TravelTelford

Telford & Wrekin Council Transport Growth Strategy

January 2016

a co-operative council

Telford & Wrekin COUNCIL

EXECUTIVE SUMMARY

The Transport Growth Strategy was adopted by Telford & Wrekin Council in January 2016 and sets out the transport infrastructure and investment that is required to accommodate future housing, business and population growth within Telford & Wrekin ensuring that Telford retains its competiveness to attract inward investment, create jobs and improve quality of life for residents and visitors. To do this it is vital that the transport network continues to offer excellent connectivity by car, bus, rail or cycling and walking and that the travel needs of residents, businesses and visitors to the Borough can be achieved.

Telford & Wrekin has a strong track record of securing central government investment and delivering major infrastructure projects. With £5bn still to be allocated over the next parliament the Transport Growth Strategy will ensure that the Council can continue to compete nationally to secure this funding and deliver the necessary infrastructure. In support of this, the strategy also sets out how the Council will continue to secure developer contributions for a wide range of transport improvements as development sites come forward. Since 2011 the Council has been successful in securing £43.5m of investment towards improving the transport network to deliver future growth, of which £22m directly relates to delivering the Transport Growth Strategy.

Telford & Wrekin's highway network is also the single most valuable asset that the Council owns, valued at just over £1.3bn. As such it is vital that the network is resilient and able to cope with the future pressures that it is likely to be placed under particularly as the Borough continues to grow. As a New Town, Telford was designed for the car and has a high capacity road network which means currently there is relatively little congestion, which is an attractive incentive for encouraging businesses to invest in the area. However, Telford is also a growth area and the emerging Telford & Wrekin Local Plan identifies an aspiration to deliver up to 15,555 houses by 2031, growing the population towards 198,000. The Transport Growth Strategy will ensure this future growth can be accommodated and provide a framework for the Council to secure further investment in the network, ensuring that the Borough continues to prosper.

The cost of the highway based improvements has been identified at £91m of which £22m has already been secured through the Marches Local Enterprise Partnership, Department for Transport or developer funding. The remaining £69m will be secured as central funding and developers come forward. The proposed improvements have been assessed in value for money terms of provide a benefit cost ration of 4.9 i.e. for every £1 invested sees a return of £4.90 to the economy. As such this represents very high value for money.

The plan and improvements identified is dependent upon a number of factors including the way developments come forward, the way central government funding comes forward and the economic climate as such the plan will need to remain flexible in its delivery. Funding for other improvements including public transport and cycling & walking will be secured on a site by site basis.

Contents

TABLES

FIGURES

1. BACKGROUND

The Transport Growth Strategy sets out the transport infrastructure and investment that is required to accommodate future housing, business and population growth within Telford & Wrekin ensuring that Telford retains its competiveness to attract inward investment, create jobs and improve quality of life for residents and visitors. To do this it is vital that the transport network continues to offer excellent connectivity by car, bus, rail or cycling and walking and that the travel needs of residents, businesses and visitors to the Borough can be achieved.

Telford & Wrekin has a strong track record of securing central government investment and delivering major infrastructure projects. With £5bn still to be allocated over the next parliament the Transport Growth Strategy will ensure that the Council can continue to compete nationally to secure this funding and deliver the necessary infrastructure. In support of this, the strategy also sets out how the Council will continue to secure developer contributions for a wide range of transport improvements as development sites come forward. Since 2011 the Council has been successful in securing £43.5m of investment towards improving the transport network to deliver future growth, of which £22m directly relates to delivering the Transport Growth Strategy.

The Draft Telford and Wrekin Local Plan replaces the 2007 Core Strategy, the Central Telford Area Action Plan and the policies that were saved from the former Wrekin Local Plan which was adopted in February 2000.

The Local Plan proposes the construction of 15,555 dwellings and a minimum of 110 hectares of employment land by 2031. As of April 2015 a total of 13,772 dwellings and 148,593 sq. metres of employment land had already been granted planning permission.

