain).

Opportunity 28 – Improve cycle infrastructure to provide direct, safe connections, particularly where there are key cycle desire lines present to increase cycle mode share. Linking in with the emerging Local Plan and the new Local Cycling and Walking Infrastructure Plan (LCWIP)

Opportunity 29 – Promote electric bicycle use as an alternative option due to the city's topography.

2.4.4 Bus

The main public transport offer in Stoke-on-Trent, for local trips, is the bus network. There are currently 38 bus routes operating in Stoke-on-Trent. First Potteries operates the greatest number of routes – 17 in total, representing more than 70% of the journeys operated on a typical weekday. D&G Bus operates 15 routes (representing a quarter of daytime services), and several other operators run a small number of routes[36].

Service frequencies vary considerably across the network, which impacts upon the attractiveness of public transport with many areas lacking 'turn up and go' style services. **Figure 2.15** shows the frequency of local bus and coach services in Stoke-on-Trent during the evening peak hour (1700 to 1759) on a weekday in 2022. The most frequent bus corridors connect the city centre, rail station and hospital. The city centre also has reasonably frequent services to the other town centres and a number of major residential areas. Apart from these services, high frequency local bus corridors are limited, Interpeak (daytime), a.m. peak and Saturday services remain at a similar level to the p.m. peak and are thus equally variable and limited in places. Evening and Sunday services are significantly less frequent, with many corridors and communities with no service (see Appendix F - Bus Network Frequency). Local bus connectivity for smaller settlements and the south and west of the city is particularly poor.

[36] Bus Service Improvement Plan, 2022

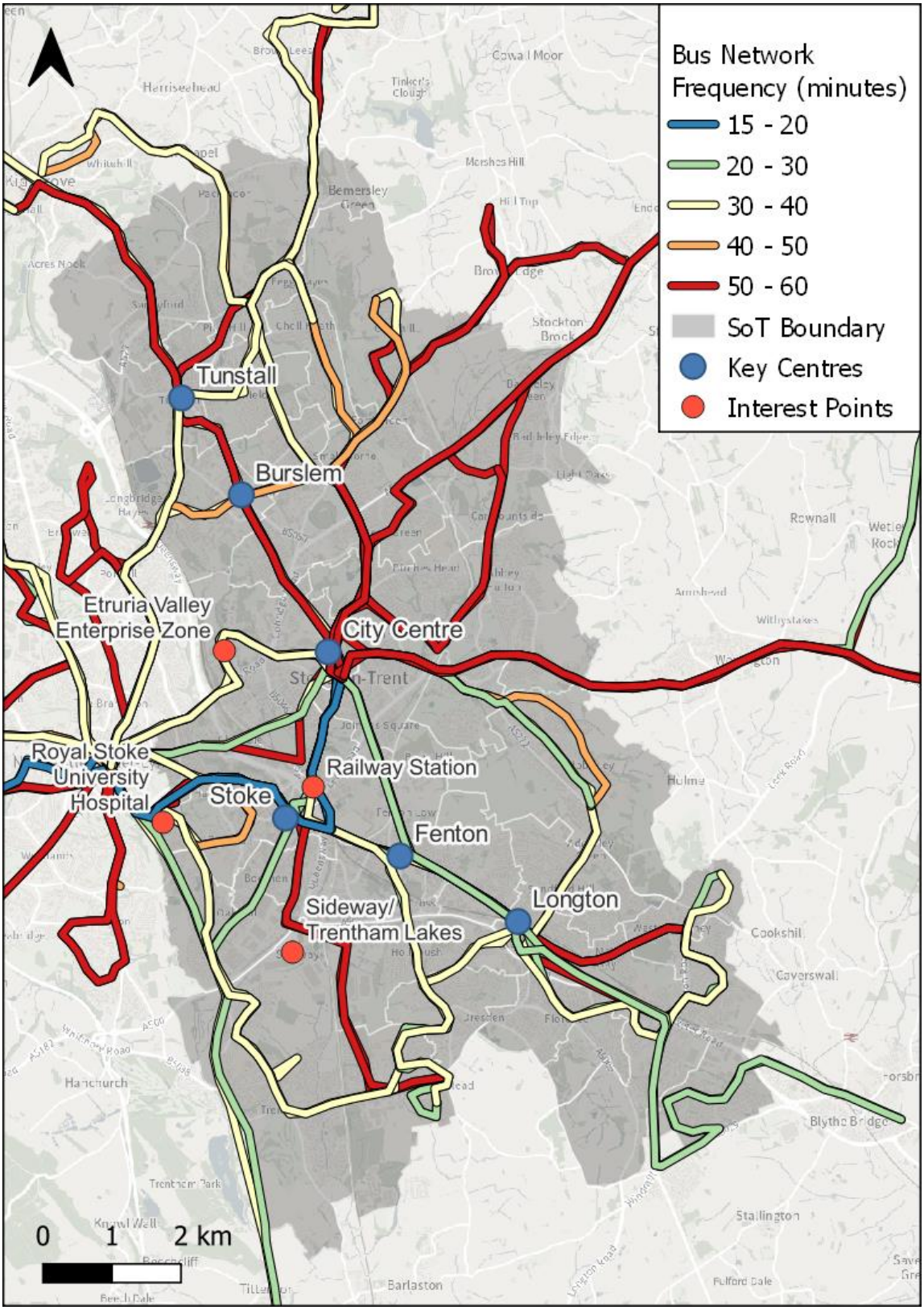

Figure 2.15 Bus Network Frequency by minutes (Peak Hour PM) – T

As mentioned in previous sections (see Figure 2.12), fewer than 9% of people who live in Stoke-on-Trent travel to work by public transport (based on 2011 Census data) affirming the preference and reliance of car use. This can be explained by the poor bus performance in terms of comparative journey times with the car between the city

centre and key locations, as shown in **Table 2.2**, due to low service frequency and indirect routes requiring the need to interchange.

Location	Car journey time (in min)	Bus journey time (in min)
Newcastle-under-Lyme	11	17
Trentham	13	18
Longton	16	20
Keele	17	37
Kidsgrove	15	30
Tunstall	12	23

Table 2.2 Selected average weekday daytime journey times by car and bus to the City Centre[37]

Bus punctuality data indicates that in 2019 only 77% of bus services in Stoke-on-Trent ran on time. While this is the highest level of punctuality Stoke-on-Trent bus services have experienced since 2013, this remains below the West Midlands regional average of 81.5% and the national average of 83%.

Whilst the city does not experience the same levels of regular congestion as some cities, it does have a number of junctions which operate beyond their operational capacity or are calculated to do so in the next ten years. It also suffers from irregular congestion patterns, exacerbated by the impact of problems on the nearby Strategic Road Network, particularly the M6. As identified in the current Local Transport Plan, without intervention – a likely mix of managing demand and selective capacity improvements – this will continue to impart a cost of lost productivity to the local economy, as well as exacerbate air quality concerns.

It is highly challenging to operate a bus network in a congested environment, particularly an unpredictable one, thus it has resulted in operators reducing risk by building in additional running time and reducing route length to enable more easy lost time recovery. One outcome of this is the increase in routes which terminate at the City Centre bus station[38] rather than operate cross-city. This results in a cost of interchange to users in terms of time and cost, and particularly impacts accessibility between residential areas to the north and east of the city centre and the major employment, educational and health facilities to the west of the city centre. The extra costs to operators of building in additional time has played a role in service reductions.

In addition to long journey times (compared to the car), poor punctuality and reduced services further exacerbated by the pandemic, a range of further challenges are also evident. These cover issues regarding customer satisfaction with bus services in Stoke-on-Trent including high and inconsistent fare structures, an aging bus fleet with less than half meeting the EURO VI environmental standard and limited real time information.

Bus services within Stoke-on-Trent have shown a long-term decline in ridership. **Figure 2.16** show that over a decade between 2009 and 2019 the number of bus passenger journeys in Stoke-on-Trent declined by 40%, which is the second largest decline out of all local authorities in England. Pre-pandemic patronage had fallen from

[38] ibid

15.6m in 2009/10 to 8.6m in 2019/20. During the pandemic patronage fell as low as 3m.

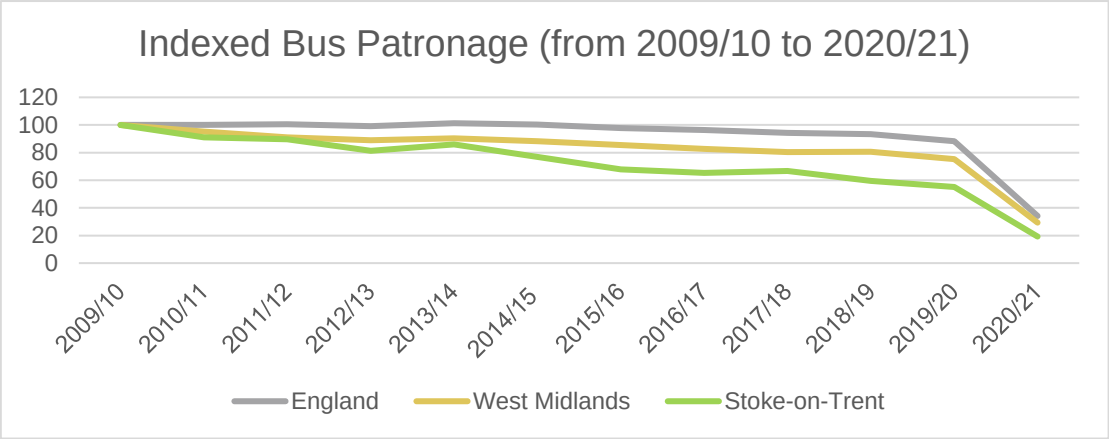

Figure 2.16 Indexed Bus Patronage 2009/10 to 2020/21[39]

Maximising physical access to the bus network will also require consideration of aspects such as seating at bus stops and at intermediate places between main bus stops and residential areas; ensuring information is provided in a format available to those with a physical, visual or hearing impairment; and assessing the opportunities for flexible bus services which can deviate from routes to get closer to where people live – demand responsive transport.

Challenge 20 – Developing a local bus network which is an attractive and practical alternative to the private car: High frequency bus services connecting residents with key opportunities in Stoke-on-Trent are limited Punctuality is also below the West Midlands average presenting a challenge in terms of providing a reliable service.

Opportunity 30 – Bus options that deliver an attractive, high frequency, fast and reliable bus offer should be explored to create a viable alternative to the private car and build on the improvements planned to be delivered through the package of Bus Service Improvement Plan (BSIP) measures. The BSIP is a programme of bus improvements up to 2025 based on an award of capital and revenue funding from the DfT.

2.4.5 Rail

There are three main railway stations in Stoke-on-Trent: Stoke-on-Trent, Longport, and Longton railway stations, with Kidsgrove and Blythe Bridge railway stations just outside the city boundaries. The rail network in Stoke-on-Trent connects the northwest and southeast area to Stoke-on-Trent Railway Station which is the closest gateway to the City Centre. It is on the Stoke branch of the West Coast Main Line (WCML) and connects Stoke-on-Trent to the wider West Midlands region including Birmingham as well as the rest of the UK, providing direct connections to the major cities of London and Manchester.

[39] Source: Passenger journeys on local bus services by local authority from 2009/10, BUS0109a Dft

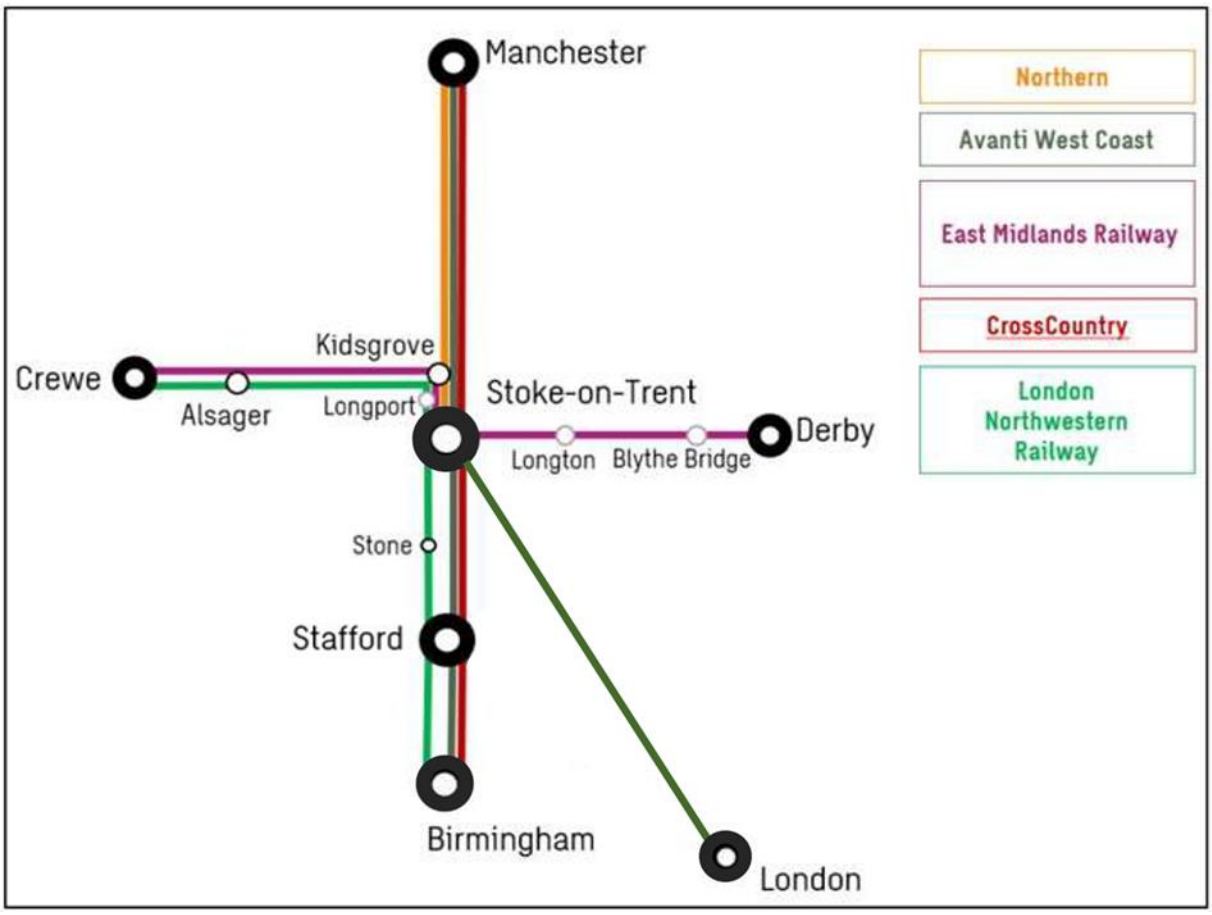

Figure 2.17 Rail connections from/to Stoke-on-Trent

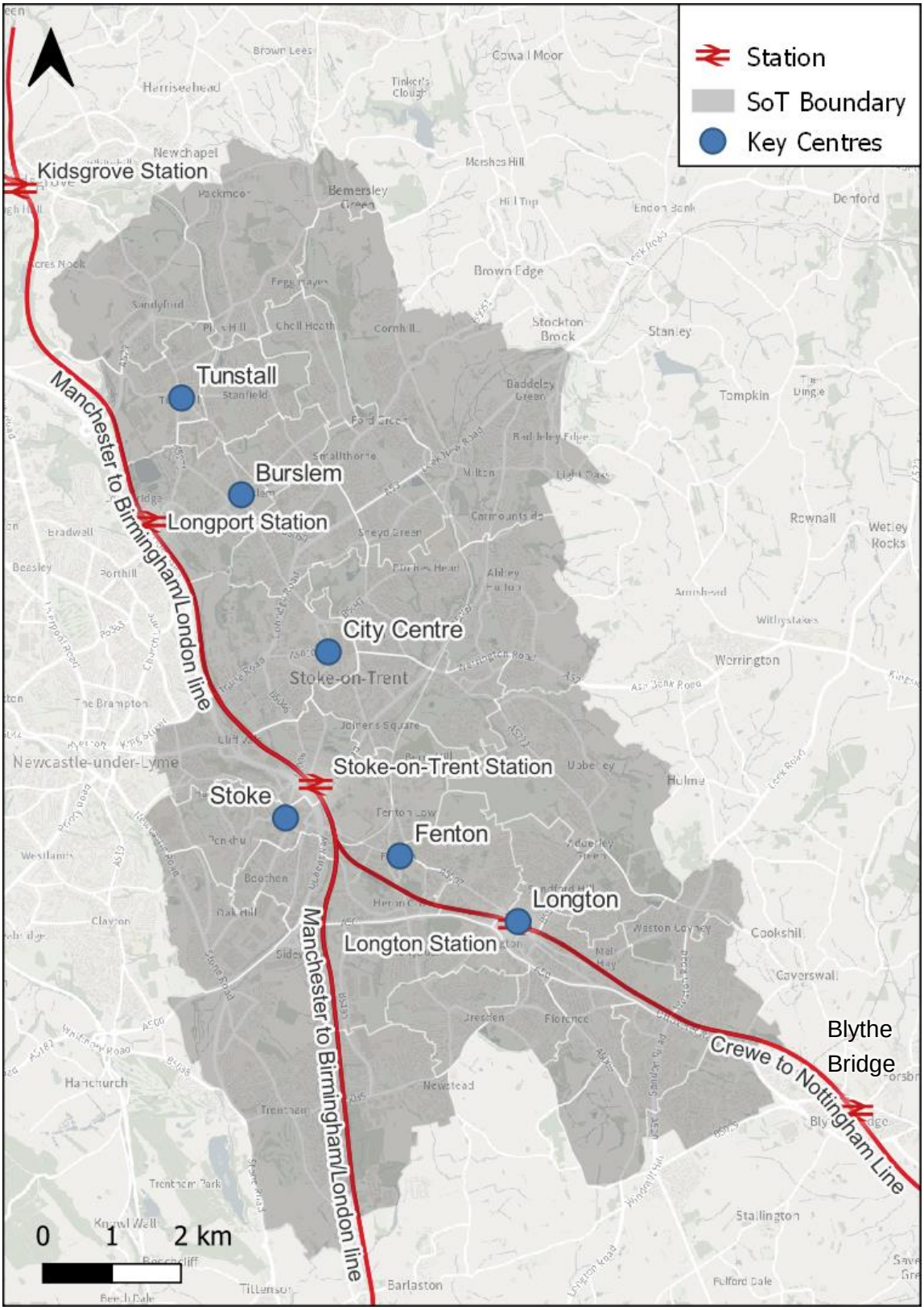

Figure 2.18 Local Rail network in Stoke-on-Trent

It is evident from the above map (**Figure 2.18**) that the local rail network is limited within the city, serving only a specific area of the city. The reach of the network is restricted, thus making it a non-viable option for most of the residents.

As presented in **Table 2.4**, Stoke-on-Trent railway station has significantly higher passenger patronage than the other stations. As it is the station closest to the City Centre, it also serves as an access point for visitors or residents travelling into and out of the city. This explains the significant difference in the patronage between stations. Nevertheless, all stations were heavily affected by the pandemic, experiencing on average a 73% decline in their passenger numbers.

Station name	2019-20	2020-21	Change %
Kidsgrove	235,864	54,796	-77%
Longport	51,756	16,490	-68%
Longton	73,840	20,364	-72%
Stoke-On-Trent	3,229,908	686,804	-79%

Table 2.4 Passenger entries and exits by station[40]

Future improvements to all three local stations and the surrounding rail infrastructure are planned. HS2 is a new high-speed rail network for the UK, connecting London with major cities in the Midlands and the north of England. The project consists of Phase 1 – London to Birmingham, which is currently under construction, and Phase 2 is planned to split into two sub-phases: Phase 2a - Birmingham to Crewe and Phase 2b - Crewe to Manchester. Stoke-on-Trent will be served under the "Package Connect" (2021-2033) which aims to enhance east-west connectivity of the region[41]. Specifically, a new junction at Handsacre, near Lichfield, will connect HS2 to the existing West Coast Main Line. This link will enable HS2 services to directly serve Stafford, Stoke-on-Trent, and Macclesfield.

As the current Crewe to Derby/Nottingham line (via Stoke-on-Trent and Longton), is characterised by poor, infrequent and slow services, the city council has worked alongside neighbouring local authorities and Midlands Connect to study the opportunities to improve journey time and frequency. Midlands Connect is examining to offer superior and frequent services via the HS line. This will also lead to better connectivity with the East Midlands Hub – Toton (Derby to Toton). Any uplift in service quality will benefit Stoke-on-Trent's local and visitor population, their connectivity to the region supporting a regional integration with potential productivity boost, job creation as well as potential shift from car use to rail due to the significant journey time reductions.

To maximise the benefit of new services for passengers, Stoke-on-Trent station will need to become a highly integrated gateway station. To this end, the city council benefited from £29 million from the government's Transforming Cities Fund (TCF) in 2020, with plans for the funding including a dramatic revamp of the area around the station, where an improved interchange facility is to be created that will offer local commuters and visitors to the city better access to taxis, buses, and cycling, while also improving walking routes to and from the station. The Station also has car parking and bicycle facilities to accommodate modal changes.

The TCF programme also includes proposals for accessibility improvements to Longton Station. The planned improvements include a platform lift as currently step

[40] Passenger entries, exits and interchanges by station (annual), Great Britain, Apr 2020 to Mar 2021, ORR
[41] An Integrated Rail Plan for the Midlands, Midlands Connect 2020

free access is not available, passenger shelters, new waiting areas, a cycle hub and potentially the conversion of an arch into the retail unit. The City Council is hoping that the work will result in more people, including Staffordshire University and college students, using Longton Station. The station provides good access to car parking and frequent bus services and is based at the heart of Longton town centre. A better pedestrian environment between the town centre and rail station is planned.

Although Longport Station is the station with the lowest passenger patronage of the three city stations, with predominantly an hourly service on the Crewe-Stoke-Birmingham service, it offers good opportunities for bus interchange with a regular bus service operating directly past it, serving Burslem and Tunstall and some surrounding residential areas. Ambitions to enhance the role that Longport Station plays in local travel include:

- Increase in frequency and/or destinations served, with a focus on a regular stop on the Stoke to Manchester service
- Selective improvements to bus services to improve connection opportunities
- Improved cycle and car parking facilities
- Improved walking and cycling links to the city's traffic free network

There are aspirations to introduce more local stations to the rail network, by reopening the Stoke to Leek line as well as a new Meir Station on the Crewe-Stoke-Derby/Nottingham line. These are good opportunities for rail to help further local and regional connectivity.

A key business case for HS2 is the freeing of space on existing rail lines. Moving intercity services onto HS2 this will free up space on the existing WCML to allow for an increase in local and freight services along the line through the Trent Valley. It is expected that the existing rail network can therefore introduce faster and more frequent services, reduce crowding, and introduce new services between destinations not currently served through a direct rail link[42]. With the introduction of HS2, there are projected crowding reduction benefits for classic rail services between Stoke-on-Trent station and Manchester/London.

Whilst it is likely that any new direct HS2 service to Stoke will replace an existing service, initial discussions are taking place with regional partners, including Transport for the North and Midlands Connect, to identify opportunities for additional services to utilise the paths created. There will be competing demands for those paths to be used by freight, regional and local services, but there is an ambition to improve frequencies and connectivity along the Stafford-Stoke-Manchester/Crewe corridor.

Services/Facilities	Stoke-on-Trent	Longton	Longport
Rail Services (regional connection)	Birmingham 2tph Manchester 3tph Derby 1 tph Nottingham 1tph Crewe 2tph London 1tph Bournemouth 1tph	Derby 1tph Nottingham 1tph Crewe 1tph	Crewe 1tph Stafford 1 tph Birmingham 1tph

[42] Benefits from HS2 released capacity, Midlands Connect

Services/Facilities	Stoke-on-Trent	Longton	Longport
	Reading 1tph		
Bus Service connections	Direct and frequent services to city centre, hospital, and Newcastle-under-Lyme. Less frequent but regular services to Trentham, Blurton, Biddulph.	Direct and regular services to city centre, Meir, Stoke and Newcastle-under-Lyme	Direct and regular services to Burslem, Tunstall and Newcastle-under-Lyme
Taxi Services (Taxi Rank)	Yes	No	No
Cycle Parking	Yes (88 spaces)	Yes (4 spaces)	Yes (4 spaces)
Cycle Hire	Brompton Bike Hire	No	No
Car Parking	3 Car Parks (489 spaces with 21 accessible spaces available)	Yes (9 with 1 accessible space)	No

Table 2.5 Railway Station Facilities (Summer 2022)[43]

Challenge 21 – Making the most of Stoke-on-Trent's rail infrastructure: The current rail network provides limited internal connectivity for residents in Stoke-on-Trent due to low local service frequencies and few stations, which are clustered to the west of the city.

Opportunity 31 – The committed future investment through TCF at Stoke-on-Trent railway station, Longton and Longport coupled with opening of the different phases of HS2, will improve rail connectivity to and within Stoke-on-Trent. Local and regional connectivity can improve help address the productivity gap and improve the local economy.

2.4.6 Freight

Stoke-on-Trent's central location within the UK, with excellent road connections to the SRN with the A500 and A50 providing connectivity to both the M6 and M1 and access to major cities such as London, Birmingham, Manchester, and ports, has turned the city into a logistics hub. As noted in section 2.3.5, the city has strong wholesale and retail trade sectors. Stoke-on-Trent's logistics industry is growing, and it continues to play an important role in the economic development of the city.

The key issues for local freight are the lack of provision for HGV stabling (parking areas), as well as last mile freight deliveries and timings to avoid impacting local traffic during peak hours. In addition, there is a desire by SoTCC to maximise the use of rail to transport freight, which is supported by Midlands Connect in their freight strategy[44].

[43] National Rail, Stations & Destinations
[44] Midlands Connect: Freight, April 2017

Challenge 22 – Taking advantage of the city's location to produce a freight strategy and deliver improvements for this vital and changing sector: Stoke-on-Trent is a UK logistics hub due to its convenient location. Currently it lacks parking areas and facilities for freight transport.

Opportunity 32 – A future freight strategy would be important to develop key issues and solutions for this sector, taking advantage of the city's location and excellent national transport connectivity.

2.4.7 Taxis

Stoke-on-Trent has notably a far higher percentage of private hire vehicles (as opposed to hackney carriages) that makes up its total licenced taxi fleet compared to its nearest neighbours (SoT 86.92%, Newcastle-under-Lyme 77.2%, Stafford 62.3%).

As shown in **Table 2.5**, there are 1248 taxis licensed to Stoke-on-Trent, of which 1122 (89.9%) are diesel or petrol, and only one vehicle is full electric. The vast majority are older diesel vehicles and this, combined with their high mileage, leads to them having a notable impact on local air quality (NO2 emissions).

Vehicle Fuel Type	Number of Vehicles	Percentage
Diesel	1071	86%
Dual Fuel	7	1%
Electric	1	1>%
Hybrid	101	8%
Liquid Petroleum Gas (LPG)	2	1>%
Petrol	51	4%
Plug in hybrid	5	1>%
Other	10	1%
Grand Total	**1248**	100%

Table 2.5 Number of Taxis (November 2021 data)[45]

As over 85% of the taxi fleet is private hire, and with the growth of new providers such as Uber enforcing the private hire position in the city, the city council will work with providers to continuously improve standards, including greening the fleet.

Much progress has been made in recent years to improve customer experience and confidence, including driver training and a regular vehicle inspection programme. There is, to date, no age restrictions for vehicles.

The ease of use of private hire vehicles and the competitive market has led them to being a key transport option for many residents, particularly for shopping and for group travel.

The 2019 Retail and Leisure Study found that taxis are the 4th most used mode of transport into Stoke-on-Trent's key centres, with 3% of all trips into the city centre being made by taxi in 2018. However, as well as competing with buses, taxis do offer a form of alternative transport for those without access to a car, outside of timetabled

[45] Vehicle fleet data provided by SoTCC (Nov 2021)

bus service hours. Whilst bus service improvements are included in the proposals to improve travel opportunities in the city, taxis will remain part of the wider transport offer.

As presented in **Table 2.6**, the city council fixed the taxi fare rates in a regional regulation. Licensed taxi operators (hackney carriages) are bound by these rates when used without pre-booking i.e., when used from a taxi rank or when hailed.

Taxi rate	Initial Charge	Price per kilometre	Price per minute
Day tariff	£3.00	£0.93	£0.15
Night tariff	£4.00	£1.24	£0.15
Sunday all-day	£4.00	£1.24	£0.15

Table 2.6 Taxi rates

Taxis thus provide value for money, especially when travelling as a group. A group day ticket for the bus network (First Potteries - £15) costs approximately the same as a five-mile (~8km) taxi journey for three people. Taxis offer flexibility and a door-to-door service with availability throughout the day[46].

Private hire operators are not controlled by these fares and pre-booked private hire services are often significantly lower than the regulated fares.

Taxi operation is a relatively low-cost base compared to bus services. For areas where, and at times of the day when, demand for public transport is very low, taxis could provide a viable demand responsive service. However, current legislation generally prevents taxi operators from providing what may be perceived as a bus service – particularly with regard to charging individual fares. This is an area in which the city council can engage with government to seek opportunities for flexibility or changes to legislation.

Challenge 23 – Providing a cleaner taxi fleet: The current taxi fleet has very few cleaner vehicles.

Challenge 24 – Offering more attractive alternative options to taxis: Taxi services are quite affordable in Stoke-on-Trent. The convenience and flexibility are attractive to users and are often a mode of necessity due to the limited bus services to many areas of the city particularly early morning, evenings, and Sundays.

Opportunity 33 – Initiate an electric charging point scheme to encourage the use of electric/hybrid taxis to replace ICE vehicles.

Opportunity 34 – Improve the public transport network with affordable fares to provide a more balanced cost between bus and taxi use.

Opportunity 35 – identify opportunities to better integrate taxis into the wider public transport offer, such as integrated ticketing and the provision of demand-responsive services. Some of this will require engagement with government to clarify or reduce legislative barriers.

[46] ibid

2.4.8 Car Parking

Publicly owned car parks are provided in all the main centres of the city (**Table 2.7**). There is a mix of on street and off-street parking, most of which have charges. On-street parking is generally short stay, whilst many car parks are mixed short and long stay. As an example of the variation in pricing, based on location and demand, car parking charges range between £1.30 to £3.40 for 2 hours.

There are also a significant number of privately-owned car parks, predominantly in the city centre and sometimes as temporary land uses pending longer-term development proposals being submitted. These often under-cut council-owned car parking charges.

Further, several town centres and the city centre have free supermarket parking for between two and three hours.

The present pricing structure of car parking in Stoke-on-Trent is generally below the costs of bus travel. Most of the car parking charges are cheaper than a day bus ticket or a group bus ticket.

It is recognised though that the bus network will benefit from redevelopment of our town centres and that in the short term at least, car parking is often required to attract the investment required. To this end, there continues to be improvements to the car parking offer, particularly in the city centre with the building of two multi-storey car parks at Smithfield and Meigh Street. To put this into context, two large older multi-storey car parks have been demolished in the city centre in recent years.

Edge- and out-of-town retail and employment development with free parking is a challenge to our town centres, exacerbated by the recent rise in internet retail. These sites are often harder to reach for people without a car and are unattractive for bus operators to serve due to the car-dominated infrastructure. To ensure all residents have more equal access to facilities there is a need to re-purpose our town centres and city centre, to provide key facilities in them, making them easier in the longer-term to be served by public transport.

Further, to ensure that the highway network is not impacted by the provision of town centre and city centre car parking, resulting in the need for capacity improvements, it is important that public transport and active travel is also encouraged. This can be through the provision of good quality infrastructure – e.g., bus station, bus stops, cycle parking – and through competitive pricing for bus travel, particularly for groups, and a step change in public transport perception such as the Very Light Rail and rail station openings ambitions.

Hanley (City Centre)	Stoke	Burslem	Tunstall	Fenton	Longton
Birch Terrace	Aquinas Street	Chapel Lane	Butterfield Place	City Road	Chancery Lane
Broad Street	Copeland Street	Jackson Street	Farndale Street		Commerce Street
Cannon Place	Elenora Street	Market Place	Hunt Street		Kingscross Street

Hanley (City Centre)	Stoke	Burslem	Tunstall	Fenton	Longton
(Victoria Square)					
Charles Street	Glebe Street	Overhouse Street	Woodland Street		Longton Exchange
Hanover Street	Harpfields Road	St. John Square			Market Street
Hinde Street	Hide Street	Westport Road			
Hope Street	Hill Street				
John Street Multi-storey	Hilton Road				
Lichfield Street	Kingsway				
Upper/ Lower Huntbach Street	South Wolfe Street				
Meigh Street Surface	Spark Street				
Newhall Street	Stoke Station West				
Pall Mall	Trade Street				
St. Ann Street	Vale Street				
Trinity Street					

Table 2.7 Car Parks[47]

There has been no real history in the city of Park & Ride. Currently the city centre – or indeed any single destination - does not have the level of inward commuting or visiting that is likely to justify it. There is also no significant transport congestion into the city centre. Furthermore, being a relatively small city, it is likely that any viable site may need to be outside the city boundaries.

However, a review has been undertaken to identify potential multi-modal hub locations to enable users to switch from car or rail for the 'last mile' to their destination by walking, cycling or bus.

Several informal School Park & Walk locations have been used to reduce parking issues at the school gate, utilising nearby car parks with good walking routes to and

[47] SoTCC website

from the school. This strategy could be extended to more schools, colleges and also to workplaces, particularly where parking supply is limited and/or local roads are congested.

Challenge 25 – Managing parking demand: There is a potential over-provision of car parking in some town centres, and a proliferation of private and sometimes temporary, poor quality car parking. Whilst they serve a purpose for some users, with attractive season ticket often offers a feature, it is a barrier to the city council developing a co-ordinated transport strategy.

Opportunity 36 – A new parking strategy developed with a clear pricing structure and a refreshed evidence base of likely demand and current supply.

Opportunity 37 – A presumption against any further applications for car parking in our town centres and city centre, including renewal of current temporary approvals. This will help speed up actual development of the sites. The potential to acquire the sites for city council uses could be considered. A review of planning conditions relating to car parking for town centre supermarket sites.

Opportunity 38 – Provision of multi-mode facilities in all new car parks – and in selected existing car parks – to include EV charging points and secure cycle parking. This will develop these sites into multi-modal facilities.

2.4.9 Highways

Congestion and delays along important transport corridors across Stoke-on-Trent along with a distinct lack of alternative routes contribute to journey time unreliability and thus impact on businesses in the area. There is poor connectivity between the Inner Urban Core and Outer Urban Area of Stoke-on-Trent and access to the City Centre is limited from other town centres, the wider North Staffordshire and Staffordshire regions, especially from the south-east of the conurbation.

It can be quite difficult to measure congestion in absolute terms, however, investigations using the NSMM Transport Model (2015 base year model) have been used to illustrate the congestion problems on road links and junctions within the city. **Figure 2.19** shows the sources of link (over-capacity links) and junction (significant junction delay) delays in the AM and PM peak hours for 2015. In particular, the Davenport Street, A53 Cobridge Road and Etruria Road, Waterloo Road, Potteries Way, A52 Leek Road, A52/A5008 Bucknall Road, A527 Dividy Road, Werrington Road, A50 Victoria Road, King Street, Weston Road and A50 Uttoxeter Road and the A34 corridors experience congestion and delay.

This demonstrates that the network is experiencing significant congestion problems during the peak hours – it must be noted that the actual level of congestion experienced is likely to be significantly worse because of issues such as blocking back which will affect the operation of downstream links and junctions and result in queues and delays on these routes.

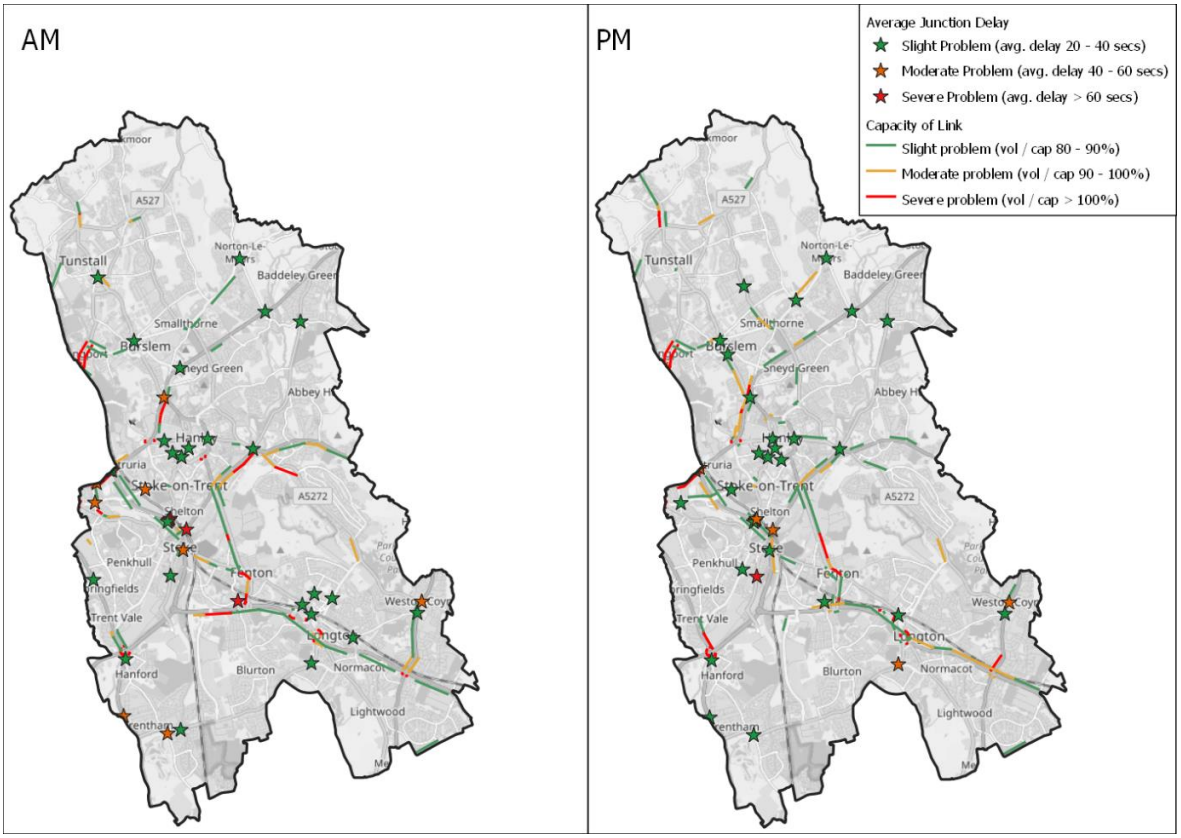

Figure 2.19 – 2015 AM/PM Peak – Over Capacity Links and Significant Junction Delays

As demonstrated by **Figure 2.19** the existing network experiences issues, with noticeable delays, particularly for inbound travel in AM peak hours and outbound travel in PM peak hours at the following locations:

- **Davenport Street from/to Burslem.** There is severe congestion on the inbound and outbound movements through Longport. This hinders access to Longport rail station and the centres of Burslem and Tunstall impacting the ability for interchange and regional connectivity. It also affects access to services and retail areas.
- **A53 Cobridge Road / Etruria Road**. This route connects Etruria enterprise zone, the western edge of the City Centre and Festival Retail Park with the A500 and Newcastle-under-Lyme beyond. Congestion and delay which is impacted by the Cobridge traffic lights hinders accessibility to key employment destinations.
- **Waterloo Road (Northbound) to Burslem.** Northbound movement from Etruria / City Centre towards Burslem (PM peak hour). There are few alternative traffic routes for this well trafficked corridor which has moderate congestion on Waterloo Road. This slows journey times and accessibility to and from key centres and employment hubs (i.e., Etruria – Bet 365).
- **Potteries Way (south of Hanley).** This serves as a partial ring road around the City Centre, with a key junction at Lichfield Street. Congestion hampers north-south movements and access to destinations such as Hanley Bus station.
- **A52 Leek Road from Joiner's Square to Limekiln junction**. This will constrain north-south movements to and from Stoke-on-Trent; inhibit access to key destinations such as Staffordshire University, the rail station and

surrounding town centres; and hinder strategic connectivity to the A500 and therefore the M6.

- **A52 Bucknall Road / A5008 Bucknall New Road Corridor**. This is route queues into the City Centre and is also adversely impacted by congestion at the Limekiln and A52 Werrington Road / Dividy Road junctions.
- **A5272 Dividy Road**. This will constrain east-west movements across the eastern suburbs of Stoke-on-Trent to areas such as Bentilee impacting the ability for residents to access employment and services.
- **A52 Werrington Road**. There are very few alternative routes east to west between the City Centre, eastern suburbs and further out to the East Midlands. Therefore, congestion along this road severely impacts the ability and capacity for people to travel from the suburbs into the city.
- **A50 Victoria Road**. This is a key route to the A50 Trunk Road and presents issues as it is the only access point for Fenton Industrial Estate, and because it feeds into the A50 Lichfield Road which is a primary corridor to the City Centre.
- **King Street**. There is severe congestion towards Fenton hindering the access towards the city and one of the key centres and further to the Fenton Industrial Estate.
- **Severe congestion along the end of the Weston Road and the A50 Uttoxeter Road**. This will constrain southwest to north movements to and from Stoke-on-Trent; inhibit access to the rail station and surrounding town centres.
- **A50 congestion towards the A500**. This route experiences severe congestion in the morning peak hindering strategic connectivity to the A500 and therefore the M6 and thus, affecting the reliability of journey times towards Sideway and out of the city.
- **A34 Stone Road (Trent Vale)**. Has severe problems during the evening peak, which are slighter in the morning peak along the A34 which can impact access to the A500 and the M6 as well as journeys to key workplace destinations such as Newcastle-under-Lyme and the Royal Stoke University Hospital.

The above congested routes impact bus services and their journey time reliability. Congestion affects all road users including bus passengers, cyclists, and pedestrians as well as car users. Pedestrians are also affected by the long traffic signal cycle times needed to handle demand at junctions.

As mentioned in the LTP 3, it is forecast that congestion will have a serious future impact on the city and its future traffic condition[48]. The impact on these forecasts due to Covid-19 is currently uncertain, although any reduction may We can assume that this situation was affected by Covid-19 as traffic levels significantly decreased due to the restrictions. These declines are likely to be only temporary with most pre-pandemic car travel patterns returning, especially for Stoke-on-Trent where there is predominantly manual and location-based work that cannot be easily done remotely and where alternatives to car use are currently limited.

[48] LTP3 2010, SoTCC

Challenge 26 – Reducing congestion on key arterial routes: The evidence indicates that several key highway links and junctions are typically congested, resulting in increased journey times, lack of journey time reliability, reduced productivity, and knock on environmental and community issues.

Opportunity 39– Targeted highway capacity improvements will be required as part of a balanced package of interventions that include encouraging more efficient use of the road network and reducing travel demand where practical. The NSMM Transport Model will identify existing and likely future congestion hotspots. To avoid barriers to further development and growth in the local economy, schemes to these 'hotspots' will need to be developed. Use of improved traffic signal intelligence can be a key tool to a more dynamic road network. Public transport and active travel interventions should be explored as an alternative to or to complement highway capacity improvement schemes along key corridors. This will aid the decarbonisation of the transport system across Stoke-on-Trent.

2.4.10 Decarbonisation

Transport is a significant contributor to the GHG emissions of the UK. According to a Climate Change Committee (CCC) report in 2021[49], 22% of total UK GHG emissions in the UK originated from surface transport, amounting to 113 mega-tonnes CO_2-equivalent (CO_2e). Predominantly this is CO_2 from the burning of fossil fuels. Cars were responsible for over 60% of total GHG emissions from transport in the UK and vans another 17%. Heavy goods vehicles (HGVs) contributed around 17% and buses 3%. The report recommended that transport GHG emissions are reduced through widespread uptake of zero-emission vehicles.

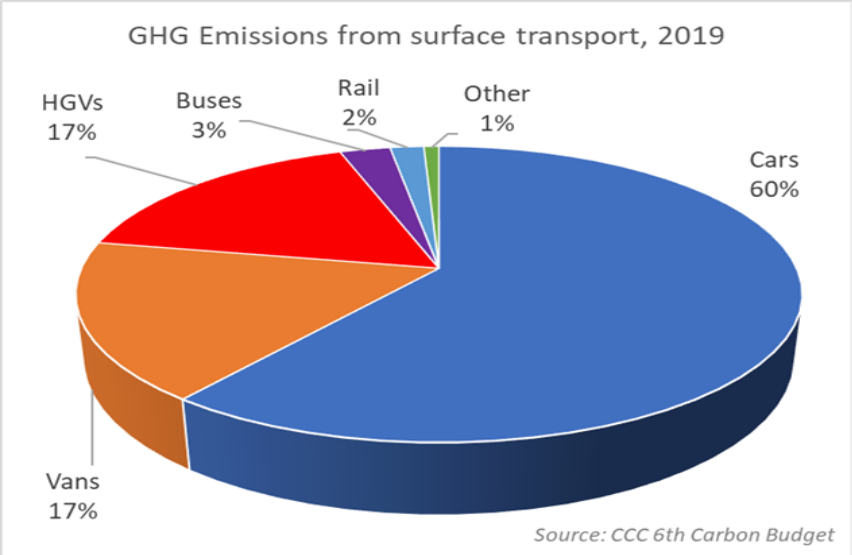

Figure 2.20 GHG Emissions from surface transport

Estimates for GHG emissions for Stoke-on-Trent in 2019[50] show that transport was responsible for 27% of the 1.37 million tonnes of CO_2-equivelent emissions attributed

[49] Source: https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Surface-transport.pdf

[50] Regional data for 2019 from https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2020. Emissions in 2020 were slightly lower due to reduced activity during the COVID-19 pandemic.

to the area, the second biggest contributor after industrial emissions. The public sector was responsible for 4.5% of the GHG emissions in the area. Of the transport emissions, 57% are estimated to originate from A-roads, 39% from minor roads, and the remainder from diesel railways and other transport sources.

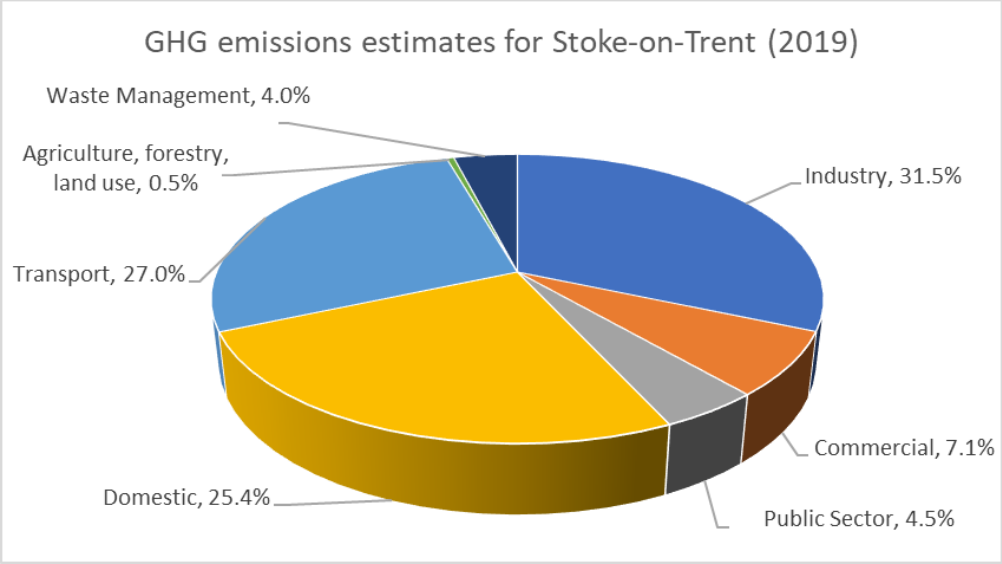

Figure 2.21: GHG emissions for Stoke-on-Trent, 2019 estimates

Zero-emission vehicles (ZEVs) are vehicles that emit no tailpipe emissions in use. Battery-electric vehicles (BEVs) and hydrogen fuel-cell electric vehicles (FCEVs) are the two technologies that meet the definition of a ZEV. It should be noted that these vehicles are still responsible for emissions related to the production of the electricity or hydrogen they use, and the source of the electricity or hydrogen used must be considered in evaluating their GHG emissions impact. The emissions over the whole life of the vehicle should also consider the emissions from the manufacture of the vehicle and its end-of-life disposal, with the manufacture of batteries having a high GHG impact. However, a recent study "Lifecycle analysis of UK road vehicles" for the Department for Transport concluded that both battery electric and fuel cell vehicles are expected to have significantly lower GHG emissions and human health impacts over their lifetime, considering all vehicle types and potential battery replacement for heavier vehicles[51].

In recent years a range of BEVs have become available in the passenger car sector, and are starting to become available for vans, buses, and local delivery trucks. Electric vehicles are reliant on charging infrastructure, which is developing although provision varies around the country. The availability of FCEVs is much more limited with just two models of car, and pilot models of vans and trucks available, although hydrogen buses and refuse collection vehicles are entering the market. There are very few hydrogen refuelling stations in the UK[52], and so early adopters are mostly fleets operating back-to-base with their own refuelling facility.

Ultra-low emissions vehicles (ULEV) are hybrids with a battery that can be charged (plugged-in), giving a zero-emission capability for a short range, and then use a petrol or diesel engine. Since they still burn fossil fuels and emit GHG emissions they are not

[51] Source: https://www.gov.uk/government/publications/lifecycle-analysis-of-uk-road-vehicles

[52] The nearest public hydrogen refuelling facilities to Stoke-on-Trent currently are in Birmingham and Sheffield, with facilities planned for Derby and Liverpool (http://www.ukh2mobility.co.uk/stations/)

ZEVs, but in some uses can reduce GHG emissions significantly, and can be a useful transitional step towards ZEVs.

As of the end of 2021 government statistics[53] indicate that 82% of the vehicles registered to keepers in Stoke-on-Trent were cars, 11% were light goods vehicles (e.g., vans), 3% motorcycles, and 2% heavy goods vehicles. Of these, just 0.5% (1 in 200) were zero-emission BEVs and 0.3% (less than 1 in 300) were ULEV plug-in hybrids. These proportions are around half those of the UK as a whole.

Vehicle type	Stoke-on-Trent	UK wide
Battery electric zero-emission	665 - 0.5% of fleet	418,796 – 1% of fleet
Plug-in hybrid ultra-low emission	409 - 0.3% of fleet	312705 – 0.8% of fleet

Table 2.8 ZEV and ULEV vehicles registered in Stoke-on-Trent vs UK

There are around 160 public service buses based in Stoke-on-Trent. On average the buses are 11.3 years old, just a third meet the latest Euro VI emissions level (some through retrofitting), and almost a third of the fleet are only at Euro III (which became obsolete in 2006 and permitted NOx and particulate matter emissions at levels around ten times higher than the current Euro VI limits[54]), further contributing to local air pollution. None are currently zero emissions. National and local government policies are encouraging a switch to zero-emission buses to reduce GHG emissions and improve air quality in city centres. In 2021, 48% of all new buses sold were electric and 5% hydrogen according to analysis by the Zemo partnership.

Over 1,200 taxis are licenced in Stoke-on-Trent, of which 90% are diesel or petrol fuelled, and 8% are hybrid. Just one electric ZEV and five plug-in ULEV taxis are registered. The average age of the taxi fleet is 9 years old and only around a quarter of taxis are thought to meet current Euro 6 emissions standards.

The council has already adopted zero-emission electric vehicles in its own car and light commercial vehicle fleet, although currently they make up a small proportion of the fleet. A trial has taken place with an electric refuse collection vehicle, with promising results.

As well as significantly reducing GHG emissions and local air pollutants, ZEVs offer other benefits such as reduced noise, and potentially lower running costs when compared to diesel equivalents. However, there are barriers to the adoption of ZEVS, most significantly their higher purchase price, and the need for supporting refuelling or recharging infrastructure. Whilst some government funding is available for home charging equipment, this is reducing, whilst home energy costs are rising. Despite these barriers though the expected reduction in the price of vehicles mitigate these barriers and there is, in any case, a national target of 2030 by which production of ICE vehicles will be phased out.

In terms of accessibility and affordability of charging infrastructure private users with off-street parking will be able to charge electric vehicles at home. However, for those

[53] Source: https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables
[54] Euro VI and Euro III details: http://www.emleg.com/legislation/view/eu-heavy-duty-vehicles

without off-street parking, there is reliance currently on alternative charging facilities at destinations such as work, retail sites and public facilities.

Analysis of public charging points in Stoke-on-Trent[55] shows approximately 60 chargers are available at destinations (supermarkets, shopping centres, and car dealers) plus 8 rapid chargers. Some of the rapid chargers are situated close to or on major routes (such as at petrol filling stations or retail sites) that could be used for on route charging, but there is currently no public provision of residential on-street charging, or rapid charging forecourts or hubs, to enable residents without private off-street parking to easily switch to an electric vehicle. However, the city council is currently installing rapid chargers in a number of public car parks through a scheme funded by the Office for Zero Emission Vehicles (OZEV) and has had a funding bid accepted by OZEV to install residential and on-street chargers as part of a partnership bid with Midlands Connect.

The city council is aware of other government funding to provide on-street charge-points, including to utilise street lighting columns. However, there are concerns relating to the logistics of providing a bespoke installation service upon request; how to deal with owners moving address; the high tariff charged; and whether large scale roadside charging infrastructure is suitable from a street-scene viewpoint as the right method to provide for the longer-term greater take-up. There is also the uncertainty of future technology advances, such as contactless charging, which may render current infrastructure obsolete.

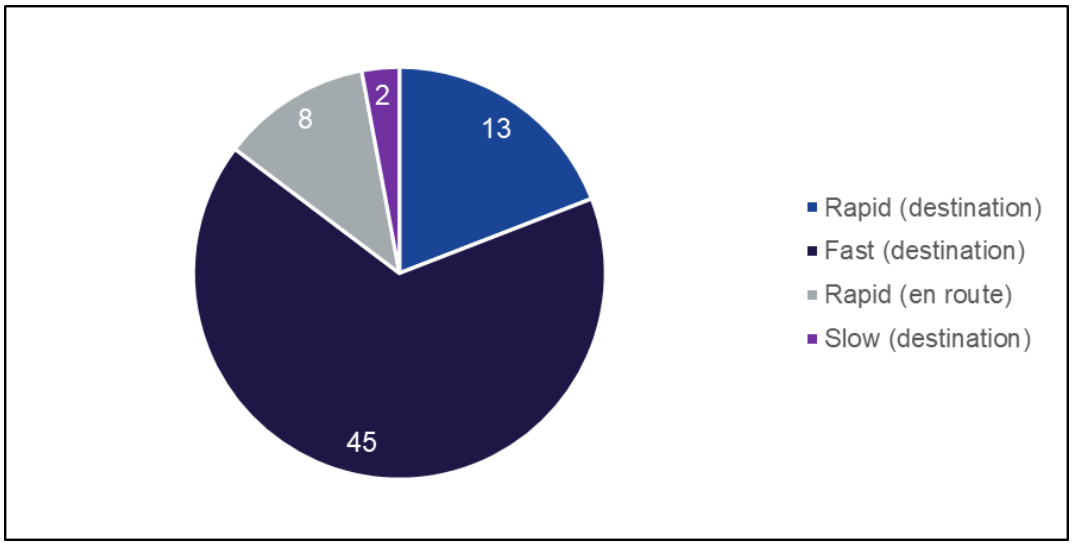

Figure 2.22 Current public charger provision in Stoke-on-Trent by speed

For fleet operators the investment needed in charging infrastructure and the local electricity grid upgrades necessary to support it may be significant, while early adopters of hydrogen vehicles are likely to need a dedicated refuelling station at their depot, or a shared access facility locally. Drivers or operators covering long journeys will need public rapid chargers on route.

Currently, there is no local strategy for the adoption on ZEVs, but revised Parking Design Standards Supplementary Planning Guidance will be progressed as part of the work for the emerging Local Plan and Local Transport Plan (LTP4).

[55] Source https://www.zap-map.com/locations/stoke-on-trent-charging-points/

Challenge 27 – Supporting the change to zero emission modes: Some initial steps have been taken to date toward zero emission modes, such as the city council adopting a few zero-emission electric vehicles in its own car and light commercial vehicle fleet and delivery of small charging infrastructure projects. Large fleets around the city – including the council's own fleet - need to move quickly towards being greener.

There is a wider challenge relating to increasing the availability of charging infrastructure and accessibility/affordability of zero emission vehicles.

Opportunity 40 – Delivery of a Transport Decarbonisation Plan will provide the opportunity for a range of private and public stakeholders to collectively drive forward the policies and infrastructure required to support residents and businesses make the change to cleaner vehicles. This will include changes to planning requirements for new developments to provide charging infrastructure. The city council can also work with partners such as Petrol Filling Station owners and supermarkets to expand the charging infrastructure available.

It can continue to identify a preferred option for providing on-street residential charging.

It can work with other large fleet providers and promoters of alternative fuels to lead on identifying the opportunities available for greening the fleet and seeking investment to deliver.

2.4.11 Influencing Travel Behaviour

Our LTP3 includes a range of interventions to influence travel behaviour and encourage mode shift towards more sustainable modes of travel in the city, including consideration of travel planning at an early stage of planning applications, and working with key trip generators such as businesses, schools, hospitals, and universities to encourage mode shift away from private car particularly for peak hour journeys. Interventions also included specific school focussed initiatives such as Safer Routes to Schools, and an intensive walking and cycling promotion with emphasis on promoting the health benefits of active travel.

The city council has a history of delivering behaviour change programmes, predominantly through government funded programmes such as the recent Capability Fund. Initiatives have linked to health and well-being and road safety objectives in some cases, although this could be strengthened.

As noted previously in section 2.4.4 (bus), standards that ensure those with reduced physical, visual and hearing abilities can easily access information; that waiting facilities are accessible and appropriate; and the vehicles themselves are easy to access and use for all, are expected as standard.

Challenge 28 – Embedding sustainable travel behaviours in Stoke-on-Trent: Whilst there has been a long-term programme of working with organisations to encourage more trips being made by walking, cycling and public transport, funding to support this has been sporadic, and thus the levels of intervention vary with the funding. The proportion of trips made by sustainable modes remains low. Whilst improved infrastructure can assist, this is a cultural issue where use of the car is seen as essential for productivity, personal mobility, reduced time of the trip and personal comfort.

Opportunity 41 – There is a need to build on existing programmes to raise the profile of sustainable travel further including through inclusion in the emerging Local Plan with potential development of Travel Planning Supplementary Planning Guidance if required, and with the council playing a more active role in delivery and monitoring of travel plan programmes. In addition, government funding of sustainable transport is likely to remain at a high level to enable the country to meet decarbonisation targets, so resource needs to be provided to ensure funding is maximised and delivery is of a high quality to enable high levels of funding to be maintained.

2.4.12 Travel Patterns

Travel to work data from the 2011 Census shows that approximately 64% of those who live in Stoke-on-Trent also work within the City's boundaries, while 12.5% commute to neighbouring Newcastle-under-Lyme, with smaller proportions commuting to nearby Stafford and the Staffordshire Moorlands area[56].

Specifically, there were 60,210 daily commuting movements within Stoke-on-Trent and of these 15.84% were between the six main towns within the city. A trip origin-destination matrix table between the six towns is provided in **Table 2.9** below. The highest flow of commuter trips was recorded between Stoke and city centre with a total of 786 trips in total. The largest number of internal commuting movements occurs in Stoke (1746 internal commuter trips – this equates to 18.31% of all commuter trips in the area). This could be explained by the fact that this area includes Stoke-on-Trent Railway Station, Staffordshire University, and large employment areas. It should be noted that due to the age of data (Census 2011) some emerging sites such as Etruria Valley Enterprise Zone may not be represented appropriately.

Major Settlements FROM/TO	Tunstall	Burslem*	Hanley & Etruria	Stoke**	Fenton	Longton	Total
Tunstall	281	162	209	140	38	32	**862**
Burslem*	130	397	368	211	49	38	1193
City Centre	19	54	600	201	47	34	**955**
Stoke**	65	132	786	1746	216	104	3049
Fenton	31	56	365	384	383	141	**1360**
Longton	44	90	531	522	258	674	2119
Total	570	891	2859	3204	991	1023	**9538**

[56] LTP3 (2011-2026), SoTCC

Table 2.9 Commuting Travel Patterns in major settlements[57]

*For Burslem, the Burslem Park & Longport MSOAs were considered

**For Stoke, the Basford & Hartshill and Boothen & Penkhull MSOAs were considered

There is also a high flow of commuter trips from Stoke-on-Trent to other destinations (33,945 total trips). 76.2%[58]of all commuting trips to outside the city are within the West Midlands region, with the main destinations being Newcastle-under-Lyme (34.6% of the outflow), Staffordshire Moorlands (15.2% of the outflow) and Stafford (15% of the outflow). The main long-distance commuting destination is Greater Manchester with far fewer journeys to the South-East region (including London)[59].

Table 2.10 shows commuting trips into Stoke-on-Trent from surrounding areas.

Trip Origin	Stoke-on-Trent	%
Newcastle-under-Lyme	26,951	50%
Staffordshire Moorlands	5,398	10%
North	6,915	13%
South	7,818	15%
East	2,901	5%
West	3,774	7%
Total	53,758	100%

Table 2.10: Commuting trips into Stoke-on-Trent from surrounding areas

Table 2.11 shows the modal share of commuter journeys. As seen in Table 2.10, half the journeys into Stoke-on-Trent originate from Newcastle-under-Lyme and nearly 30% come from either the North or South. Table 2.11 shows that 90>% of all journeys into Stoke-on-Trent are made using a car, with the West having the highest proportion of car journeys (97%). Newcastle-under-Lyme has the highest percentage of journeys into Stoke-on-Trent using public transport at 9%.

Trip Origin	Total	Car	PT	Car%	PT%
Newcastle-under-Lyme	26,951.39	24,573.25	2,378.10	91%	9%
Staffordshire Moorlands	5,398.13	5,070.78	327.37	94%	6%
North	6,915.39	6,439.23	476.16	93%	7%
South	7,817.96	7,408.29	409.66	95%	5%
East	2,900.94	2,757.62	143.27	95%	5%
West	3,774.32	3,655.68	118.66	97%	3%
Total	53,758.13	49,904.85	3,853.22	93%	7%

Table 2.11: Modal spilt of trips into Stoke-on-Trent from surrounding areas

To provide an overview of travel patterns, we have examined the distance travelled to work data as well as the travel to work method (see **Figure 2.12**). Based on the travel to work method, 65.6% of residents travel to work by car. Although there is high car reliance, Stoke-on-Trent has a significantly high percentage of people travelling to work within 0 to 5km.These travel distances indicate that =these trips would be

[57] ONS, 2011 from Location of usual residence and place of work WU03EW
[58] ibid
[59] LTP3 (2011-2016), SoTCC

possible by more sustainable travel modes such as walking and cycling (bike sharing, electric bikes) and bus, and there is therefore scope to target modal shift from the car.

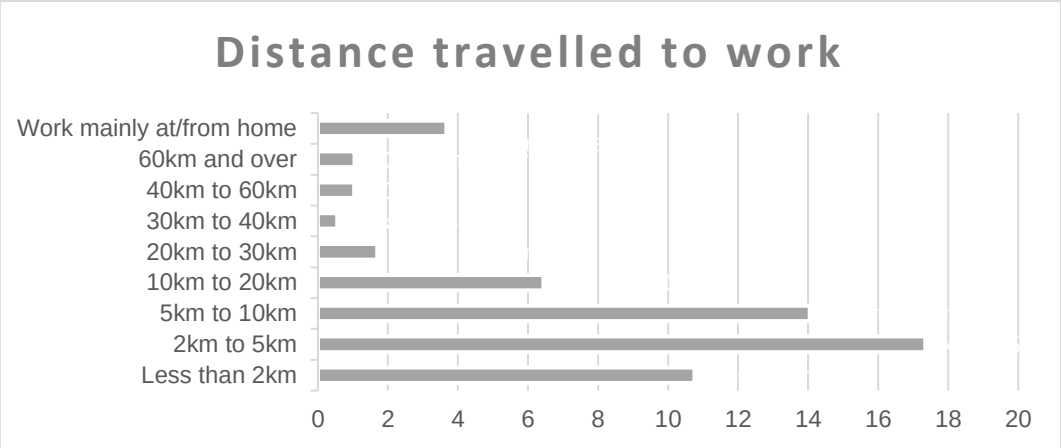

Figure 2.23 Distance Travelled to work[60]

Challenge 29 – Improving connectivity between residential areas and Stoke-on-Trent's five town centres, the city centre and other major employment destinations: There is limited sustainable travel connectivity between the Inner and Outer Urban Core to town centres, the City Centre and key employment centres.

Challenge 30 – Improving connectivity between Stoke-on-Trent and other key destinations in the West Midlands region: Poor connectivity between the City and the rest of the region, especially with key employment destinations such as Newcastle-under-Lyme.

Challenge 31 – Improving connectivity to key employment locations to promote modal shift: Many commuting trips are less than 5km, suggesting there is room for modal shift away from the private car. There are often however limited alternative travel options and poor active travel infrastructure to reach key employment locations.

Opportunity 42 – Provide better connectivity between Inner and Outer Urban Core to the City Centre, where the majority of the commuter trips are (employment areas).

Opportunity 43 – Improve connectivity via rail with the rest of the West Midlands region (Newcastle-under-Lyme, Staffordshire Moorlands and Stafford) and Manchester. Options that deliver a more attractive, frequent service, with further improved integration to the regional transport network with rail should be explored.

Opportunity 44 – Development of multi-modal hubs to encourage trips by rail, bus, active travel, and very light rail instead of car use. Improve active travel infrastructure to promote and achieve mode shift to sustainable modes such as walking and cycling (bike sharing, electric bikes) to key employment zones.

2.4.13 Connectivity Summary

As set out in the People section (2.1), there is a clear need for Stoke-on-Trent to improve productivity, retaining existing skill sets and developing new ones from the

[60] WD702EW - Distance travelled to work (Workday population) Census 2011

existing population and attracting talent from outside in the city. GVA per hour worked was £26.83 (Staffordshire) and £25.27 (Stoke-on-Trent) in 2016. These equate to 82.5% and 81% of the national average respectively.[61]

Transport to and within an urban area can be either a core element in improving productivity or it can be a significant barrier. UK cities generally are less productive per head of population than their European counterparts. Due to a range of factors including higher density land use planning principles and provision of fast public transport networks, a bigger proportion of residents in European cities can access employment by non-car modes in a specified time than in similar sized UK cities.

For residents, commuters and visitors with regular car access, journey time is relatively short and thus it is understandable that authorities will focus on ensuring car-based travel remains efficient. However, for cities like Stoke-on-Trent with a significant population without access to a private car and with potential inbound commuters less willing to drive longer distances, a poor public transport network results in an economy where only a proportion of people can access jobs within a reasonable travel time.

Whilst it is acknowledged that the local economy is heavily based on jobs which require a physical presence in the workplace, digital connectivity is one part of the solution. This will improve the attractiveness and effectiveness of home working and help reduce trips on the transport network and their negative impacts on the local environment. Improving access to jobs in Stoke-on-Trent for people living there will enhance opportunities to develop 15-minute neighbourhoods, where more sustainable transport like walking and cycling can be used. This will in turn help increase the health of the local population as well as the resilience of the local transport network.

Taxis and mobility hubs will support those who want to keep their private car use to a minimum. Bus options that deliver an attractive, high frequency and reliable sustainable transport offer should be explored to create a viable alternative to the private car and build on the improvements planned to be delivered through the package of BSIP measures. High frequency bus connections should connect with rail hubs as well as all the key towns and employment hubs in Stoke-on-Trent.

Rail investment from HS2 and investment in station connectivity through TCF with the rest of Stoke-on-Trent has the potential to be transformational with connectivity beyond Stoke-on-Trent significantly enhanced. A future freight strategy will be key to improving the key issues of future freight requirements in Stoke-on-Trent as well as taking advantage of the city's prime location.

Managing highway demand will be key for the area. Opportunities available to the city council include using parking pricing and managing parking stock to manage highway demand, especially at peak times. There are opportunities to combine focussed highway capacity improvements with significant investment and upgrades of sustainable transport modes to deliver sustainable connectivity gains. Many hot spots on the local roads impact multiple modes, so the emphasis needs to be on multi-modal solutions. There is a need to develop a Zero Emission Vehicle Strategy for Stoke-on-Trent to support the areas sustainable transport aspirations.

Stoke-on-Trent has a high proportion of commute trips that travel beyond the city boundaries. Investment in Stoke-on-Trent connectivity will both make rail more attractive as a connecting mode for these trips but moreover make employment and

[61] Stoke-on-Trent & Staffordshire Enterprise Partnership, Strategic Economic Plan, 2018. Regeneris Report (stokestaffslep.org.uk)

opportunities within Stoke-on-Trent more attractive and in so doing cut down on long distance car trips. For internal trips in Stoke-on-Trent, the evidence shows that there is opportunity in providing better connectivity on key corridors, particularly between the traditional own centres and into the City Centre (Hanley), with a need for better sustainable transport connections to Etruria. Overall, the trip distribution for Stoke-on-Trent commuters is very mixed and so there is particularly potential in Stoke-on-Trent for the development of multi-modal hubs to offer options for all trip distances and purposes, using rail, bus, active travel, and very light rail instead of car use.

Due to a significant part of the city's population having health issues that restrict their mobility, a focus on enabling those with disabilities to use the transport network is required.

2.5 Current Situation - Summary

In a multi-centred city with low urban density and a population just over 250,000, it is unlikely that a large mass transit transport system (i.e., tram or Metro) will be viable. To 'level up', the opportunities are around developing high quality high priority public transport corridors - be that for bus or a much lower cost tram system such as the very light rail prototype - as well as active travel, whilst balancing against the need to support car access for those who need it. A step change is needed in transport connectivity to support regeneration schemes and signal the City's repositioning nationally and internationally and to attract new residents and businesses into the city. This may point to a need for a flagship transport initiative to change how people perceive getting around Stoke without a car.

The evidence base identifies the need for intracity public transport improvements to connect the disparate population to economic opportunities in a sustainable way, whilst also encouraging densification around the 6 town centres to continue in Stoke-on-Trent. There is also a need to enhance connectivity with rail to make the most of the committed investment. Highway schemes will need to be focussed on key congestion hotspots, taking a multi-modal perspective.

Ultimately the future schemes will need to provide an accessible, attractive, affordable, and efficient transport alternative to car dependency and bridge the connectivity gap for those with and without cars in Stoke-on-Trent, whilst also achieving tangible benefits in terms of sustainability. In order to grow Stoke-on-Trent, future schemes will have to facilitate Stoke-on-Trent retaining and growing its productive workday population.

3 Growth and Planned Interventions

3.1 Introduction

The following section sets out the future local context in Stoke-on-Trent in terms of **population growth** and **planned interventions** which aim to address some of the challenges and opportunities detailed in section 2 as well as the **recovery from Covid-19**.

This section will provide insights of the future local situation to realise the gaps in progress towards delivering the LTP3 proposals and to further identify targeted improvements (section 6) to address local transport needs, opportunities and challenges which have emerged in the years since LTP 3 was developed.

3.2 Future population growth

Population estimates for 2041, highlight an expected growth of 18,548 residents from 2021 levels (Source: DfT's National Trip End Model, TEMPro 7.2) within Stoke-on-Trent. This equates to a 7.3% growth in population over the next 20 years. This is significantly lower than the growth forecast across England and Wales as a whole (10%).

The distribution of growth differs throughout Stoke-on-Trent, with some areas forecast to grow faster than others. The largest levels of growth are forecast in Dresden, Weston Coyney, Hanford, and Trentham West. The population growth will add further pressure to the highway network if trip rates by private car remain as current or increase. In addition to longer journey times and impacts on bus services, it will also create pressure for additional spending on the network to improve capacity at hotspots. Some of this will be inevitable, but capacity enhancements can be expensive and time consuming, with further capacity pressures delayed rather than resolved. Therefore, a balanced approach is required to cater for population growth, that requires the planning system to play as big a part as any transport interventions, with a focus on higher density development in specific, well-connected locations and corridors to assist the ability for them to be well served by public transport.

Challenge 32 – Supporting sustainable population growth in Stoke-on-Trent: Population growth has tended to be focussed on suburban locations many of which have limited opportunities to enable non-car-based travel.

Opportunity 45 – The emerging Local Plan will allocate sites for residential development across the city. There should be a focus on sites that are close to key destinations or that are well connected by public transport and walking and cycling routes to key destinations. For less accessible sites there should be the need for the local authority and the developer to invest in the necessary infrastructure to mitigate the location as much as possible. This should be supported with sufficient human and financial resource to deliver good quality travel plan programmes.

3.3 Future growth sites

Whilst the emerging Local Plan will review and allocate sites for development, there are currently a number of large residential sites being delivered in a variety of locations, from those in town centres to those at the fringe of the city, including Chell, Burslem, the City Centre, Stoke, Trentham and Meir.

Whilst some of these locations are closer to key destinations and have good access to sustainable transport options, evidence demonstrates that availability of private car parking is still expected by developers and residents. So, whilst accessible locations remove some of the barriers to considering modes of travel other than car, the reality of dispersed travel requirements – each resident is likely to have multiple 'key destinations' at differing times of the day – and the aspiration of upward social mobility, means that any growth site is likely to put added pressure on the highway network.

Many of the above-mentioned key destinations will be employment sites, so where they are located is as equally influential to the way individuals choose to travel as the location of their home. Future employment growth is focussed on a relatively small number of locations, so the agglomeration of employment centres can provide a focus for improving transport links to these sites. Key locations include:

- The City Centre
- Ceramic Valley Enterprise Zone – south of Tunstall
- Etruria Valley – west of the city centre
- Meir – south-west of Meir centre

As per residential developments, these sites have large, free parking areas which do little to discourage single-use car trips. However, thousands of jobs have been created on what were often old industrial brownfield sites, and they are the backbone of the city's economic development. They are not though easily accessible for many residents without regular car access.

Figure 3.1 shows the locations of the main committed employment and residential development clusters.

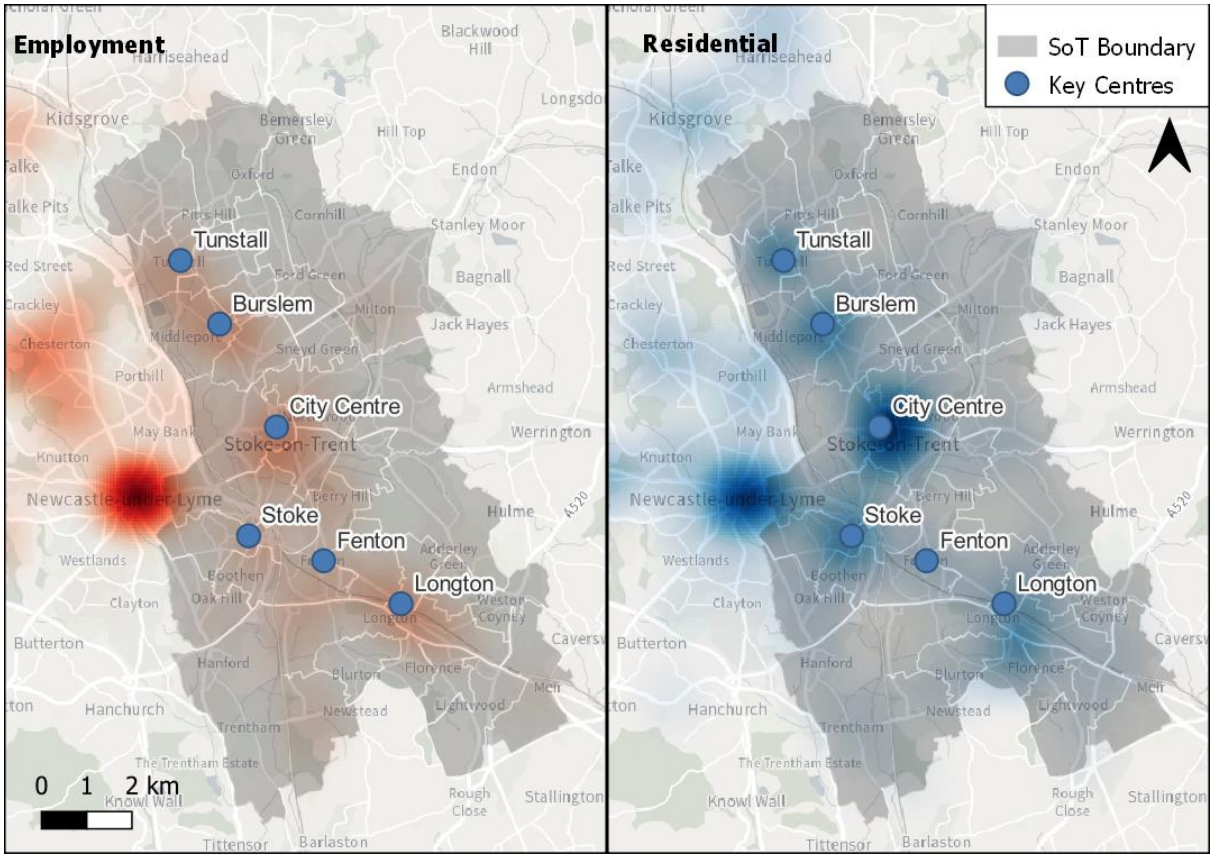

Figure 3.1 Employment and Residential Development Clusters

Challenge 33 – Supporting sustainable development: There is a need to support the growth of the economy through housing and employment development, and the public and developers retain an expectation of a site design that is accessible and useable by car. This needs to be accepted, whilst encouraging development of more accessible sites where possible, and with design that also does not discourage walking and cycling. Travel Plans are generally not delivered to a good standard, if at all.

Opportunity 46 – The emerging Local Plan should consider a focus on locations which provide the opportunity for less or more sustainable travel, and design guidance should encourage walking and cycling.

3.4 Transport Improvements

Several transport improvements are to be delivered in the city between 2020-2025. The planned improvements address some of the current local issues. These include addressing network performance, alleviating congestion, and improving safety on Stoke-on-Trent's existing transport networks. In addition to this, supporting planned housing and employment growth.

Table 3.1 lists the planned transport improvements in terms of mode/type of improvement. Additional information is provided below the table relating to schemes being advanced through Transforming Cities, Levelling Up and Active Travel Funds.

Scheme Name	Highway	Bus Priority	Rail	Active Travel	Air Quality
A52 Leek Road/Station Road Junction Improvement	✓	x	x	x	x
Station Road/College Road/Regent Road Improvements	✓	✓	✓	✓	x
Etruria Valley Link Road Project	✓	✓	x	✓	x
A500/A519 Newcastle Road to A519 Newcastle Road/A5182 Trentham Road Improvement	✓	x	x	x	x
A5010 Etruria Road Corridor Improvement	✓	x	x	x	x
City East Link Road	✓	✓	x	✓	x
Bucknall New Road Bus retrofitting	x	x	x	x	✓
A53 Bus gate*	x	x	x	x	✓
Clear Air Zone (CAZ) Type C*	x	x	x	x	✓
Rail Station Hub	x	x	✓	✓	✓
Rail Station to City Centre Links	x	✓	x	✓	x
Onward Cross City Links	x	✓	x	✓	x
College Road Bus gate	x	✓	x	✓	✓
Shelton New Road	x	x	x	✓	✓
Cycle Hire Scheme: Introduce two cycle hire locations at Lidice Way and Station Road	x	x	x	✓	✓

Table 3.1 List of transport improvements by mode/type of improvement
*awaiting funding, FBC/OBC to be submitted

The Transforming Cities Fund, Levelling Up, and Active Travel Fund include major regeneration and development projects with goals to transform certain parts of the city. The Active Travel Fund follows a clear direction of decarbonisation and supports walking and cycling. Some important projects are as follows:

Transforming Cities Fund:

- Station Hub: Major development of Stoke-on-Trent Rail Station into the Station Hub; a next generation multimodal and multifunctional Mobility Hub.
- Station to City Centre Links: Provide high quality mass transit links (bus priority improvements) to the City Centre.
- Onward Cross City Links: Create onward improved cross city mass transit and sustainable travel links including to Etruria Valley and wider connectivity to employment areas including Longton, Burslem and Tunstall, the Royal Stoke University Hospital and Trentham Lakes.

Levelling Up Fund:

- It includes Etruscan Square, The Goods Yard and infrastructure projects within the city

Active Travel Fund:

- College Road: Introduction of a bus gate on College Road to restrict through traffic to cycles, taxis, and buses between Station Road and Queen Anne Street. This aims to create quieter, more pedestrian friendly and cycle friendly route, improve air quality, improve accessibility between the train station and key areas of the city, tackle congestion in the area, improve bus journey time reliability and provide better choices for travel for the local community.
- Shelton New Road: Introduction of 2km of cycling infrastructure including improvements to crossings, dedicated segregated cycle lanes and new shared paths.
- Cycle Hire Scheme: Introduction of two cycle hire locations at Lidice Way and Station Road. As part of this proposal, an app-based system with folding bikes would be introduced. This aims to extend the reach of the existing transport hubs to key employment areas in the city, provide new opportunities and better choices for travel for the local community and improve connectivity with Stoke-on-Trent.

Challenge 34 – Taking a multi-modal approach to highway improvements: There is a focus on highway improvement schemes, yet limited interventions to support other travel modes, this will only reaffirm existing trends, i.e., the prevalence of car use.

Opportunity 47– To address Stoke-on-Trent's LTP priorities, a greater focus is required on promoting new sustainable transport infrastructure such as public transport or active travel developments.

3.5 COVID-19 Recovery

Covid has changed travel patterns, especially in terms of commuting habitats, more online deliveries, and a reduction in public transport usage. Under the resulting lockdowns, some mobility trends have accelerated (for example: working from home; active travel; increased freight and more local deliveries) whilst others have been paused or moved in the other direction.

In combating the spread of COVID-19, the UK government took a number of significant actions that placed restrictions on individuals, areas, and the wider economy. Whilst these restrictions caused very significant disruption to people's lives, they also resulted

in changes of behaviour which, if continued, could help to resolve some transport-related issues.

The organisational and business actions are a snapshot of those taken by individual organisations and whole industries to cope with the ongoing pandemic and its impacts on how organisations operate:

- Investing in IT systems to support remote working
- Expansion of capacity of home delivery services
- Contactless payment preference
- Bus services reduced in medium to long term
- Reduced local services due to closing down

Public Transport

Due to the increased physical interaction required by public transport, there has been reluctance to return to bus and rail use. Though locally specific information has not been able to be sourced, at a national level (outside London) Transport Focus's latest research from March 2022[62] found:

- 87% of train passengers feel safe in relation to COVID-19; however only 68% of non-rail passengers would feel safe if they had to make a rail journey.
- 88% of bus passengers feel safe in relation to COVID-19; however only 62% of non-bus passengers would feel safe if they had to make a rail journey.

The safety concerns expressed by non-rail and bus users is likely to be a significant barrier to encouraging mode shift and encouraging greater use of public transport. Careful consideration will need to be given to how public attitudes on the safety of travelling by rail and bus can be improved to support increased use. However, early signs indicate patronage levels for public transport may not recover to pre-pandemic levels for some time (if at all), continuing to impact on the commercial viability of services and requiring consideration of different operating models.

Working from Home

The biggest impact of Covid-19 has been the increased usage and attractiveness of work from home (WFH) behaviours. Whilst figures are not available for Stoke-on-Trent specifically, 40% of all adults began working from home at the start of the first lockdown, and in January 2022, 36% of working adults reported to having worked from home a least once in the last seven days because of the pandemic. This indicates continuation of this working practice. The DfT's "All Change?" document has outlined the reluctancy of many workers returning to the office on a regular daily basis.

Several large companies have established policies outlining future WFH patterns that can be allowed for employees in the future. British Airways, BP, and Nationwide have outlined that WFH will become an accepted practice for at least a few days a week. As more and more companies and organisations embrace the use of WFH on a full or part-time basis, it is possible that the amount of total commuting in Stoke-on-Trent will fall. WFH will have several impacts on the future of transport and developments:

[62] https://d3cez36w5wymxj.cloudfront.net/wp-content/uploads/2022/03/04092502/Travel-during-Covid-19-survey-%E2%80%93-4-March-2022.pdf

- Significantly reduced greenhouse gas emissions from reduction in commuting: COVID-19 lockdown led to a 42% reduction nationally in Nitrogen Dioxide levels.
- Changes to the way offices are structured: Savills found that office vacancy rates nationally increased from 4.9% to 8.4% from early 2020 to 2021.

Challenge 35 – Developing a transport network that is resilient to changes in travel habits: Whilst there were some initial reductions in local traffic levels at the start of the pandemic, these have generally returned to pre-covid levels. However, far fewer people are using public transport than previously. Whether these people are using alterative travel means – walking, cycling or by car – or whether they are just not travelling as often, is not known. The reduced demand has led to reduced bus service levels. The challenge is that if there is a permanent drop in bus patronage, bus service levels will remain significantly below pre-pandemic levels, leading to reduced accessibility for many, and the potential for more pressure on the road network if there is a longer-term shift across to single occupancy car use. A reappraisal of travel habits will be required post-Covid on a local level to understand what long-term impacts this will have on the need for transport interventions.

Opportunity 48 – There needs to be a better understanding of likely travel patterns post-pandemic. The 2021 census may not be able to support that understanding, it being in the middle of the pandemic itself, so additional data is likely to be needed. Government funding of sustainable transport is currently high, so delivery of schemes through the Transforming Cities Fund, Bus Service Improvement Plan, and Active Travel Fund will enable can help mitigate some of the pressure on the transport network and can help support the recovery of bus services through incentives to attract users back to the bus.

4 Strengths, Weaknesses, Opportunities, Challenges

A summary of the strengths, weaknesses, opportunities, and challenges for the study area has been identified and provided in the **Table 4.1** below. These insights can feed into the approach of the development of the transport strategy in terms of informing the objectives, the interventions identified and the delivery plan. As highlighted significant challenges are faced due to the high levels of car dependency and the polycentric geography of Stoke-on-Trent.

Strengths	Weaknesses
• Stoke-on-Trent is home to over 256,600 people and is growing, resulting in a substantial 'addressable market' that will directly benefit from enhanced intra-urban and inter-urban connectivity • Stoke-on-Trent is characterised by a skilled workforce in the areas of innovation and technology (two local universities with potential to better retain talent). Transport investment will enable employers to better attract and retain the right skills needed to drive economic growth • Employment sites such as Staffordshire University, Etruria Enterprise Employment Zone, Royal Stoke University Hospital provide substantial opportunities for increasing active and sustainable travel • Numerous green spaces, protected areas and other heritage and ecological sites • The Citywide full-fibre gigabit network (113km citywide) has set the foundation for joining the network of Smart Cities	• There is a serious health deprivation issue with more than 50% of residents living in most deprived neighbourhoods of England[63] • Two tier society with or without car access • Rising costs of car use • Low levels of non-car travel • There are congestion and safety hot spots across the network as a result of high levels of car dependence, particularly in more rural areas of the study area • Very poor air quality in the inner urban area • Poor network connectivity as well as poor rail and bus frequencies to key employment areas and the city centre (failing public transport network) • Lack of cross city bus routes, such trips are therefore forced to interchange • Poor infrastructure for walking and cycling • Hilly and steep topography (weakness in terms of active travel) • Poor alternative links to the strategic road network

[63] Stoke-on-Trent Health Profile 2015

• Lower property prices in Stoke-on-Trent than Manchester or Birmingham make Stoke an attractive location for young couples and families to set up home and commute • Stoke-on-Trent is a linear city with potentially strong public transit corridor • Ideal location for a logistics hub between Birmingham and Manchester	• Insignificant amount of an EV fleet and related charging infrastructure • Very few ZEVs within the council fleet and across the local network • Limited planned improvements towards sustainable transport • Lack of a parking strategy with an abundance of cheap or free parking including in the centres
Opportunities	**Challenges**
• Ensure a robust suite of transport policies is developed as part of the Local Plan • Improve active travel connectivity around the City Centre • Increase connectivity to the Outer Urban Core through public transport links such as VLR and improve connectivity in this area to the existing rail network • Interventions to deliver improved public transport connectivity between the six towns • Interventions to support sustainable access to the six towns for those in less dense peripheral areas • Improve public transport to tackle demand in denser central areas as well as active travel connectivity to encourage short local trips by alternative modes • Transport interventions to support sustainable access to the key employment destinations • Improve accessibility to employment in areas of deprivation through better PT and active travel links • Transport interventions in walking, cycling and passenger transport to increase levels of active travel for end-to-end journeys or as part of a longer trip by public transport	• Low population density – difficult for serving by public transport • Accommodating population growth and associated transport needs • Providing connectivity for a dispersed population • Improving sustainable access to dispersed employment centres • Improving access to opportunities from areas of deprivation (Burslem, Bentilee, Fenton) • Improving health and wellbeing through increased active travel • Providing attractive alternatives to private car travel • Providing alternative transport options to areas with low car access • Improving highway safety through corridor improvement packages • Reducing carbon emissions from local transport to support the net zero target • Improving air quality through emissions reduction • Developing a local transport network that is resilient to the impacts of climate change

• To reduce multiple car ownership, particularly where attractive public and active transport options and fast digital infrastructure already exists • Improve transport options to areas with low car availability • Corridor improvement packages for specific roads, especially in the Inner Urban Core, could help reduce the number of road collisions and casualties • Support behavioural shift towards sustainable transport modes including a cleaner vehicle fleet, combined with a better digital infrastructure to reduce the need to travel • Investment in transport measures that help deliver improved air quality in addition to what is planned for the NSLAQP which includes a charging CAZ C • Delivering new infrastructure with includes flood defences • Ensuring Stoke-on-Trent's natural and heritage assets are protected • Complementing existing heritage sites and green corridors with sustainable transport (cycling, VRL) as well as with active travel schemes to expand their utilisation • Use of Stoke-on-Trent's waterways for both local transport and freight • Transport interventions to support the movement of workers to key employment destinations • Transport interventions to facilitate the new journey patterns • Alternative transport options to keep up with the freight demand such as rail and water transport freight • The rollout of superfast and ultrafast broadband and mobile internet in areas with lower average download speeds	• Ensuring Stoke-on-Trent's natural and heritage assets are protected • Delivering a transport network that supports Stoke-on-Trent's diverse industrial needs • Delivering a transport network that support the changing travel pattern of workers • Supporting the increasing need of retail and home deliveries • Building on the full-fibre gigabit network to reduce the need to travel and/or enhance efficient journey times • Building on the full-fibre gigabit network to provide digital connectivity • Increasing local walking trips • Improving cycle connectivity to facilitate an increase in trips by bike • Developing a local bus network which is an attractive alternative to the private car • Making the most of Stoke-on-Trent's rail infrastructure • Taking advantage of the city's location to produce a freight strategy and deliver improvements for this vital and changing sector • Providing a cleaner taxi fleet • Offering more attractive alternative options to taxis • Managing parking demand • Reducing congestion on key arterial routes • Supporting the change to zero emission modes • Embedding sustainable travel behaviours in Stoke-on-Trent • Improving connectivity between Stoke-on-Trent's five key local centres and opportunities in Hanley

• Create opportunities for multi-modal journeys through the development of apps that can be used for journey planning and ticketing (allowing for all the multi-modal routing options) • Encourage increased trips on foot, particularly along key pedestrian desire lines located both in the City Centre and Outer Urban Core (Tunstall, Longton) • Improve cycle infrastructure to provide direct, safe connections, particularly where there are key cycle desire lines present to increase cycle mode share • Promote E- bike use as an alternative option due to the city's topography • Bus options that deliver an attractive, high frequency and reliable transport offer • Improve rail connectivity within Stoke-on-Trent and with the rest of the West Midlands region and Manchester • A future freight strategy to develop key issues and solutions for this sector • Initiate an electric charging point scheme to encourage the use of electric/hybrid taxis to replace ICE vehicles • Improve the public transport network with affordable fares to compete with the taxi offer • Manage parking demand by making alternative modes more competitive through reviewing the parking charges • Explore PT and active travel interventions as an alternative to highway capacity improvement schemes along key corridors such as the A34, A50, A52 and A5272 • Offer incentives to increase take up of zero emission modes, including switching public and private vehicle fleets to zero emission vehicles • Decarbonise public transport	• Improving connectivity between Stoke-on-Trent and the West Midlands region • Improving connectivity to key employment locations to promote modal shift • Supporting sustainable future population growth in Stoke-on-Trent • Supporting sustainable development • Taking a multi-modal approach to highway improvement • Developing a transport network that is resilient to changes in travel habits • Modest population growth • Retrieving long time lapsed bus users • A large car owning social class B-C demographic (owning small and medium sized cars), who appear to be the least likely to get out of their cars

• Adopt a strategy on ZEVs • Raise the profile of sustainable travel further including development of Travel Planning supplementary planning guidance, as well as implementation of behaviour change interventions • Provide better connectivity between Inner and Outer Urban Core to the City Centre, where most of the commuter trips are (employment areas) • Development of MMH to encourage trips by rail, bus, active travel, and VLR • Provide alternative transport options to support sustainable access to key destinations for those in peripheral areas • Connect the key locations and support focused transport interventions for sustainable travel to the clusters of where the future residential and employment sites are located • Invest in smart technology to capture changes in trends from ongoing surveys of people's travel behaviour including public transport usage and vehicle movements, as well as wider metrics around air quality and economic spend in the area • Growth beginning to be centred on brownfield sites so density coming back to places like Etruria	

Table 4.1 SWOC – Strengths, Weaknesses, Opportunities, Challenges of Stoke-on-Trent

5 Vision and Objectives

5.1 Vision

The vision of the Transport Strategy is to support an economically vibrant city served by a well-connected, accessible, and efficient transport network enabling residents, commuters, and visitors to easily access the full range of economic and social opportunities available, in such a way that supports good health, good air quality and decarbonisation/net zero ambitions.