The strategy has been prepared in the context of advice contained in the National Policy Planning Framework (NPPF) as well as the Council's transport policy as set out in the Local Transport Plan (LTP) for Telford and Wrekin 2011- 2025.

The methodology underpinning the strategy is detailed below together with a summary of the key objectives of the strategy. The report looks at how the demand for travel in Telford is forecast to change over the plan period and shows how this will impact on the transport network if no action is taken. It looks at the relative impact of developments that have already been granted planning permission as well as those where the Council has resolved to grant permission. It also considers the impact of the proposed Local Plan development sites themselves. The analysis excludes all other development proposals.

It addresses the transport issues that will arise in the future and develops a strategy for addressing these issues. The effectiveness of the strategy has been the subject of an initial assessment in terms of:

- Traffic congestion;
- Value for money;
- Climate Change;;
- Safety; and
- Resilience.

Each major scheme component in the strategy will be the subject of a more detailed appraisal as the schemes progress through the various statutory planning and funding processes. This will accord with the advice set out in the Department for Transport's (DfT) WebTag advice and will include consideration of remaining economy, social, environmental and public account issues This will involve the preparation of Business Cases for all major schemes in accordance with current Marches Local Enterprise Partnership (LEP) funding approval processes including preparation of appropriate Scheme Appraisal Summary Tables (ASTs). At this stage a full appraisal of road safety benefits arising from the strategy has not been undertaken although changes in traffic flows at the worst accident sites as a result of the Local Plan developments themselves has been undertaken.

The strategy is costed and the issue of affordability is also addressed.

In light of the information provided with regard to the phasing of the proposed development sites the strategy is broken down into short term and long term measures although it is recognised that delivery of the plan is subject to a number of factors including the way developments come forward, and the way central government funding comes forward and as such there plan needs to remain flexible.

2. TRANSPORT POLICY BACKGROUND

2.1 National

The Local Plan has been developed in accordance with the National Planning Policy Framework (NPPF).

At the core of the planning system is sustainable development with three dimensions to it: economic, social and environmental. The NPPF emphasises that in order to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system. The NPPF sets out a set of 12 core land-use planning principles that should underpin both plan-making and decision-taking and particularly related to transport is the following principle:

- actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.

Promoting sustainable transport is seen in the NPPF as one of the key means for delivering sustainable development but also wider sustainability and health objectives. Smarter use of technologies, giving people a real choice about how they travel, solutions which support reductions in greenhouse gas emissions and reduce congestion and pattern of development which facilitates the use of sustainable modes of transport should all be at the heart of transport policy when preparing a Local Plan. The NPPF also emphasises working with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure. It requires all developments that generate significant amounts of movement to be supported by a Transport Statement or Transport Assessment and developers should also be required to provide a Travel Plan.

Local Plans should ensure developments that generate significant movement are located where the need to travel will be minimised and where the use of sustainable transport modes can be maximised. They should also accommodate the efficient delivery of goods and supplies, give priority to pedestrian and cycle movements, have access to high quality public transport facilities, minimise conflicts between traffic and cyclists or pedestrians, avoid street clutter, where appropriate establishing home zones, incorporate facilities for charging plug-in and other ultra-low emission vehicles and consider the needs of people with disabilities by all modes of transport. Finally, a balance of land uses should be sought to minimise journey lengths for employment, shopping, leisure, education and other activities whilst for larger scale residential developments, in particular, planning policies should promote a mix of uses in order to provide opportunities to undertake day-to-day activities including work on site.

To assist with the above NPPF guidance, T&WC prepared an Integrated (Sustainable) Appraisal Report in July 2015 to aid the development of the plan. Other technical papers relating to housing and employment and housing site selection were also prepared in July 2015. The housing and employment development sites selected as a result of this screening process have now been the subject of further investigation from a transport point of view through use of the Telford Strategic Transport Model (TSTM). This work forms the basis of the Transport Growth Strategy.