This will be done through a balanced approach, as mentioned in section 1.4. This will comprise of targeted road capacity enhancements to support development, efficient use of roads (car share, bus priority, cycle, and pedestrian facilities) throughout the network and use of other networks such as greenways and canal/river paths to increase overall transport capacity and accessibility for the area. Furthermore, use of behavioural change techniques to generate modal shift from the car to reduce the existing high car dependency and improve take up of greener modes such as active travel and very light rail public transport.

5.2 Objectives

The vision is supported by a set of five key objectives set out below:

- To improve access for residents and visitors to economic opportunities, education, healthcare, and essential retail
- To improve the air quality of Stoke-on-Trent
- To improve local health outcomes
- To support decarbonisation of Stoke-on-Trent's transport network
- To improve accessibility by public transport and active travel

The above-mentioned objectives should connect with the Local Transport Plan 3 (LTP3) objectives. In **Table 5.1**, the link with the LTP objectives is identified.

Objectives Transport Strategy / LTP	Economy Improving the local economy through increasing productivity for existing businesses and encouraging new investment by making the area more attractive	Environment Improving the local environment through reducing the impact of traffic (air and noise) and moving towards more sustainable transport technology and modes, coupled with improving the appearance of local area	Health Caring for local health through improving access to transport, transport safety and encouraging walking and cycling

To improve access for residents and visitors to economic opportunities and healthcare	Alignment with economic goals to increase productivity by improving access	Improving access by introducing new public transport options which will also reduce the impact of road traffic	Alignment in terms of providing health benefits by improving access to healthcare
To improve the air quality of Stoke-on-Trent	Improving air quality will increase the attractiveness of the area	Part of improving air quality will deliver the objective of reducing the impact of traffic	Improved air quality will deliver health benefits to all residents of Stoke-on-Trent
To improve local health outcomes	Improving local health outcomes will contribute to increased productivity across many sectors	Local health outcomes will be improved by any intervention which reduces traffic impacts by introducing sustainable transport options	The TSDP seeks to improve health outcomes by delivering active travel options and improving air quality.
To support decarbonisation of Stoke-on-Trent's transport network		Decarbonisation of road traffic will directly reduce the impact on air quality	The decarbonisation of the transport network will deliver improved health outcomes and may encourage walking and cycling trips
To improve accessibility by public transport and active travel	Alignment with economic goals to increase productivity by improving access to key employment centres.	Sustainable transport options would reduce congestion to several corridors, thus improving the air quality to their adjacent locations	Improving health and wellbeing of the residents by promoting alternative to car transport options

Table 5.1 Transport Strategy Plan Objectives linked to the LTP

5.3 Policy Links

Current national priorities for transport focus are driven by the policy background. Key policies and strategies are described in the Local Transport Plan Review (May 2022) and are set out in **Table 5.2**.

Strategy	Description	Link to Transport Strategy and Delivery Plan
National		
Industrial Strategy	Published in November 2017, the Industrial Strategy White Paper aims to boost productivity by backing businesses to create good jobs and increase the earning power of people throughout the UK with investment in skills, industries, and infrastructure.	Integral to the 'Infrastructure' foundation is transport infrastructure. The White Paper recognises that investment in transport infrastructure will be needed if the goals of the Industrial Strategy are to be met. The pertinent goals for an urban transit system related to "Clean growth" and the "Future of mobility". The city's Transforming Cities Fund is funded via this strategy.
Transport Investment Strategy	The Government's Transport Investment Strategy Command Paper outlines the government's priorities for making transport investment decisions, including a set of priorities and policies to guide those decisions. It is explicitly set in the context of the Industrial Strategy	The strategy includes specific commitments on local and regional transport; it notes that all journeys necessarily make use of local transport at some stage, and that for most journeys, local transport comprises the entirety of the trip. Furthermore, it highlights that urban transport systems are central to making local journeys possible.
Climate Change Act and Low Carbon Transport: A Greener Future	Low Carbon Transport: A Greener Future Strategy (July 2009) intends to enable the UK to meet the requirements of the carbon budgets set under the Climate Change Act 2008. The strategy sets out the need for action in respect to climate change and transport emissions, areas of focus including supporting a shift to new technologies and cleaner fuels, promoting lower carbon choices, using market mechanisms to encourage a shift to lower carbon transport.	The strategy states its commitment to changing the way long-term transport planning decisions are made including considering CO_2 and other greenhouse gas emissions as one of the five goals that will guide future transport policymaking and infrastructure investment decisions. Delivery of transport schemes can support this commitment.

Strategy	Description	Link to Transport Strategy and Delivery Plan
Transport Decarbonisation Plan	Government has now set a net zero target. It has undertaken to bring forward a Transport Decarbonisation Plan which will set out how transport will contribute to this cross-sectoral goal.	In advance of completing the Plan, in Decarbonising Transport Setting the Challenge, Government has set out its six objectives including accelerating modal shift to public and active transport, place-based solutions for emissions reduction. The transport schemes within this document would provide an attractive public transport option and potential for integration with existing modes, increasing opportunities for mode shift away from private car and thus further reducing emissions.
Decarbonising Transport Setting the Challenge	In March 2020 the Department for Transport set out what it sees as the challenges to decarbonise transport	Goals include accelerating modal shift to public and active transport, decarbonising road vehicles and adopting place-based solutions.
Ten Point Plan for a Green Industrial Revolution	The Government's November 2020 sets out steps it will take to meet its commitment for net zero by 2050.	Steps include promoting green public transport, cycling, and walking (point 5), as part of which is a commitment to further invest in the enhancement of local public transport in cities.
National Infrastructure Strategy	Published alongside the November 2020 Spending Review, the National Infrastructure Strategy Command Paper sets out the Government's goal and commitment to: "To use infrastructure to unite and level up the UK, delivering a stronger Union, thriving regions, cities living up to their full potential and revitalised towns and communities. To deliver this, the government is investing across the country, prioritising those areas that have received less support in the past" [page 11]	The Command Paper notes that many of the UK's largest cities have below average productivity relative to their size and population and that this in part due to high congestion and poor local transport links. It states that a well-designed public-transport network is fundamental to the operation of any city, but in regional cities public transport provision lags behind continental peers. It commits the Government to invest in public transport as part of its effort to rebalance the national economy. To support its decarbonisation plans, the Command Paper states that the Government wants to increase the share of

Strategy	Description	Link to Transport Strategy and Delivery Plan
		journeys taken by public transport, cycling and walking.
Bus Back Better	The aim of this strategy is to make buses more frequent, more reliable, easier to understand and use, better co-ordinated and cheaper. There is an expectation that Local Transport Authorities (LTAs) to commit to establishing Enhanced Partnerships under the Bus Services Act in co-operation with operators. The strategy also recognised longer term franchising options. To benefit from the funding in this strategy, LTAs are expected to implement Bus Service Improvement Plans (BSIP) to deliver service improvement.	The BSIP is part of the Enhanced Partnership agreement between Stoke-on-Trent Council and the Bus Operators. The plan's main goals are to improve the bus network across the city and encourage more people to use it with a focus on delivering sustainable and inclusive transport. Key elements include bus priority, more frequent and reliable bus services, longer hours of bus operation, a review of bus fares in terms of cost and complexity, accessibility considerations, provision of clear and real time passenger information and real-time journey times, modern low emission vehicles and improved passenger satisfaction. Delivering the BSIP will support overcoming key challenges and weaknesses in the city's current bus network.
Future of Freight: a long-term plan	In June 2022, the first-ever cross-modal and cross-government plan for the UK freight transport sector was published. This plan sets out the government's long-term vision for the freight sector and identifies the main challenges, objectives and actions that need to be taken in the following 5 priority areas: • A National Freight Network (NFN) • Transition to net zero • Planning • People and skills • Data and technology	The Freight plan objectives align with the future need for a freight strategy as well as the deliverables of this plan to promote freight transport enhancements in Stoke.

Strategy	Description	Link to Transport Strategy and Delivery Plan
Regional		
Midlands Connect Strategic Transport Plan	The Midlands Connect Strategic Transport plan sets out the following key challenges: • Levelling up and strengthening the region and UK • Decarbonising transport and adapting to climate change • Driving resilient economic growth	The Delivery Plan objectives directly align with the decarbonisation of transport and promoting economic growth. The deliverables of this plan will support the levelling up of Stoke-on-Trent.
Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) and Strategic Economic Plan (SEP)	The Stoke-on-Trent and Staffordshire LEP was created in 2011 and it is ongoing with its main target to support businesses which wish to start up, grow or relocate to drive economic growth. The plan focuses on Stoke-on-Trent for rapid economic growth, capitalising on its connectivity potential.	This plan also aims to support economic growth by enhancing connectivity in the local area and improving accessibility to key destinations, including employment zones.
Local		
Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (2006 – 2026)	The Core Spatial Strategy sets out a broad framework for the future development of the whole of Newcastle-under-Lyme and Stoke-on-Trent. The core aims of the strategy include “To reduce the need to travel, improve accessibility and increase the opportunities for development of sustainable and innovative modes of travel to support regeneration”	This plan and the transport deliverables described within it focus on improving accessibility and providing sustainable travel options. The transport deliverables will target underserved areas to support regeneration and sustainable development.

Strategy	Description	Link to Transport Strategy and Delivery Plan
Stoke-on-Trent Local Plan (emerging)	This will replace the Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (2006 – 2026). The core aims of the Plan are to determine suitable development opportunities based around a core set of principles to enable the continued growth of the local economy and to meet local and national targets for development.	This Plan is critical to how successful a sustainable transport strategy can be in providing improved access for all, based on where development is prioritised.
North Staffordshire Local Air Quality Plan (2020)	The whole of Stoke-On-Trent was designated as an Air Quality Management Area for nitrogen dioxide in 2006, the main source of which is vehicle emissions. The plan will help to protect and promote the health of the local population by improving air quality and reducing the impact of air pollution on the environment. In so doing, the local authorities are complying with the UK Air Quality Plan and bringing NO2 air pollution within statutory limits in the shortest possible time.	A key objective of this plan is to improve air quality by delivering transport infrastructure which serves the joint local area and provides an emission free alternative to motorised transport.

Table 5.2 Policy Links

6 Targeted Improvements

6.1 Introduction

This section sets out the targeted improvements based on the Transport Strategy's aim to implement a balanced approach to deliver its objectives. This balanced approach comprises targeted road capacity enhancements to support development, efficient use of roads (car share, bus priority, cycle, and pedestrian facilities) across the network and use of other networks such as greenways and canal/river paths to increase overall transport capacity and accessibility for the area. In addition, use of behavioural change techniques to generate modal shift from car and take up of greener modes.

As the overall ambition of SoTCC is to deliver a better-connected City with transport options that currently do not exist, these proposals consider the need to support economic growth by providing the necessary infrastructure to accommodate and manage travel demand in a sustainable way.

A number of strategic schemes that align with national, regional, and local policies have been identified to tackle the key transport challenges of Stoke-on-Trent as summarised in the SWOC table.

These schemes aim to deliver the objectives of the LTP3 and the Transport Strategy, and facilitate the drafting of LTP4, in 2023-24, as required by DfT.

	Route to Net Zero (Greener Vehicles)
	Active Travel (Walking and Cycling)
	Transport Hubs (Places to interchange from one type of transport to another) – includes Park and Ride
	Bus Network Improvement
	Rail
	Very Light Rail
	Freight Transport Enhancements
	Road Network Improvements

It should be mentioned that apart from the proposed schemes, the city council intends to draft / revise supplementary planning guidance for Parking, Travel Planning, and EV strategy.

6.2 Route to Net Zero

Road transport in the city is a major contributor to both GHG emissions and air pollution. A transition to zero emission vehicles is essential to decarbonise transport, and to achieve long-term air quality improvements. The measures needed to deliver this transition are considered in the Options Assessment report (see Appendix C), with a focus on four key areas:

- A zero-emission bus network
- Opportunities for a zero-emission city council fleet
- Zero emission taxis
- Roll out of electric vehicle charging points on-street and off-street

The bus fleet in the city is ageing and polluting. Zero emission (ZE) buses are being introduced in cities across the UK, many supported by funding through the ZEBRA (Zero Emission Bus Regional Areas) scheme in England or similar schemes elsewhere in the UK, and with a wide choice on the market they are quickly becoming the mainstream well ahead of the expected phase-out of diesel bus sales. Their benefits to air and noise pollution are appreciated as well as their significant GHG reductions.

Battery electric buses and their recharging infrastructure require a high capital investment but offer potentially lower running costs, and longer ranges require larger, more expensive batteries, additional vehicles, or opportunity charging (such as pantographs at terminals). Hydrogen fuel cell buses provide operational flexibility with capability for longer range routes, but have higher running costs, and are currently more expensive to purchase. In Stoke-on-Trent between 7% and 35% of services require a longer range than can typically be achieved by electric buses depending on the bus type and specification used, with midi buses being particularly challenging given their current limited electric availability and their widespread use in the region. A first step towards decarbonising the bus fleet would be a deeper evaluation of the technical and financial case for both electric and hydrogen buses, considering their operational requirements and capital and operational costs, to output Total Cost of Ownership (TCO) comparisons specific to Stoke-on-Trent and inform technology selection.

The Council road vehicle fleet is large and varied, but newer than the bus fleet and most vehicles meet current emissions standards. A transition to zero emission vehicles will not only reduce the Council's own emissions but would set an example to residents and businesses in the city and demonstrate the benefits and viability of zero emission vehicles. A fully electric vehicle fleet could reduce GHG emissions by around 80% by 2030 and as much as 98% by 2040. Electric vehicles are now becoming available for most of the Council vehicle needs, including vans and refuse collection vehicles (RCVS) which together are responsible for three-quarters of the fleet GHG emissions. A fully electric zero-emission road fleet is achievable by 2035, and most light-duty vehicles could be electric by 2030, with the necessary funding and delivery plan.

Hydrogen RCVs are also becoming available, and as with buses offer operational flexibility, but with a higher purchase and running cost, and so they are expected to be used only where energy demand or distances covered fully justifies their selection over battery electric vehicles. 9% of the fleet emissions are from mobile plant, the variety and specialist nature of which will need a dedicated strategy with a range of solutions to enable decarbonisation.

Like the bus fleet, the taxi fleet in Stoke-on-Trent is relatively old and polluting, with only a third meeting current emissions standards, and a range of barriers are likely to be preventing drivers and operators adopting zero-emission vehicles. The Council has already begun installing chargers for the use of taxis and is looking to ways in which residential charging can be provided. Development of taxi charging infrastructure needs to ensure effective and equitable provision for all drivers. Other measures can be developed to address the concerns and barriers facing taxi drivers adopting zero-emission vehicles and encourage or assist their uptake.

While taxis are expected to transition to electric vehicles in the future as the wider vehicle parc is increasingly electric, slow take-up limits potential GHG reductions in the city and continues to add to air quality problems. An all-electric taxi fleet by 2035 would be achievable with the right measures and could reduce GHG emissions from the fleet by 89%, saving nearly 4000 tonnes of CO_2e in that year alone. Ultimately zero emission taxis can be ensured through licencing or access restrictions, but such measures will need long implementation times so that drivers and operators can plan for them.

The wider uptake of electric cars and vans in the region lags the national average. For electric vehicles to be adopted by the residents and businesses, the city needs publicly available chargers that meet the needs of residents, businesses, and visitors. The study discusses the types of charging infrastructure, solutions for residents without off-street parking, and estimates the demand for en-route, destination, and residential chargers. The costs and the commercial and grant opportunities for different charger types are considered.

The Council needs to ensure charging infrastructure develops across Stoke-on-Trent to meet current and expected needs, and that lack of infrastructure is not a barrier to the adoption of zero emission vehicles. However, their focus should be the provision of access to low-cost and convenient charging facilities to residents without access to off-street parking, as this is the means to ensure equitable access to charging electric vehicles and widespread adoption of them without leaving disadvantaged communities behind. Stoke-on-Trent are part of the successful recently awarded bid through Midlands Connect for government funding to start the provision of electric vehicle charging infrastructure for residents without off-street parking.

6.3 Active Travel

Active Travel measures will deliver new infrastructure to promote walking and cycling, both as main modes of travel and as first and last mile solutions combined with public transport interchanges.

Schemes committed for delivery, through a range of government and local funding sources, include:

- New cycle route from city centre to Etruria (Etruria Road)

- New cycle route from city centre to Stoke-on-Trent Railway Station (College Road and Regent Road)
- Upgraded pedestrian and cycling route between rail station and Sideway/Trentham Lakes (Trent & Mersey canal path)
- New cycle route from city centre to Newcastle-under-Lyme (Shelton New Road)

Many local pedestrian schemes are committed or included in the current delivery programme, many linking to safe routes to schools.

A large number of other schemes from very small to significant have been identified.

To enable informed decisions are taken regarding priorities for delivery that will maximise benefits to users, our Local Cycling and Walking Infrastructure Plan (LCWIP) has used data based on actual and potential demand for walking and cycling routes, and any new schemes will be cross-referenced against the LCWIP principles.

The LCWIP delivery strategy will consider which measures and resources will be required to achieve the increases in walking and cycling levels needed to meet future Government active travel targets.

Through the LCWIP process active travel infrastructure improvements will be identified and prioritised to deliver:

- Improved walking and cycling connectivity, installing links where network gaps have been identified through the production of the Local Cycling and Walking Improvement Plan (LCWIP)
- Safe, accessible, direct, all weather active travel routes, avoiding heavily congestion sections of the road network, supported by a regular maintenance routine to ensure active travel routes remain accessible and safe to use.
- Improved linkage between existing greenway corridors and off road routes, making better use of the extensive canal towpath network.
- Improved wayfinding signage between key distances
- Improved provision of secure and accessible cycle parking include access to recharging facilities to promote the use of electric bicycles.
- Cycling training, road safety and active travel planning incentives

Consideration will also be given to delivering active travel infrastructure improvements which support the development of accessible 15 minute neighbourhoods, where essential local amenities, goods and services are easily accessible within a 15 minute walk.

The existing greenways network, including sections of canal towpath require a regular and consistent maintenance programme, to remove overgrown vegetation, littered sections and uneven or broken surfacing. Without regular maintenance some of those routes can become unwelcoming for active travel users

6.4 Transport Hubs

An optioneering study has been undertaken to assess the viability of transport hubs in a number of locations. These hubs will perform two functions:

- supporting increased use of sustainable travel options for local trips within the city through a network of Multi-Modal Interchanges; and
- facilitating transfer from private car to public transport for those entering the city through Park and Ride

A Strategic Outline Case has been developed which explored a long list of 32 options and their associated performance against identified objectives, critical success factors and likely levels of feasibility and deliverability. Options included:

• Longton Station • Longport Station • Sideway Employment area (and Stadium) / Trentham Lakes • Etruria Employment Area • A52 (East of City Centre) • A50 (North of City Centre)	• A53 (North of City Centre) • Stoke Rail Station • Hanley Bus Station • Royal Stoke University Hospital • Minor VLR stops on any future network • City centre car parks.

Following assessment of this long list, nine options were short listed, subsequently developed into three packages – a 'do something' package focussed on improving local connectivity within Stoke-on-Trent, a preferred option, focussed on bus-based park and ride, and a preferred option which would build upon VLR proposals, both of which would facilitate transfer from private car to public transport via Park and Ride.

The sites identified were based on locations with one or more existing modes of transport available, such as railway stations and are a mix of more traditional bus park and ride sites and sites with potential for linking car or rail journeys with a short walk or cycle ride. Consideration was also given to key traffic flows on the main road network and potential for abstraction from these flows to public transport.

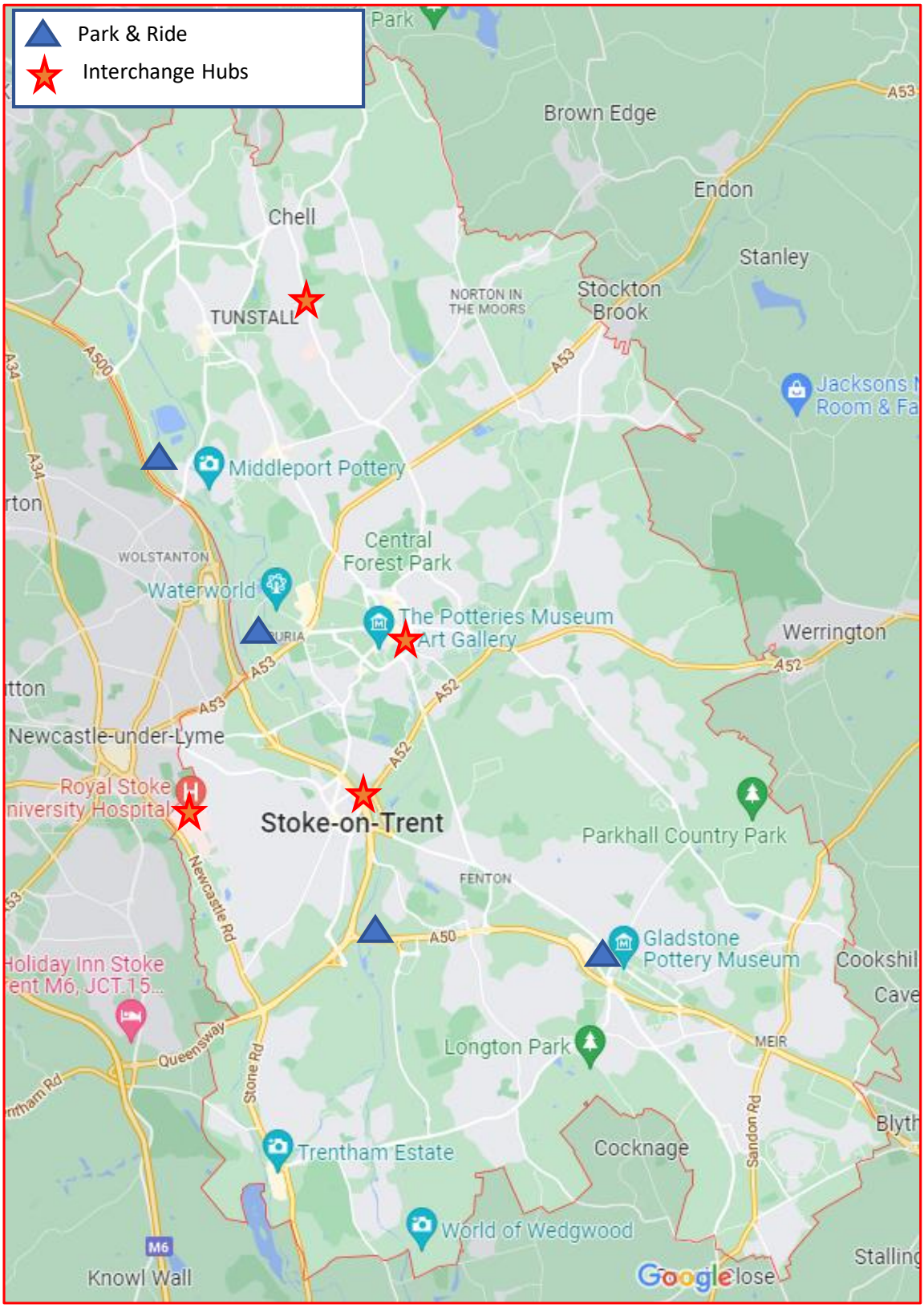

Figure 6.1 Transport Hubs – indicative sites

Multi-Modal Interchanges

The Multi-Modal Interchanges will be focused on sites which offer maximum access by active travel modes such as walking and cycling and align with public transport interchanges. Cycle and walking routes to the transport hubs will be identified and/or

enhanced to provide safe and pleasant journeys to/from key destinations by active modes.

Facilities such as cycle parking, parcel lockers to allow drop off or collection of local deliveries, real-time travel information and shops/cafes will be provided at each multi-modal hub to support modal interchange.

Stoke-on-Trent Rail Station is ideally placed to become a next generation multi-modal and multi-functional mobility hub, incorporating a range of first mile/last mile mode options with supporting land uses that would reduce local vehicle kilometres travelled through the combination of functions at a single location. In doing so it would serve as a catalyst for reinvigoration of the local economy and communities.

The station sits approximately one mile south of the city centre and is a focus of the Transforming Cities Fund programme. It is currently managed and staffed by Avanti Westcoast Ltd. and has a small retail outlet and three cafés. It has secure cycle parking. It has a significant role to play in the city's economic growth, being a gateway for commuting and visitors. The challenge is to provide an attractive option for people to use for onward connections to their destination, be that a short walk to nearby educational establishments, or a short cycle or bus ride to the city centre and other employment sites.

Proposal	Delivery Timescale	Funding provision
More cross-city bus services calling at the station; bus timetables revised to enable connection with trains where applicable	2023	Bus Service Improvement Plan
Improved quality of public realm and bus interchange facilities	2024	Transforming Cities Fund
Improved links to city centre for buses, pedestrians, and cyclists	2024	Transforming Cities Fund
Improved links to major employment sites via local cycle network	2024	Transforming Cities Fund
Provision of revised car parking with EV charge-points, new taxi rank, and expanded cycle parking and rental facilities	2024	Transforming Cities Fund
Adjacent 'Goods Yard' development – mixed use residential, hotel and leisure	2025	Levelling Up Fund + private investment
Uplift to internal facilities including larger arrival hall, additional retail	No indicative date yet agreed	No funding yet identified, but will be from within the rail industry

Proposal	Delivery Timescale	Funding provision
space, potential workspace		
Additional rail services – ambition for two trains per hour from all local/regional stations	2030	Not yet identified
Additional work to enable services from Leek to terminate/call, and for VLR interchange	2030	Not yet identified
Additional work as required to accommodate HS2 services	2030	Not yet identified

Table 6.1 Indicative programme of improvements at the Stoke-on-Trent Railway Station Hub

The other existing transport hub is the **City Centre Bus Station** at Lidice Way. This currently provides a modern, covered, and staffed facility for bus passengers to travel into the city centre with the vast majority of bus services terminating here. It is also used by scheduled coach service providers, connecting to a range of national destinations including Liverpool, Birmingham, Manchester, and London.

Proposal	Delivery Timescale	Funding provision
Improved bus links to major employment sites	2023	Bus Service Improvement Plan
Enhanced staff provision – additional hours	2023	Bus Service Improvement Plan
Upgraded public information provision	2023	Transforming Cities Fund
Design alterations to enable new cross-city bus services to call at the bus station	2024	Transforming Cities Fund
Upgraded cycle parking and new cycle hire facility	2024	Active Travel Fund 4 (indicative)
Adjacent 'Etruscan Square' development – residential, retail, leisure, car park	2025	Levelling Up Fund + private investment
VLR interchange	2030	Not yet identified

Table 6.2 Indicative programme of improvements at the City Centre Bus Station Hub

Potential additional Multi-Modal Hub locations will be evaluated through an appraisal of options. These include:

- Royal Stoke University Hospital – Interchange Hub based on converge of existing frequent bus services, potential VLR stop and improved cycle network connectivity, secure public cycle parking and potential cycle hire facility
- Tunstall – building on the bus services which currently serve the town centre, with a potential VLR stop and improved cycle network connectivity and secure cycle parking, with potential cycle hire facility
- Longton Station – will be considered as a potential multi-modal hub, to capitalise on the planned public realm and connectivity improvements proposed between the railway station, town centre, bus stops, provision of improved cycle parking and a cycle hire facilities plus step free station platform access.

Park and Ride

A new Park and Ride network would provide a number of car parking sites at the periphery of the urban area, allowing an interchange with public transport services (such as ultra-light rail, or bus) or bicycle, into the town centres. The connecting public transport services would be fast, reliable, and frequent in order to promote use of the network. Associated cycle infrastructure would provide safer direct routes to key destinations.

The focus of the Park and Ride network will be primarily improving access to the City Centre by non-car modes to reduce congestion, improve bus journey times and safety for active travel modes, and improve local air quality. It will also seek to improve access to/from Stoke-on-Trent Railway Station, Ceramic Valley/Etruria Valley Enterprise Zone, and Trentham Lakes/Sideway Employment Zones.

Potential Park and ride locations which were explored through an options appraisal process include the following key locations:

- Longton Station
- Longport Station
- Sideway Employment area (and Stadium) / Trentham Lakes
- Etruria Employment Area
- A52 (East of City Centre)
- A50 (North of City Centre)
- A53 (North of City Centre)

Four locations have been short listed at the SOC stage include the major employment sites at Etruria Valley and Trentham Lakes/Sideway. The Etruria Valley site has the potential for a surface car park, whilst the Trentham Lakes/Sideway area has existing car parking at the football stadium and potential other vacant sites for car parking provision. Both are well located on the Strategic Road Network. The ambition is to have a bus service that connects the two sites, potentially via the city centre and/or the rail station. The potential to add VLR provision is also being explored.

Proposal	Delivery Timescale	Funding provision
Improved cross-city and city centre bus links including timetables based around core working times	2023	Bus Service Improvement Plan
Upgraded 'central' bus stop with public information provision	2024	Bus Service Improvement Plan
Segregated cycle route to city centre – Etruria Road corridor (Etruria Valley)	2024	Transforming Cities Fund
Upgraded cycle route to Stoke-on-Trent Railway Station (Trentham Lakes)	2024	Transforming Cities Fund
Upgraded cycle parking and new cycle hire facilities	2024	Active Travel Fund 4 (indicative)
Improved cycle network links – upgraded access points	2025	Active Travel Fund 4 (indicative)
VLR interchange	2030	Not yet identified

Table 6.3 Indicative programme to develop Park & Ride Hubs at Etruria Valley and Trentham Lakes

Two other potential Park & Ride hub sites are at Longport and Longton rail stations:

- Longport Station – already offers bus and rail connection to Burslem, Tunstall and nearby residential areas, although rail service is very limited. There is the potential for a car park to be built to complete any improvements to rail service frequencies. Improved cycle parking and cycle hire facilities will be considered to enable connected, onward journeys. Etruria valley is a short walk or cycle ride from Ceramic Valley and Etruria Valley employment sites.
- Longton Station – it is proposed that public realm is improved to better connect the rail station with the heart of the town centre and bus stops. There are proposals in place to create lift access to the high-level platforms at Longton, and improved cycle parking and cycle hire facilities will be considered to enable connected, onward journeys

6.5 Improving the Bus Network

Bus service patronage has declined in the past decade, with a further decline during Covid-19, leading to targeted reductions in services by bus operators and resulting in a considerable risk to the viability of the current network once government Covid-19 support funding finishes in March 2023.

In line with government guidance, the city council is to enter into a legal partnership with bus operators in October 2022 to demonstrate a joint commitment to improve services. This has been helped considerably by the indicative award of £31.5m of

capital and revenue funding to deliver the priorities contained in the Bus Service Improvement Plan (BSIP), which was published in 2021. The funding will deliver a programme of improvements by 2025.

Selective improvements have already been made to elements of the local bus network, with some buses being upgraded with cleaner engines, and the introduction of tap-on-tap-off (London Underground style) technology that speeds up boarding and automatically caps the daily cost of travel.

A number of junctions will receive bus priority measures through the Transforming Cities Fund, based on analytic data provided by bus operators relating to delays experienced. This will be complemented by intelligent telematics upgrades at a number of signalised junctions to detect and provide priority to buses.

A summary of the key proposed bus network improvements and how they will be funded is shown in **Table 6.4.**

The Stoke-on-Trent Bus Service Improvement Plan (2022-2027) sets out the ambition for providing better bus services for the city. The main elements of the Bus Service Improvement Plan (BSIP) are as follows[15]:

- Shorter journey times – upgrading traffic signals and bus priority measures to optimise journey times
- More Frequent Buses – buses service intervals of 10-20 minutes
- Longer hours of operation – increasing evening and Sunday services
- Review of fares – discounting and capping day tickets and standardising ticket prices for younger persons
- Accessibility – installing more level boarding kerbs and introducing new routes including demand responsive transport, provision of more direct cross city services, reducing the need to change buses to complete a journey
- Information – providing accessible timetabling information at bus stops and countdown displays at certain bus stops
  Customer Care – creating a passenger charter to outline passenger service levels

Proposal	Delivery Timescale	Funding provision
Tap-on-tap-off readers – quick boarding, fares cap sing bank card	2022-23	Transforming Cities Fund
Cleaner vehicles – retrofitting and newer vehicles brought into fleet	2022-23	Ministerial Direction on Air Quality (JAQU)
A new Customer Charter for bus users	2022-23	Bus Service Improvement Plan
Bus priority at junctions – a range of physical improvements and traffic signal telematics	2023-2025	Bus Service Improvement Plan; Transforming Cities Fund

Proposal	Delivery Timescale	Funding provision
providing selective bus priority		
Bus network uplift – greater frequency on some core corridors; evening and Sunday services; more cross city services to increase direct travel options	2023-24	Bus Service Improvement Plan
Lower and simplified fares – one ticket range for all bus operators' services	2023-24	Bus Service Improvement Plan
Bus stop upgrades – level boarding kerbs, CCTV, real time information	2023-24	Bus Service Improvement Plan
Increased staff resources to deliver and manage the improvements	2023-24	Bus Service Improvement Plan

Table 6.4 Indicative programme of the bus network improvements

6.6 Rail

The rail network provides the opportunity to move large numbers of people quickly and, as it is not maintainable by the city council, is a cost-effective mode (for the council) in which to put forward a case for investment. It is a vital network that is currently under-utilised for local trips, mainly due to frequencies often limited to hourly or less.

Despite there being a limited rail network within the city boundaries, this mode is a very popular one for people visiting the city. Stoke-on-Trent station is served by services from five Train Operating Companies (TOCs), with regular services to London, Birmingham, and Manchester and, more locally, to Crewe and Stafford. There are also less frequent services to Derby and Nottingham.

The city council works closely with neighbouring authorities, the Sub-Regional Transport Bodies of Transport for the North (TfN) and Midlands Connect, and with its local MPs, to push for more improvements.

Whilst the Covid-19 pandemic has had a damaging and possibly long-term impact on passenger numbers, the city council currently has a number of ambitions which are at various stages of progression. These are summarised in Table 6.5:

Proposal	Potential Delivery Timescale	Current status
Maintenance of local stations – including volunteers to improve platform areas	Current	North Staffordshire Community Rail Partnership delivery plan

Proposal	Potential Delivery Timescale	Current status
Accessibility improvements at Longton Station	2024	Project management stage through Transforming Cities Fund
Improved services at Longport – hourly service to Manchester to complement hourly service to Crewe/Birmingham	Ambition for 2023-24	Dialogue with TfN
New Station - Meir	Control Period (CP) 6 (2024)	Progressed to next stage of business case through Restoring Your Railway
Reopening of Stoke to Leek line	CP7 (2029)	SOBC Stage through Restoring Your Railway – submission planned December 2022
Reopening of Wedgwood, Barlaston or Trentham station	CP6-7 (2024-2029)	Initial stage of discussions with West Midlands Rail Executive and Network Rail
Reduce journey time on Nottingham-Derby-Stoke-Crewe service, including track doubling Alsager to Crewe to improve link to Crewe HS2 Hub	CP6-7 (2024-2029)	Midlands Connect – initial stages of business case development
Increase frequency of Nottingham-Derby-Stoke-Crewe service to 2 tph	CP7	Midlands Connect – initial stages of business case development
HS2 service – secure indicative London-Stoke-Macclesfield hourly service and extend to Manchester	CP7	Dialogue with HS2 Ltd. and DfT

Table 6.5 Rail improvement proposals

Our target is to have a service frequency of at least two trains per hour, as evenly spaced as possible during the hour, at all local stations in North Staffordshire and South Cheshire, providing the opportunity for cross-city/conurbation travel at a frequency that is viable for commuters.

There is an aspiration to be at the forefront of national ambitions to better integrate rail and bus ticketing. Whilst there is currently an active PlusBus ticket for the city, this does not cover bus and rail travel, which is entirely within the North Staffordshire operating boundary, thus being of more use for travel from regional centres such as Birmingham and Manchester.

6.7 Very Light Rail

Figure 6.2 Very light rail vehicle example (Source: Coventry City Council)

Very Light Rail (VLR) is a public transport system that can be designed and delivered rapidly and at a lower cost than traditional rail or light rail (tram) options. Routes can be designed to utilise existing road and rail infrastructure allowing much more flexibility than traditional railway networks. Very light VLR schemes are also designed to have low or zero CO2 emissions. The largest cost savings of a VLR network compared to a typical tram system stem from their lightweight nature not requiring the need to move existing utilities, as track can be laid on a pre-cast base on the surface of the carriageway. This means that very light rail capital costs could be 30 to 50% cheaper than a tram system. Conversely capacities are limited to less than 60 persons per vehicle (see Figure 6.2) compared to a typical tram which carries 250 passengers, although this limitation could be overcome either through higher frequency services or use of new technologies where two vehicles could move together. There is further opportunity for operational cost savings through use of automation, with driverless vehicles.

Very light rail has currently only been implemented in Qatar however Coventry City Council have received funding through the City Regional Sustainable Transport Settlements (CRSTS) to further develop their proposals. Plans for the first route in Coventry are under development and will connect major employment and education sites with the city centre and integrate with the bus and railway stations. Coventry City Council are working with the Very Light Rail Innovation Centre in Dudley for testing the integrated system. The Centre will allow testing and development of Coventry Very Light Rail vehicles in the West Midlands including a test track and workshop to support research and development.

The route of the very light rail will be planned to provide a comprehensive service, connecting residential areas with key destinations such as employment and retail centres. The route will also connect to key transport hubs such as railway and bus stations to create opportunities for interchange and to enhance the existing network and travel options.

An initial assessment has been undertaken to decide on the feasible options based on the City's topography in comparison with the bus network, the socioeconomic information, population, and employment density, predicted future demand and consideration of large trip generators/attractors. It will be important that the very light rail network complements the bus network rather than the two modes competing with one another. This will require dialogue with bus operators and significant traffic management measures. A bus franchise agreement could be sought if required to enable more direct management of public transport in the city.

A Strategic Outline Case (SOC) has been produced for VLR, see **Appendix A**, which outlines the sifting work undertaken to derive a short list of VLR lines from a longer list of options. The resultant VLR network options, shown in Figure 6.3, include a Northern, Central and Southern line. This network and the individual lines are assessed in more detail within the SOC, including more detailed demand forecasting of both very light rail usage, modal shift from the car and bus patronage abstraction, as well as a high-level appraisal including quantifiable and non-quantifiable benefits and costs.

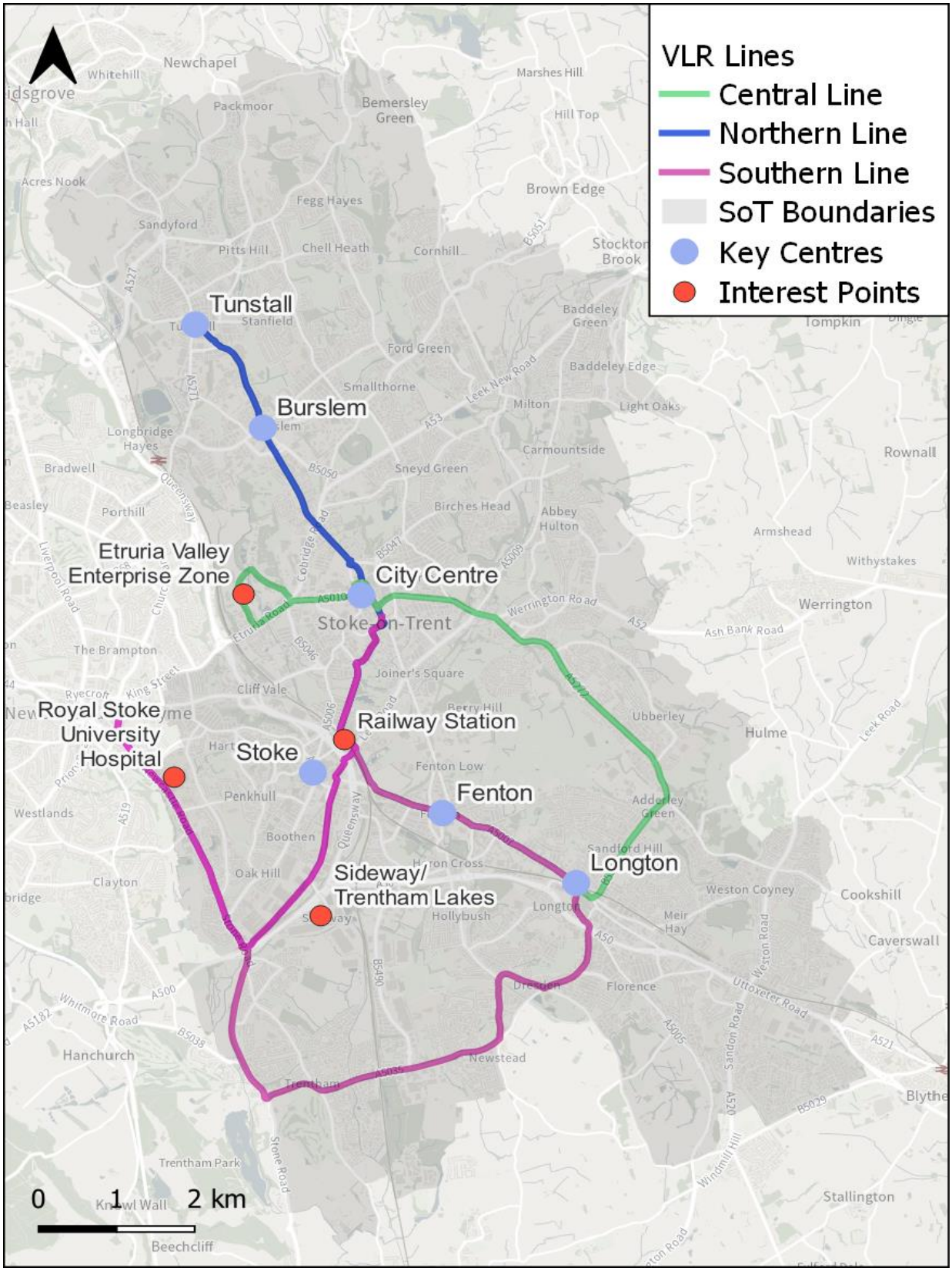

Figure 6.3 Proposed VLR Lines

The three lines provide good coverage across Stoke-on-Trent were selected based on a range of criteria including topographical constraints, how they connect the main centres and parts of the city not served by the local rail network.

The 13 criteria are:

1. Route Gradient (0-5% -Low, 5-10% Medium, above 10% - High).
2. Population Density: Successful rapid transit routes/schemes have demand distributed along the route in addition to end to end trips.
3. Index of Multiple Deprivation areas: National and local economic and transport policy to improve accessibility from those suffering economic and transport poverty
4. Number of lanes, length of route and number of junctions: High capacity is a key constraint when proposing a new fixed rail mode due to impact on congestion and delays and potential costs to mitigate traffic disbenefits.
5. Length of route: From a construction and delivery perspective a shorter route may perform better, as indicated by Coventry plans for a short demonstrator route initially.
6. Expected impact on mode shift by car users: Identifying areas with low car ownership who may be a captive market as well as locations with higher-than-average car ownership which have the potential for modal shift.
7. Bus Network Commercial Impact.
8. Predicted employment density in 2027: including uncertainty log data provided by SoTCC. this allows us to include a measure of economic growth.
9. Level of disruption to road traffic: based on Google Map traffic conditions in the PM peak hour.
10. Accessibility to railway stations: this is a measure of regional and national connectivity to prioritise routes which provide good interchange with the rail network.
11. Accessibility to proposed park & ride locations: a measure to reflect where car to VLR interchange could lead to benefits and modal shift.
12. Accessibility to proposed MMH locations.
13. Political support based on input from SoTCC (positive, neutral, and negative). Based on our discussions with officers and deputy leader of the council.