The TSTM has been used to develop an evidence base for the plan. The importance of this is set out in the National Planning Policy Framework (NPPF) which acknowledges that a robust evidence base can facilitate approval of the Local Plan, reduce costs and delays to the delivery of new development and reduce the burden on the public purse and private sector.

It confirms that the transport evidence base should identify the opportunities for encouraging a shift to more sustainable transport usage, where reasonable to do so; and highlight the infrastructure requirements for inclusion in infrastructure spending plans linked to the Community Infrastructure Levy, section 106 provisions and other funding sources.

It also confirms that Local Authorities should take account of Circular 2/2013 Strategic Road Network and the delivery of sustainable transport. This circular explains how Highways England (the former Highways Agency before April 2015) will engage with the planning system. It also gives details on how the Highways England will fulfil its remit to be a delivery partner for sustainable economic growth whilst maintaining, managing and operating a safe and efficient strategic road network.

2.2 Regional

Midlands Connect

Telford is a non-constituent member of the new West Midlands Integrated Transport Authority (ITA) established in 2014 which aims to provide strong, clear leadership to strategic transport planning for the West Midlands Metropolitan Area.

Midlands Connect is an ambitious initiative of the ITA to identify and realise the transport connectivity improvements that the Midlands need to maximise long-term regional economic growth. The aim is to bring together key political and industry leaders from across the East

and West Midlands to make the Midlands into an "Engine for Growth" and secure the necessary strategic investment in the Midlands's transport infrastructure.

As such, the link between land use and transport at a strategic level is a key feature of its 'Engine for Growth' strategy. It covers connectivity of the area both from a national perspective as well as within the West and East Midlands and liaises closely with Highways England, Network Rail and Birmingham Airport in this regard. It is currently developing a two year work programme and a £5m funding submission was made to Government for this programme in October of this year.

It has a vital role in determining the scope and size of future Growth Deal settlements for LEPs in its area and will therefore, continue to provide the strategic backcloth for the regeneration activities within individual LEP and local authority areas, including Local Plans and associated transport funding.

It will provide the vehicle for identifying the strategic transport needs of the area including both rail schemes and road schemes on the Strategic Road Network (SRN) including the procurement of the requisite funding.

Marches Local Enterprise Partnership Strategic Economic Plan

The Marches Strategic Economic Plan (SEP) was developed by The Marches Local Enterprise Partnership (LEP) and sets out how the partnership of Telford and Wrekin, Herefordshire and Shropshire Councils intend to create 70,000 new homes and almost 40,000 new jobs over the next 20 years.

The aim is for the Marches LEP to kick start its growth by seeking funding from Government for infrastructure and transport schemes which will unlock housing and employment sites. The SEP recognises that the road network suffers from a lack of major roads between key economic towns across the Marches region coupled by the lack of direct rail links to London which has been a major hindrance to business and to the visitor economy. The region also suffers in many parts from poor accessibility to employment centres resulting in a number of potential development sites being stalled due to limited transport connectivity. These transport barriers include:

- Current and forecast traffic congestion in the Urban Powerhouses and Opportunity Towns;
- Pinch points and missing links in the road and rail inter-urban transport network;
- A lack of highway access into specific sites for car drivers, HGVs, buses, pedestrians and cyclists;
- Poor public transport in rural areas which affects the ability of people without a car to access education and, in particular, jobs; and
- Ageing public realm and traffic dominated streets detract from the offer for potential investors.

The SEP identified the key solutions to unlock Marches opportunities directly related to the local plan, including:

- Speed up delivery on ‘ready to go’ land;
- Speed up housing completions; and
- Invest in infrastructure.

Telford - Urban Powerhouse

Telford is one of the three Urban Powerhouses and the economic heartlands of the Marches. It was identified in the SEP that with more than 400 acres of development land Telford offers unique opportunities to accelerate the delivery of residential and commercial development using this development to drive further private investment across the region as well as bringing regeneration benefits to the Borough.