Whilst the ambition is for provision of an affordable, rail-based mode, it is recognised that Bus Rapid Transit (BRT), utilising significant segregation from general traffic and operated by articulated, multi-entrance buses with off-bus ticketing, can provide an initial upgrade whilst the business case for VLR is being prepared and funding obtained. An example of an urban BRT in the UK is the Glider system in Belfast, an image of which is shown below in Figure 6.4.

Figure 6.4 Gilder System in Belfast

Whilst BRT is sometimes proposed as a first step towards light rail, it is unlikely to provide the potential for modal shift – and the significant raise in the public perception of public transport - that a modern rail-based system such as VLR could produce.

6.8 Freight Transport Enhancements

Focussing on freight aligns with both regional and national policies, specifically, the Future of Freight: a long-term plan (June 2022) which is the first-ever cross-modal and cross-government plan for the UK freight transport sector. This plan sets out the government's long-term vision for the freight sector and identifies the main challenges, objectives and actions that need to be taken in the following 5 priority areas[64]:

- A National Freight Network (NFN)
- Transition to net zero
- Planning
- People and skills
- Data and technology

This plan is pivotal as the sector can make a significant contribution to levelling up the regions. Cities such as Stoke-on-Trent which are ideally located as a logistics hub, can strengthen their position by managing the industry's issues.

Midlands Connect has produced a Freight Strategy (2017), aiming to deliver a reliable freight system with congestion-free motorways from the two hubs around Leicester/Coventry and Birmingham/Black Country. It is also looking to provide capacity to allow new rail freight to develop alongside the expected growth of passenger services.

[64] Future of Freight: A long-term plan, 2022

The city council will ensure that it's strategy relating to freight will be developed as part of the forthcoming Local Transport Plan 4 and will align with regional and national strategies, to enable continued growth of the freight and logistics sector whilst ensuring it complements our local transport priorities.

The focus of the freight strategy will include:

- provision of HGV stabling (parking areas) through offering secure HGV parking locations to keep both driver and cargo safe and secure during an overnight- or weekend stay. Freight hubs can be created/ transformed to accommodate easily pre-book guaranteed spots at one of the HGV parking locations. This will boost the City's offer for HGV Stabling and reinforce the value of the city's location at the heart of the A50/M6 strategic road network.
- reviewing the opportunities to tackle the challenges of last mile freight deliveries and timings to minimise impact on local traffic during peak hours
- identify last mile delivery solutions which involve the use of zero/ultralow emission vehicles and alternative transport modes for deliveries into city/town centre locations.
- understanding the opportunities for more freight to travel by rail, through making use of the additional rail paths which will come available following the introduction of HS2 and potential rail-head sites in the city. This aligns with the Midlands Connect aspiration on maximising the use of rail to transport freight.
- Understanding the opportunities that the waterways provide to move freight, accepting this is likely to be a very small part of the overall strategy

6.9 Road Network Improvements

It is recognised that the proposed balanced approach advocated for our transport strategy will need to include selective road capacity improvements. It is also acknowledged that some road building is likely to be required to support access to development sites.

The city council maintains its North Staffordshire Multi-Modal Model, using a regular programme of surveys to update travel data. It calculates where current traffic levels are putting pressure on road capacity and predicts where future traffic growth will create additional capacity pressures. This information is used to inform where priorities should be focussed in terms of increasing road capacity and, where possible and appropriate, managing future demand. For potential new developments, it helps assess the impact on the highway.

The Etruria Valley Link Road (EVLR) is scheduled for completion in late 2022, providing relief to the A500/A53 junction.

An extension of EVLR – the Newport Lane Link – is contained within the Bus Service Improvement Plan programme. This will be a bus and active travel link, in line with the funding requirements. However, there could be the opportunity to upgrade in the future to provide an access route for all traffic, subject to appropriate traffic modelling analysis.

Two major junctions on the A50 corridor are identified as the cause of significant delays. The Joiners Square roundabout has been remodelled and early indications are that it has improved circulation and reduced delays as modelled. The A50/A52

Cobridge junction is proposed for capacity improvements, subject to land acquisition and funding.

The City East Link Road (formerly the Hanley – Bentilee Link Road) is identified and supported by Midlands Connect as a Large Local Major (LLM) scheme. A feasibility study, option assessment report and SOBC has already outlined the case for the scheme to the DfT, including the following benefits:

- improved access to the City Centre
- improved access to key employment and residential areas
- improved linkages to the main routes to the key centres, notably the A50, A52, A5008, and A5272 corridors
- linkages between the key centres and the Strategic Road Network i.e., the A50 (T) as part of phase 2
- provision of bus priority measures (bus lanes) on the existing Bucknall New Road corridor

Opportunities to improve active travel accessibility, connectivity and safety will be considered as a priority factor in all highways related schemes.

Under new guidance, local authorities must ensure that any highway schemes funded wholly or in part by government incorporate improved facilities for pedestrians, cyclists and, where applicable, buses. Government challenges authorities to reallocate road space to buses and cyclists. Funding from two of its key funds – the Bus Service Improvement Plan and the Active Travel Fund – focus heavily on this. This is embraced by the city council and acknowledged that there is a longer-term aim to manage the demand for road space, but it creates a challenge where there is a need to address existing capacity pressures and predicted growing traffic levels.

6.10 Alignment to Transport Strategy Objectives

This section provides an overview of the strategic schemes in terms of their alignment to the objectives of the Transport Strategy and the LTP3 to be able to further inform the emerging Local Transport Plan (4).

Score:

✓✓✓ Strong alignment to objective

✓✓ Medium alignment to objective

✓ Small/negligible alignment to objective

x No alignment to objective

Scheme/ Objective	Economy	Environment	Health	Summary Score	Description
Route to Net Zero	x	✓✓✓	✓✓✓	✓✓	Reducing road vehicle emissions through a shift to zero emission vehicles for bus and council fleets, and promoting zero emission vehicle uptake in the taxi and private car fleets
Active Travel	✓✓	✓✓✓	✓✓✓	✓✓✓	Increasing active travel mode share
Multi-modal Hubs	✓	✓✓	✓✓	✓✓	Multi-modal hubs will provide opportunities to interchange between active transport and public transport, thereby supporting all three objectives.
Park & Ride	✓	✓✓	✓	✓	Park and Ride would focus on minimising car trips into the town centres, reducing congestion and increasing trips by public

Scheme/ Objective	Economy	Environment	Health	Summary Score	Description
					transport and active travel. This would support all three objectives.
Bus Priority Measures	x	✓✓	✓	✓	These deliverables support the modal shift to active travel.
Rail	✓✓✓	✓✓✓	✓✓	✓✓✓	Enhancing passenger/freight services and opening disused station offering alternative transport options
Very Light Rail	✓✓✓	✓✓✓	✓✓	✓✓✓	A very light rail scheme would support all three objectives by improving access to areas across Stoke-on-Trent as well as promoting walking (to and from stops).
Freight Transport Enhance ments	✓	✓✓	x	✓	Reducing carbon emissions arising from transport by using rail. HGV stabling to support the local economy.
Road Network Improvem ents	✓	✓✓	✓✓	✓✓	Supporting the modal shift to active travel and offering access improvements.

Table 6.6 Targeted Improvements and their alignment to the objectives

Table 6.6 shows the strong alignment of the rail, very light rail schemes and active travel schemes to all of the Transport Strategy objectives. By enhancing passenger/freight rail services and opening new stations and disused rail lines, the city would offer greater alternatives to car use, boosting the visitor economy and local productivity. A very light rail scheme would support all three objectives by improving access to areas across Stoke-on-Trent as well as improving the environment and

health by increasing active travel. Single-user car journeys which contribute to poor air quality would be replaced with a low/zero emissions journey. Lastly, by improving the active travel infrastructure and connectivity, walking, and cycling mode share can increase, benefiting the resident and visitor population.

The Route to Net Zero, Transport Hubs (Multi-Modal hubs, P&R), and Road Network improvements all have alignment to most of the objectives.

Bus Priority and Freight Transport Enhancements have marginal alignment to the objectives, making them lower priority of the targeted improvements.

7 Delivery Plan

7.1 Introduction

The following section sets out the city council's delivery plan regarding the identified interventions required to achieve the Transport Strategy's vision and objectives. It further explores the gap between the committed transport interventions and the proposed targeted improvements to suggest next steps and possible funding options.

As examined in section 3, there is a need to support population growth in the Outer Urban area as well as the sustainable development of the six centres where future growth development is primarily planned. A shift towards more sustainable transport solutions to support this growth is needed. This includes active travel improvements and public transport alternatives to reduce car dependency, help address air pollution carbon reduction targets, reduce future congestion, and provide greater connectivity to the six centres and the main residential and employment sites. Such improvements align with the existing LTP objectives and what DfT will be expecting in LTP4 with an emphasis on net zero and levelling up.

7.2 Transport Interventions 2022-2025

As outlined in section 3, there is a range of transport improvements to be delivered by the end of 2025 which will help address issues with congestion, improve journey times and promote active travel.

These schemes are to be delivered to help alleviate congestion and improve safety on Stoke-on-Trent's transport networks, as well as to support planned housing and employment growth.

As mentioned in section 3.4, the Levelling Up, Transforming Cities and Active Travel Funds include major regeneration and development projects with aim to transform several parts of the city. The Active Travel Fund follows a clear direction of decarbonisation and support sustainable modes of travel and related infrastructure. The city is lacking on delivering projects with a greater focus on sustainable development and emission-free alternatives to the private car.

Table 7.1 outlines the Transport Strategy Delivery Programme for Phase 1 (2022-2025) in terms of the transport elements to be delivered, their outcome and core outcome improvement.

Transport Strategy Delivery Programme – by Phase (Phase 1 2022-2025); (Phase 2 2026-2031)

PHASE 1		
Highways	**Outcome**	**Core Outcome Improvement**
Newport Lane Link Road	Improving access to jobs and reducing journey times. To initially provide a direct pedestrian, cycle, and bus link between Etruria Valley and Tunstall/Burslem	Economy
A53/Waterloo Road	Reduce traffic delays by providing additional capacity on major bus corridor	Economy
Leek Road/Station Road	Mitigate impacts of traffic management scheme around rail station through additional capacity	Economy
Ongoing Minor Highway Improvements Programme	Delivery of schemes to provide improved efficiency, safety and to support sustainable transport modes	Economy; Environment; Health
Continuing development of information to road users	Use of Variable Message Signs and other media to better inform road users of traffic conditions	Economy; Environment
Effective management of network	Improved management of utilities and roadworks to reduce impact to road users and the resultant cost to the local economy	Economy; Environment
Active Travel		
Production of LCWIP	To identify gaps in the existing walking and cycling network and propose priority schemes for delivery, to provide incentive for more trips by active travel	Environment
Active Travel Fund 4 Programme (funding to be confirmed)	Delivery of priority schemes to provide improved connectivity for pedestrians and cyclists, contributing also to improved air quality and personal health. Included behaviour change programme.	Economy; Environment; Health; Internal Levelling Up
Cycle Training	Delivery of Bikeability training to over 2000 school students per annum	Environment; Health
Road Safety		
Maintaining and evaluating collision data and road safety	Staffordshire Safer Roads Partnership – identifying collision sites and causes to inform priority safety schemes; balanced approach	Health

initiatives and campaigns	of education and information based around data on vulnerable users, with enforcement via review and upgrade (first phase) of safety cameras and speed awareness course provision.	
Bus services		
Bus Service Improvement Plan	More frequent and connective bus network with more cross-city services and evening services, principally to improve access to education and employment. Lower and more simplified fares to improve affordability and ease of use. Bus priority predominantly through use of traffic signal technology.	Economy; Environment; Internal Levelling Up
Bus pass management	Administration and promotion of concessionary fares and multi-operator ticket schemes	Economy; Environment
Rail services		
Stoke-on-Trent Rail Station improvements	First phase – improving public realm and connecting transport facilities	Economy; Environment
Local station reopening	Improved access to the national rail network and to provide fast cross city connections. Potential new stations at Meir and Trentham. Provide realistic alternative to car travel	Economy; Environment
Longton Station accessibility improvements	Improved station accessibility including public realm and connectivity improvements between the railway station, town centre and bus stops	Economy; Environment
Better bus and rail integration	Creation of city-region metro-style product, with ticketing integrated with bus and potentially parking, cycle hire etc. to provide a Mobility as a Service product.	Economy; Environment
Very Light Rail	Focus on developing the Very Light Rail concept. Production of business case and funding identification.	Economy; Environment
Community Rail Partnership	Funding for investment at local rail stations; volunteer groups to maintain and improve local station; liaison with TOCs	Economy

Reducing carbon emissions		
Clean Air Zone	A CAZ is proposed around the wider city centre area that will charge for entry by older vehicles but excluding private cars.	Environment
EV Infrastructure	Delivery programme for public and on-street charge-point network, to facilitate move to EV and improve local air quality. Increased EV infrastructure requirements in new developments through planning process	Environment; Internal Levelling Up
Decarbonising bus, taxi, and council fleets	Identifying suitable funding opportunities to support operators to reduce emissions from their fleets to improve local air quality	Environment
Multi-Modal Hubs	Providing sites with good facilities to enable users to transfer to sustainable travel modes. First phases at Stoke-on-Trent Station and City Centre Bus Station	Economy; Environment
Freight		
Freight stabling	To position the city as a premium location for logistics provision, supporting economic growth	Economy
Digital		
5G Connectivity	To enable the city to be productive whilst reducing the need to travel	Economy; Environment; Internal Levelling Up

Table 7.1 Phase 1 Transport Elements

The targeted improvements to be delivered by 2025 (Phase 1) follow in Figure 7.1

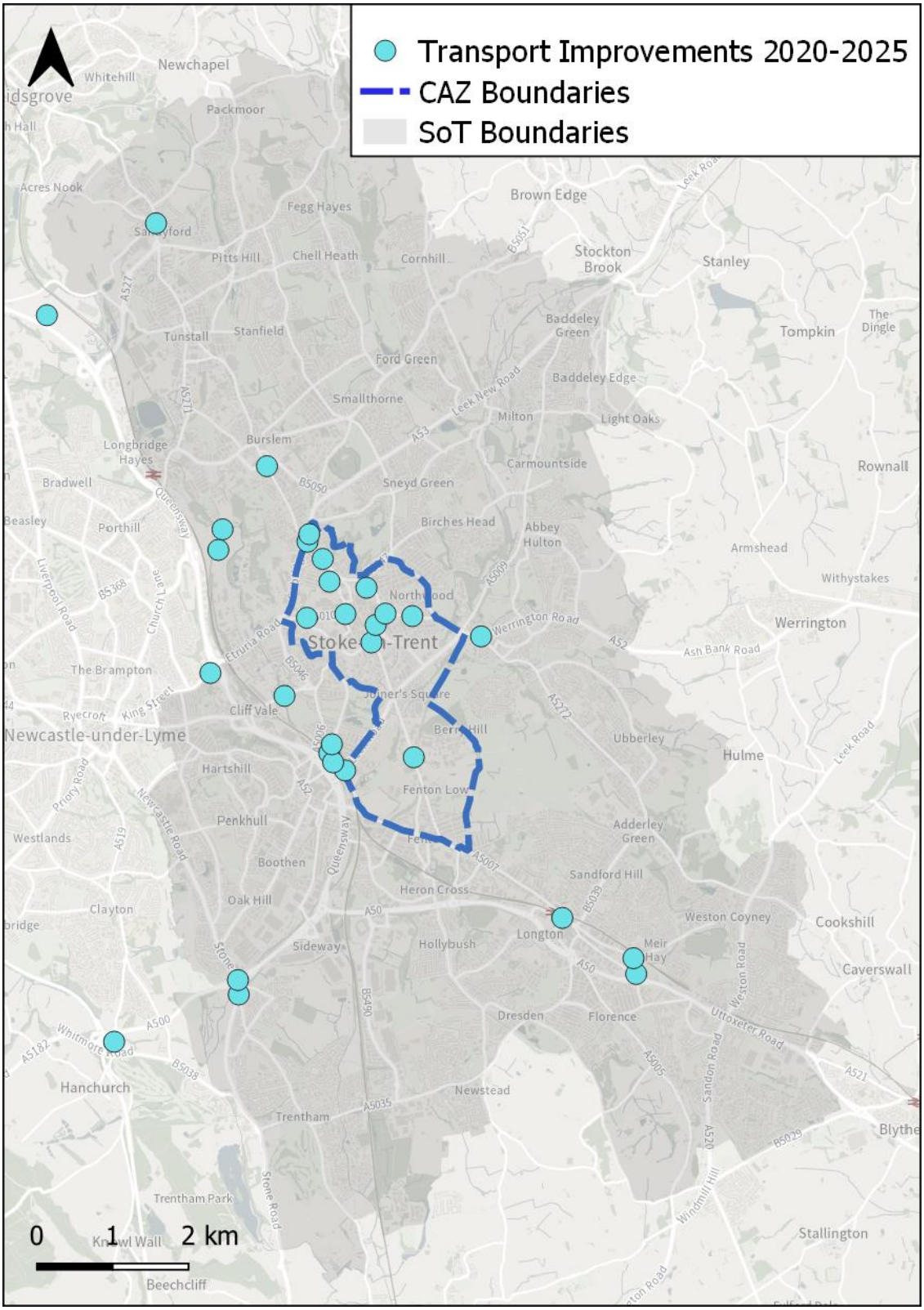

Figure 7.1 Transport Interventions 2022-2025 (see Table 3.1 for reference)

7.3 Transport Interventions 2026-2031

The overall aim and ambition of the city council is to plan and deliver transport schemes that shape a better-connected City with transport options that currently do not exist to help develop a net-zero environment and promote active travel to better the wellbeing and lifestyle of its citizens.

Several targeted improvements were proposed in section 6 and examined over their alignment to the Transport Strategy and LTP3 objectives with the rail (including very light rail) and active travel improvements having a strong alignment to the overall objectives. These were followed by the route to net zero, transport hubs (MMH, P&R) and road network improvements. Realising that there is a gap on delivering projects which align to the environmental and health objectives, the city council is planning to deliver certain projects in order to address its key issues.

- The City East Link Road (CELR) is proposed to be delivered within this time horizon. This is a strategic transport project, which focusses on improving connectivity between the Inner Urban Core of Stoke-on-Trent and the south and east of the City. It provides one of the City's missing links in the network that will connect the City Centre with the Major Road Network (MRN) and beyond though existing links to the SRN.
- Reopening disused rail lines will be explored including the Stoke-Leek line that could be used for passenger use (VLR/BRT) and/or heavier rail for freight use.
- A very light rail network, formed of 3 lines (northern, central, and southern) is assessed in more detail in the SOC, see appendix A. The Very Light Network will extend across the city to serve the Outer and Inner Urban areas and connect them to the City Centre as well as to key employment zones. The SOC will sit under this Transport Strategy & Delivery Plan.
- Other priorities include development of a multi-modal hub network in the city. Transport hubs in Stoke-on-Trent will provide improved integration between travel modes across the strategic transport network in Stoke-on-Trent. They will perform two functions; supporting increased use of sustainable travel options for local trips within the city through a network of Multi-Modal Interchanges; and facilitating transfer from private car to public transport for those entering the city through Park and Ride.
- Developing a net-zero pathway that will have a focus on hydrogen bus opportunities for the city. A transition to zero emission vehicles is essential to decarbonise transport, and to achieve long-term air quality improvements. The measures needed to deliver this transition are being considered, with a focus on a zero-emission bus network, opportunities for zero emission city council fleet, zero emission taxis and the roll out of electric vehicle charging points on-street and off-street.

Table 7.2 outlines the Transport Strategy Delivery Programme for Phase 2 (2026-2031) in terms of the transport elements to be delivered, their outcome and core outcome improvement.

Transport Improvement Programme – by Phase (Phase 1 2022-2025); (Phase 2 2026-2031)

PHASE 2		
Highways	**Outcome**	**Core Outcome Improvement**
Completion of city centre ring road	To provide reduced journey times; to enable reallocation of road space in city centre to sustainable travel modes	Economy
City East Link Road	To improve access to the city centre, key employment and residential areas and better linkages to the main routes to the centres and the strategic road network whilst providing bus passenger and active travel benefits	Economy, Health, Internal Levelling Up
Ongoing Minor Highway Improvements Programme	Delivery of schemes to provide improved efficiency, safety and to support sustainable transport modes	Economy; Environment; Health
Continuing development of information to road users	Use of Variable Message Signs and other media to better inform road users of traffic conditions	Economy; Environment
Effective management of network	Improved management of utilities and roadworks to reduce impact to road users and the resultant cost to the local economy	Economy; Environment
A50/A500 Sideway Junction; A50 corridor	Capacity enhancements and route management signage to improve traffic flow; potential average speed cameras on A50 to assist traffic flow and air quality	Economy; Environment
M6 Junction 15	Capacity and safety improvements to tackle congestion and collision incidences	Economy; Environment
Active Travel		
Active Travel Fund	Based on LCWIP - delivery of priority schemes to provide improved connectivity for pedestrians and cyclists,	Economy; Environment; Health; Internal Levelling Up

	contributing also to improved air quality and personal health	
Behaviour Change Programme	Continued engagement with businesses, residents' groups, and schools to promote safe walking and cycling	Environment; Health
Cycle Training	Delivery of Bikeability training to over 2000 school students per annum	Environment; Health
Road Safety		
Maintaining and evaluating collision data and road safety initiatives and campaigns	Staffordshire Safer Roads Partnership – identifying collision sites and causes to inform priority safety schemes; balanced approach of education and information based around data on vulnerable users, with enforcement via review and upgrade (first phase) of safety cameras and speed awareness course provision	Health
Bus services		
Bus Service Improvement Plan	Stabilisation of the network post-BSIP Funding. Identifying further opportunities for bus priority measures, ticketing improvements, fleet upgrades. Focus in this phase on move to net zero fleet	Economy; Environment; Internal Levelling Up
Bus pass management	Administration and promotion of concessionary fares and multi-operator ticket schemes, ensuring technological advances are captured	Economy; Environment
Rail services		
Stoke-on-Trent Rail Station improvements	Second phase – development of station space for retail, workspace etc.; ensure station is HS2 ready and adapted for VLR and additional rail services	Economy; Environment
Local station reopening	Improved access to the national rail network and to provide fast cross city connections. Potential new stations on a re-opened Stoke to Leek line. Provide realistic alternative to car travel	Economy; Environment
Improved service frequency	To improve local connectivity with minimum 2 tph at all local stations	Economy; Environment

Light Rail	Further phase – move from business case to securing funding and delivering first VLR line	Economy; Environment
Maximise access to HS2 network	Minimum of 1 tph on HS2 timetable to serve Stoke (Manchester – London). Improved journey time and frequency of connecting service to Crewe HS2 Hub	Economy
Community Rail Partnership	Funding for investment at local rail stations; volunteer groups to maintain and improve local station; liaison with TOCs	Economy
Reducing carbon emissions		
Clean Air Zone	Planned removal of CAZ once emission levels have reduced to meet required standards	Environment
EV Infrastructure	Continue to seek funding to develop infrastructure in line with latest technology	Environment; Internal Levelling Up
Decarbonising bus, taxi, and council fleets	Identifying suitable funding opportunities to support operators to reduce emissions from their fleets to improve local air quality, moving towards 2050 net zero target	Environment
Multi-Modal Hubs	Subject to funding and business cases, developing second phase of sites with multi-mode facilities e.g., P&R, Bus-Rail-VLR interchange	Economy; Environment
Freight		
Road Freight provision	Continue to work with logistics sector to ensure Stoke-on-Trent is an attractive location to be based. Work with National Highways and Midlands Connect to identify Strategic Road Network freight stabling/fuelling opportunities	Economy
Digital		
5G Connectivity +	To enable the city to be productive whilst reducing the need to travel, continue to be at the forefront of technological advances in digital connectivity	Economy; Environment; Internal Levelling Up

Table 7.2 Phase 2 Transport Elements

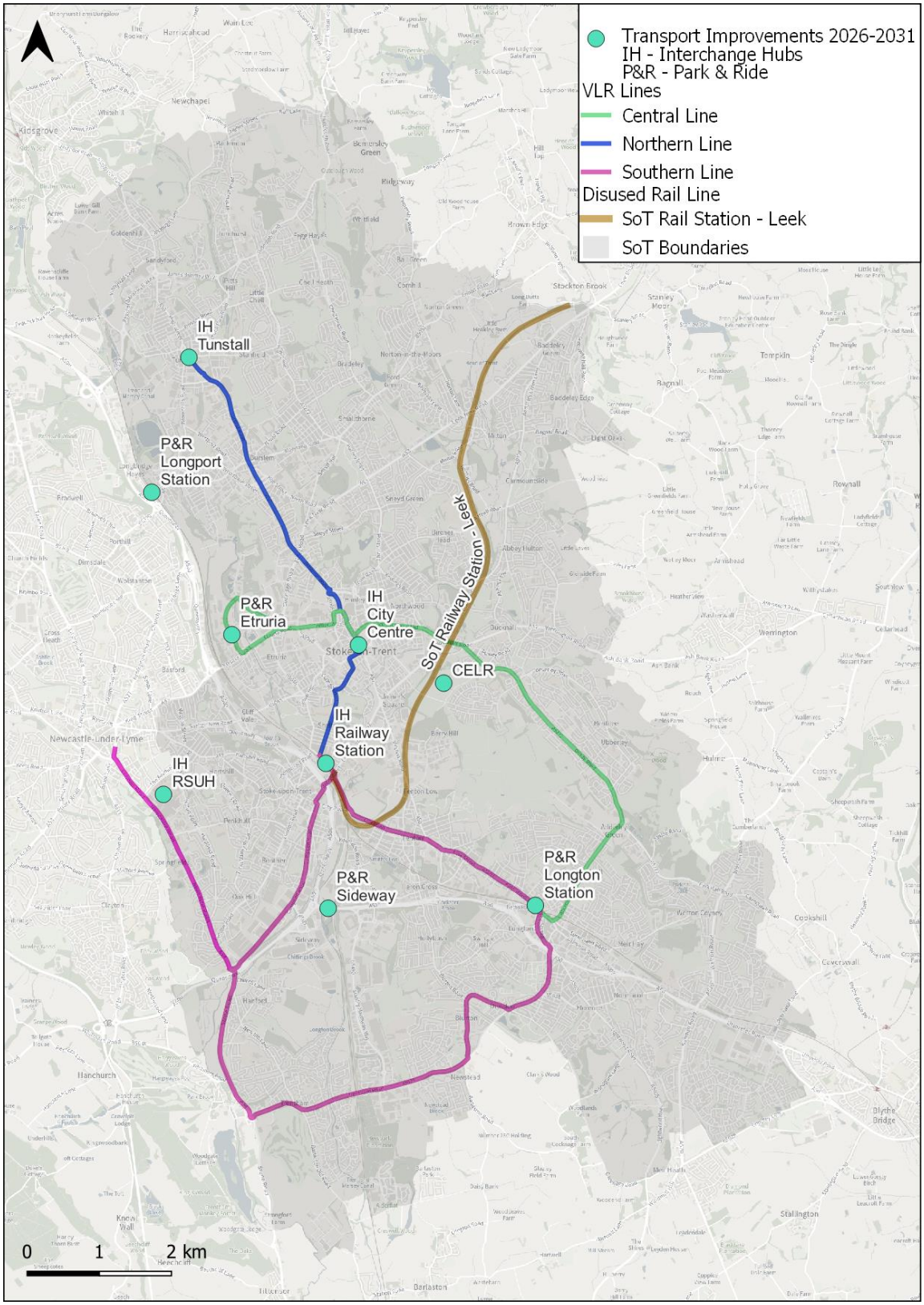

Figure 7.2 Transport Improvements 2026-2031

7.4 Funding Options

This section sets out the funding options about each of the proposed transport interventions identified in section 6.

The table below provides an overview of the different options that can be utilised to deliver the suggested targeted improvements.

Potential Funding Options

Name	**Phasing**	**Priority**	**Outline cost**	**Supporting actions**	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Route to Net Zero	Short	High	TBC	VLR, MMH, P&R, Improved active travel links via LCWIP (LT120 compliant and TCF)	✓		✓	✓			✓	✓		✓
Active Travel	Short	High	Medium	MMH, P & R, Cycling, Walking	✓	✓	✓	✓	✓		✓	✓		
Transport Hubs	Short	High	Medium	Improved active travel links via LCWIP (LT120 compliant and TCF), VLR and BSIP proposals, Route to Net Zero proposals e.g., EV charging	✓		✓	✓	✓	✓	✓	✓		✓

Name	Phasing	Priority	Outline cost	Supporting actions	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Park & Ride	Medium	High	Medium	Interchange incentives e.g., low-cost, integrated ticketing, Parking management to disincentivise City Centre parking, Real time information, Road space re-allocation to P&R services, Very-Light Rail, BSIP proposals			✓	✓	✓		✓			
Bus Partnership	Short	High	Medium	Real time information, Bus Priority, Bus Infrastructure, Low-cost integrated ticketing, Integrated timetabling	✓		✓	✓		✓				

Name	Phasing	Priority	Outline cost	Supporting actions	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Bus Rapid Transit	Medium	Low	High	Parking management to disincentivise City Centre parking, Interchange incentives e.g., low-cost, integrated ticketing, Real time information, Integrated bus timetabling, Bus Priority, Reallocation. se of road space to BRT, Bus Partnerships			✓	✓	✓	✓	✓	✓		

Name	Phasing	Priority	Outline cost	Supporting actions	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Rail	Long	High	High	Parking management to disincentivise City Centre parking, Interchange incentives e.g., low-cost, integrated ticketing, Real time information, Integrated bus timetabling, Bus Priority, Reallocation. se of road space to BRT, Bus Partnerships, Real time information, Integrated bus timetabling, Freight Transport	✓			✓				✓		✓

Name	Phasing	Priority	Outline cost	Supporting actions	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Very Light Rail	Long	High	High	Parking management to disincentivise City Centre parking, Interchange incentives e.g., low-cost, integrated ticketing, Real time information, Integrated bus timetabling	✓		✓	✓	✓			✓		✓
Freight Transport Enhancements	Medium	Medium	Medium	HGV Stabling, Shared Logistics Facilities, Rail Freight, Water Transport Freight, Freight Strategy			✓	✓	✓		✓	✓		

Name	Phasing	Priority	Outline cost	Supporting actions	TCF	ATF	S106	CIL	Business Rates Supplem't	BSIP	LTP / Highways In'strcrt funding	Other gov. funding opps	LLM	Private/ development/ 3rd party inv'mnt
Strategic Road Network	Medium	Medium	High	Reallocation of road space to PT and active modes, Targeted highway infrastructure to support development (including high quality sustainable transport provision), City East Link Road			✓	✓	✓		✓	✓	✓	

8 Summary

This Transport Strategy and Delivery Plan for Stoke-on-Trent will cover the period 2022-2031, It will provide a strong foundation to inform the development of the Local Transport Plan 4. As the new LTP will be produced in the coming years to provide a new, fifteen-year transport policy document, with a greater focus on decarbonisation as the world moves towards net zero targets.

In the interim, the city council requires a document to demonstrate that it has a focused transport strategy and delivery plan, which moves transport policy in the right direction for Stoke-on-Trent. This will assist decision makers at local and national level, clarifying the local transport priorities for Stoke-on-Trent. It aligns with new legislation and guidance and will also be supported by the content of the emerging Local Plan and supplementary transport planning documents.

The good timing of the document is evident as a new government leadership starts to shape its priorities. The planning of the proposed schemes and the next steps of the delivery plan are supported and outlined in detail in the upcoming section.

The delivery of schemes over the ten years, from 2022-2031, will be partly dependent on funding being available and satisfactory business cases being developed.

Aligning the strategy and delivery plan with national priorities gives the best opportunity of obtaining business case and funding approvals. The strategy, though, is also ambitious in wanting to explore less developed options such as the potential of hydrogen as an alternative to electric battery technology, and the potential for smaller cities to upgrade their public transport network at an affordable cost through the emerging very light rail product. Our city continues to work with partners who share their interest to develop these emerging technologies and are willing to explore efficient and innovative options.

8.1 Innovative Solutions

There is a focus on developing innovative solutions to provide a step-change in how people travel around the city. Indicative strategic outline cases for three specific initiatives have been developed, as follows:

- Very Light Rail (VLR)
- Mobility Hubs
- Net Zero Fleets

The Very Light Rail (VLR) proposal (see Appendix A) has the potential to change the image of public transport in the city, whilst reducing travel time and improving air quality. A strong public transport offer has a correlation with economic growth.

A number of mobility hubs (see Appendix B) are also proposed, enabling easy interchange between modes, including car use, bus, rail, active travel and a potential VLR network.

Whilst it is acknowledged that there will be a growth in the use of electric vehicles and the need for infrastructure, we recognise the global impacts of battery production and the limitations it has in some transport sectors. We believe that there are alternative

technologies such as hydrogen that can green commercial fleets, particularly in the bus sector (see Appendix C).

8.2 Funding

There are improvements that can be implemented in the short term and others that will require longer term planning. All transport improvements are dependent on available funding. There are a range of sources that we will explore to fund the proposed and committed plans to deliver our objectives and ultimately our vision.

There are several funding streams available including the local transport plan capital programme, active travel fund and the levelling up programme.

Significant funding has already been secured through the Transforming Cities Fund and the Bus Service Improvement Plan. Between them, these programmes will provide:

- A high-quality city gateway at Stoke-on-Trent Railway Station
- An attractive route between the rail station and city centre
- Bus priority at pinch point locations
- More bus services
- Lower and simpler fares
- Improved bus service information
- Improved walking and cycling links to major employment sites

Government is also allocating significant funding to electric vehicle charging infrastructure and active travel, and potential schemes will be identified. Successful funding bids to date have enabled the delivery of the first rapid charge-points in the city, with the potential for a second phase of sixty additional charge-points.

As mentioned, for modes such as EV, bus, and active travel there is a clear national commitment to progress and fund ensuring next steps and planning. For schemes such as VLR and hydrogen solutions, where funding is not as available/obvious, it is restricting to progress plans. There is the potential for a move towards bus franchising and even a Transport Authority status (possibly North Staffordshire) to achieving ambitions such as integrating the VLR network with the bus network as well as seeking private investment.

The city council would be additionally open to support and self-fund such plans due to their long-term positive impacts to their city and its residents.

8.3 Transport Investment Priorities

This strategy is intended to provide a clear focus to the council's transport investment priorities in the next ten years. It is critical that the council continues to develop and deliver this programme to ensure that the progress made to date is maintained and to ensure that all stakeholders, and particularly city residents and businesses, have clarity on what we are trying to achieve.

A summary of the proposed transport improvement programme for Stoke-on-Trent by mode is provided in Table 8.1 below.

Transport Improvement Programme – By Mode

Mode	Outcome	Core Outcome Improvement
Highways		
Completion of city centre ring road	To provide reduced journey times; to enable reallocation of road space in city centre to sustainable travel modes	Economy
Newport Lane Link Road	Improving access to jobs and reducing journey times. To initially provide a direct pedestrian, cycle, and bus link between Etruria Valley and Tunstall/Burslem	Economy
A53/Waterloo Road	Reduce traffic delays by providing additional capacity on major bus corridor	Economy
Leek Road/Station Road	Mitigate impacts of traffic management scheme around rail station through additional capacity	Economy
Ongoing Minor Highway Improvements Programme	Delivery of schemes to provide improved efficiency, safety and to support sustainable transport modes	Economy; Environment; Health
Continuing development of information to road users	Use of Variable Message Signs and other media to better inform road users of traffic conditions	Economy; Environment
Effective management of network	Improved management of utilities and roadworks to reduce impact to road users and the resultant cost to the local economy	Economy; Environment
A50/A500 Sideway Junction; A50 corridor	Capacity enhancements and route management signage to improve traffic flow; potential average speed cameras on A50 to assist traffic flow and air quality	Economy; Environment
M6 Junction 15	Capacity and safety improvements to tackle congestion and collision incidences	Economy; Environment
Active Travel		
Production of LCWIP	To identify gaps in the existing walking and cycling network and propose priority schemes for delivery, to provide incentive for more trips by active travel	Environment

Active Travel Fund	Delivery of priority schemes to provide improved connectivity for pedestrians and cyclists, contributing also to improved air quality and personal health	Economy; Environment; Health; Internal Levelling Up
Bus services		
Bus Service Improvement Plan	More frequent and connective bus network with more cross-city services and evening services, principally to improve access to education and employment. Lower and more simplified fares to improve affordability and ease of use. Bus priority predominantly through use of traffic signal technology	Economy; Environment; Internal Levelling Up
Rail services		
Stoke-on-Trent Rail Station improvements	First phase – improving public realm and connecting transport facilities Second phase – development of station space for retail, workspace etc.; ensure station is HS2 ready	Economy; Environment
Local station reopening	Improved access to the national rail network and to provide fast cross city connections. Potential new stations at Meir, Trentham and on a re-opened Stoke to Leek line. Provide realistic alternative to car travel	Economy; Environment
Improved service frequency	To improve local connectivity with minimum 2 tph at all local stations. Creation of city-region metro-style product, with ticketing integrated with bus	Economy; Environment
Light Rail	Focus on developing the Very Light Rail concept. Delivery of initial lines to uplift the image of public transport in the city and improve connectivity	Economy; Environment
Maximise access to HS2 network	Minimum of 1 tph on HS2 timetable to serve Stoke (Manchester – London). Improved journey time and frequency of connecting service to Crewe HS2 Hub	Economy
Reducing carbon emissions		
Clean Air Zone	A CAZ is proposed around the wider city centre area that will charge for entry by older vehicles but excluding private cars	Environment

EV Infrastructure	Delivery programme for public and on-street charge-point network, to facilitate move to EV and improve local air quality. Increased EV infrastructure requirements in new developments	Environment; Internal Levelling Up
Decarbonising bus, taxi, and council fleets	Identifying suitable funding opportunities to support operators to reduce emissions from their fleets to improve local air quality	Environment
Multi-Modal Hubs	Providing sites with good facilities to enable users to transfer to sustainable travel modes	Economy; Environment
Freight		
Freight stabling	To position the city as a premium location for logistics provision, supporting economic growth	Economy
Digital		
5G Connectivity	To enable the city to be productive whilst reducing the need to travel	Economy; Environment; Internal Levelling Up

Table 8.1 Transport Improvement Programme by Mode

8.4 Next Steps

The first step in planning for the future is to establish a vision and outcomes for the transport system as well as identifying and prioritising specific initiatives to deliver.

As mentioned, three initiatives - Very Light Rail (VLR), Mobility Hubs and Net Zero Fleets - have been taken forward for initial Strategic Outline Cases. This will help to evaluate whether the initiatives should be progressed for funding bids and whether they deliver value for money.

8.5 SOC Summaries

8.5.1 Very Light Rail

The City of Stoke-on-Trent Council, through recent planning (Local Plan development) and transport funding applications (Transforming Cities, Active Travel) has identified the need for transport improvements over a ten-year horizon which are affordable, deliverable, and should support economic growth, residents' mobility, wellbeing, and the environment.
This Strategic Outline Case (SOC) aimed to assess and appraise the potential for a VLR network to serve the city, based on the Coventry example, focusing on the Strategic and Economic cases, with a light-touch Commercial, Management and Financial case.

A VLR network has been developed covering the key centres and employment zones of Stoke-on-Trent consisting of three routes - Northern, Central and

Southern, with the latter formed of three services (Full Route, Hospital Route, Trentham Route services) as shown in **Figure 4.1.**

- Northern Line (1) : Tunstall, City Centre, SoT Railway Station, Longton
- Central Line (2) : Etruria, City Centre, Bentilee, Longton
- Southern Line (3) : Three service options can operate on the Southern Line (using same track)
    - Full route (3) : SoT Railway Station, Longton, Trentham, Hospital, NuL
    - Hospital (3A) : SoT Railway Station, Hospital, NuL
    - Trentham (3B) : SoT Railway Station, Longton, Trentham, SoT Railway Station

The routes of the VLR are planned to provide a comprehensive service, connecting residential areas with key destinations such as employment and retail centres. The VLR network will also connect to key transport hubs such as railway and bus stations to create opportunities for interchange and to enhance the existing network and travel options improving the overall resilience of the Stoke-on-Trent public transport network.

The above network was assessed under two Do-something scenarios to provide further insights of the proposed scheme:

- **DS Scenario A**: VLR network with reduced frequencies on parallel / competing bus services
- **DS Scenario B**: VLR network with doubled parking charges in the City Centre and doubling of rail service frequencies between Derby and Stoke-on-Trent (in both directions).

<u>The key insights of this study are:</u>

- The VLR network will significantly improve the public transport offer in our city, improving accessibility and journey times for all and offering a real alternative to the car.
- It is forecast to achieve a modal shift of between 3 to 5% from car trips for all journeys within our city. For certain key corridors, such as Tunstall to the City Centre, Trentham to Newcastle-under-Lyme town centre, the car mode split is halving in the morning peak. This illustrates a great shift towards sustainable transport modes.
- Such a network will significantly improve access to jobs, especially for those without a car, providing wider economic benefits for our city.
- Being a low emission transport system that is battery powered it is a very clean form of transport and will therefore help improve local air quality and reduce our city's carbon emissions as we progress towards net zero.
- The revenue from the VLR would cover its operating costs however the majority of VLR patronage is forecast to come from existing bus passengers, the net operating costs for public transport due to this abstraction, will not be covered by total public transport revenue. In order to address this funding gap, other sources of revenue should be investigated including advertising and potentially looking at parking revenue.
- It will be important to work closely with the bus operators to ensure an integrated public transport offer rather than one that competes, a bus franchising arrangement should be explored.

- Based on an initial demand analysis of each line, the delivery of the VLR network should be phased as follows:
    - Phase 1: Northern Line
    - Phase 2: Central Line
    - Phase 3: Southern Line – Hospital Service (3A)
    - Phase 4: Southern Line – Full Route (3) and Trentham Service (3B)
- Given the costs of such a network, funding would be needed from Central Government as well as support from our Council. Further work is needed to develop the business case, progressing it to OBC/FBC stage, including further liaison with Coventry City Council, the VLR Innovation Centre in Dudley and key stakeholders.

The scheme currently generates a present value benefit (PVB) of £655.33 million and a present value of costs (PVC) of £652.94 million under Scenario A and a present value of benefits (PVB) of £753.17 million and a present value of costs (PVC) of £555.97 million under Scenario B. This results in a BCR of between 1.00 and 1.35 respectively which, as per the DfT Value for Money Framework, is categorised as low value for money. However, the scheme's purpose is far greater than value for money categorisation, it is the step change in public transport offer it brings to the city coupled with the positive environmental impacts, which are of upmost importance.

It should be noted that this is an initial and very high-level assessment of benefits and costs of the VLR network, and further work is needed. There are a number of benefits currently excluded which should be calculated at the next stage of work. This would include the calculation of reliability, safety, environmental and wider economic benefits. In addition, quantification of the social and distributional impacts and an active travel appraisal should be undertaken. Inclusion of the above would have significant positive impacts on the case for VLR and should be assessed as the scheme progresses through the next stage of the business case development, where more a detailed assessment is needed.

8.5.2 Mobility Hubs

This Mobility Hubs Strategic Outline Case (SOC) aimed to assess and appraise the potential for a network of mobility hubs to serve the city, focusing on the Strategic and Economic cases, with a light-touch Commercial, Management and Financial case.

The mobility hub network has been developed to address several problems and challenges, including:

- To improve air quality by promoting modal shift away from car journeys;
- To reduce traffic congestion on most affected routes;
- To improve journey time on public transport to key destinations when compared with car journey time;
- To provide opportunities for interchange onto the public transport and/or active travel networks; and
- To enhance and promote the public transport and active travel user experience.

Three scenarios were considered:

- 'Do something' – Multi Modal Hubs only: The Network of Mobility Hubs package comprises of a network of multi-modal hubs at eight strategic locations across

Stoke-on-Trent that will improve multi-modal connectivity across the local authority area, making sustainable modes more attractive for those living and working in the area.

- ‘Preferred option 1’ – bus-based P&R: The bus-based P&R option consists of the same proposals as the do something , but with the addition of two bus-based Park and Ride sites on the A500 in the vicinity of Longport Station and bus-based part and ride in the vicinity of Longton Station. Mode shift from car to park and ride would further support improved air quality by reducing congestion on the A500 corridor and encouraging mode shift to bus as a lower carbon option. Provision of a Park and Ride site and its associated multi-modal hub infrastructure would provide improved interchange opportunities between car, bus, cycle and walk.

- ‘Preferred option 2’ – VLR based P&R: The VLR and bus-based P&R option consists of the same proposals as the Network of Mobility Hubs but with the addition of VLR P&R sites at:
    - Longton Station;
    - A location on the A50 in the vicinity of the Sideway Employment area, Stadium and Trentham Lakes;

A bus-based Park and Ride site on the A500 north of in the vicinity of Longport Station would also be included.

The preferred option has capital cost central cost estimate of £7m and operation and maintenance cost central cost estimate of approximately £340,000 per annum including maintenance, promotion, monitoring and evaluation and planting/gardening.