In relation to the transport infrastructure, the investments address key motorway and arterial routes and infrastructure that will immediately open up new site opportunities and accelerate delivery of others. However, it also emphasises that Telford has significant numbers of residential sites with planning permission currently stalled which could be quickly brought to market delivering new homes and private investment through relatively modest levels of investment.

2.3 Local

The Local Transport Plan for Telford and Wrekin 2011-2026 (LTP) sets out the strategic policies of the local transport authority and forms the strategic framework for the Local Plan transport policies. A copy is available on the Council website.

Telford & Wrekin Council’s third LTP for the period 2011 to 2026 sets out the long term strategy for transport in support of the Community Strategy. It recognises that Telford currently has unsustainable travel behaviours with workplaces and homes being separate, and with good link roads. This legacy dates back to the New Town design philosophy of the mid 1960’s.

The challenge for Telford is to use growth to re-shape and create an urban form and density that is more conducive to cycling and walking. The LTP also recognises that better use must also be made of the existing infrastructure, acknowledging that the car will remain essential for many journeys. The LTP identifies a number of issues and challenges in the period up to 2026 with the key challenges particularly relevant to the Local Plan being:

- To manage traffic from new developments and provide access to key services;
- To create an urban form that encourages cycling and walking trips through regeneration and new development;

The six LTP goals which will help achieve the overall vision in 2026 are:

1. Making travel more reliable and efficient, to attract jobs and support growth and regeneration;
2. Maintain highways effectively and efficiently;
3. Reduce carbon emissions to help tackle climate change;
4. Allow everyone to access jobs, education, healthcare, shops and leisure;
5. Improve safety and security on the transport network and promote active travel choices which encourage people to be healthier; and

6. Improve the quality of life by reducing the visual, noise, air quality and other impacts of transport on people and the local environment.

The LTP has five supporting strategies that reflect the six goals of the LTP. The strategies that are particularly relevant for the Local Plan are set out in *Table 1* below.

Strategy	Relevant goal	Approach
Supporting Economic Growth	LTP Goals 1 and 2	Employ a plan-led approach for new developments to mitigate any transport impacts and require developers to prepare and fund the development and implementation of travel plans as part of an Area Travel planning approach
Reducing Carbon Emissions	LTP Goal 3	Reducing the need for people to travel by encouraging mixed use developments of housing, employment and community facilities.
		Helping people make low carbon travel decisions by promoting travel by walking and cycling for short distance, and public transport, in particular rail, for long distance trips.
Promoting Equality of Opportunity	LTP Goal 4	Working with local businesses to encourage the use of sustainable transport to access work; and with local schools to develop and widen the implementation of Safer Routes to School.
Contributing to Better Safety, Security and Health	LTP Goal 5	Use regeneration and development projects to encourage greater levels of active travel through better urban design and planning and creating strategic links to walking, cycling and bridleway networks.
Improving Quality of Life and a Healthy Natural Environment	LTP Goal 6	Develop local design principles as a basis for discussions with developers on the design of residential streets and urban and rural streets outside of residential areas. Specific design guides will be developed for use in areas where the conservation of historic buildings is particularly important.
		Employ a joint approach to mitigating the impacts of major development with the Highways Agency.

Table 1 – LTP 3 Strategies

Transport is a key factor in bringing forward land for development and the LTP aims to ensure safe and efficient operation of the network both for existing road users and the occupiers of the new development sites. The following policies were identified to achieve this:

- LTP POLICY 4 To adopt a plan led approach to mitigate the impact of new developments on the existing transport network in a 'fair and reasonable' manner taking account of the likely level of available public funds
- LTP POLICY 5 To require developers to adopt and fund an Area Travel Planning approach in support of the LDF and associated Area Action Planning processes

- LTP POLICY 6 To require developers to prepare site based travel plans in support of the overarching Area Travel Planning process
- LTP POLICY 7 To require developers to fund the development, implementation, monitoring and enforcement costs of Area and Site based Travel Plans
- LTP POLICY 8 To ensure that transport investment supports high quality public places and vibrant urban environments

3. STRATEGY METHODOLOGY

The methodology underpinning the development of the Transport Growth Strategy is entirely consistent with the approach set out in the NPPF as demonstrated below.