Key expected impacts from the scheme that can be monetised at Outline Business Case stage include:

- Journey time and journey time reliability benefits: It is envisaged that the Preferred Package will generate significant travel time savings and journey time reliability benefits for all modes due to rationalised movements and reduced delays on the A500.
- Health benefits: The scheme will provide health benefits from increased physical activity and Air Quality and Noise improvements.
- Security and Journey quality benefits: Lighting, CCTV at the hubs will increase security and journey quality for those using active and public transport modes.
- Noise, AQ and CO2: With reduced congestion and potential reduction in demand by car mode as a result of improvements there will be less noise, air pollution and reduced carbon emissions.
- Wider economic benefits: Improved connectivity between key destinations in Stoke-on-Trent and from wider area to Stoke-on-Trent will deliver wider economic benefits in the form of additional tax revenue from increased labour supply and higher productivity due to increased agglomeration.
- Safety benefits: It is not expected that the interventions will have a significant direct impact on safety.
- Distributional impacts: The preferred option will generate benefits for vulnerable groups (children and elderly people) especially through increased safety. Affordability benefits for people in deprived communities are also anticipated.

The above list demonstrates that an investment of £7m (central cost estimate) into preferred option will generate significant benefits for transport users, local communities, and economy, contributing to Stoke-on-Trent's transport related targets and objectives. The estimation of benefits will be refined at the OBC stage and supported by transport modelling. The estimation of costs should also be refined based on more advanced design and inclusion of a Quantified Risk Assessment.

8.5.3 Route to Net Zero

This study addresses the GHG emissions and air quality concerns related to road transport in Stoke-on-Trent by setting out a Route to Net Zero. This forms the outline of a Strategic Outline Business Case (SOBC) for each of the four areas covering bus operations, the Council's own fleet, the taxi fleet in the city, and the development of public charging infrastructure. The analysis focuses on the strategic and economic case (the options available and their benefits) for each area, with initial information to support the financial and commercial case, although it is recognised that more detailed work will be needed to establish accurate costs and commercial arrangements to support an SOBC. The delivery strategy for each area provides recommendations of where further work may be necessary to develop a fully detailed route to implementation.

The study considers four separate areas:

- A zero-emission bus network. The bus fleet in the city and its operations are evaluated against the emerging availability of zero-emission buses. Both battery electric and hydrogen technologies are discussed covering range, capability, infrastructure needs, costs, GHG and air quality benefits, commercial and funding opportunities. Battery electric buses have lower purchase and running costs and lower "well-to-wheel" GHG emissions, but more limited range and operational flexibility than hydrogen vehicles, and specific challenges for Stoke-on-Trent are identified. The delivery strategy includes recommendations for further work to select the best technology and utilise opportunities for funding.
- Opportunities for a zero-emission city council fleet. The Council vehicle fleet is reviewed with initial moves towards zero-emission vehicles. The availability of electric and hydrogen vehicles is assessed with the pros and cons discussed similar to buses. Electric vehicles will soon be suitable for most of the fleet requirements, and a fully electric fleet is potentially achievable by 2035. Hydrogen offers operational flexibility and increased range which may benefit larger vehicles such as RCVs, but at higher purchase and running costs, and with smaller well-to-wheel GHG benefits. The delivery strategy sets out immediate measures and the need for infrastructure provision.
- Zero emission taxis. The current taxi fleet is reviewed, along with the likely barriers to the adoption of zero emission vehicles. The infrastructure needs for taxis are considered. Measures to address the infrastructure needs and other barriers to electric taxi use are set out, and the potential impact on GHG

emissions of accelerating the switch to electric vehicles across the taxi fleet is evaluated. The delivery strategy identifies key measures that can be developed and further work that could support their implementation.

- Roll out of electric vehicle charging points on-street and off-street. Types, locations, and applications of charging infrastructure are reviewed, including innovative charging options. The policy landscape is evaluated including implications for local authorities. The demand for residential, destination, and en-route chargers in the city is estimated for 2030, and policy measures to enable development of infrastructure and the costs and funding opportunities for their provision are discussed. The delivery strategy identifies the need for the Council to focus on infrastructure to enable residents without off-street parking to access low-cost and convenient charging, while enabling the commercial provision of destination and en-route charging.

8.6 Delivery Plan

The delivery plan shown in Tables 8.2 to 8.6 provides the key new projects and schemes to be delivered in the next ten years. It provides the proposed steps for the delivery of each project or scheme including the funding source and the timescale for delivery.

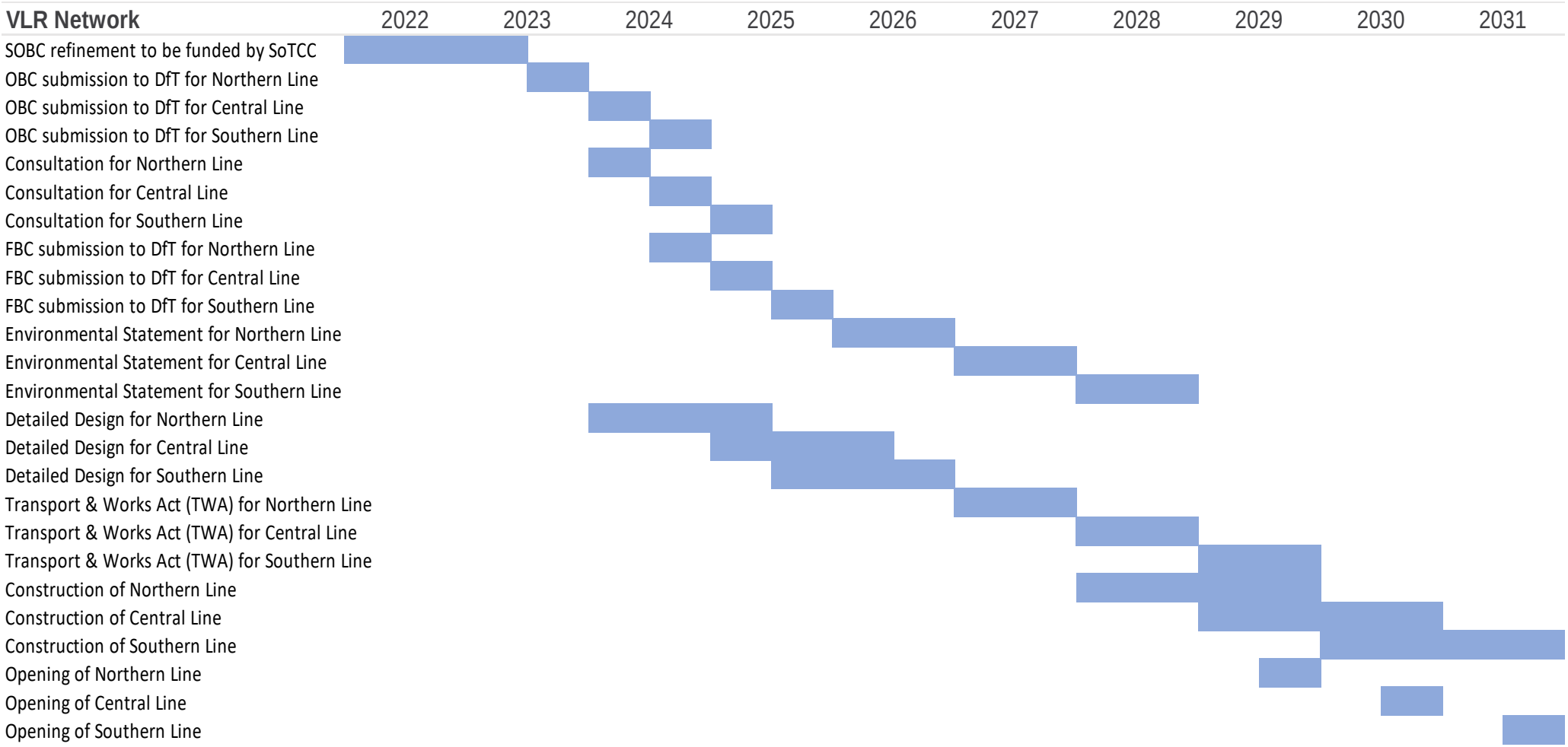

Table 8.2 VLR Network Programme Delivery Plan

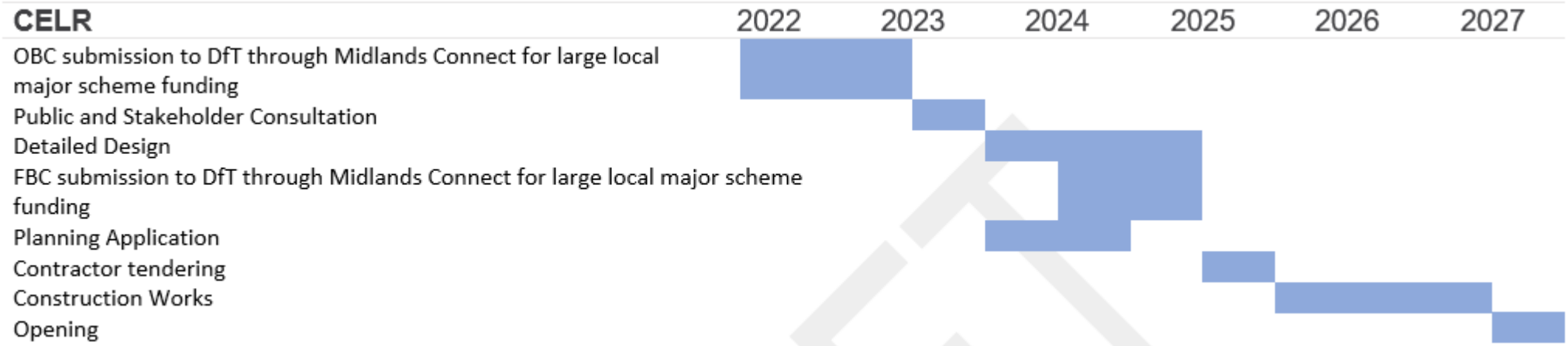

Table 8.3 CELR Programme Delivery Plan

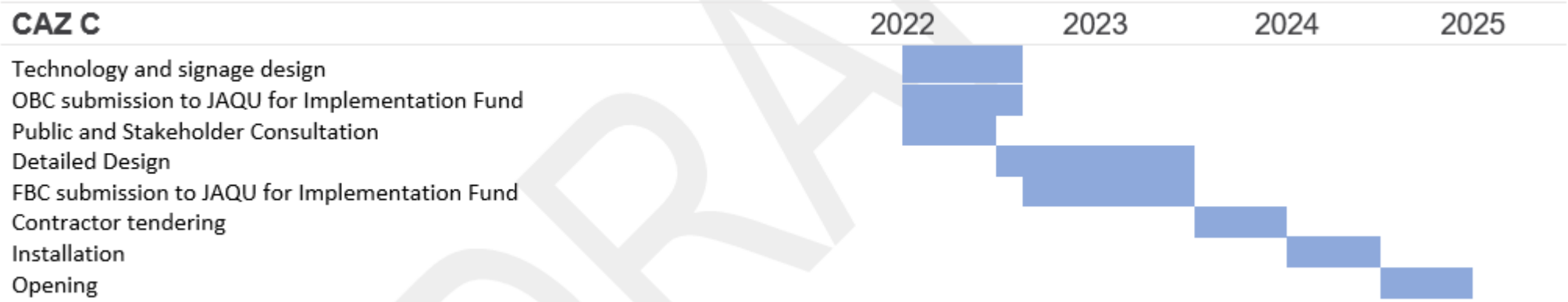

Table 8.4 CAZ C Programme Delivery Plan

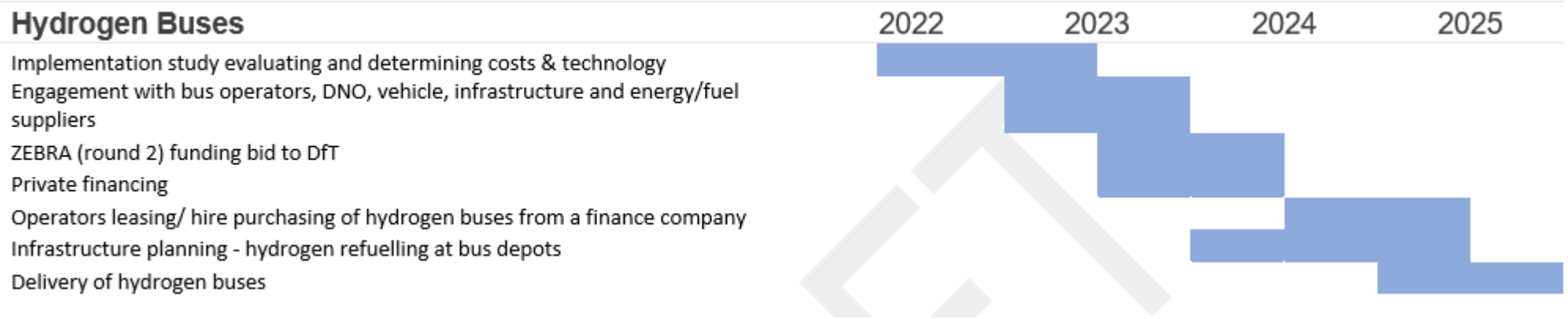

Table 8.5 Hydrogen Buses Programme Delivery Plan (Phase 1)

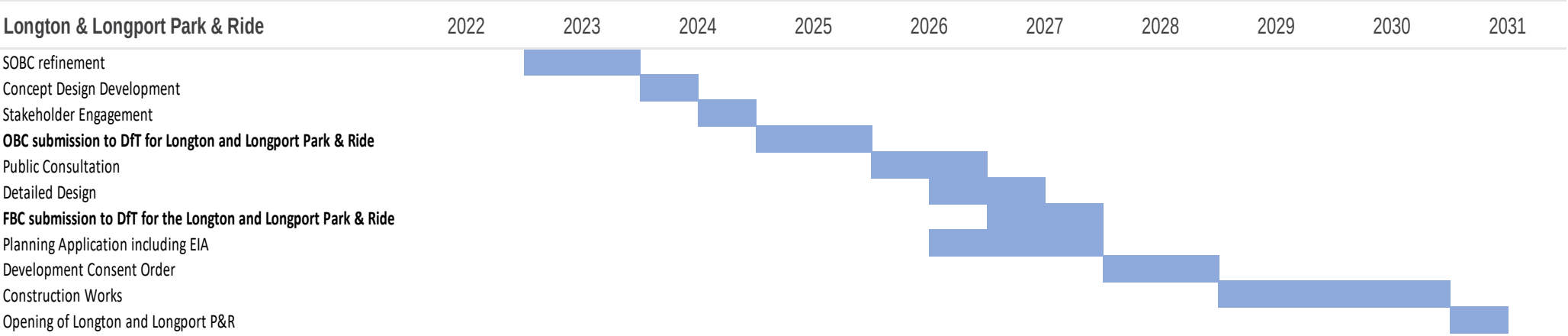

Table 8.6 Longton & Longport Park & Ride Programme Delivery Plan

Appendix A

Very Light Rail SOC

SEE SEPARATE DOCUMENT

Appendix B

Mobility Hubs SOC

SEE SEPARATE DOCUMENT

Appendix C

Route to Net Zero Options Assessment

SEE SEPARATE DOCUMENT

Appendix D

SoT LTP 3 (2011-2026) Review

Local Transport Plan Review LTP3 (2011-2026)

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1 Introduction

The Local Transport Plan Review outlines the current transport policies at a national, regional, and local level. Based on these policies, it identifies and revises outdated references and assesses the extent to which delivery of the previously stated objectives of the Local Transport Plan 2011-2026 (LTP3) of Stoke-on-Trent City Council has been achieved. Last, the identification of new objectives will be considered, to substitute the outdated ones.

The following sections examine the successes of the LTP3 and show the clear shift in governmental guidance and policies towards multi-modal solutions, decarbonisation, and active travel. There is need to reach air quality, health, and economic targets, which affect local policies and funding towards levelling up and strengthening the region, decarbonising transport, and adapting to climate change, driving resilient economic growth.

2 Current Transport and Other Policies

The relevant key national, regional, local policies as well as certain relevant schemes for spatial and transport planning are as follows:

National Policies:

- DfT Transport Investment Strategy (2017)
- DfT Future of Mobility (2019)
- Clean Air Strategy (2019)
- Gear Change (2020)
- Road Investment Strategy 2 (2020)
- DfT Outcome Delivery Plan (2021)
- Build back better (2021)
- DfT Decarbonising Transport – A Better, Greener Britain (2021)
- Bus Back Better (2021)
- Electric Vehicle Infrastructure Strategy (2021)

Regional Policies:

- Stoke-on-Trent and Staffordshire Local Enterprise Partnership Strategic Economic Plan (2011)
- Staffordshire Local Transport Plan (2011)
- Midlands Connect Strategy (2017)

Local Policies:

- Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (2006)
- Stoke-on-Trent Local Transport Plan (2011)
- Ministerial Direction (2018)
- North Staffordshire Local Air Quality Plan (2020)
- Clear Air Zone
- Stoke-on-Trent Local Plan (2020)
- Bus Service Improvement Plan (2021)
- Local Cycling and Walking Infrastructure Plan (emerging)
- Powering Up (emerging)

Other relevant schemes:

- Getting Building Fund
- Constellation Partnership
- Levelling Up Programme (2021) – TCF
- Active Travel Fund
- HS2 Phase 2b

A diagram showing the policy landscape is shown in Figure 2.1.

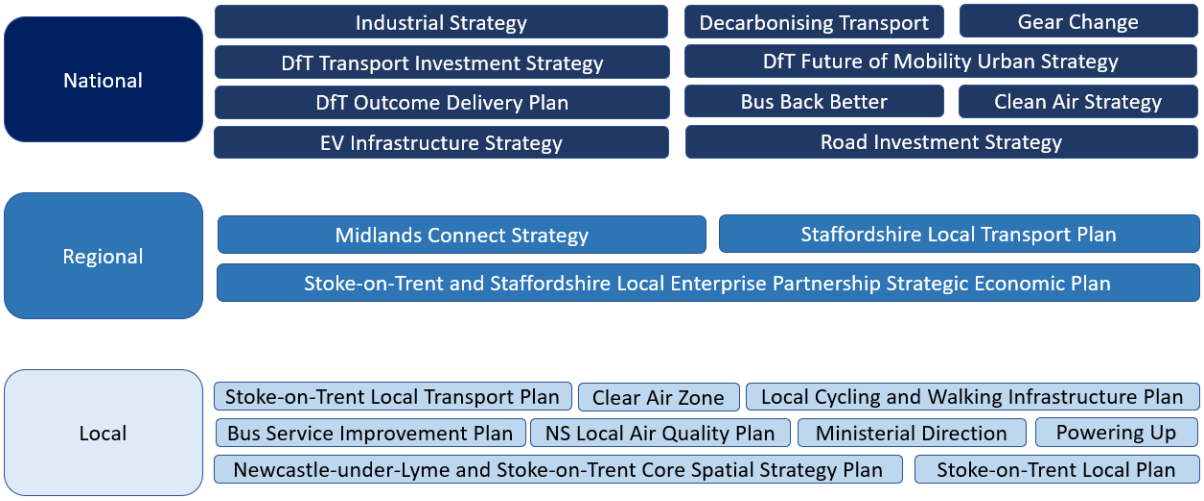


Figure 2.1: Policy Landscape

The relevant key aims, and objectives of these policies are identified below.

2.1 National Policies

2.1.1 DfT Transport Investment Strategy: Moving Britain Ahead (2017)

The Investment Strategy sets out how the government will respond to current challenges whilst delivering the aims of the Industrial Strategy and putting the travelling public at the heart of the choices made.

The strategy states that investment must seek to:

- **create a more reliable, less congested, and better-connected transport network** that works for the users who rely on it
- **build a stronger, more balanced economy** by enhancing productivity and responding to local growth priorities
- **enhance our global competitiveness** by making Britain a more attractive place to trade and invest; and
- **support the creation of new housing**.

Furthermore, the strategy sets out the following goals:

- **Ensure investment consistently meets the needs of users and helps to create a balanced economy**: by focusing on schemes that tackle clearly-defined problems or unlock specific opportunities; ensuring decisions reflect a clear understanding of the distinctive needs and circumstances of different parts of the country; taking account of the balance of spending between different regions and developing a new way of assessing projects for the contribution they make to creating a more balanced economy; and being open-minded about the best way to tackle particular problems across different modes.
- **Focus on getting the best value out of the network and investmen**t: by continuing to prioritise value for money and rigorous business case appraisal; ensuring we are getting the most out of our existing asset before investing; sharing the burden of funding with those who stand to benefit; seeking to unlock opportunities for private finance where it meets our objectives.
- **Retain a resolute focus on delivery**: by continuing to prioritise predictable funding and a stable long-term pipeline of projects; taking a realistic approach to delivery challenges and exploring the innovative approaches to deliver outcomes more quickly and efficiently; favouring projects which deliver for users quickly and at lower cost and risk.
- **Remain adaptable in the face of change**: by seeking balance and diversity across the investment portfolio; and expecting investment projects to put the UK at the forefront of adopting future technology.

The strategy discusses a range of priorities including:

- **Expanding existing capacity to ease congestion** - the document states that in many cases there is a need to invest to upgrade and enhance the existing network, making it better able to cope with demand by adding capacity to reduce congestion and crowding. This not only makes journeys more comfortable and reliable but can make possible new trips that were previously impractical due to frequent or unpredictable delays. It is acknowledged that upgrades which tackle congestion typically have high returns. Schemes in the Government's Road Investment Strategy, which included new sections of smart motorway, junction improvements, widening and bypasses show high rates of return, with £1 spent leading to an average return of at least £4.5.
- **Enhancing connectivity by adding new capability** - the document acknowledges that the connectivity of our transport system is a fundamental component of the positive economic contribution it can make. The strategy refers to a need to invest to add new capability to the network, which transforms travel in a particular corridor or provides opportunities for the travelling public to make journeys in a new way. These schemes can create new links between communities and workplaces to deepen local labour markets, connect housing developments to the network or provide new routes on city and commuter networks.

2.1.2 DfT Future of Mobility: urban strategy (2019)

The 'Future of mobility: urban strategy' outlines the Government's approach to maximising the benefits from transport innovation in cities and towns. It acknowledges that modern technologies are emerging that within a generation will transform journeys.

It sets out nine principles that will guide the Government's response to emerging transport technologies and business models, and guide decision-making going forward. Key principles are:

- Walking, cycling and active travel must remain the best options for short urban journeys.
- Mass transit must remain fundamental to an efficient transport system.
- New mobility services must lead the transition to zero emissions.
- Mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy, or consolidating freight.

2.1.3 Clear Air Strategy (2019)

The Clear Air Strategy sets out the comprehensive actions required across all parts of government and society to improve air quality, protect nature, and boost the economy.

The strategy sets out the actions required:

- protect the nation's health
- protect the environment
- secure clean growth and innovation
- reduce emissions from transport, homes, farming and industry
- monitor our progress

Based on that, Stoke-on-Trent Council has come to an agreement for a Clean Air Zone (CAZ) (see section 2.3.5)

2.1.4 Gear Change (2020)

Gear Change is a Department for Transport policy document that sets out the government's strategy to increase walking and cycling. The document presents a vision for active modes to make up half of all journeys in towns and cities by 2030. Proposed actions include improving infrastructure, increasing connectivity with other modes, and providing more cycle parking facilities. The government will fund cities and towns across the UK to install a considerable number of miles of main road cycle tracks to boost and transform the active travel capabilities. Alongside this document, a new cycling design guidance was published which sets out the much higher standards that are now required if schemes are to receive funding, along with several failings, common in the past, which will either no longer be allowed at all, or will strongly discouraged.

Active Travel England is now a statutory consultee for active travel schemes in England and will enforce the standards, meaning the quality of delivery for will have a direct bearing on the ability to bid for funds for wider transport schemes.

2.1.5 Road Investment Strategy 2 (2020 – 2025)

The Road Investment Strategy 2 (RIS2) is a five-year strategy for investment in and management of the strategic road network from April 2020 to March 2025[65]

Its vision specifies the performance standards Highways England must meet; lists planned enhancement schemes expected to be built; and states the funding available during the second Road Period (RP2), covering the financial years 2020/21 to 2024/25.Through this investment, a safer, more reliable, and sensitive to the places it runs through network will be created.

The vision of the network in 2050 includes:

- A network that supports the economy
- A greener network
- A safer and more reliable network
- A more integrated network

[65] Road Investment Strategy 2, Department of Transport, 2020

- A smarter network

In December 2021, the Road Investment Strategy 3 (2025-2030) describes how the government is planning ahead for the Strategic Network with expanding the objectives to:

- Improving safety for all
- Improved environmental outcomes
- Network performance
- Growing the economy
- Managing and planning the SRN for the future
- A technology-enabled network

2.1.6 DfT Outcome Delivery Plan (2021 – 2022)

Both COVID-19 and Brexit have provided challenges over the past year to the transport industry. To address these changing circumstances, on 15 July 2021 the DfT withdrew the previous Single Departmental Plan and published the Outcome Delivery Plan66 which sets out in detail how the DfT and the UK will continue to deliver the priority outcomes and how success will be measured. The three priority outcomes are to:

- Improve connectivity across the UK and grow the economy by enhancing the transport network, on time and on budget.
- Build confidence in the transport network as the country recovers from COVID-19 and improve transport users' experience, ensuring that the network is safe, reliable, and inclusive.
- Tackle climate change and improve air quality by decarbonising transport (this outcome reflects the DfT's contribution to the BEIS-led cross-cutting net zero outcome).

2.1.7 Build Back Better (2021)

The strategy Build Back Better followed the 2017 Industrial Strategy which had set out a long-term plan to boost the productivity and earning power of people throughout the UK with a focus on five foundations:

- **Ideas** – the world's most innovative economy
- **People** – good jobs and greater earning power for all
- **Infrastructure** – a major upgrade to the UK's infrastructure
- **Business environment** – the best place to start and grow a business
- **Places** – prosperous communities across the UK

[66] Department for Transport Corporate Report - Outcome Delivery Plan: 2021 to 2022 (July 2021)

There have a lot of changes since 2017, hence the need for a new framework to address the focus on infrastructure, skills and innovation. It reflects new opportunities available to following the exit from the European Union, opening up new ways to drive growth and supporting the vision for Global Britain. This plan also demonstrates that growth will not be pursued at the expense of the government's wider objectives - instead real opportunities will be identified to boost the economic performance while levelling up across the UK and in a way that contributes to reaching net zero emissions.

2.1.8 Decarbonising Transport – A Better, Greener Britain (2021)

By law, the UK's emissions must now be net zero by 2050. Transport is the largest contributor to UK domestic greenhouse gas (GHG) emissions, responsible for 27% in 2019. Domestic GHG emissions from transport have been broadly flat for the last 30 years. Better engine efficiency has been made up for by increasing numbers of journeys; the growth of electric and hybrid vehicles has been made up by the growth in diesel and petrol SUVs.

The plan sets out how to deliver the required emission reductions as well as the associated benefits. The plan sets a series of actions and timings to decarbonise transport by 2050.

The main themes to deliver this by 2050 include:

Accelerating modal shift to public and active transport – including net zero buses and trains and making public transport more competitively priced

Decarbonising road transport – phasing out new non-zero emission road vehicles, from motorbikes to HGVs by 2040

Decarbonising how we get our goods – including the freight system, use of digital solutions and data sharing optimising efficiency and decarbonised last mile delivery

UK as a hub for green transport technology and innovation – with the UK leading green technology and research

Place based solutions to emissions reduction – by 2050 every place in the UK will have its own net zero transport network

Reducing carbon in a global economy – UK aviation will meet net zero targets by 2040

2.1.9 Bus Back Better (2021)

The aim of this strategy is to make buses more frequent, more reliable, easier to understand and use, better co-ordinated and cheaper. By the end of June 2021, it is expected by all LTAs (Local Transport Authorities), except MCAs which have started the statutory process of franchising bus services, to commit to establishing Enhanced Partnerships across their entire areas under the Bus Services Act, and all operators to co-operate with the LTA (Local Transport Authorities) throughout the process. LTAs which also wish to pursue franchising may do so – but they should commit to implementing Enhanced Partnerships in the meantime until the franchising process,

which can be lengthy, is complete. To benefit from the funding in this strategy, LTAs in such places will be expected to implement ambitious bus priority schemes and draw up ambitious Bus Service Improvement Plans.

Stoke-on-Trent has proceeded with the Bus Service Improvement Plan (BSIP) in October 2021 under the Enhanced Partnership Programme (see section 2.3.7).

2.1.10 Electric Vehicle Infrastructure Strategy (2021)

The decarbonisation of UK's road transport is moving forward at a fast pace. Taking this into account along with the rapid developments in battery and charging technology, the Taking charge: the electric vehicle infrastructure strategy was formed in 2021 with main goal the rollout of electric vehicle charging infrastructure in the UK.

This is vision is based on the intention:

- to end the sale of new petrol and diesel petrol and diesel vehicles by 2030
- for all new cars and vans to be fully zero emission at the tailpipe by 2035

2.2 Regional Policies

2.2.1 Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) and Strategic Economic Plan (SEP)

The Stoke-on-Trent and Staffordshire LEP was created in 2011 and it is ongoing with its main target to support businesses which wish to start up, grow or relocate to drive economic growth.

They have a single inward investment team Make it Stoke-on-Trent and Staffordshire and an Education, Employment and Skills Board, which is working with education providers and businesses to address the skills gap, while Destination Staffordshire is working with tourism businesses to market the county as a place to work and visit. To ensure the best for the area the LEP is working with Government and other organisations to secure funding and improve access to finance for businesses leading to higher employability.

The SSLEP SEP identifies the City of Stoke-on-Trent as the focus for innovation-led economic growth, founded on competitive connectivity, sector growth and a skilled workforce. This SEP is designed to bring businesses and local authorities together to drive economic growth, create jobs and raise skills levels. Its vision is to create 50,000 jobs and increase the size of the economy by 50% by 2024, for which the region is on course to meeting these key goals.

The SEP Strategic Framework is underpinned by the following key goals:

Stoke-on-Trent as a Core City – rapid, planned growth of the conurbation centred on the City of Stoke-on-Trent which would be a critical economic driver of Stoke-on-Trent to become one of the strongest performing economies in the UK.

A Connected County – to build on Stoke-on-Trent's central location, excellent external connectivity, and existing peri-urban sites to harness the rapid economic growth of the Midlands Engine. The location offers the city the opportunity to marry the

right blend of further employment sites and supporting infrastructure to drive business growth, encourage inward investment and meet labour market needs.

Competitive Urban Centres – to ambitiously enhance growth opportunities for an attractive and thriving City of Stoke-on-Trent and other towns across Staffordshire where people are eager to live, work and enjoy themselves owing to outstanding infrastructure.

Sector Growth – ensure globally competitive innovation, investment, and enterprise-led expansion in large and small businesses across priority sectors. The transition from traditional industries into innovative higher-value sectors will ensure that growth will be promoted and potentially flourish.

Skilled Workforce – to develop a modern and flexible skills system which enables all people to up-skill and re-skill to meet the needs of growth sectors.

2.2.2 Staffordshire Local Transport Plan 2011 (SLTP)

The Staffordshire LTP (Local Transport Plan) priority objectives are:

- Supporting growth and regeneration
- Making transport easier to use and places easier to get to
- Improving safety and security
- Reducing road transport emissions and their effects on the highway network
- Improving health and quality of life
- Respecting the environment

2.2.3 Midlands Connect Strategy (2017, 2022)

Midlands Connect is a pan-Midlands partnership of local transport authorities, local enterprise partnerships and local business representatives working with the Department for Transport and its key delivery bodies. The delivery of the Midlands Connect vision will help to secure a £1 billion-a-year boost to the regional economy, create 300,000 additional jobs and save businesses £500 million.

The Strategy identifies North Staffordshire including Stoke-on-Trent as one of four Strategic Economic Hubs. Furthermore, Stoke-on-Trent forms part of two Intensive Growth Corridors, towards Birmingham and towards Derby and Nottingham.

The updated challenges of this plan are:

- Levelling up and strengthening the region and UK
- Decarbonising transport and adapting to climate change
- Driving resilient economic growth

2.3 Local Policies

2.3.1 Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (2006 – 2026)

The Core Spatial Strategy sets out a broad framework for the future development of the whole of Newcastle-under-Lyme and Stoke-on-Trent. This approach helps to make sure that the two councils are working together to achieve the best results. This strategy sets out the overarching spatial planning framework for the long-term regeneration of the Borough of Newcastle-under-Lyme and City of Stoke-on-Trent, up to the year 2026. It seeks to ensure that public and private investment is properly co-ordinated, with a focus on promoting the principles of sustainable development. The key aims, principles and policies of the Core Spatial Strategy are as follows:

Core Spatial Strategy Strategic Aims

- SA2 – To facilitate delivery of the best of healthy urban living in the development of the conurbation
- SA3 – To reduce the need to travel, improve accessibility and increase the opportunities for development of sustainable and innovative modes of travel to support regeneration
- SA7 – To enhance the City Centre of Stoke-on-Trent's role as sub regional commercial centre
- SA10 – To facilitate development within identified priority regeneration areas of the North Staffordshire conurbation
- SA12 – To renew the fabric of urban and rural areas to promote the best of safe and sustainable urban and rural living
- SA13 – To protect and improve the plan area's network of canals and watercourses, green spaces/infrastructure, and parks
- SA17 – To minimise the adverse impacts of climate change in the move towards zero carbon growth through energy efficiency

Core Spatial Strategy Spatial Principles

- SP1 – Target Regeneration
    - New housing sites have been identified in significant urban centres, such as Newcastle-under-Lyme town centre
    - Employment provision with be focussed on sites accessible to and within the North Staffordshire Regeneration Zone
    - Staffordshire University, the University Hospital, Keele University, and Science Park will continue to be the focus for high value business growth
- SP2 – Economic Development

- Diversification and modernisation of the centres for new business investment, particularly in terms of retailing, education, leisure, entertainment, culture, office development and residential development
- Improvement in the levels of productivity, modernisation, and competitiveness of existing economic activities, whilst attracting new functions to the conurbation
- Taking advantage of North Staffordshire's pertinent geographical position, its people, and its productive asset base

- SP3 – Movement and Access
  - Improving the accessibility and therefore the social inclusion of previously poorly connected communities to maximise the range of services and facilities available to people
  - Maximising the accessibility of new residential, employment, retail, development, health and education centres, green open space, leisure, and sport facilities as well as strategic transport interchanges, such as railway stations, by walking, cycling and public transport
  - Secure developer contributions towards the delivery of schemes that support the key objectives of the Staffordshire and North Staffordshire Local Transport Plans

Core Spatial Strategy Area Spatial Policies

- ASP1 – City Centre of Stoke-on-Trent
  - Public transport access to the City Centre will be enhanced by the development of bus routes along radiating roads and linking to improvements for all public transport modes within the centre and to a new bus station
  - Public places and green spaces within the City Centre will be improved for the benefit of pedestrians and better connections provided between Central Forest Park, Festival Park, and Hanley Park via the City Centre
  - The missing links of the Potteries Way will be provided, and steps taken to reduce the constraints to non-vehicular movement provided by the existing highway and connections along Etruria Road to Festival Park, the A500 and Newcastle-under-Lyme, as well as there being proposed improvement to the connectivity between Hanley and to the eastern suburbs
- ASP2 – Stoke-on-Trent inner urban core
  - The proposal of multiple transport infrastructure improvements including Stoke town centre highway improvements (the Inner Relief Road), and cycleway improvements.
  - A review of the Hanley-Bentilee link road

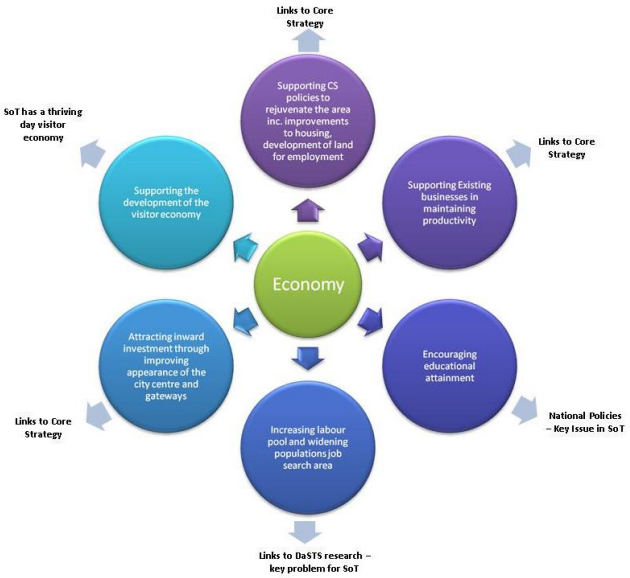
- ASP3 – Stoke-on-Trent outer urban area
    - Better public transport connections to the town centres of Stoke-on-Trent
    - Bus priority measures along routes from Stoke, Longton, Bentilee, Tunstall, Sneyd Green and Burslem to City Centre
    - The enhancement of the built and natural environment, together with increased access to greenspace and watercourses as well as the realisation of brownfield development opportunities

2.3.2 Stoke-on-Trent Local Transport Plan (LTP3 2011-2026)

Stoke-on-Trent's Third Local Transport Plan (LTP3), published in 2011, reflects on some of the key transport achievements in the local authority under LTP2, such as the Cycle Stoke initiative, a new community rail partnership, a Bus Partnership initiative, and bus priority measures at the A34 Stone Road/Mayne Street junction.

The three goals of the Stoke-on-Trent LTP3[67] are as follows:

1. **Economy** - improving the local economy through increasing productivity for existing businesses and encouraging new investment by making Stoke-on-Trent more attractive.



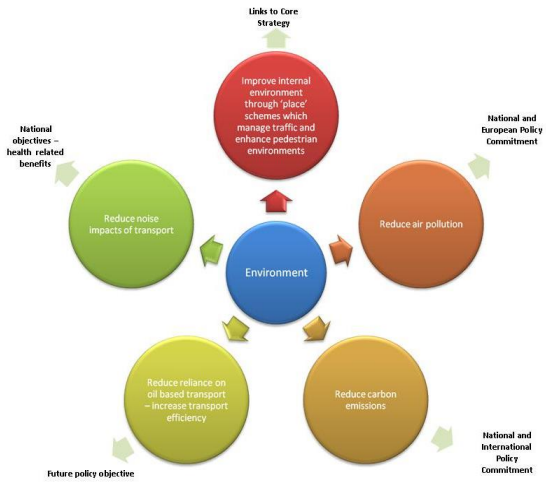
The following **economy** goal objectives are of relevance:

- Supporting the Core Strategy policies to rejuvenate the area including improvements to housing and development of land for employment

[67] Stoke-on-Trent – Local Transport Plan 2011/12- 2025/26

- Supporting existing businesses in maintaining and improving productivity
- Increasing the labour pool and widening the job search area
- Attracting inward investment
- Supporting the development of the visitor economy
- Encouraging Educational Attainment

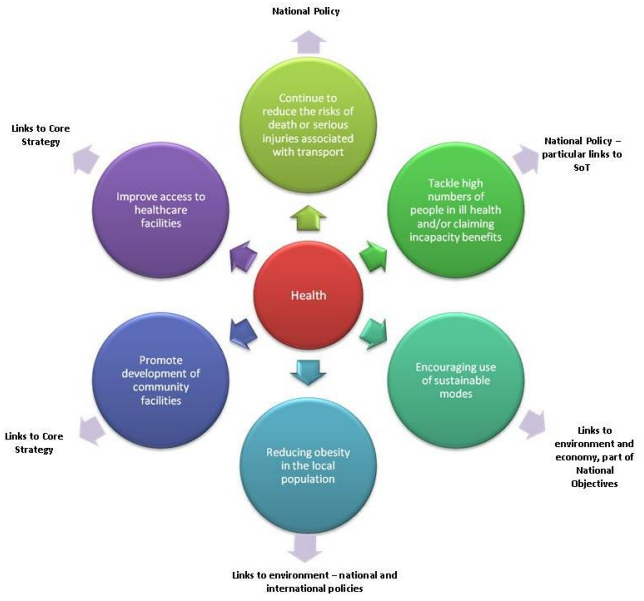
2. **Environment** - improving the local environment through reducing the impact of traffic (air and noise) and moving towards more sustainable transport technology and modes, coupled with improving the appearance of local areas.



The following **environment** goal objectives are of relevance:

- Improve internal environment through 'place' schemes which manage traffic and enhance pedestrian environments
- Reducing air pollution
- Reducing noise impacts of transport
- Reducing carbon emissions
- Reduce reliance on oil-based transport

3. **Health** - caring for local health through improving access to transport, transport safety and encouraging walking and cycling.



The following **health** goal objectives are of relevance:

- Reduce the risk of death or serious injuries associated with transport
- Encouraging the use of sustainable transport modes
- Improve access to healthcare facilities
- Promote development of community facilities
- Reducing obesity in the local population
- Tackle high numbers of people in ill health and/or claiming incapacity benefits

LTP3 highlights several issues and constraints that impact the provision of bus services in Stoke:

- The core bus network is based on services to and from the City Centre (Hanley) and Newcastle-under-Lyme Town Centre. This contrasts with the travel to work pattern, which is dispersed, leaving many people with no direct home to work bus service.
- The bus network has the appearance of an unconcentrated network with a high number of bus services servicing discrete small residential locations.
- Post-16 education and hospital sites are outside the traditional centres.
- Some new residential areas are being built on brownfield sites and are often on the edge of town, requiring the diversion or extension of existing services, or new services.
- Poor physical access to services is a major barrier to using buses, particularly, pedestrian routes to and from the bus stop.

- Punctuality and reliability remain an issue, primarily caused by the interaction of services with traffic on major routes. There are currently limited lengths of bus priority in Stoke-on-Trent. The constrained nature of the local road network makes it exceedingly difficult to provide significant amounts of bus priority.
- Driver shortage is an issue.
- There is a need to understand clock-face timetables with the need to account for variable running times at various times of the day or week. The issue is complicated further by the requirements of punctuality imposed by Traffic Commissioners.
- The city has several congestions hot spots.

LTP3 identifies several opportunities for the bus offer in Stoke-on-Trent, specifically in relation to integration with pedestrian and cycle journeys. LTP3 states several policies aimed at:

- Implementing a transport hierarchy that considers pedestrian needs first, cyclists and public transport second and car drivers third, recognising that there are likely to be compromises between users in some locations; and
- Providing information on journey times by walking, cycling, bus, and rail to encourage choice and highlight journey times by mode to encourage more people to use these modes.

2.3.3 Ministerial Direction (2018)[68]

In December 2015, the UK Government published the plan for 'Tackling nitrogen dioxide in our towns and cities – UK overview document' naming the first wave of five cities, Birmingham, Leeds, Southampton, Nottingham, and Derby, to implement Clean Air Zones (CAZ). In July 2017, the UK Government published the UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations – An Overview,1 which set out the Government's plan to achieve a cleaner and healthier environment along with actions to lower NO2 air pollution to levels that comply with established EU limits in the shortest possible time. As a result, the Government initially identified 28 local authorities with the worst NO2 problems in the country and directed them to produce local air quality plans. These plans aim to detail how each authority will attempt to reduce its NO2 concentrations to compliant levels in the shortest time.

In March 2018, the Government continued pursuing the Ministerial Direction to further advise more authorities to address their NO2 issues. A further 33 local authorities were required to produce plans on potential pollution mitigation measures to be implemented in their areas.

In October 2018, another supplement to the NO2 plan was issued in which a further eight local authorities were directed to produce a local air quality plan to address their respective NO2 problems. These 'third wave' authorities included both SoTCC and NuLBC; owing to their proximity to one another, they were tasked with producing a

[68] North Staffordshire Local Air Quality Plan (OBC) 2020

joint plan pertaining to their pollution issues. SCC is assisting the authorities in its role as highway authority for Newcastle under-Lyme.

2.3.4 North Staffordshire Local Air Quality Plan[69]

As mentioned above, due to the Ministerial Direction, a joint plan was produced. The plan will help to protect and promote the health of the local population by improving air quality and reducing the impact of air pollution on the environment. In so doing, the local authorities are complying with the UK Air Quality Plan and bringing NO2 air pollution within statutory limits in the shortest possible time. The joint approach has also been necessary because it is recognised that air pollution does not respect local authority boundaries and therefore a consistent and co-ordinated approach is required to maximise air quality benefits for all people living and working in North Staffordshire. By working together, the authorities can also minimise the risk of unintended consequences and help to ensure, as far as possible, alignment between the NSLAQP and wider authority strategies.

2.3.5 Clear Air Zone

Stoke-on-Trent Council has come to an agreement for a Clean Air Zone (CAZ). A CAZ suggests a daily charge for diesel vehicles older than September 2015 or petrol vehicles older than 2006 driving in the area and is intended to improve air quality.

In Stoke-on-Trent, a CAZ C is now being considered. This would look at the possibility of a daily charge for older buses, coaches, taxis, private hire vehicles, heavy goods vehicles and light goods vehicles that have higher emissions to travel in a defined area. Cars would not be included in the charges and all vehicles that meet emissions standards would also be exempt from any charges or restrictions. The different step it will follow would be:

Phase 1 – Bus retrofitting

Phase 2 – A53 Etruria Road Bus gate

Phase 3 – Charging CAZ

This measure would be used as an alternative to a bus gate to tackle air quality exceedances on Victoria Road in Fenton, which was a legal requirement.

2.3.6 Stoke-on-Trent Local Plan

The Local Plan (2020-2040) is currently being developed and looks to ensure that long term policies and plans are in place to make sure that the city manages and meets the needs of local people and businesses in the future. It follows on from the Core Spatial Strategy and will eventually supersede it. The City Council aims to adopt the Local Plan in 2022.

The Local Plan will play a key role in[70]:

[69] North Staffordshire Local Air Quality Plan (OBC) 2020
[70] Strategic Options Consultation Document July 2017

- Attracting and directing investment in housing, jobs, shops, and facilities
- Seeking to meet community aspirations
- Setting a framework for encouraging and managing development
- Securing the physical infrastructure to support new development
- Protecting and enhancing the natural and historic landscape

Consultation on a preferred growth scenario, options for employment and housing development (including preferred sites) and strategic options for retail and leisure was undertaken in February 2018.