A robust evidence base has been established to enable an assessment of the transport impacts of both existing development as well as that proposed, to be undertaken and to help inform sustainable approaches to transport at the plan-making level. This has included consideration of viability and deliverability.

This assessment has established evidence with regard to:

- improving the sustainability of transport provision;
- enhancing accessibility;
- creating choice amongst different modes of transport;
- improving health and well-being;
- supporting economic vitality;
- improving public understanding of the transport implications of development;
- enabling other highway and transport authorities/service providers to support and deliver the transport infrastructure that conforms to the Local Plan; and
- supporting local shops and the high street.

The key issues, which have been considered when developing the transport evidence base, have included the need to:

- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- highlight and promote opportunities to reduce the need for travel where appropriate;
- identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;

- consider the cumulative impacts of existing and proposed development on transport networks;
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands; and
- identify the short, medium and long-term transport proposals across all modes.

The outcomes have included assessing where alternative measures which would improve the sustainability, viability and deliverability of proposed land allocations (including individual sites) in a manner that is compliant with national policy as a whole.

The following list indicates the key aspects that have been addressed in the transport assessment:

- all current transport issues as they affect all modes and freight covering, for example, accessibility, congestion, mobility, safety, pollution, affordability, carbon reduction across the whole Plan area and, within relevant areas of the Plan, including existing settlements and proposed land allocations;
- the potential options to address the issues identified and any gaps in the networks in the short, medium and longer term covering, for example, accessibility, congestion, mobility, safety, pollution, carbon reduction;
- the locations of proposed land allocations and areas/corridors of development and potential options for the provision of sustainable transport and transport networks to serve them;
- solutions to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- the scope and options for maximising travel planning and behavioural change; and
- accessibility of transport nodes such as rail/bus stations to facilitate integrated solutions.

The transport assessment has been produced in partnership with Highways England, the local bus operator and key stakeholders such as The Marches LEP.

A Strategic Transport Model has been developed for Telford to assist with the assessment. The Telford Strategic Transport Model (TSTM) is built on transport data that reflects the typical (neutral) flow conditions on the network (for example, non-school holiday periods, typical weather conditions etc.) and has been validated for the intended traffic forecasting purposes. Data was collected in November 2009 which complies with the NPPF recommended periods for data collection which are spring and autumn.

The model complies with the NPPF in that in terms of road traffic, but not other types of traffic, it facilitates the robust projection of existing or historical traffic data for future year assessments, including sensitivity analysis. The adopted option is based on the use of appropriate local traffic forecasts derived from the DfT Trip End Model (TEMPRO) as advised by the DfT. For longer distance through traffic, the TSTM incorporates use of appropriate national growth rates derived

from the National Trip End Model. The forecast of HGV trips is based on the National Road Traffic Forecasts (NRTF).

The use of the TSTM has been agreed with both Highways England and a number of developers who have recently submitted planning applications.

Both the TSTM and the National Trip End Model, on which TEMPRO is based, are explanatory models as opposed to model that simply extrapolate historic trends. As such, they seek a reasoned approach to explaining existing and historic travel patterns in terms of a series of relevant variables as opposed to simply extrapolating previous trends. As such these types of model take account of the need to address historic travel patterns whilst not necessarily reinforcing them as advised by the NPPF.

To assess the availability of the capacity of the road network, the transport assessment has taken into account:

- interviews at the roadside and key car parks in Telford Town Centre;
- counts for peak period turning movements at critical strategic junctions; and
- 12 hour/24 hour automatic traffic counts.

Additional surveys have included:

- manual turning counts (which should be conducted at 15-minute intervals) to identify all strategically relevant highway network peak periods;
- journey time surveys;
- LGV and HGV counts; and
- pedestrian and cyclists counts.

Capacity assessments for roads have been undertaken. The views of the local bus operator have also been obtained on the commercial viability implications of the proposed development sites.

The first step in quantifying the impact of proposed land allocations in the Local Plan on the transport system was to provide an estimate of the trips (for all types of transport) that are likely to be generated by it.

In all cases, an analysis of development-related trips was undertaken using the established industry software TRICS database as agreed with Highways England.

An assessment of the impacts of the proposed additional land allocations has been undertaken. This was based on a description of the type of development at each of the locations proposed in as much detail as was available at the time. This has included:

- location plans of each site;
- description of all the proposed land uses;

- scale of development – such as the number of residential units or gross floor area of development – subdivided by land use where available;
- site area in hectares;
- likely proposed access to existing transport infrastructure for all types of travel;
- development phasing, where applicable; and
- potential for securing travel planning benefits and enhanced sustainable transport provision.

The strategy has also taken account of safety considerations and accident analysis, taking into account the objective of facilitating, where reasonable to do so, the use of sustainable modes of transport. The level of detail considered was commensurate with the strategic nature of the Local Plan. More detailed analysis will follow at the time of the detailed planning application process and associated infrastructure provision on the ground including the completion of Road Safety Audits.

The transport assessment has identified all significant highway safety issues and has provided an overarching analysis of the recent accident history of the affected/impacted areas. The extent of the safety issue considerations and accident analysis is related to the scale and type of developments in the context of the character of the affected Strategic Road Network. The need to minimise conflicts between vehicles and other road user groups has also been subject to an initial consideration.

Critical locations on the road network with poor accident records have been identified. This is to determine if the proposed land allocations would be likely to exacerbate existing problems and whether highway works or traffic management measures would be required to alleviate such problems.

The assessment has adopted the principles of WebTAG[1] by assessing the potential impacts of development within the framework of WebTAG objectives. NPPF acknowledges that for most

[1] https://www.gov.uk/transport-analysis-guidance-webtag

Local Plan assessments the full methodology recommended will not be appropriate. Assessments involving major new transport infrastructure costing more than £5m will, however, employ the methods set out in WebTAG.

The WebTag approach for Local Plan transport assessments has ensured that any proposed land allocation impact is considered in the context of two alternative scenarios – 'with development' and 'without development' – and has enabled a comparative analysis of the transport effects of the proposed allocation.

4. STRATEGY OBJECTIVES

In accordance with the NPPF, the objectives of this Transport Growth Strategy are to:

- support economic vitality;
- improve the sustainability of transport provision;
- create choice amongst different modes of transport;
- improve health and well-being;
- minimise the impact of new development on road safety and the environment;
- enhance accessibility;
- improve public understanding of the transport implications of development;
- enable other highway and transport authorities/service providers to support and deliver the transport infrastructure that conforms to the Local Plan; and
- support local shops and the high street.

5. TRANSPORT EVIDENCE AND ISSUES

5.1 Overview

The population of Telford is expected to increase from 167,000 in 2011 to 198,000 by 2031. This creates a need to provide land for 15,555 new houses and at least 110 hectares of employment land during the plan period. The TSTM includes 16,000 houses to allow for potential under delivery.

The demographic characteristics of residents are also forecast to change. *Figures 1* and *2* below show that the proportion of elderly people, aged 65 or more, is forecast to increase from 14% in 2009 to 23 % in 2031(Source: Tempro DfT). A growing elderly population is likely to result in reduced demand for peak hour commuting but an increase in off peak shopping and social trips.