2.3.7 Bus Service Improvement Plan (BSIP)

The BSIP is part of the Enhanced Partnership agreement between Stoke-on-Trent Council and the Bus Operators. The plan's main goals are to improve the bus network across the city and encourage more people to use it with a focus on delivering sustainable and inclusive transport.

The elements of the plan include:

- Shorter bus journey times – upgrading the traffic signal system, significant increases in bus priority
- More frequent and reliable bus services
- Longer hours of bus operation
- A review of bus fares – lower and simpler fares, integrate ticketing
- Accessibility and Safety – continue driver training in disability awareness, dropped kerbs
- Journey Information – provision of clear passenger information and real-time journey times
- Modern buses and decarbonisation
- Passenger satisfaction – improved cleanliness of buses

2.3.8 Local Cycling and Walking Infrastructure Plan (LCWIP)

The LCWIPs are a new government initiative and approach to identify cycling and walking improvements of local authorities.

Local transport authorities are required to develop Local Cycling and Walking Infrastructure Plans (LCWIPs) to help the government deliver their Cycling and Walking Investment Strategy (CWIS) with the objectives to have:

Better Safety - A safe and reliable way to travel for short journeys

Better Mobility - More people cycling and walking – easy, normal, and enjoyable

Better Streets - Places that have cycling and walking at their heart"

Stoke-on-Trent is now developing and designing the LCWIP for the city with a main goal to connect the town centres (Tunstall, Burslem, Hanley, Stoke, Fenton, Longton) based on the propensity to cycle analysis.

The core design principle focuses on accessibility for all: coherent, direct, safe, comfortable, and attractive. Cycle networks are meant to allow citizens to reach their day-to-day destinations and preferably safely and directly.

As set out in the above policy review, there is a clear focus on active travel, decarbonisation and prioritising sustainable travel modes nationally, regionally, and locally.

2.3.9 Powering Up

The Powering Up prospectus identifies the partnership that could be formed between the council and the government departments to reach certain agreements that could drive the city's economic growth and regeneration. Their main priorities include:

- **Transport** as the city is identified as one of the most regionally connected by Midlands Connect.
- **Economic Development** as Stoke-on-Trent is an economic hub at the western end of North Midland
- **Education and Skills** as the level of educational outcome remains exceptionally low
- **Health and Productivity** as the percentage of all economic inactivity (29%) is higher than the national average (21.5%)

2.4 Schemes, Funding, Partnerships and Programmes

2.4.1 Getting Building Fund

The government announced a £900 million Getting Building Fund to deliver jobs, skills, and infrastructure across the country. This investment is being targeted in areas facing the biggest economic challenges because of the pandemic. It is supporting the delivery of shovel-ready infrastructure projects, agreed with mayors and Local Enterprise Partnerships to boost economic growth, and fuel local recovery and jobs.

2.4.2 Constellation Partnership

The Constellation Partnership is a collaboration of seven local authorities and the Cheshire and Warrington, Stoke-on-Trent, and Staffordshire Local Enterprise Partnerships. It aims to unlock major new growth and investment opportunities which could deliver more than 100,000 new homes and 120,000 new jobs by 2040 by creating a new Growth Zone at the connecting gateway to the Northern Powerhouse and the Midlands Engine.

The Partnerships' HS2 Growth Strategy identified Stoke-on-Trent as the commercial, leisure and retail 'capital' of the Constellation, with a great city living offer.

2.4.3 Levelling up Programme

The Levelling Up programme has been introduced across the UK to boost infrastructure investments and improve everyday life. The £4.8 billion fund focuses on supporting town centres and high street regeneration, local transport projects, and cultural and heritage assets.

Stoke-on-Trent's regeneration has emerged with significant improvements on the transport sector. One of the council's main objectives is addressing inequalities within the city - removing barriers to travel and connecting residents to employment opportunities. Hence, some of the current projects in the city:

- The Etruria Valley Link Road (underway)
    - a new 1km road between the Wolstanton junction of the A500 through to St Modwen Park Stoke Central and Festival Park, one of the six employment sites on the Ceramic Valley Enterprise Zone
    - This crucial infrastructure will improve connectivity for existing businesses in the area and assist in unlocking unused employment land and open new housing sites to support the Local Plan
- Transforming Cities Fund
    - Stoke-on-Trent is part of the 12 Transforming Cities fund to be received from DfT- which promotes the improvement of bus commute, easy transfers, and sustainable travel modes as well as high quality cycling and walking routes
    - Some of the transformations include new pavements and kerbs outside Stoke Station with repositioning of signs, additional car parking and taxi drop off facility to the rear of the station, with electric vehicle charging points, improvements to walking and cycling routes within Hanley Park and linking to the station and City Centre
    - Cross City Bus Service Scheme: The introduction of the cross-city bus service scheme includes the below potential bus pairings which will improve the connectivity and journey times between the six towns of Stoke-on-Trent council:
        - New Route 3: Kidsgrove – City Centre – Longton – Meir combining services 3/3A & 6/6A and reducing bus journey times by up to 20 minutes
        - New Route 6: Abbey Hulton – City Centre – Station – Trentham combining services 5 & 21 and reducing bus journey times by up to 28 minutes
        - New Route 7: Biddulph – City Centre – Station – Hospital – Keele combining services 7 & 25 and reducing bus journey times by up to 29 minutes; and

New Route 8: Ball Green – City Centre – Station – Blurton combining services 8 & 23 and reducing bus journey times by up to 29 minutes.

- City East Link Road

- A Large Local Major Scheme which will address the severe congestion of key road corridors
- Critical to the BSIP
- The project will improve air quality and lower greenhouse gas emissions and noise
- It will ease congestion and improve journey times and connectivity

2.4.4 Active Travel Fund (2020)

The grant funding supports local transport authorities with producing cycling and walking facilities. The funding is in 2 tranches[71]:

- tranche 1 supports the installation of temporary projects for the coronavirus (COVID-19) pandemic. This funding was announced by the Secretary of State for Transport on 23 May 2020 as part of the work to combat the COVID-19 pandemic
- tranche 2 and funding for 2021 to 2022 (announced on 14 May 2022) supports the creation of longer-term projects

Stoke-on-Trent has been allocated funding and plans to support the delivery of the below:

- College Road: Introduce a bus gate on College Road, to restrict through traffic to cycles, taxis, and buses only between Station Road and Queen Anne Street. This aims to create quieter, more pedestrian friendly and cycle friendly route, improve air quality, improve accessibility between the train station and key areas of the city, tackle the congestion hotspot in the area, improve bus journey time reliability, provide new opportunities, and better choices for travel for the local community.
- Shelton New Road: Introduce 2km of cycling infrastructure including improvements to crossings, dedicated segregated cycle lanes and new shared paths.
- Cycle Hire Scheme: Introduce two cycle hire locations at Lidice Way and Station Road. As part of this proposal, an app-based system with folding bikes would be introduce. This aims to extend the reach of the existing transport hubs to key employment areas in the city, provide new opportunities and better choices for travel for the local community and improve connectivity with Stoke-on-Trent.

2.4.5 HS2 Phase 2b

HS2 is a new high speed rail network for the UK, connecting London with major cities in the Midlands and the north of England[72]. Phase 2 is planned and is split into two sub-phases:

[71] Active travel fund: local transport authority allocations, DfT,2020
[72] High Speed Two Phase Two Strategic Case, 2017

Phase 2a - Birmingham to Crewe and phase 2b – Crewe – Manchester.

On 24 January, the government introduced the High-Speed Rail (Crewe – Manchester) Bill into Parliament to secure the powers to construct and maintain HS2 Phase 2b, between Crewe in Cheshire and Manchester.

HS2 will serve Stoke-on-Trent as well helping to relieve congestion, improve reliability and speed up journey times.

3 Outdated References

3.1 Policy

- The Eddington Transport Study (2006)
- The Stern Review
- 'Towards a Sustainable Transport System' White paper (2007)
- Creating Growth Cutting Carbon, Making Sustainable Local Transport Happen (White Paper Jan 2011)
- Stoke on Trent Core Strategy (still in use but shortly to be replaced with the Local Plan)
- North Staffordshire Integrated Transport Study (2005)
- Peak Oil/Oil depletion + House of Commons Environmental Audit Committee; Reducing Carbon Emissions from Transport
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1) July 2007
- Review of Local Air Quality Management (2010). This was updated in 2015.

3.2 Regional Spatial Strategies (RSS)

The Regional Spatial Strategies provided regional level planning frameworks for the regions of England outside London. They were introduced in 2004 and revoked on 6 July 2010. The RSS contained links between the Core Strategy policies of Stoke-on-Trent and the national policies. The Core Strategy has remained as a key policy document even with the revocation of the RSS, as suggested in LTP3.

3.3 Streetcar

The Stoke Streetcar was a proposed bus rapid transit system for the Potteries Urban Area to enhance bus priority along with improvements of stops/interchanges and improved buses. A priority for park & ride was driven based on the programme but the Stoke city council decided to suspend work on the project.

3.4 Local Rail Developments

There has not been any development on the discussed re-opening of the Stoke to Cauldon Rowe rail line apart from the heritage train running between Leekbrook Junction and Cauldon Rowe.

3.5 Regional Growth Fund (RGF)

The Regional Growth Fund (RGF) has supported eligible projects and programmes raising private sector investment to create economic growth and lasting employment.

Stoke-on-Trent and Staffordshire LEP had submitted several bids to this fund (Media Place, Central Business District, East West Phase One, Centre of Refurbishment Excellence, Energy Reduction in Ceramics) yet the RGF was withdrawn in 2021.

3.6 The Hanley to Bentilee Link Road Scheme

The Hanley to Bentilee Link Road is now referred as City East Link Road. A Strategic Outline Case has been submitted to the Department for Transport and the project is to be completed by 2027.

3.7 LTP3 Successes

LTP3 proposed the implementation of schemes for the development and regeneration of the surrounding area. To this day, the below have been completed:

Scheme Name	Year of Completion
City Centre Bus Station	2013
University Boulevard	2013
Crewe to Derby route of North Staffordshire Line (Community Rail Partnership)	
M6 J16 Improvements	2019
A500/A52 City Road Junction Improvement	
A5006 Broad Street/A5010 Marsh Street Junction Improvement	
A5007 City Road/Glebedale Road Junction Improvement	
A5006 Marsh Street/Trinity Street Improvements	
A520 Weston Road/Weston Coyney Road Junction Improvement	2019
A53 Etruria Road/Festival Way Roundabout Improvement - Removal of Bus Lane	
A50 Victoria Road/A52 Leek Road (Joiners Square) Junction Improvement	
A5008 Bucknall New Road Widening	
A50/A500 Safety Schemes	2019
A500 Widening (Porthill to Wolstanton)	2015

3.8 Assessment of delivery of stated LTP objectives

An assessment has been made regarding the relevance of the LTP objectives, the delivery of the stated LTP objectives and their progress from 2011 to 2022. The objectives are valid to this day and this assessment has been made based on the progress of implementation of related schemes indicated in LTP3 as identified through desk-based research.

Determining if the objectives have been met without SMART attributes was challenging. A baseline assessment can provide though a critical reference point for assessing changes, as it establishes a basis for comparing the situation before and after an intervention.

The interventions associated with the objectives are listed in the Table A-1 (see Appendix) and have been assessed based on their delivery (broadly delivered, further work required, limited delivery to date) until 2022. As we do not have data to assess the delivery of the objectives, we have used delivery of interventions as a proxy. A grading system was used to assess the deliverability of each intervention as shown in Table 3.2.1.

Grade	Criteria
Broadly Delivered	Significant changes, measures have been taken to progress with the interventions after the LTP3
Further Work Required	Few measures have been taken to progress with the interventions after the LTP3
Limited Delivery to Date	Limited or no measures have been taken to progress with the interventions after the LTP3

Table 3.2.1 Grading system

The assessment criteria are presented in more detail in Tables 3.2.2 to 3.2.4 for each intervention as well as suggestions for the interventions that need further implementation. It should be mentioned that all the interventions in the table could be delivered and yet the objectives still not be met.

Broadly Delivered	Assessment
Improved legible bus services	City Centre Bus station delivered with improved bus interchange and more modern passenger information, Bus network that has access to key destinations, ongoing introduction of refurbished vehicles, BSIP funding agreed, bus stop spacing, TCF – bus rail interchange, bus priority measures and cross city buses
Produce analysis of development trigger points using NEW NSTMIV model access pain/gain ratios	Creation of a development funding model using NSTM
Continue to work with businesses, schools, hospitals, universities to encourage mode shift for peak hour journeys	SoTCC travel planning team produces a series of travel plans for different trips generators, Smart ticket, student ticket, bike to work scheme
Improve the appearance of the area through maintenance of streets and highways both on and off the main highway	Ongoing maintenance of streets and highways, delivery of University Boulevard, junction and roundabout improvements - A50 Victoria Road/A52 Leek Road (Joiners Square) Junction Improvement
Education, Training, Promotion of safety, including eco-driving, child pedestrian, cyclist, motorcycle training.	Bikeability, school training, student smart ticket (ADD DETAILS), Active travel funding improvements – creation of two major cycling routes in the city - College Rd. and Shelton New Rd.
University Boulevard, school bus provision, student smart offer, diploma smart initiative	Delivery of University Boulevard, Smart ticket initiative, provision of bus pass
Highways to be improved to reflect/ manage demand	Delivery of A53 Etruria Road/Festival Way Roundabout Improvement - Removal of Bus Lane, Etruria Valley Link Road under construction, A50 Victoria Road/A52 Leek Road (Joiners Square) Junction Improvement
Ensure travel plans produces for schools are of a high standard working with planning partners, monitor schools' performance and provide additional support to new schools and academies	Production of school travel plans working with travel planners
Focus improvements on inner urban core	Completed and committed schemes have focused on the inner urban area
Safe routes to schools, travel planning for businesses	Production of ravel plans for schools and businesses
Reduce incidence of vehicle accident disruption to the highway network	DS to comment

Broadly Delivered	Assessment
Ensure highways and footways are in good condition	Ongoing maintenance on highways and footways
Consider public realm in all schemes paying particular attention to footways consider improvements such as tree planting, street de-cluttering, repaving	Public realm strategy, Various public realms improvement in the city centre
Work with operators to invest in cleaner vehicles	Working with bus operators on the delivery of bus retrofitting as part of the Clean Air Plan, ongoing work with the operators as part of the BSIP
Work with designers of new bus station and public transport operators to encourage good pedestrian safety at bus interchanges	Delivery of the City Centre Bus station, ongoing work with the operators as part of the BSIP
Reduce boarding times through off bus ticketing or exact fare only	Contactless payment First Potteries
Improve information of gateways	Map information in the visit stoke website
Ensure bus fleet is low floor. Continue to train drivers in disability awareness	Low-floor bus fleet
Ensure that designs for educational institutions are put forward with an emphasis on safety for pedestrians and cyclists, car drivers should be accommodated away from main entrances, while bus stops should be visible from main entrances/ exits	Lines, signs outside of educational institutions
Ensure that parking lines and signs around schools are enforceable	Lines and signs in numerous spots
Partnership working with Staffs Police/ Fire service and Safer Roads Partnership	Reduction in the number of collisions resulting in injury in Staffordshire and Stoke-on-Trent
Dropped kerbs and consideration of rest locations in public realm schemes	Implemented City Centre public realm improvements
Travel planning initiatives worked into early planning discussions	Already being undertaken
Continuous feedback on appropriate enforcement conditions, maintenance of signs, lines, and checking	SoTCC website
Focus regime on core network and inner urban core neighbourhoods and streets	Main focus on inner urban area

Broadly Delivered	Assessment
Consider improved maintenance regime/ community partnerships to look after bus stops and cycle parking in employment /housing locations – DS to comment	Ongoing liaison with resident associations
Improving appearance of the city and surrounding streets through maintenance of streets, particularly footways.	Ongoing maintenance
Increase maintenance regime in inner urban core and liaise with highways improvement to ensure the use of sustainable/ hardwearing materials	Ongoing maintenance
Maintenance of signs and lines to ensure use of bus lanes and poor parking can be enforced – consider alterations to ensure mobile units can be used	Ongoing maintenance
Maintenance of sign, lines, bus lanes, cyclist, and pedestrian environment	Ongoing maintenance
Emphasis on improving maintenance of streets and walk/cycle routes in inner urban core	Ongoing maintenance
Ensure greenways are clean/free of glass	Ongoing maintenance
Improve maintenance regime for streets in the inner urban core	Ongoing maintenance
Ensure any new routes are linked into the existing network	New cycle routes College Rd. and Shelton New Rd.
Improve pedestrian and cycle accesses to main sites of employment	Active travel Improvements on College Rd. and Shelton New Rd. have improved accessibility to city centre jobs
Maintenance and improvement of walking and cycling	Ongoing maintenance and Active travel Improvements on College Rd. and Shelton New Rd.
Ensure access arrangements are safe and that adequate provision is made for integration of new accesses into main streets and highway network	Ongoing
CCTV at key tourist points – ensure adequate routes and lighting in tourist locations. Maintain car parking facilities that are most likely to be used by visitors to a high standard	Numerous cameras around the city (200)

Broadly Delivered	Assessment
Ensure that development is provided with adequate access	Ongoing as part of planning process
Rigorously observe planning conditions – with links to healthcare	Ongoing, Council obligation

Table 3.2.2 Broadly Delivered Intervention Assessment

Further work required	Assessment	Suggestions
Newer buses	The bus fleet has been historically old comparing poorly to an average age nationally of 8 years[73], bus quality poor. However, some improvements with bus retrofitting as part of the ongoing work for the Clean Air Plan	Working with bus operators to develop green bus strategy, Rollout of new technology and cleaner buses
Concentration of buses close to major employment and housing	Bus services have been reducing pre-pandemic and exacerbated by the pandemic	Continue to work on and implement the bus improvement plan, Northeast of the city is not that well served by the current bus service frequency
Improve bus speeds through the conurbation by selected bus priority	There haven't been any significant improvements currently but are planning to, BSIP and TCF	Implementing the TCF committed schemes following funding
Smarter routes - combinations of improved parking facilities off main highways greater enforcement	Parking sites all around the Potteries way	
Ensure close working with BSF programmes to renew appropriate bus location and divert services and street environment around schools is maintained to a good standard	Birches Head High School and Ormiston Meridian Academy (formerly Sandon high School) are examples of two schools that were refurbished and provided with ICT funding in the area, now offering world-class learning facilities for thousands of children	Further work is needed to inform this through a bus strategy

[73] BSIP, 2021

Further work required	Assessment	Suggestions
Improve local stations, plus bus and other partnership initiatives with Train Operating Companies, improve bus/rail interchange, BRT	Delivery of City Centre Bus station improvement. SoT Railway and Longton interchanges, Secured funding through TCF for SoT Rail-bus interchange improvements	Delivery of Longton and Longport railway interchange improvements, Opening of new railway station at Meir, Delivery of SoT Rail-bus interchange as part of TCF
Improve main gateways: rail station, bus, and coach station.	Delivery of City Centre Bus station improvement. SoT Railway and Longton interchanges, Secured funding through TCF for SoT Rail-bus interchange improvements	Delivery of Longton and Longport railway interchange improvements, Opening of new railway station at Meir, Delivery of SoT Rail-bus interchange as part of TCF
Improve city centre public realm, bus routes and hubs, University Boulevard	Delivery of University Boulevard, Delivery of City Centre Bus station improvement	Ongoing City Centre public realm improvement, Etruscan square, and Smithfield redevelopment to be delivered with public realm improvements
Work with operators to invest in cleaner vehicles. Affordable public transport; ticketing initiatives, access to public transport info	Working with bus operators on the delivery of bus retrofitting as part of the Clean Air Plan, ongoing work with the operators as part of the BSIP, Smart bus ticket, access to live information	Working with bus operators to develop green bus strategy, Rollout of new technology and cleaner buses
Quality Bus Partnership agreement for bus operators to renew fleets/limit age of buses	BSIP makes reference to the Enhanced Partnership	Implementation of the Enhanced Partnership
Smarter routes –	Bus routes connecting main centres	
Encourage fleet replacement to quieter buses, encourage operator to switch off engines when waiting near housing or in high streets		
Safe routes to schools, travel planning for businesses, improve public transport info, develop branded network	Production of travel plans for schools and businesses, Access to live information, rebranding of the bus lines	Implementation of a single bus network brand across operators

Further work required	Assessment	Suggestions
Accessibility mapping part of development analysis	Included in the BSIP, LCWIP	
Emphasis on the developments of coherent links between new facilities and existing streets and public transport	Current planning towards the connection of the town centres. TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd.	Development of a citywide public realm strategy and delivery plan
Partnership working with PCT/LA/NHS to promote improvements to public transport	Health and Wellbeing Strategy (2021 -2025) – lacks focus on transport improvements to access healthcare, Seven primary care networks	Identification of current and future gaps in the public transport network to serve healthcare facilities
Consider drainage in the development of schemes to reduce impacts of poor weather or extreme weather events	Flood risk assessment strategy – already in place	Integrated consideration for sustainable urban drainage as part of any future schemes
Reduce congestion/ improve reliability through better parking enforcement arrangements	City Centre Car parking strategy	Development of citywide car parking strategy and implementation, Consideration of removing parking in central areas or increasing parking charges as well as car-free developments
Introduction of bus priority measures here affordable and deliverable - locations to be agreed with operators and passenger transport team	TCF funding received to implements bus priority measures citywide. Planning the re-introduction of cross-city services offers the long-term potential for operation as a BRT network[74]	Implementation of the TCF bus priority measures, Lessons learnt to be applied to the other bus corridors
Streets and key gateways to be the focus of intensive improvement	TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd.	Ongoing City Centre public realm improvement, Etruscan square, and Smithfield redevelopment to be delivered with public realm improvements,

[74] ibid

Further work required	Assessment	Suggestions
		Delivery of the TCF railway station scheme
Work with partners to improve signing along the canal at railway stations and within town centres	Installation of new Wayfinding signs	Delivery of the Swift house site development between Railway station and the Trent and Mersey Canal, connecting pedestrian routes with tow path and the development site
Enforcements of banned parking/ use of bus lanes by private vehicles	Fine, SoTCC website to report an illegally parked vehicle	Review of potential implementation of red routes
See other improvements – emphasis on pedestrian access to bus stops/ interchange, walking routes and cycling lanes	TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd., currently progressing LCWIP	Preparing active travel schemes in advance of funding bids, Delivery of active travel plan schemes, LCWIP implementation
Create better walking and cycling environment	TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd., currently progressing LCWIP	Preparing active travel schemes in advance of funding bids, Delivery of active travel plan schemes, LCWIP implementation
Ensure that parking restrictions are enforced	Enforcement officers, cameras	Implementation of citywide parking strategy, Review of potential implementation of red routes
Consider renewal of surrounding streets and main pedestrian routes		
Consider setting up travel plan delivery organisation using dev cont.		
Work with job centres to improve awareness of potential bus routes and journey times to access locations provide timetable and bus maps in job centres, offers wheels to work/bike recycling		

Further work required	Assessment	Suggestions
Ensure visit stoke website contains printable and up to date rail and bus timetable and maps	Printable cycling, map with rail and bus sings	Superseded by mobile phone technology
Promotion of ticket initiatives	Smart ticket, student ticket, visit stoke offers	Development of multi-modal and multi-operator ticketing options
Driver/ cyclist training incorporated into travel planning initiatives – BE comment	bikeability	
Intensive walking and cycling promotion activities, learning from cycle stoke successes	Hanley Parkrun, Trentham Gardens Parkrun, Cycle stoke website (currently being rebuilt), Hanley Economic Potters Arf Marathon	Development of the Cycle Stoke website, active travel promotion activities
Loan bike schemes	Bike2work	Consult with local authorities for lessons learnt from implementing cycle hire schemes e.g., TfL, TfWM
Concentrated work with the hospital sites to encourage PT and W/C from day one – BE comment		Identification of current and future gaps in the public transport network to serve healthcare facilities
Consider replacing surface treatments on carriageways with quieter materials – DS to comment		
Encourage people outside through improved maintenance of local streets	TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd., currently progressing LCWIP	Preparing active travel schemes in advance of funding bids, Delivery of active travel plan schemes, LCWIP implementation
Increase maintenance regime on surrounding streets	Ongoing maintenance	Investigate potential for additional highway maintenance funding
Accessibility analysis to be incorporated into development requirements during planning stage – ensure proposed routes are maintained to a good standard	Not currently quantified in the planning process but captured qualitatively	Ensure collaborative work between transport planners and development control officers during planning phase projects, embed the use of TRACC accessibility analysis at the pre

Further work required	Assessment	Suggestions
		application and planning stage for new developments
Bike recycling schemes, continue bike ability training	Bike ability training	
Cycling Promotion: leisurely cycles, tourist focus cycle maps, cycle signing, use of heritage assets – for example heritage museums/ factory shops and bottle kiln bike rides – BE further comments	Cycle stoke website (being rebuilt)	Development of the Cycle Stoke website, active travel promotion activities
Schemes to improve walking and cycling environment	TCF funding for the railway – bus interchange including car-free streets – College Rd. and Station Rd., currently progressing LCWIP	Preparing active travel schemes in advance of funding bids, Delivery of active travel plan schemes, LCWIP implementation
Ensure that locations of bus stop and pick up points are in positions with good sight lines. Consider speed reduction and Speed Indicator Devices (SIDs) in locations around colleges schools and universities	Road safety audits would ensure good sight lines for bus stop locations	
CCTV at stops/ interchanges to improve visitor safety	CCTV at bus stops in 8 streets	Further rollout of CCTV at bus stops (69 locations) as part of the BSIP implementation
Driver training		
Ensure that community facilities are provided with safe walking routes	Some have been provided with safe walking routes	Analysis and identification of unsafe walking routes to be undertaken in order to prioritise funding improvements around community facilities
Work with planning to ensure concentration of development along bus routes	Concentration of development in the inner urban area	Ensure collaborative work between transport planners and development control officers during planning phase projects, Local plan process to give

Further work required	Assessment	Suggestions
		greater importance to existing bus network regarding the location of future developments
Ensure new sites contribute to highway and public transport improvements in order that impacts are mitigated	S106 funding contributions	Develop community infrastructure levy style funding source to ring fence transport infrastructure improvements
Ensure all future developments consider accessibility to main employment sites	Focus on the strategic sites	To be considered within the local plan process
Ensure development delivers high quality environment	Collaboration between developers and various teams including regeneration, planning and transport	Ongoing City Centre public realm improvement, Etruscan square, and Smithfield redevelopment to be delivered with public realm improvements, Delivery of the TCF railway station scheme

Table 3.2.3 Further work required intervention assessment and future suggestions

Limited delivery to date	Assessment	Suggestions
Network Reviews to reduce numbers of similar services	Due to a lack of a bus partnership and the deregulated bus market, there has been a lack of progress	Working with bus operators to develop green bus strategy, Rollout of new technology and cleaner buses
Consider incorporation of electric charging point in central car parks and in new housing developments	Very few EV charging points (2 – city centre)	Need for an EV charging strategy to identify locations of charging points. Preparation of future EV charging funding bids
Eco-driving training promotion	No actions	Promotion and implementation of eco-driving training
Encourage use of sustainable modes (cycling/ walking/ public transport). Share a lift scheme	Limited promoting actions	Car sharing scheme, mobility as a service. Rollout of bike share

Limited delivery to date	Assessment	Suggestions
Consider future electric vehicle charging point in developer applications	Limited number of EV charging points	Need for an EV charging strategy to identify locations of charging points.
Faster public transport, consider introduction of semi-fast routes and develop local and regional rail	Ongoing feasibility and business case development	Feasibility study of Very Light Rail, Increasing the number of rail services between Stoke and Derby and reintroducing passenger services between Leek and SoT
Parking strategies and pricing	Availability of affordable parking across the city, lack of a coherent strategy	Development of citywide car parking strategy and implementation, Consideration of removing parking in central areas or increasing parking charges as well as car-free developments
Work with NHS to generate health benefits evidence for use in promoting walking as beneficial exercise even for those in poor health		
Transport planning teams to produce guidance for developers	Does not exist	Production of transport guidance for developers. This could include a licence fee to gain access and use the NSMM transport model for transport assessments of new developments
Cycle recycling	No actions	Set up a bicycle recycling scheme and/or cycle hire scheme
Raise Passenger Transport profile at Station and entrance points – development of informal park and ride facilities on improved bus routes	No existing bus-based park and ride	Investigation into Mobility Hubs across the city and if viable business case development
Reduce congestion and/or generate greater distance between highways source and sensitive receptors i.e., houses or streets with high pedestrian flows	Limited progress	Implementation of A53 Bus gate, Noise fences, tree planting especially near the SRN

Limited delivery to date	Assessment	Suggestions
Walking and cycling promotion, family rides, walking promoted via FSC, car free days cycle training, travel planning, bike recycling	Limited actions, considered in isolation when funding opportunities arise or as part of major transport projects	Further promotion activities to include family rides, car free days cycle training, travel planning, bike recycling
Publish cycling accessibility plots and provide posters for inside workplaces	Cycle stoke website currently under rebuilding	Move towards cycle app – Strava etc.
Legible bus network, airport-rail link development, improve information or Passenger Transport at these locations	Declining patronage, few information (no real-time information)	Use of HS rail infrastructure to run classic rail passenger services between SoT and Manchester Airport
Electric charging points	Limited number of EV charging points	Need for an EV charging strategy to identify locations of charging points.
Develop straightforward guide to bus services which considers local attractions, place these in printable format on tourist info sites and website and rail station	Visit Stoke website only showing the central bus stop and rail services	Move towards use of apps, Bus stop app based information (Scan sharing).
Increase bus mode share	Declining patronage	Production of bus strategy, rollout of BSIP, delivery of cleaner bus vehicles, implementation of TCF bus priority schemes, introduction of bus taster ticket, renewed travel planning, Enhanced partnership – The SoTCC working closely with operators
Consider more efficient/ hybrid vehicles when purchasing new fleets	No actions	Investigation of the council fleet and of the feasibility either of Electric or Hydrogen network
Parking strategies and pricing. Consider replacing surface treatments on carriageways with quieter materials – DS to comment	Availability of affordable parking across the city, lack of a coherent strategy	Development of citywide car parking strategy and implementation, Consideration of removing parking in central areas or increasing parking charges as well as car-free developments
Ensure that adequate funding is allocated to travel planning initiatives	N/A following austerity is more likely to be conducted to a project-by-project basis	N/A

Limited delivery to date	Assessment	Suggestions
Identify most popular stops and encourage greater community participation in stop design/ maintenance, follow similar approaches as the Community Rail Partnership	Could form part of the BSIP implementation	Promote the formation of a community bus partnership
Consider setting up Travel Planning centres on large employment sites	Redundant given the impacts of commuting and business travel trends after the pandemic (i.e., WfH, online meetings)	N/A
Walking/ Cycling Road shows		

Table 3.2.4 Limited delivery to date intervention assessment and future suggestions

A summary of the assessment is presented on the table below to demonstrate the overall delivery of the objectives.

Economy	**Progress**
Supporting the CS policies to rejuvenate the area including improvements to housing, development of land for employment	Broadly delivered
Supporting existing businesses in maintaining and improving productivity	Broadly delivered
Encouraging educational attainment	Further work required
Increasing the labour pool and widening the job search area	Further work required
Attracting inward investment through improving appearance of the city centre and gateways	Further work required
Supporting the development of the visitor economy	Further work required
Environment	
Improve internal environment through 'place' schemes which manage traffic and enhance pedestrian environments	Broadly delivered
Reduce air pollution	Limited delivery to date
Reduce carbon emissions	Limited delivery to date
Reduce reliance on oil-based transport - increase transport efficiency	Further work required
Reduce noise impacts of transport	Further work required
Health	
Continue to reduce risks of death or serious injuries associated with transport	Broadly delivered
Tackle high numbers of people in ill health and/or claiming incapacity benefits	Further work required
Encouraging use of sustainable modes	Further work required
Reducing obesity in the local population	Further work required
Promote development of community facilities	Further work required
Improve access to healthcare facilities	Further work required

Table 3.2.2 Summary assessment of LTP3 objectives

As shown in the above table, further work is required for most of the objectives.

Conclusions

There is a clear change of governmental direction with key focus on Multi-Modal Hub solutions and Active travel. The policies stated in the LTP review leading to funding are now emphasising decarbonisation, sustainability and demonstrate that a roadbuilding cannot be the only future solution.

The Gear Change fund illustrates this shift by stating that if the schemes funded are not of quality, this will have an impact and limitations on the amount of funds available for highway schemes.

The Local Transport Plan follows this direction with a new focus on the Environment objectives and developing strategies on Ultra-light rail, Multi-modal hub – Park & Ride and Route to Net Zero which will certainly have positive impact on the overall objectives (Economy, Health). There is clearly further work required based on the assessment of the delivery of LTP3 objectives, but it should be mentioned that the document refers to a period until 2026.

In order to reach the LTP3 goals regards to the economic, health and environmental regeneration of the corridor, further work would be required on all levels – public transport, highways/streets, influencing travel behaviour, walking/ cycling, safety, planning integration.

There have been improvements with focus on the highways/streets but there have been very few changes in the rest of the targeted improvements. There is a risk that highway improvement schemes to address existing capacity constraints on the local and strategic highway network could encourage more people to travel by car. Parking pricing structure and taxi fares should be reviewed in order to manage the parking demand while offering incentives for alternative modes. Public transport and active travel interventions should be explored as an alternative to capacity improvement schemes. This will aid the decarbonisation of the transport system across the corridor.

High frequency bus services connecting residents with key opportunities in Stoke on Trent are limited with the south of Stoke on Trent served only with a half hour frequency at best. Punctuality is also below the west midlands average presenting a challenge in terms of providing a reliable service. Patronage levels are low (and patronage decline has been exacerbated by Covid. Bus options that deliver an attractive, high frequency and reliable sustainable transport offer should be explored to create a viable alternative to the private car. There is already planning towards the right direction (BSIP), yet there is room for improvements such as the fleet decarbonisation (cleaner vehicles, hybrid).

Regards to influencing travel behaviour, further work is required towards the promotion and shift towards sustainable travel modes. Numerous events such as group runs are occurring in Stoke-on-Trent, but more is required for human behaviour to adapt to new standards. Bike ability training and bike2work are very helpful but they could only be further encouraged via a safe and an accessible cycling network throughout the area as well as proper training and promotion towards the active lifestyle.

With 18% of Stoke on Trent's residents living within a 15-minute walk of key destinations75, there is opportunity to encourage increased trips on foot particularly along key pedestrian lines located not only in the city centre but in Tunstall and

[75] ONS 2011, Location of usual residence and place of work by method of travel to work WU03UK

Longton[76]. Addressing key barriers such as severance, conflict with vehicular traffic and poor pedestrian environment present key challenges.

There are no cycle routes which allow for direct, segregated cycle journeys between key destinations which would promote commuting by bicycle which is a key weakness. The delivery of Stoke-on-Trent's Local Cycling and Walking Infrastructure Plan (LCWIP) is a key part of improving the active travel network, which will improve connectivity to key employment, education, retail, leisure, and healthcare opportunities and integrate with key public transport interchanges such as Stoke-on-Trent's rail and bus station to make a more integrated transport network.
Building on the existing objectives and interventions, there is great opportunity to significantly improve the profile of sustainable travel further for local trips against key objectives of carbon reduction, air quality improvement, health improvement and equality of access to opportunities such as employment and other key services.

[76] Source: ONS 2011, Distance travelled to work QS702EW

Appendix

The Table A-1 demonstrates whether the schemes associated with each objective have been:

1. Broadly delivered
2. Further work required
3. Limited delivery to date

Table A-1 Assessment of the Economy, Environment and Health interventions

Economy								
Objectives	**Public Transport**	**Highways/Streets**	**Influencing Travel Behaviour**	**Management/ Maintenance**	**Walking/Cycling**	**Safety**	**Planning Integration**	**Assessment**
Supporting the CS policies to rejuvenate the area including improvements to housing, development of land for employment	-Newer buses -Improved legible bus services -Network Reviews to reduce numbers of similar services -Concentration of buses close to major employment and housing	-Produce analysis of development trigger points using NEW NSTMIV model access pain/gain ratios -Consider incorporation of electric charging point in central car parks and in new housing developments	-Travel planning initiatives worked into early planning discussions -Consider setting up travel plan delivery organisation using dev cont.	-Improve the appearance of the area through maintenance of streets and highways both on and off the main highway -Focus improvements on inner urban core	-Accessibility analysis to be incorporated into development requirements during planning stage – ensure proposed routes are maintained to a good standard -Ensure any new routes are linked into the existing network	-Ensure access arrangements are safe and that adequate provision is made for integration of new accesses into main streets and highway network	-Consider future electric vehicle charging point in developer applications -Work with planning to ensure concentration of development along bus routes -Ensure that development is provided with adequate access	Broadly Delivered

Economy								
Objectives	**Public Transport**	**Highways/Streets**	**Influencing Travel Behaviour**	**Management/ Maintenance**	**Walking/Cycling**	**Safety**	**Planning Integration**	**Assessment**
Supporting existing businesses in maintaining and improving productivity	-Improve bus speeds through the conurbation by selected bus priority -Reduce boarding times through off bus ticketing or exact fare only - Smarter routes - combinations of Improved parking facilities off main highways greater enforcement	-Consider drainage in the development of schemes to reduce impacts of poor weather -Reduce congestion/ Improve reliability through better parking enforcement arrangements	-Continue to Work with businesses, schools, hospitals, universities to encourage mode shift for peak hour journeys	-Continuous feedback on appropriate enforcement conditions, maintenance of signs, lines, and checking -Consider drainage in the development of schemes to reduce impacts of extreme weather events -Focus regime on core network and inner urban core neighbourhoods and streets	-Continue to work with businesses, schools, hospitals, universities to encourage mode shift for peak hour journeys -Improve pedestrian and cycle accesses to main sites of employment	-Education, Training, Promotion of safety, including eco-driving, child pedestrian, cyclist, motorcycle training. -Reduce incidence of vehicle accident disruption to the highway network	-Ensure new sites contribute to highway and public transport improvements in order that impacts are mitigated	Broadly Delivered

Economy								
Objectives	**Public Transport**	**Highways/Streets**	**Influencing Travel Behaviour**	**Management/ Maintenance**	**Walking/Cycling**	**Safety**	**Planning Integration**	**Assessment**
Encouraging educational attainment	-University Boulevard, school bus provision, student smart offer, diploma smart initiative -Ensure close working with BSF programmes to renew appropriate bus location and divert services	-Ensure that designs for educational institutions are put forward with an emphasis on safety for pedestrians and cyclists, car drivers should be accommodated away from main entrances, while bus stops should be visible from main entrances/ exits -Ensure that parking lines and signs around schools are enforceable	-Ensure travel plans produces for schools are of a high standard working with planning partners, monitor schools' performance and provide additional support to new schools and academies	-Working with BSF programme to ensure street environment around schools is maintained to a good standard	-Bike recycling schemes, continue bike ability training	-Ensure that locations of bus stop and pick up points are in positions with good sight lines. Consider speed reduction and Speed Indicator Devices (SIDs) in locations around colleges schools and universities		Further work required

Economy								
Objectives	**Public Transport**	**Highways/Streets**	**Influencing Travel Behaviour**	**Management/ Maintenance**	**Walking/Cycling**	**Safety**	**Planning Integration**	**Assessment**
Increasing the labour pool and widening the job search area	-Faster public transport, consider introduction of semi-fast routes and develop local and regional rail -Improve local stations, plus bus and other partnership initiatives with Train Operating Companies, improve bus/rail interchange, BRT	-Introduction of bus priority measures here affordable and deliverable - locations to be agreed with operators and passenger transport team	-Work with job centres to improve awareness of potential bus routes and journey times to access locations provide timetable and bus maps in job centres, offers wheels to work/bike recycling	-Consider improved maintenance regime/ community partnerships to look after bus stops and cycle parking in employment /housing locations	-Bike recycling, Bike ability training	-Identify most popular stops and encourage greater community participation in stop design/ maintenance, follow similar approaches as the Community Rail Partnership	-Ensure all future developments consider accessibility to main employment sites -Transport planning teams to produce guidance for developers	Further work required
Attracting inward investment through improving appearance of the city centre and gateways	-Improve main gateways: rail station, bus, and coach station. Improve city centre public realm, bus routes and hubs, University Boulevard -Raise Passenger Transport profile at Station and entrance points – development of informal park and ride facilities on improved bus routes	- Highways to be improved to reflect/ manage demand -Streets and key gateways to be the focus of intensive improvement		-Increase maintenance regime in inner urban core	-Maintenance and improvement of walking and cycling	-CCTV at stops/ interchanges to improve visitor safety -CCTV at key tourist points – ensure adequate routes and lighting in tourist locations. Maintain car parking facilities that are most likely to be used by visitors to a high standard		Further work required

Economy								
Objectives	**Public Transport**	**Highways/Streets**	**Influencing Travel Behaviour**	**Management/ Maintenance**	**Walking/Cycling**	**Safety**	**Planning Integration**	**Assessment**
Supporting the development of the visitor economy	-Improve information of gateways -Legible bus network, airport-rail link development, improve information or Passenger Transport at these locations -Develop straightforward guide to bus services which considers local attractions, place these in printable format on tourist info sites and website and rail station	-Work with partners to improve signing along the canal at railway stations and within town centres	-Ensure visit stoke website contains printable and up to date rail and bus timetable and maps	-Improving appearance of the city and surrounding streets through maintenance of streets, particularly footways.	-Cycling Promotion: leisurely cycles, tourist focus cycle maps, cycle signing, use of heritage assets – for example heritage museums/ factory shops and bottle kiln bike rides	-CCTV at stops/ interchanges to improve visitor safety -CCTV at key tourist points – ensure adequate routes and lighting in tourist locations. Maintain car parking facilities that are most likely to be used by visitors to a high standard		Further work required

Environment								
Objectives	Public Transport	Highways/Streets	Influencing Travel Behaviour	Management/Maintenance	Walking/Cycling	Safety	Planning Integration	Assessment
Improve internal environment through 'place' schemes which manage traffic and enhance	-Work with operators to invest in cleaner vehicles.	-Consider public realm in all schemes paying particular attention to footways consider improvements such		-Increase maintenance regime in inner urban core and liaise with highways improvement to				Broadly Delivered

pedestrian environments		as tree planting, street de-cluttering, repaving		ensure the use of sustainable/ hardwearing materials				
Reduce air pollution	-Work with operators to invest in cleaner vehicles. Affordable public transport; ticketing initiatives, access to public transport info -Quality Bus Partnership agreement for bus operators to renew fleets/limit age of buses	-Parking strategies and pricing -Reduce congestion and/or generate greater distance between highways source and sensitive receptors i.e., houses or streets with high pedestrian flows	-Safe roads to schools, travel planning for businesses to encourage commuter mode shift -Eco-driving training promotion. -Consider more efficient/ hybrid vehicles when purchasing new fleets	-Maintenance of signs and lines to ensure use of bus lanes and poor parking can be enforced – consider alterations to ensure mobile units can be used	-Safe routes to schools, travel planning -Increase walking and cycling through ensuring better environment for these modes and intensive walking and cycling promotion activities, learning from cycle stoke successes	-Encourage use of sustainable modes (cycling/ walking/ public transport)		Limited delivery to date
Reduce carbon emissions	-Work with operators to invest in cleaner vehicles. Affordable public transport; ticketing initiatives, access to public transport info	-Parking strategies and pricing -Electric charging points -Parking enforcement to reduce congestion cause by inappropriate parking	-Safe roads to schools, travel planning for businesses -Promotion of ticket initiatives - Eco-driving training promotion		-Safe routes to schools, travel planning	-Encourage use of sustainable modes (cycling/ walking/ public transport). Share a lift scheme	-Ensure new developments incorporate robust travel plans -Charging points need to be considered in new housing developments	Limited delivery to date
Reduce reliance on oil-based transport - increase transport efficiency	-Work with operators to invest in cleaner vehicles -Smarter routes	-Parking strategies and pricing -Enforcements of banned parking/ use of bus lanes by private vehicles	-Safe roads to schools, travel planning for businesses to encourage commuter mode shift	-Maintenance of sign, lines, bus lanes, cyclist, and pedestrian environment	-Safe routes to schools, travel planning	-Encourage use of sustainable modes (cycling/ walking/ public transport). Share a lift scheme -Reduce incidence of vehicle accident		Further work required

			-Eco-driving training promotion. -Consider more efficient/ hybrid vehicles when purchasing new fleets			disruption to the highway network		
Reduce noise impacts of transport	-Encourage fleet replacement to quieter buses, encourage operator to switch off engines when waiting near housing or in high streets	-Parking strategies and pricing. Consider replacing surface treatments on carriageways with quieter materials		-Consider replacing surface treatments on carriageways with quieter materials				Further work required

Health								
Objectives	Public Transport	Highways/Streets	Influencing Travel Behaviour	Management/Maintenance	Walking/Cycling	Safety	Planning Integration	Assessment
Continue to reduce risks of death or serious injuries associated with transport	-Work with designers of new bus station and public transport operators to encourage good pedestrian safety at bus interchanges	-Partnership working with Staffs Police/ Fire service and Safer Roads Partnership	-Driver/ cyclist training incorporated into travel planning initiatives	-Ensure highways and footways are in good condition	-Ensure highways and footways are in good condition	-Education, Training, Promotion of Safety		Broadly delivered
Tackle high numbers of people in ill health and/or claiming incapacity benefits	-Ensure bus fleet is low floor. Continue to train drivers in disability awareness	-Dropped kerbs and consideration of rest locations in public realm schemes	-Work with NHS to generate health benefits evidence for use in promoting walking as beneficial exercise	-Encourage people outside through improved maintenance of local streets	-Ensure highways and footways are in good condition	-CCTV at major interchanges -Driver training		Further work required

Health								
Objectives	Public Transport	Highways/Streets	Influencing Travel Behaviour	Management/Maintenance	Walking/Cycling	Safety	Planning Integration	Assessment
			even for those in poor health -Walking and cycling promotion, family rides, walking promoted via FSC, car free days cycle training, travel planning, bike recycling					
Encouraging use of sustainable modes	-Safe routes to schools, travel planning for businesses, improve public transport info, develop branded network	-See other improvements – emphasis on pedestrian access to bus stops/ interchange, walking routes and cycling lanes	-Safe routes to schools, travel planning for businesses	-Emphasis on improving maintenance of streets and walk/cycle routes in inner urban core -Ensure greenways are clean/free of glass	-Walking/ Cycling Road shows -Publish cycling accessibility plots and provide posters for inside workplaces	-CCTV at stops/ interchanges -Consider inserting power points for mobile CCTV masts at locations on greenway or at neighbourhood stops		Further work required
Reducing obesity in the local population job search area	-Increase bus mode share	-Create better walking and cycling environment	-Intensive walking and cycling promotion activities, learning from cycle stoke successes -Loan bike schemes -Cycle recycling facility	-Improve maintenance regime for streets in the inner urban core	- Intensive walking and cycling promotion activities, learning from cycle stoke successes -Schemes to improve walking and cycling environment	-Safe routes to schools, expand to safe routes to workplaces	-Ensure development delivers high quality environment	Further work required
Promote development of community facilities	-Accessibility mapping part of development analysis	-Accessibility mapping part of development analysis	-Consider setting up Travel Planning centres on large employment sites			-Ensure that community facilities are provided with safe walking routes	-Ensure that adequate funding is allocated to travel planning initiatives	Further work required

Health								
Objectives	Public Transport	Highways/Streets	Influencing Travel Behaviour	Management/Maintenance	Walking/Cycling	Safety	Planning Integration	Assessment
	-Emphasis on the developments of coherent links between new facilities and existing streets and public transport	-Emphasis on the developments of coherent links between new facilities and existing streets and public transport						
Improve access to healthcare facilities	-Partnership working with PCT/LA/NHS to promote improvements to public transport	-Ensure that parking restrictions are enforces -Consider renewal of surrounding streets and main pedestrian routes	-Concentrated work with the hospital sites to encourage PT and W/C from day one	-Increase maintenance regime on surrounding streets	- Concentrated work with the hospital sites to encourage PT and W/C from day one		-Rigorously observe planning conditions – with links to healthcare	Further work required

Appendix E

Accessibility Mapping

To determine the level of accessibility in the city through active travel and public transport modes, the accessibility analysis software, TRACC, was utilised. TRACC, developed by Basemap, uses imported data to run multi-modal journey time calculations to produce isochrone maps of journey times from selected destinations.