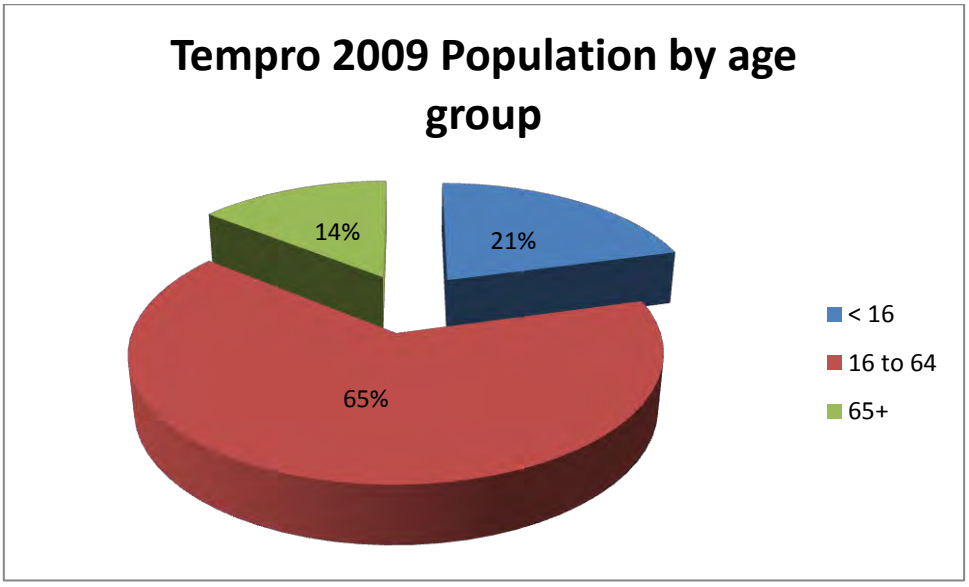

Figure 1 - Population by age group 2009

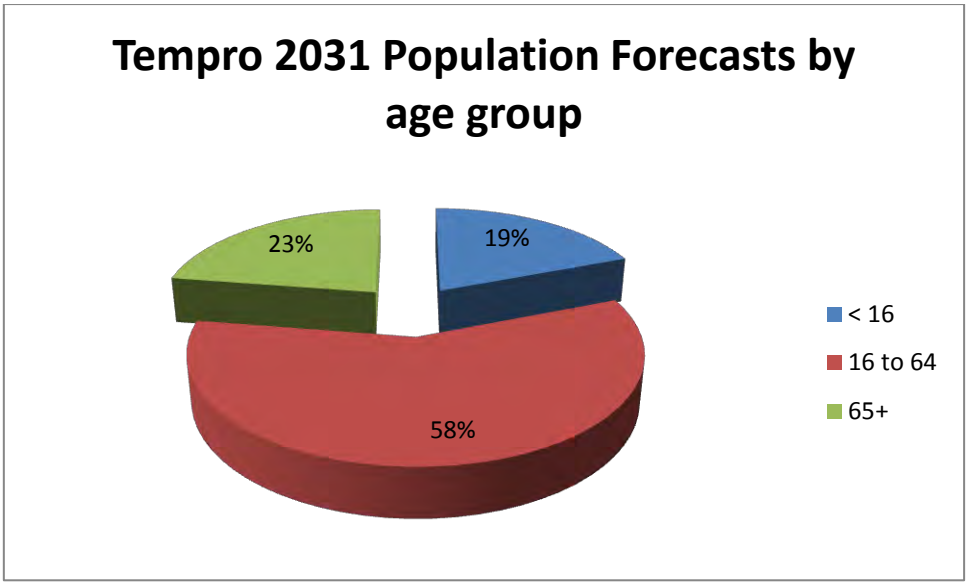

Figure 2 - Population by age group 2031

The 2011 census shows that almost 80% of households in Telford had access to a car or van which is higher than the national (74.3%) and regional (75.3%) average. In terms of future car ownership, the number of cars owned in the urban area of Telford is expected to increase by 25% between 2009 and 2031 (Source: Tempro) compared with a 27% increase in the rural area.