Seven destinations were selected for the accessibility mapping, named below:

- City Centre (Hanley),
- Stoke-on-Trent Rail Station,
- Etruria Valley Enterprise Zone (EVEZ),
- Trentham Lakes / Sideway Employment Zone (TL)
- Royal Stoke University Hospital (RSUH)
- Longton
- Tunstall

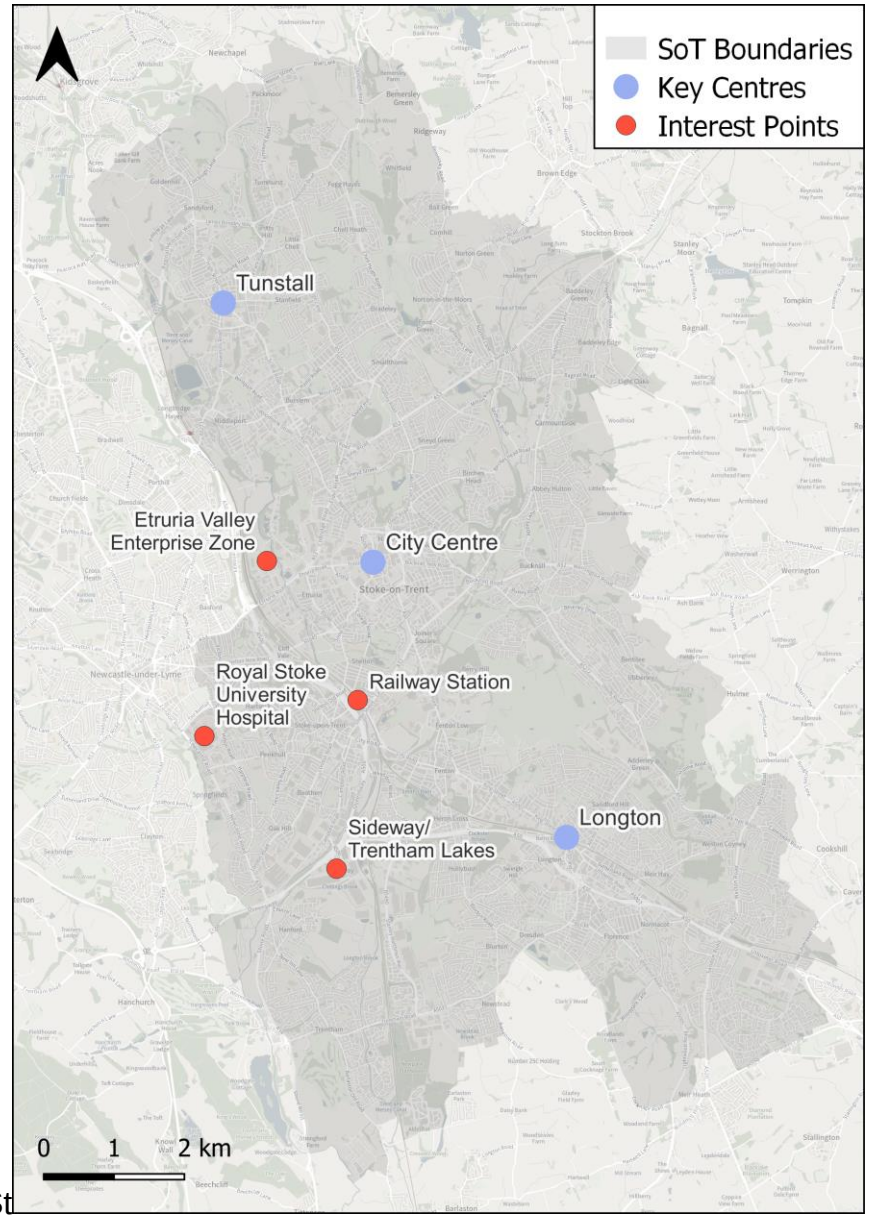


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Figure A.1 The 7 key destinations

Three forms of accessibility mapping were undertaken for each of these destinations:

- 30-minute active travel journey time catchment,
- 60-minute public transport (bus and rail modes) journey time catchment
- 60-minute car journey time catchment

For the public transport calculations, maps were produced for the AM, Inter Peak and PM peak periods to ascertain any potential differences in catchments during this period.

Active Travel accessibility

City Centre (Hanley)

From the City Centre (Hanley), both Stoke-on-Trent Rail Station and EVEZ are within a 10-minute cycle. TL and RSUH are accessible within 20 minutes. Each of the five

other towns are within a 30-minute cycle, with other locations, including Newcastle under Lyme and Kidsgrove also falling within the catchment.

Stoke-on-Trent Rail Station

As with the City Centre (Hanley), each of the six locations fall within a 30-minute cycle of Stoke-on-Trent Rail Station. City Centre (Hanley) is within a 10-minute cycle, with the other three selected locations within a 20-minute cycle. Additional locations within 30 minutes of the site include Newcastle-Under-Lyme and areas of Blythe Bridge.

Etruria Valley Enterprise Zone

As seen in the Appendix in Figure A.6, both Stoke-on-Trent Rail Station and City Centre (Hanley) are accessible by bicycle within 10 minutes from EVEZ. RSUH lies within 20 minutes and TL between 20 and 30 minutes. Each of the five remaining towns also fall within 30 minutes. Newcastle Under Lyme, Keele University, and southern areas of Kidsgrove are also accessible.

Trentham Lakes / Sideway Employment Zone

Due to the southern location of the site, Tunstall falls outside the 30-minute cycle catchment. Stoke-on-Trent Rail Station lies within 10 minutes of the site, with the other three locations accessible within 20 minutes. Burslem and Longport form the northern boundary of the site, Blythe Bridge the eastern, Stone the southern, and Keele University the western.

Royal Stoke University Hospital

Areas within 10 minutes of RSUH include Newcastle under Lyme, Hartshill and Clayton, with each of the four remaining selected locations within 20 minutes of the site. All of the six towns are within the 30 minutes, however, due to the western location of the site, both Tunstall and Longton lie on the catchment boundary.

Longton

Trentham Lakes / Sideway Employment Zone falls within a 10-minute cycle from the site of Longton, with Stoke-on-Trent Rail Station and the City Centre (Hanley) both included in the 20-minute catchment shown in Figure A.7. Less accessible locations of EVEZ and Royal Stoke University Hospital are less than a 30-minute cycle with Tunstall out-with the cycling catchment altogether. Milton to the north, Blythe Bridge in the east, Moddershall to the south and Newcastle-under-Lyme form the boundaries of the cycling catchment.

Tunstall

The northern-most site of Tunstall includes EVEZ and City Centre (Hanley) in the 20-minute cycling catchment, with Royal Stoke University Hospital and
Stoke-on-Trent Rail Station falling within a 30-minute journey. Trentham Lakes / Sideway Employment Zone and Longton are narrowly out-with a 30-minute journey by

bicycle. Buddulph is the northern-most boundary of Tunstall, with Baddeley Green in the east, Springfields in the south and Audley to the west of the site.

The 30-minute active travel catchment maps are displayed in the Appendix in Figures A.2 to A.8

Public Transport accessibility

The 60-minute public transport maps are displayed in the Appendix in Figure A.9 through to A.29**,** with summaries for each site provided below.

City Centre (Hanley)

City Centre (Hanley) offers the greatest accessibility of all sites by bus mode due to the presence of the area's primary bus station within the boundaries of the site. Within 60 minutes of the site, Leek, Cheadle and Stafford are all accessible by bus. By rail, the catchment extends to include southern areas of Greater Manchester, Crewe and Uttoxeter.

Stoke-on-Trent Rail Station

The accessibility maps indicate that a broad range of destinations lie within 60 minutes of Stoke-on-Trent Rail Station, with each of the six towns accessible within 20 minutes. Locations accessible by bus within 60 minutes include Alsager, Madeley Heath, Froghall and Stone. By train the catchment expands substantially with Macclesfield, Stafford, Crewe, Uttoxeter and suburban areas of Manchester all within 60 minutes.

Etruria Valley Enterprise Zone

From EVEZ, Newcastle Under Lyme, Stoke-on-Trent and City Centre (Hanley) are all accessible via a 20-minute public transport journey. Burslem, Tunstall, Fenton and Longton are all located within the 20-to-40-minute journey time catchment. The 60-minute catchment extends to include Stafford, Crewe and Alsager.

Trentham Lakes / Sideway Employment Zone

Accessibility by public transport from the site is primarily focused southwards with Stone and Stafford within a 60-minute journey. Five of the six towns lie within the catchment, with Tunstall falling outside of it. Travel by rail extends the catchment to the north with Crewe, Kidsgrove and Alsager all within 60 minutes.

Royal Stoke University Hospital

From the RSUH site, Newcastle Under Lyme, Stoke-on-Trent, and Fenton are all accessible within 20 minutes. Stone, Kidsgrove and Blythe Bridge lie within 40 minutes of the site and Macclesfield, Crewe and Uttoxeter are within 60 minutes.

Longton

South of the site are Stone and Uttoxeter, both accessible within a 60-minute bus journey. EVEZ and Stoke-on-Trent Rail Station are a 20-minute trip from Longton, with the remaining sites all falling within the 60-minute catchment. Alsager and Crewe are accessible by rail within a 40-minute journey during the PM peak period.

Tunstall

Within a 20-minute public transport journey of Tunstall are the towns of Newcastle-under-Lyme and Kidsgrove. Keele University, Buddulph and Longton are all accessible in 60 minutes by bus. By rail, Poynton and Macclesfield to the north, Longton to the south and Crewe to the west are all within the catchment area.

Cycling

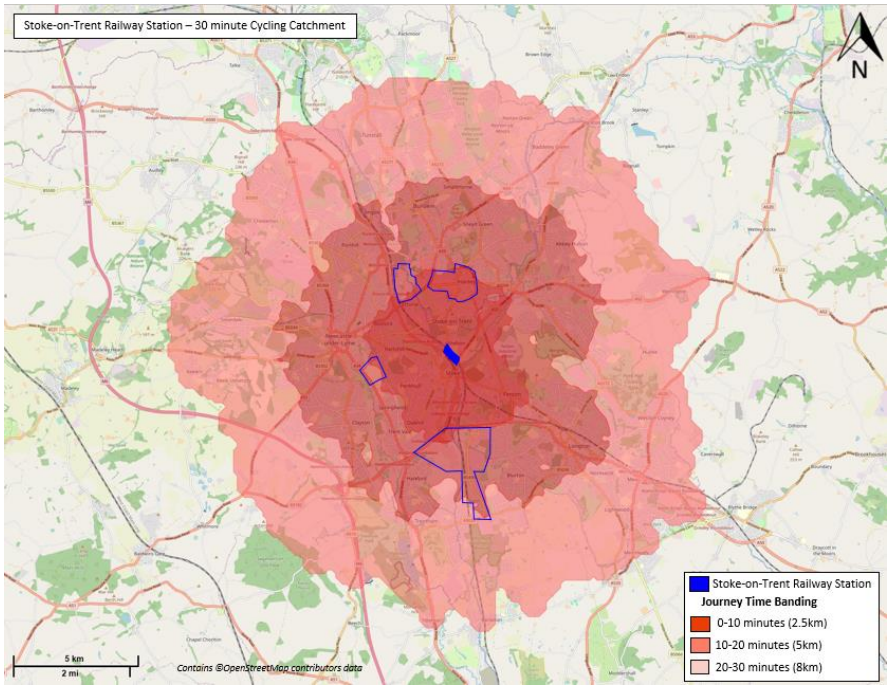

Figure A.2 Stoke-on-Trent Railway Station

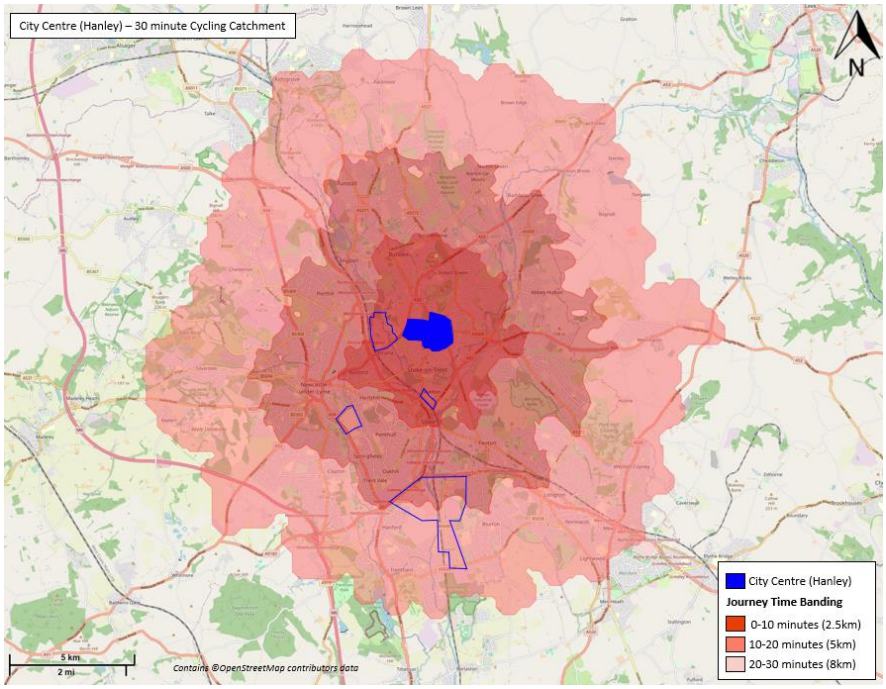

Figure A.3 City Centre (Hanley)

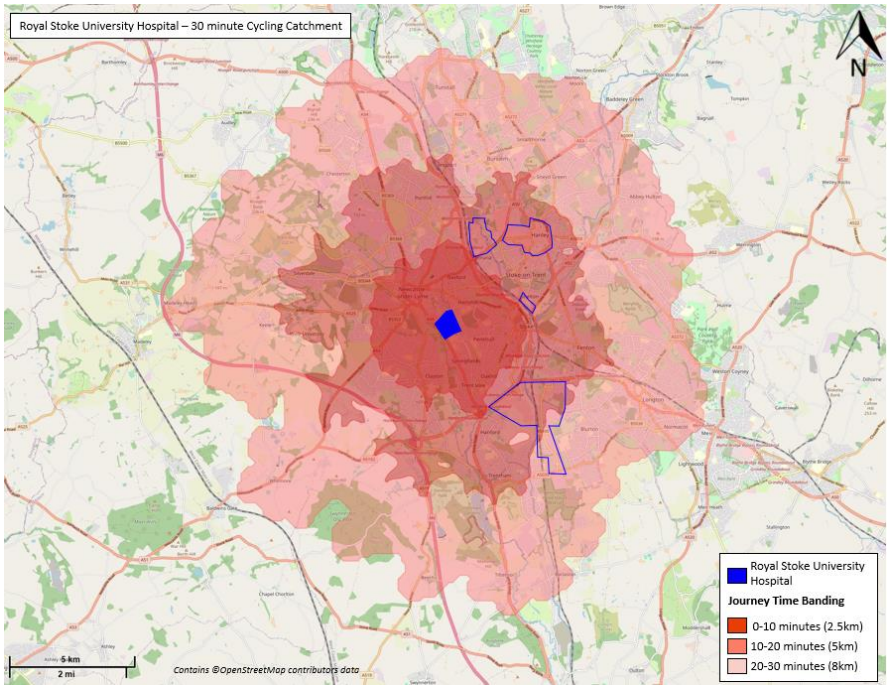

Figure A.4 Royal Stoke University Hospital

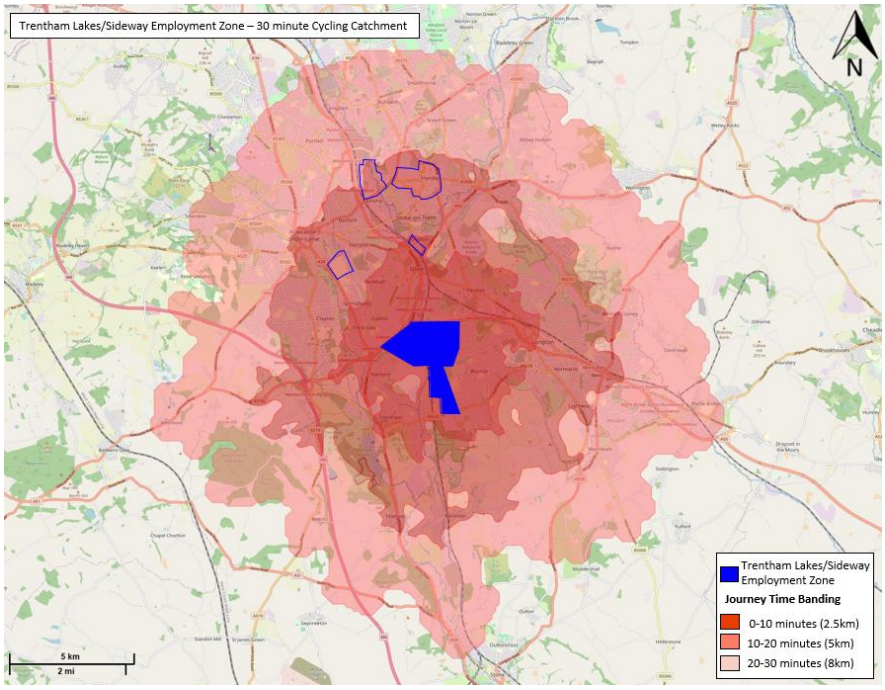

Figure A.5 Trentham Lakes/Sideway Employment Zone

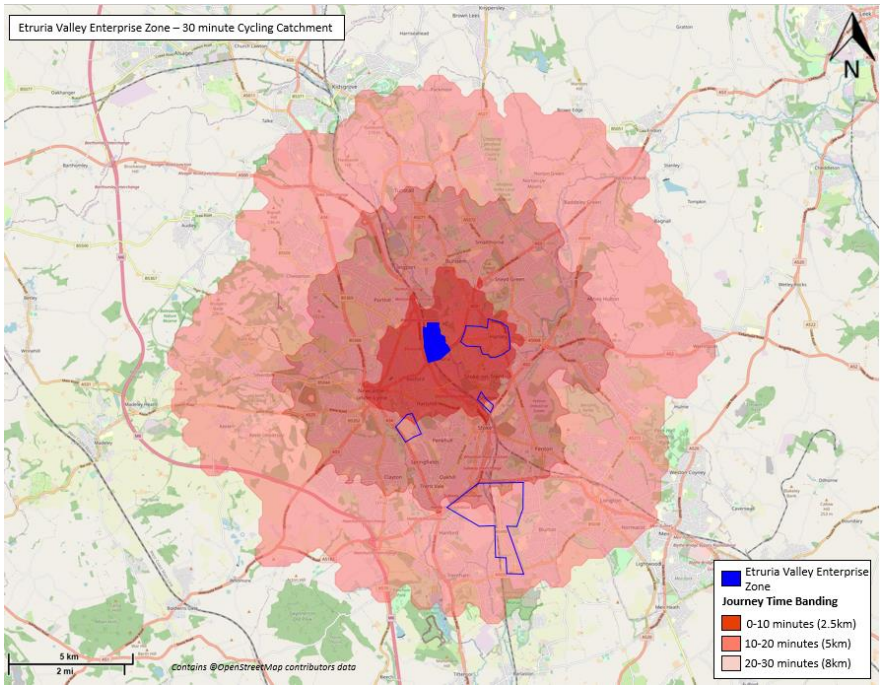

Figure A.6 Etruria Valley Enterprise Zone

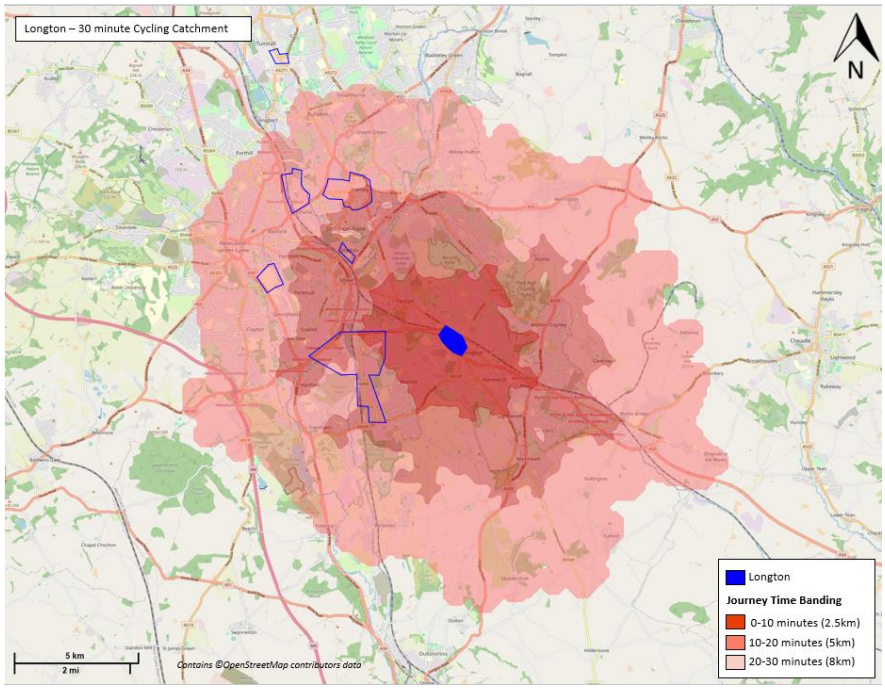

Figure A.7 Longton

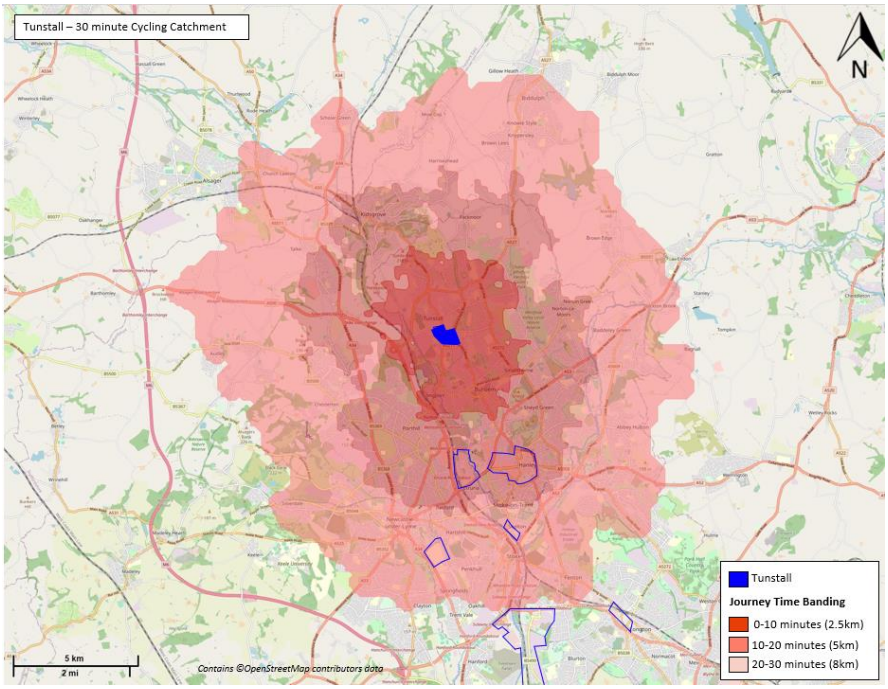

Figure A.8 Tunstall

Public Transport

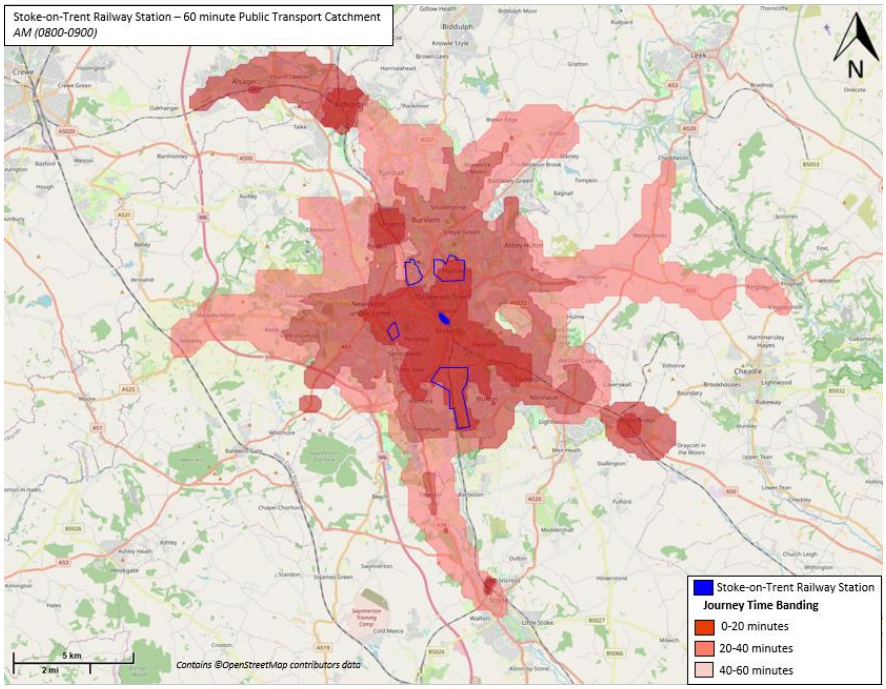

Figure A.9 Stoke-on-Trent Railway Station AM (0800-0900)

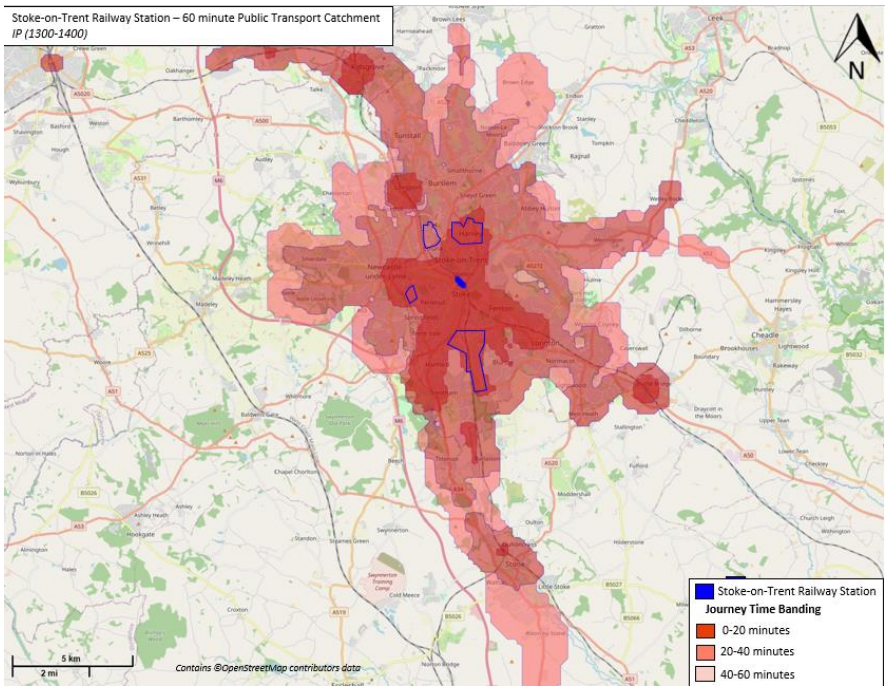

Figure A.10 Stoke-on-Trent Railway Station IP (1300-1400)

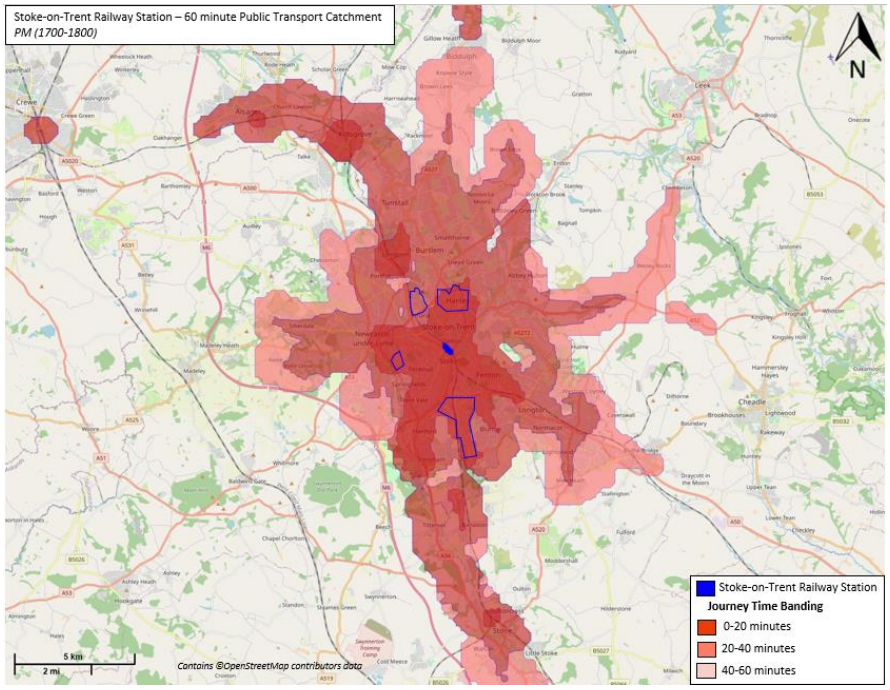

Figure A.11 Stoke-on-Trent Railway Station PM (1700-1800)

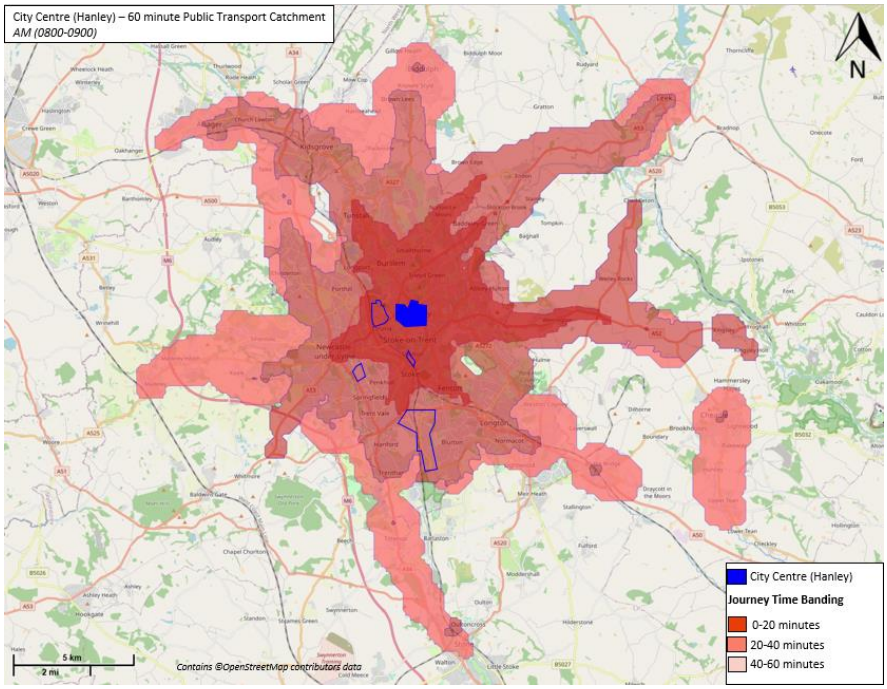

Figure A.12 City Centre (Hanley) AM (0800-0900)

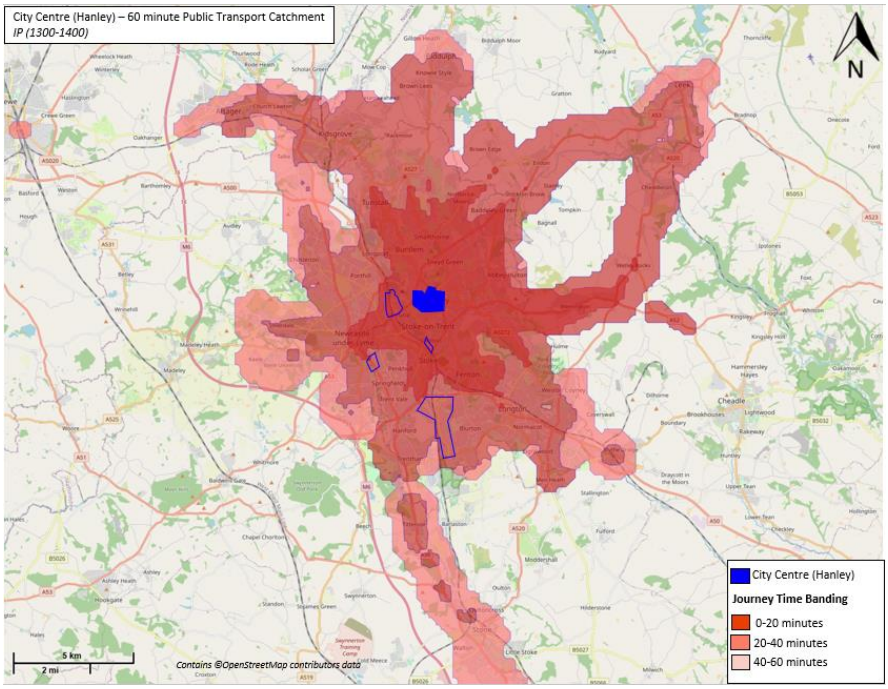

Figure A.13 City Centre (Hanley) IP (1300-1400)

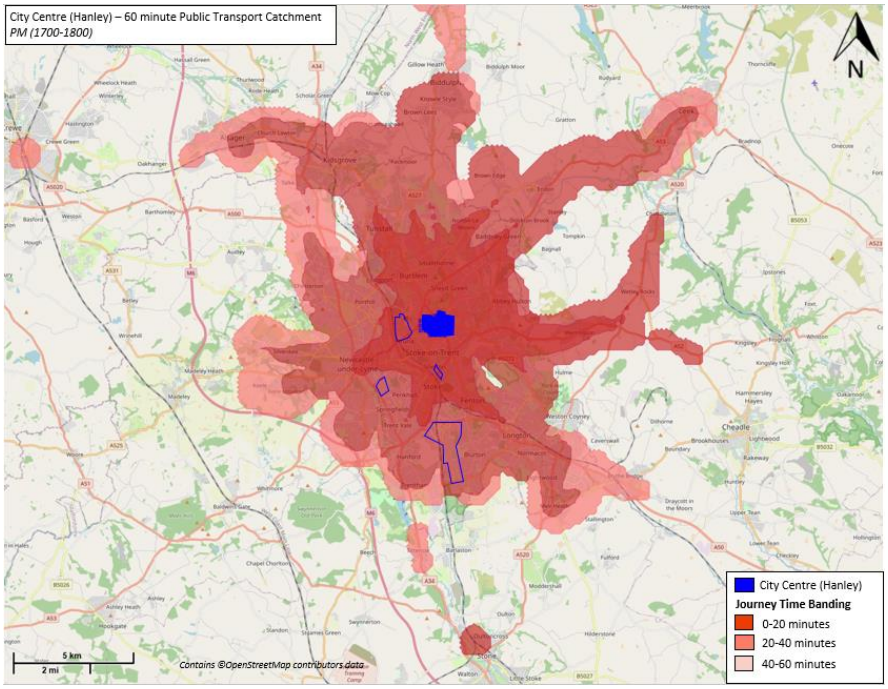

Figure A.14 City Centre (Hanley) PM (1700-1800)

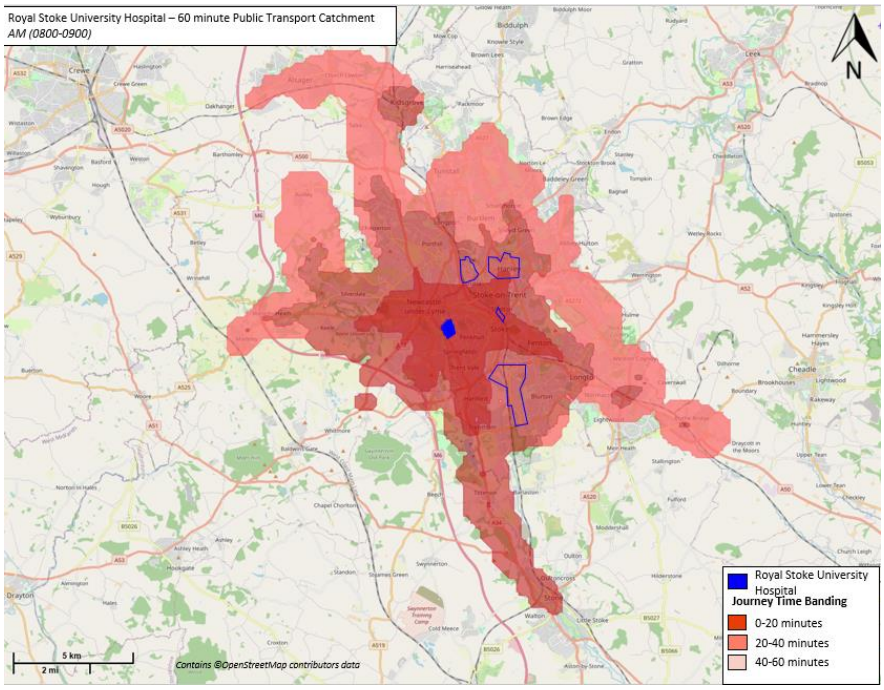

Figure A.15 Royal Stoke University Hospital AM (0800-0900)

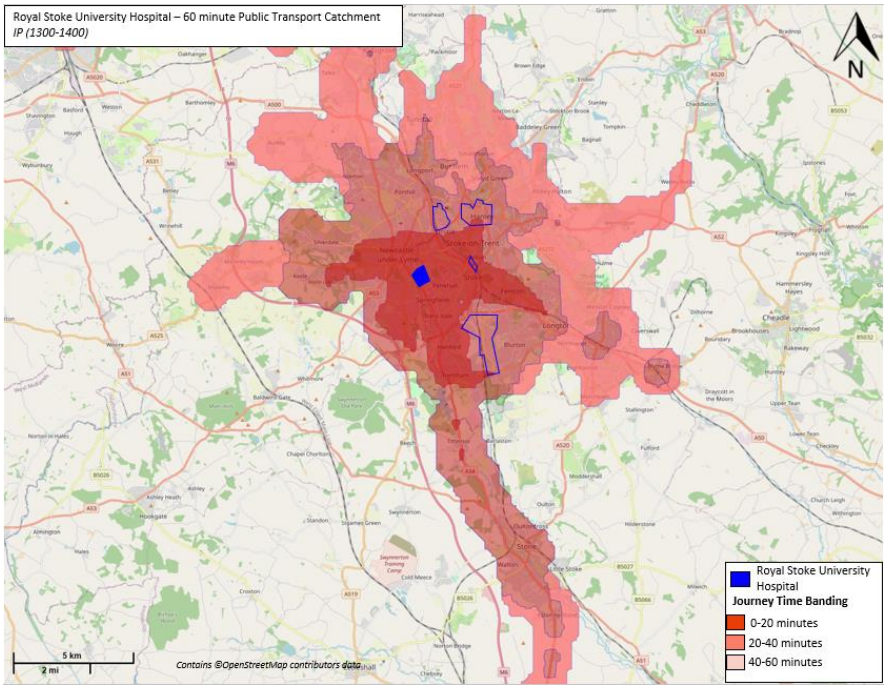

Figure A.16 Royal Stoke University Hospital IP (1300-1400)

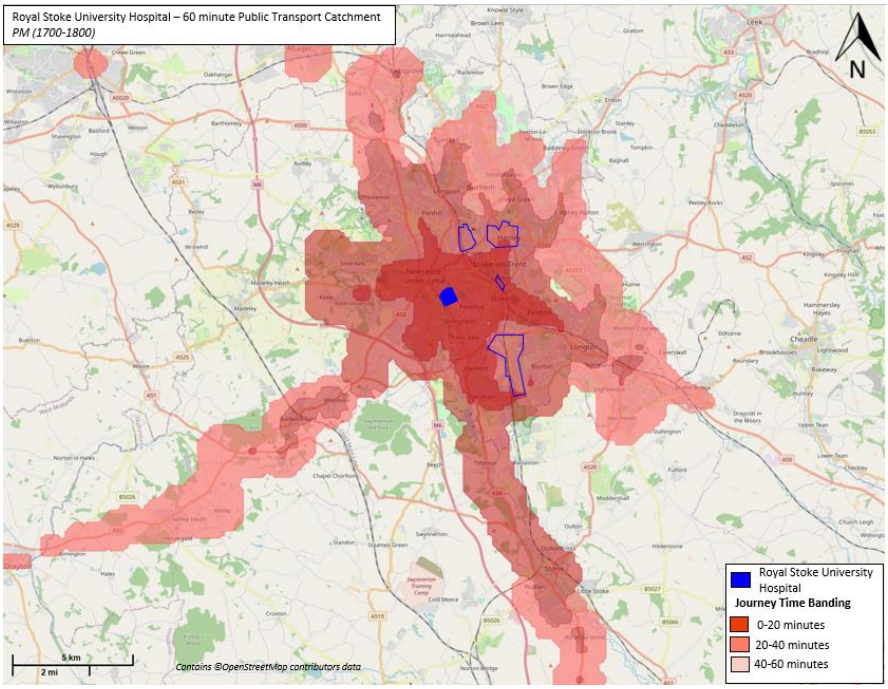

Figure A.17 Royal Stoke University Hospital PM (1700-1800)

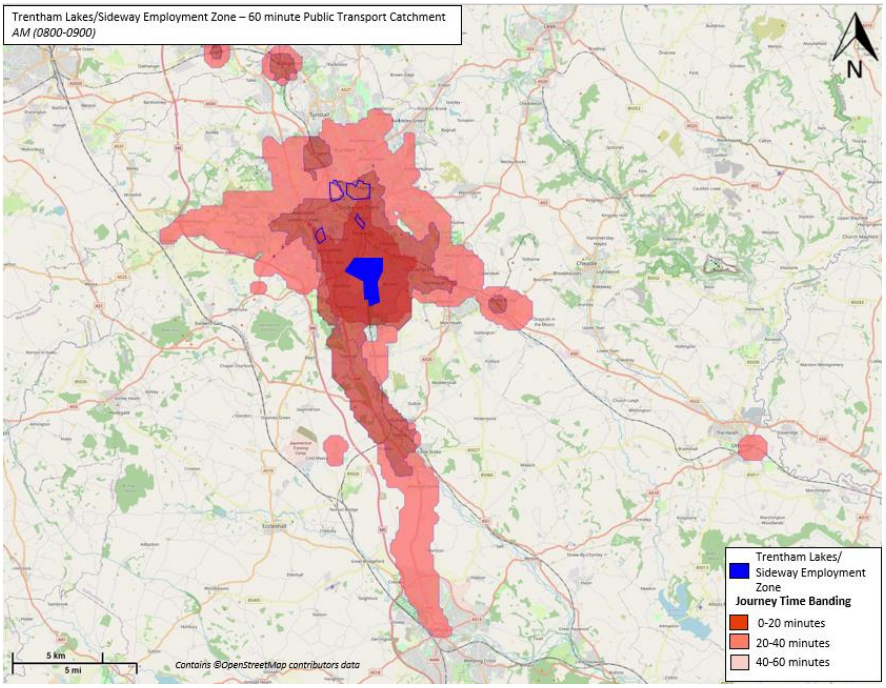

Figure A.18 Trentham Lakes/Sideway AM (0800-0900)

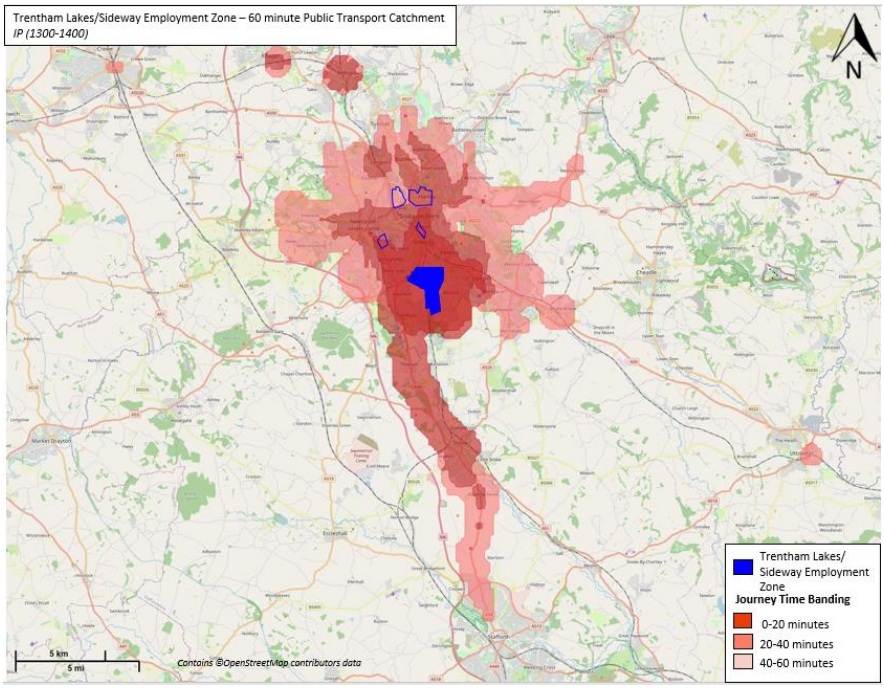

Figure A.19 Trentham Lakes/Sideway IP (1300-1400)

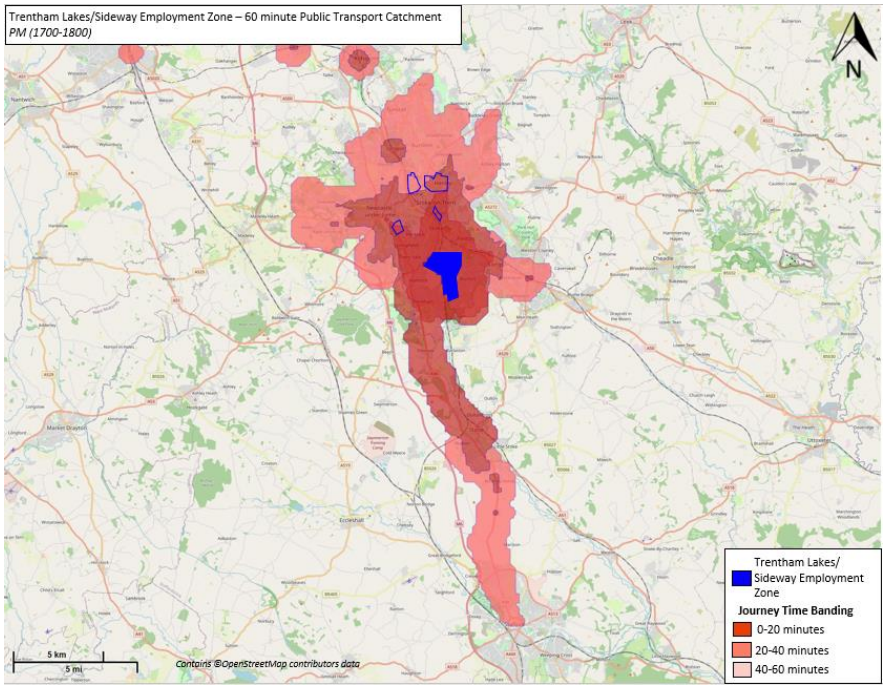

Figure A.20 Trentham Lakes/Sideway PM (1700-1800)

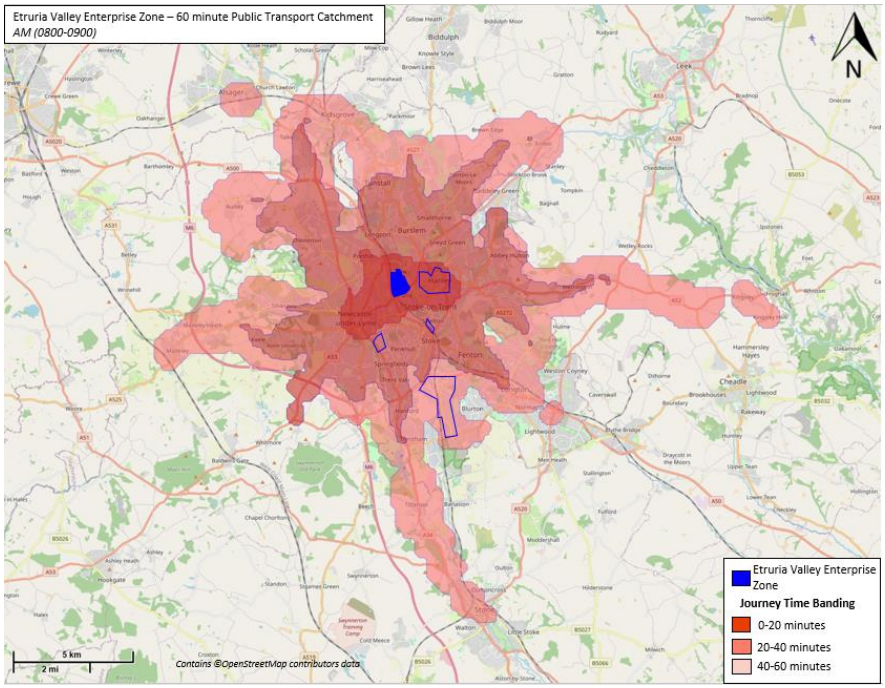

Figure A.21 Etruria Valley Enterprise Zone AM (0800-0900)

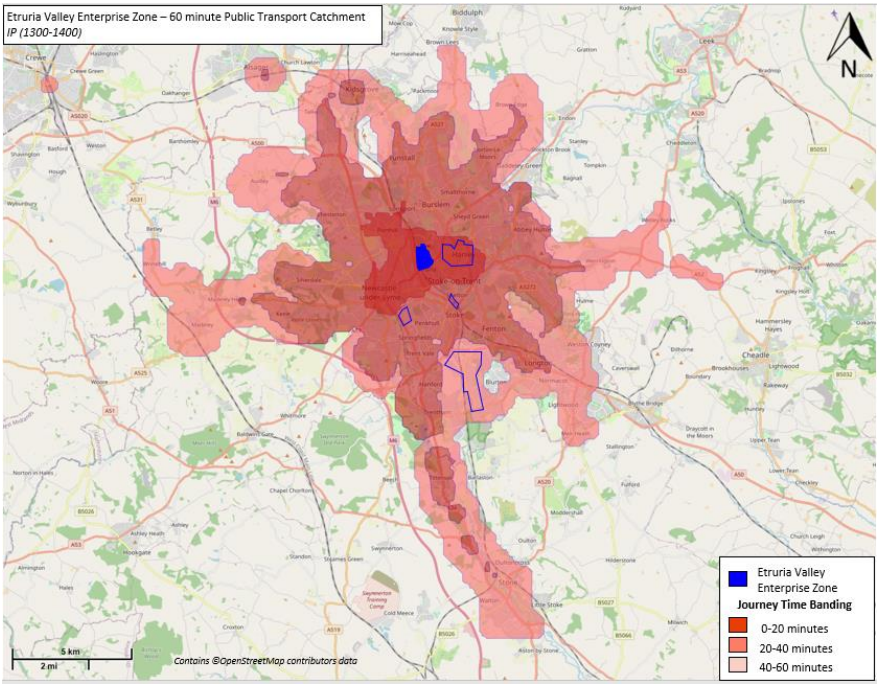

Figure A.22 Etruria Valley Enterprise Zone IP (1300-1400)

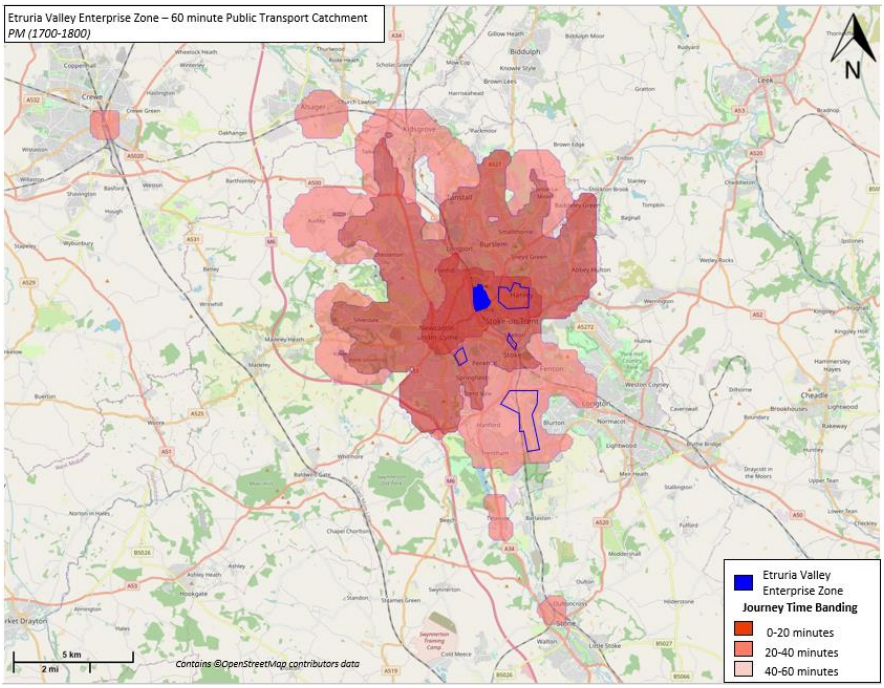

Figure A.23 Etruria Valley Enterprise Zone PM (1700-1800)

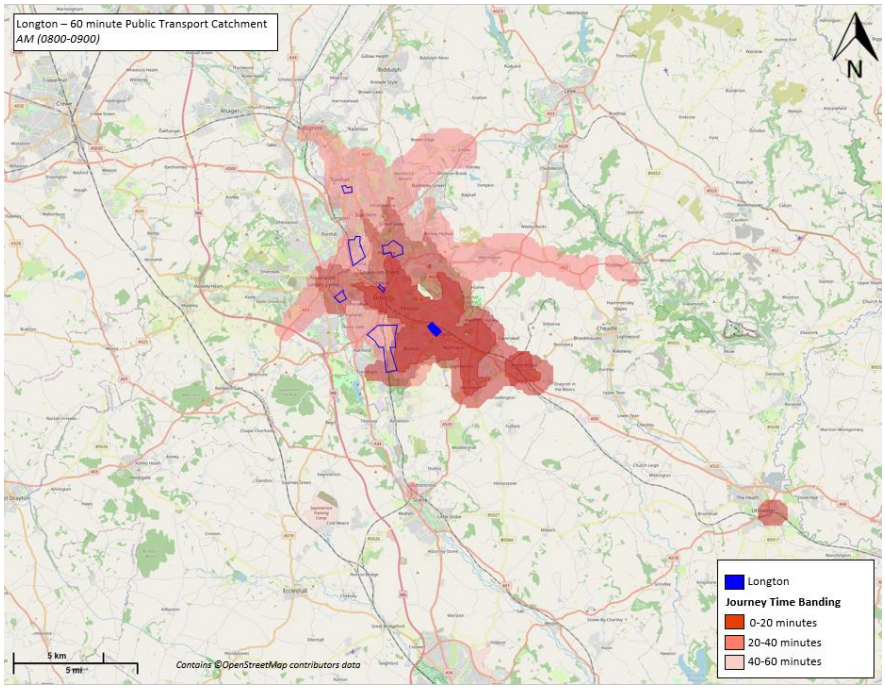

Figure A.24 Longton AM (0800-0900)

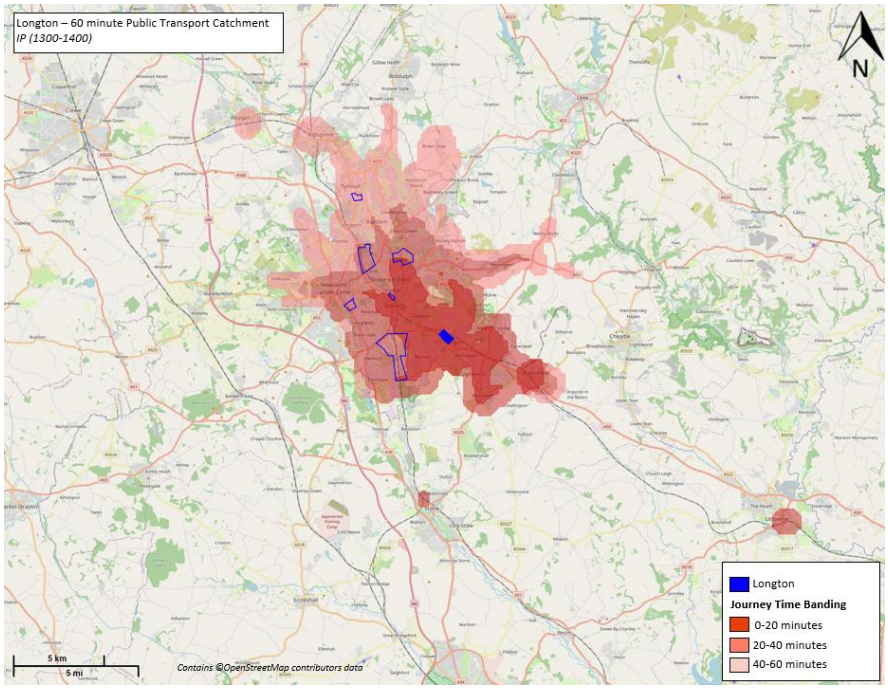

Figure A.25 Longton IP (1300-1400)

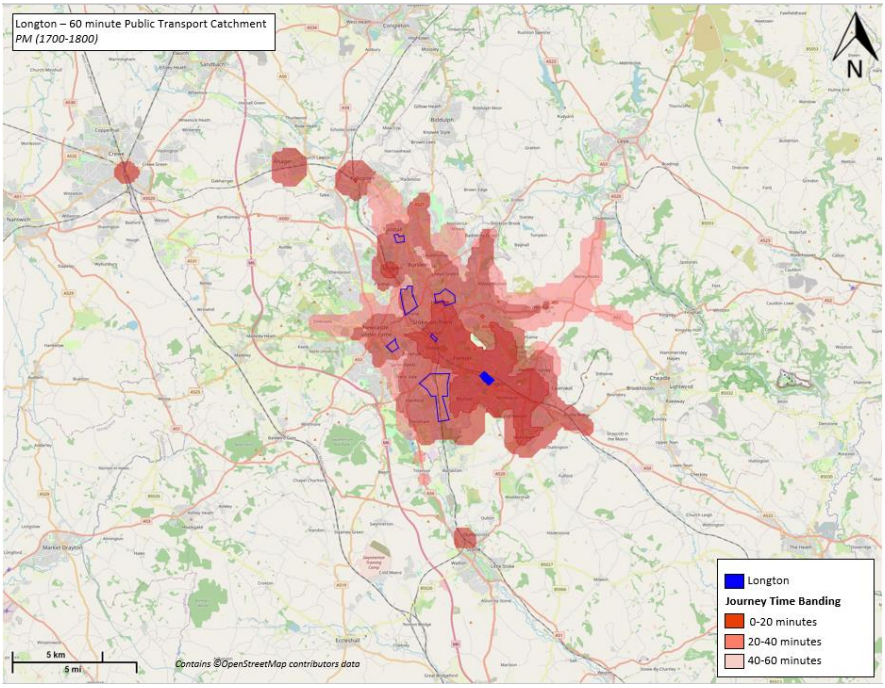

Figure A.26 Longton PM (1700-1800)

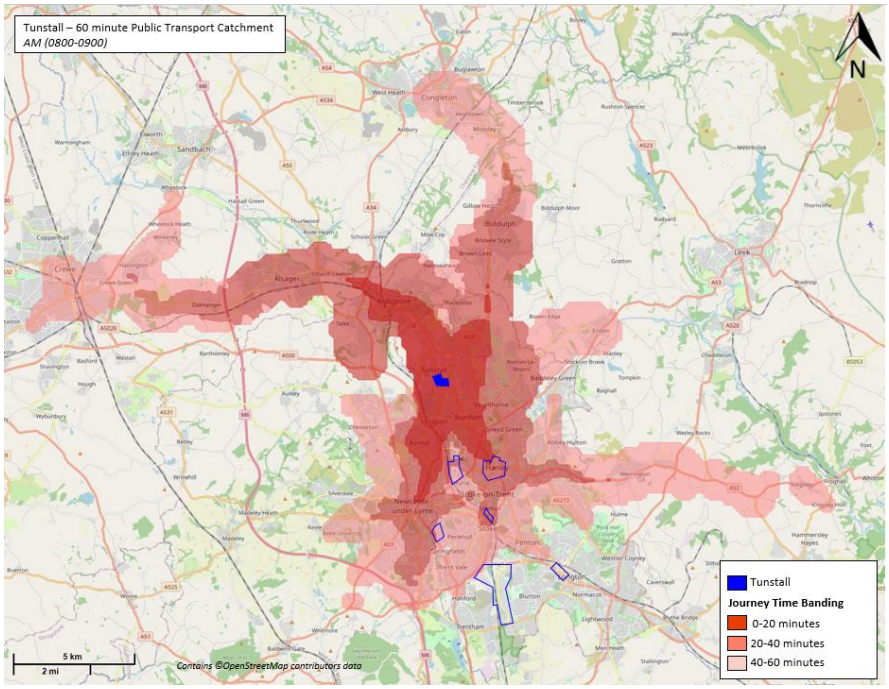

Figure A.27 Tunstall AM (0800-0900)

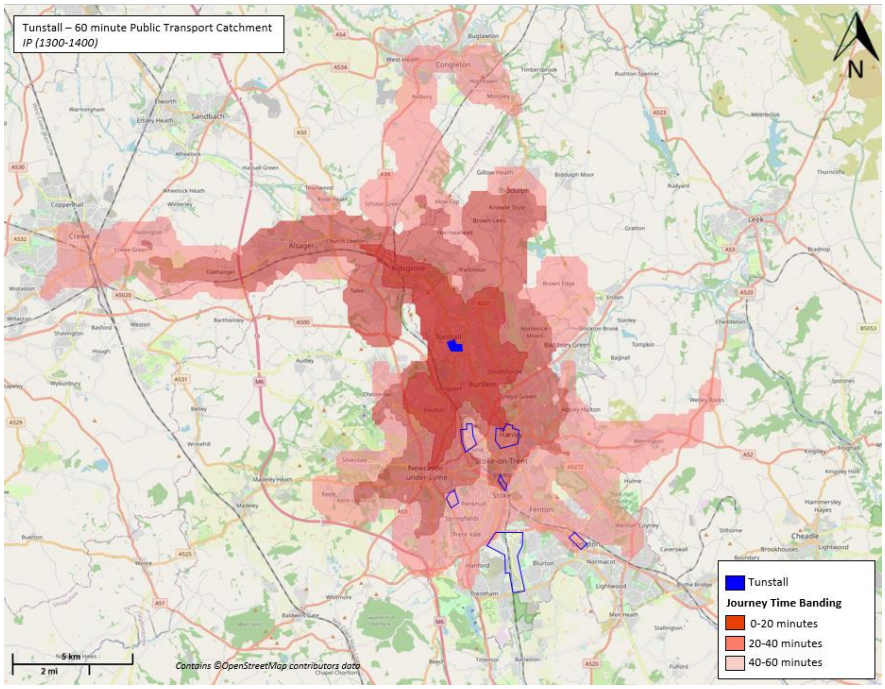

Figure A.28 Tunstall IP (1300-1400)

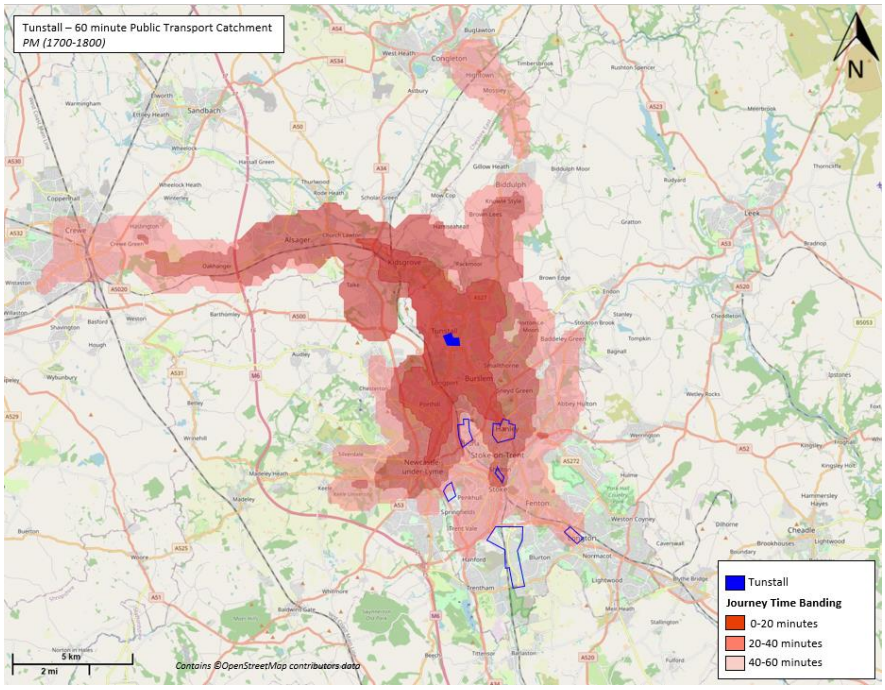

Figure A.29 Tunstall PM (1700-1800)

Car

The 60-minute accessibility maps for journeys made by car are shown in Figure A.30 through to Figure A.3.6. In summary, the 7 sites are all within 60 minutes of other major cities including Liverpool, Manchester, Birmingham and Nottingham Individual summaries for each site follow. It should be noted that all journey times are assumed to be during Inter Peak periods with the absence of congestion.

From the City Centre (Hanley), as shown in Figure A.30, Leyland, south of Preston, is the northernmost town within a 60-minute car journey from the city centre, with Nottingham the most eastern. Bromsgrove forms the southernmost extent and Wrexham, the westernmost. From Stoke-on-Trent railway station, the journey time catchment is largely identical, with the eastern extent of the catchment extending to Long Eaton instead of Nottingham. This is shown in Figure A.31.

Bromsgrove in the south and Wrexham once again in the west. Chorley, Long Laton, Bromsgrove and Llangollen are all a 60-miunte journey from EVEZ, as seen in Figure A.32.

Due to the southern location of Trentham Lakes compared to the other sites, the southern extent of the 60-minute catchment has extended south, with Droitwich Spa and northern areas of Worcester accessible. This is shown in Figure A.33.

Figure A.34 shows the catchment area for the Royal Stoke University Hospital. It shows that to the north, Leyland, Long Laton in the east, Droitwich Spa in the South and Wrexham to the west are all within the catchment area.

From Longton, as seen in Figure A.35, the northernmost destination that can be reached within 60 minutes is Wigan. Nottingham in the east, areas of Worcestershire to the south, and the eastern extents of Wales in the west all fall within the catchment.

Tunstall, as seen in Figure A.36 is the northernmost site, with the northern extents of the catchment extending to Preston.

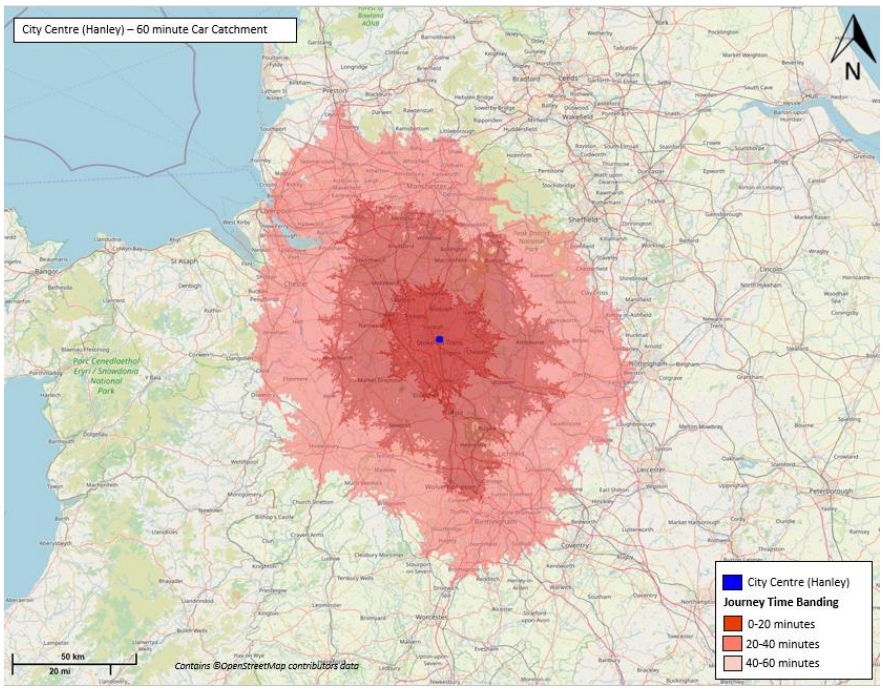

Figure A.30 City Centre (Hanley)

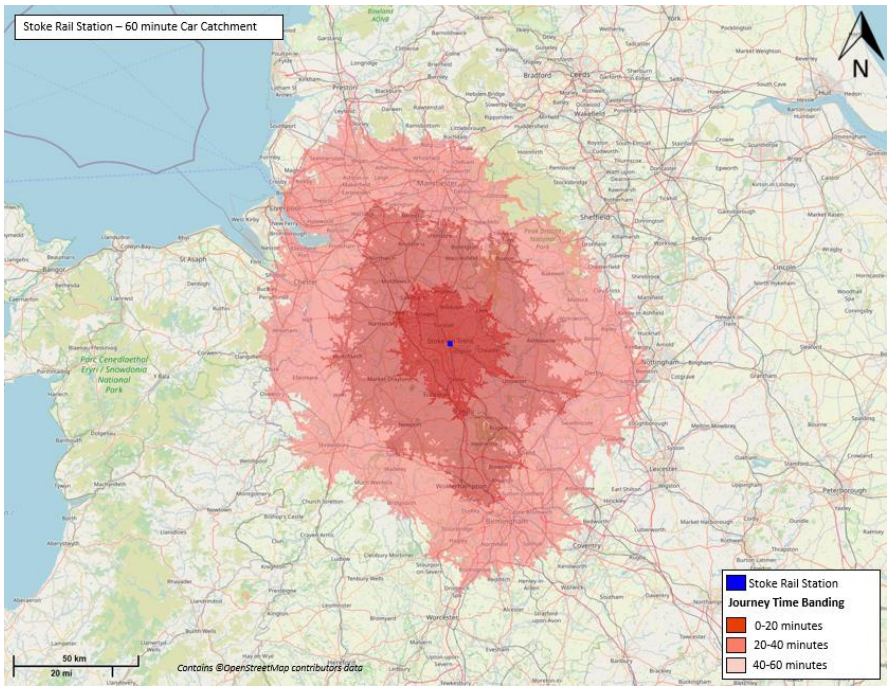

Figure A.31 Stoke-on-Trent Railway Station

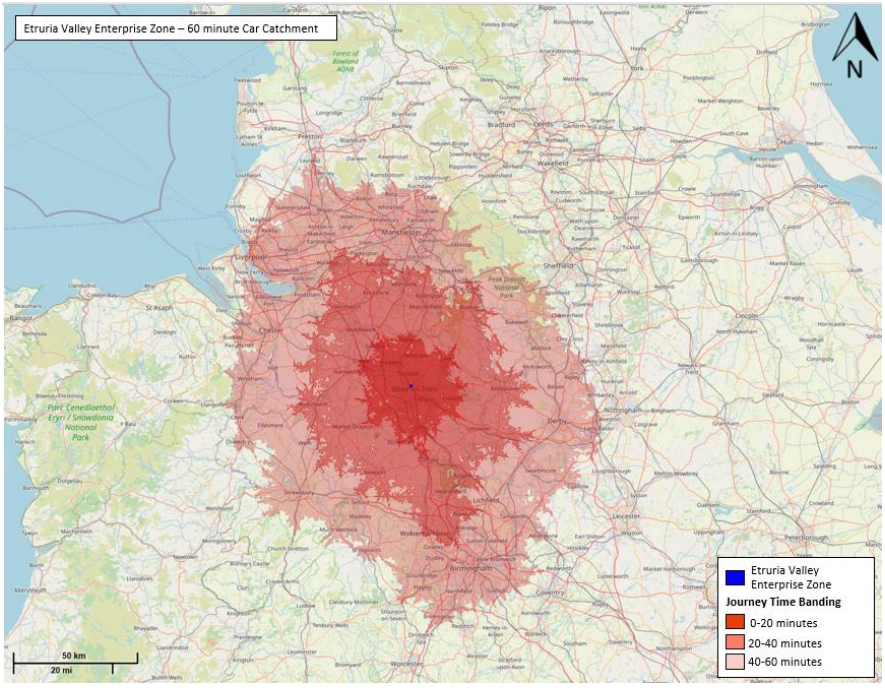

Figure A.32 Etruria Valley Enterprise Zone

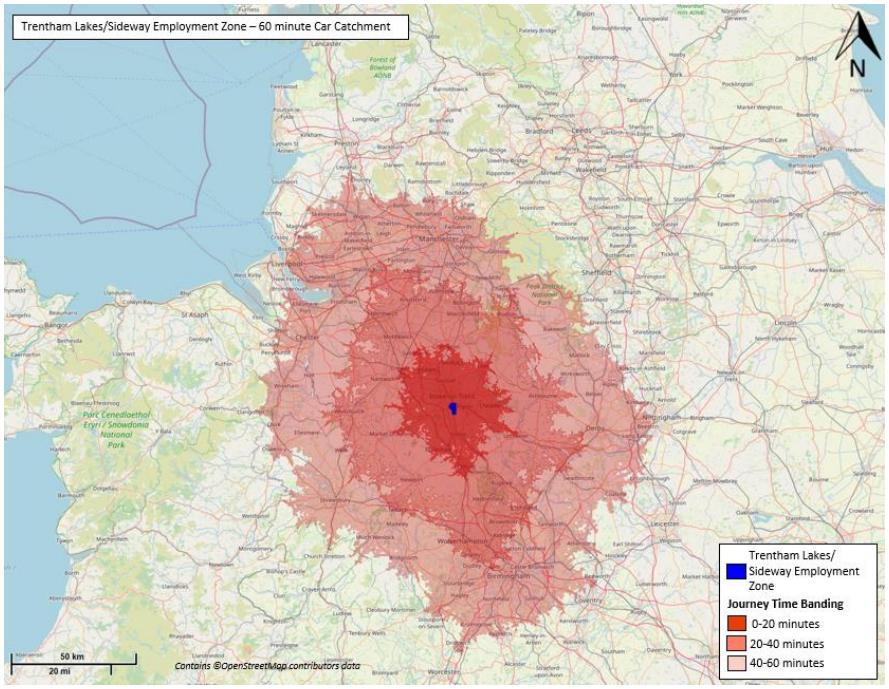

Figure A.33 Trentham Lakes / Sideway Employment Zone

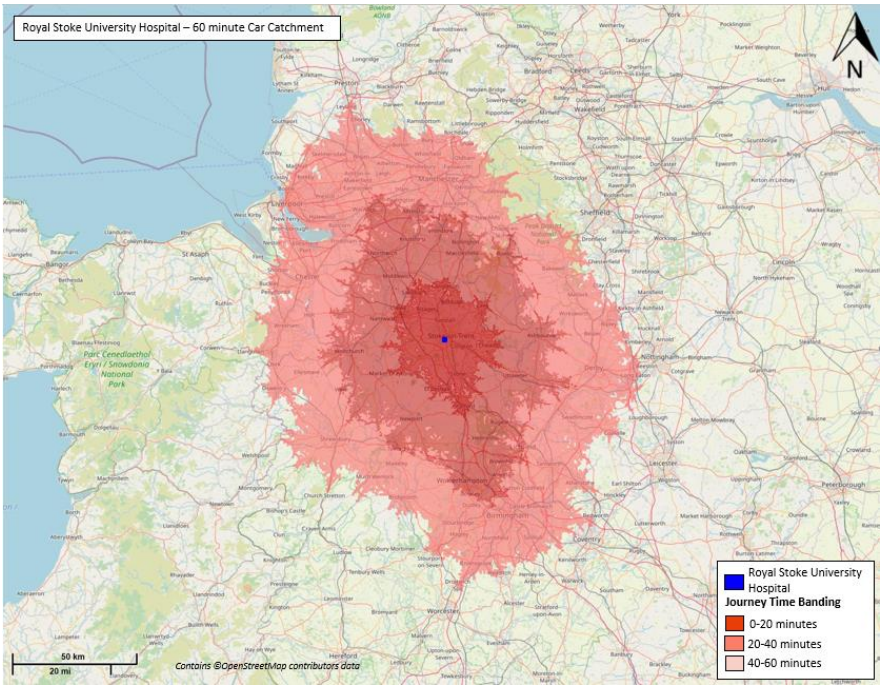

Figure A.34 Royal Stoke University Hospital

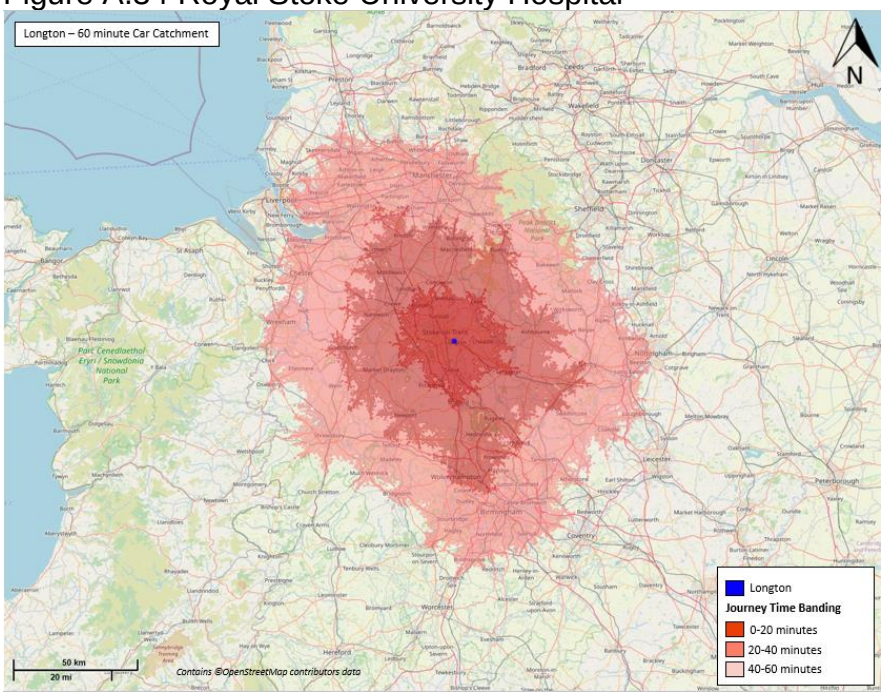

Figure A.35 Longton

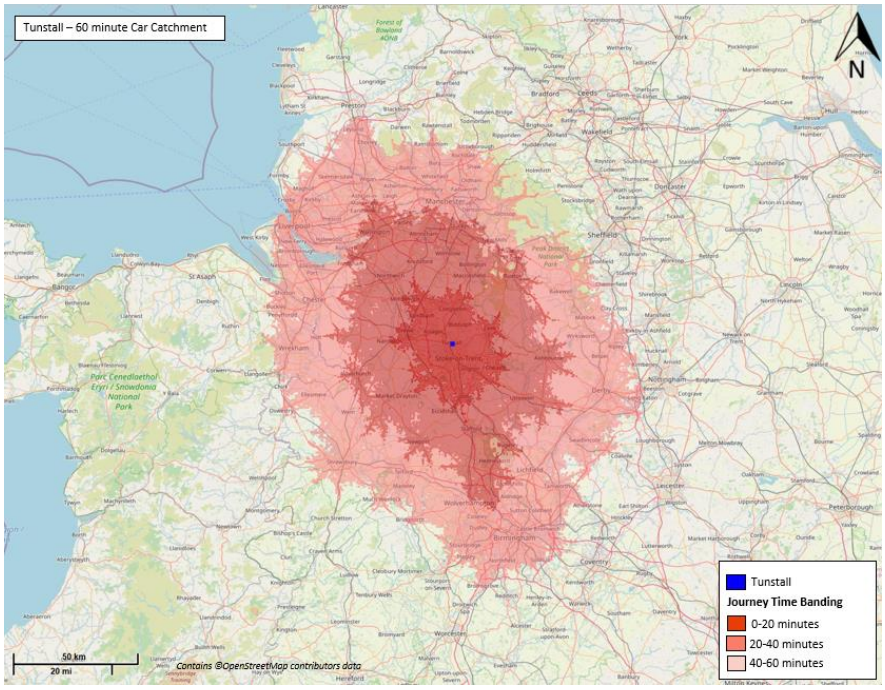

Figure A.36 Tunstall

Appendix F

Bus Network Frequency

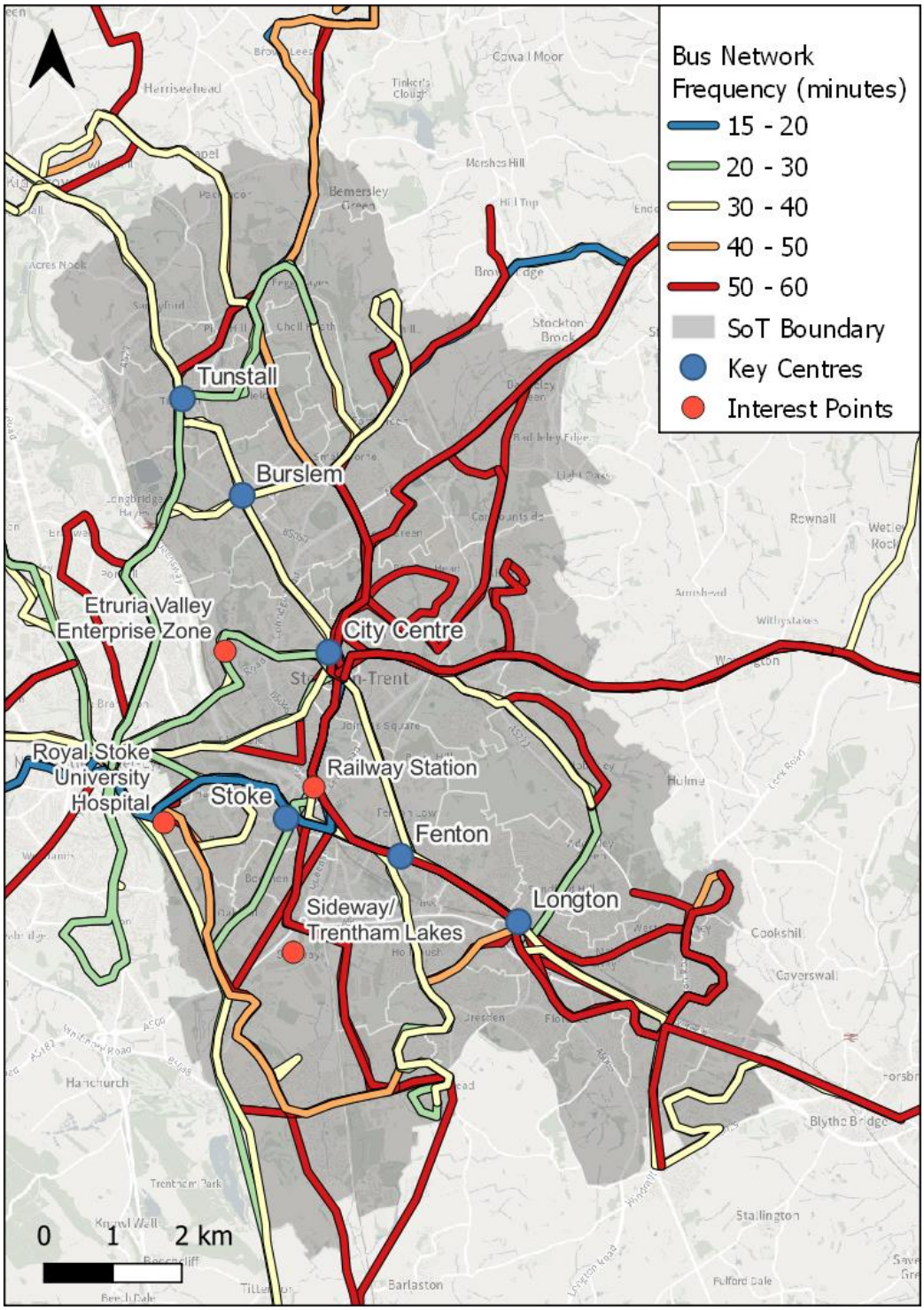

Figure B.2 Bus Network Frequency (AM)

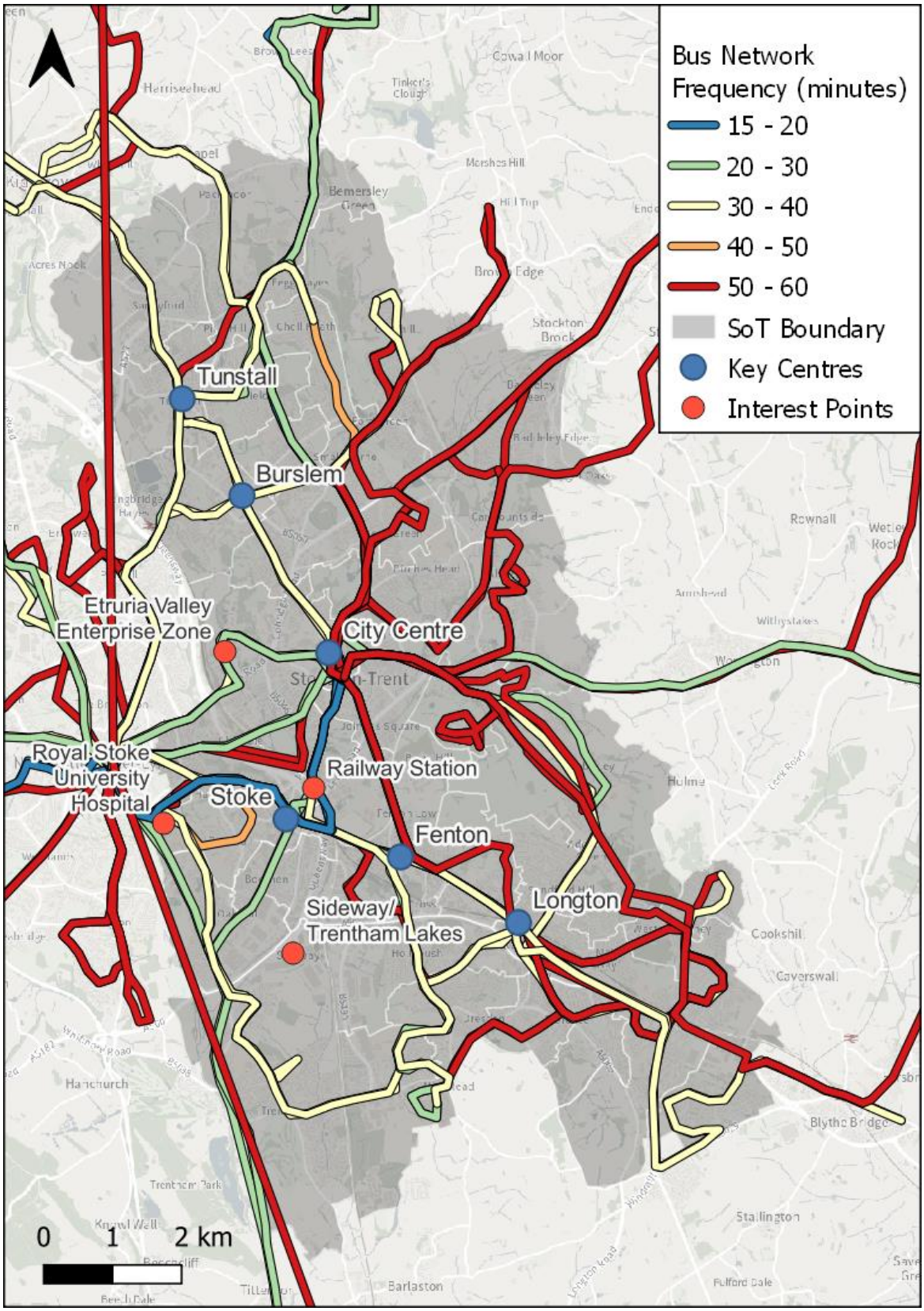

Figure B.1 Bus Network Frequency (IP)