In development terms, it should be noted that a number of developments have been completed since the TSTM surveys were carried out in 2009 and that a significant number of planning applications have already received planning permission. Between April 2009 and April 2015 a total of 3,924 dwellings and 296,655 m^2 of employment development were completed. Developments that were classified as committed as at April 2015 included those sites with Outline, Full and Reserved Matters approval. In total the committed developments account for 12,092 dwellings and 148,593 m^2 of employment and retail development within Telford & Wrekin borough. In addition there are a further 1,680 dwellings which form current planning applications and are listed as resolution to Grant, this is when planning approval has not been given as the Council is waiting for legal documents to be signed. This brings the total housing commitments to 13,772.

Accordingly, the number of trips made in Telford is forecast to increase by 30% by 2031 compared with the 2009 Base Year in the AM Peak as shown in *Table 2* (Source: Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan). The corresponding figure for the PM Peak is 42% (*Table 3*).

Trips	2009 Base	Base+ComDev	% Growth
Total	38,318	49,685	30%

Table 2 - Committed Development Traffic AM Peak

Trips	2009 Base	Base+ComDev	% Growth
Total	33,009	46,950	42%

Table 3 - Committed Development Traffic PM Peak

As shown below in *Table 4* and *5*, the level of development proposed in the Local Plan itself will further increase the number of trips made in Telford by 2031 (Source: Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan).

Housing Trips	AM Peak Arrivals	AM Peak Departures	PM Peak Arrivals	AM Peak Departures
Total	609	1,634	1,505	854

Table 4 - Local Plan Housing Development Trips AM and PM Peak

Employment Trips	AM Peak Arrivals	AM Peak Departures	PM Peak Arrivals	AM Peak Departures
Total	4025	1019	732	3620

Table 5 - Local Plan Employment Development Trips AM and PM Peak

The above factors will combine to generate more traffic on Telford's roads by 2031. This will result in more congestion with a need for more car parking. If no action is taken to reduce congestion more vehicles will operate under stop: start conditions resulting in poorer air quality and road traffic noise. Increased car ownership will tend to dampen down the increase in the number of people travelling by train and bus although population growth and other factors will help offset this trend.

Measures to encourage people to use more sustainable travel modes have been considered particularly for shorter distance trips. However, there is no guarantee that the people of Telford will use such facilities and this could lead to an under design of necessary highway infrastructure. Any strategy has to be resilient to such behavioural uncertainty.

5.2 Public transport

Rail Services

Telford is served by three train operating companies; Arriva Trains Wales, London Midland and Virgin Trains. It has three stations at Wellington, Oakengates and Telford Central.

The former operator provides cross boundary services into Wales and the franchise is let by the Welsh Government. The latter provides regional services from Shrewsbury and Telford into the West Midlands conurbation and the franchise is currently let by DfT.

In recent years the Council has liaised closely with The Marches LEP and Virgin Trains to restore a limited direct service to London to improve connectivity for local businesses.

Historically, the line serving Shrewsbury Telford and Wolverhampton has been maintained to minimal standards thereby increasing the costs of future works to improve service performance. Previous plans to improve running speeds for passenger services in Control Period 4 were subsequently dropped by Network Rail on cost benefit terms. Also, the line remains un-electrified. Other issues relate to severe overcrowding at peak times and uneven

headways. Whilst facilities at Telford Station were recently improved, conditions at the remaining two stations are poor with a particular need for the installation of lifts for disabled passengers at Wellington. Car parking facilities at Telford Central needs improving to encourage Park and Ride commuting travel into the West Midlands and Shrewsbury.

There is a need to address historical inconsistencies in fare levels within the West Midlands travel to work area.

The Marches Rail Study was commissioned by the three Local Transport Authorities within the Marches LEP Area (Shropshire, Herefordshire and Telford & Wrekin). The study aimed to look at the potential constrained and unconstrained growth on the main rail lines in the Marches area including the Shrewsbury – Wolverhampton line. This showed that between Shrewsbury and Wolverhampton passenger growth could increase between 30-46% by 2024.

Local Bus Services

The main local bus operator is Arriva and the current pattern of local bus services, including both commercial and subsidised routes, with relation to the proposed Local Plan housing sites is shown on *Figure 3* below.

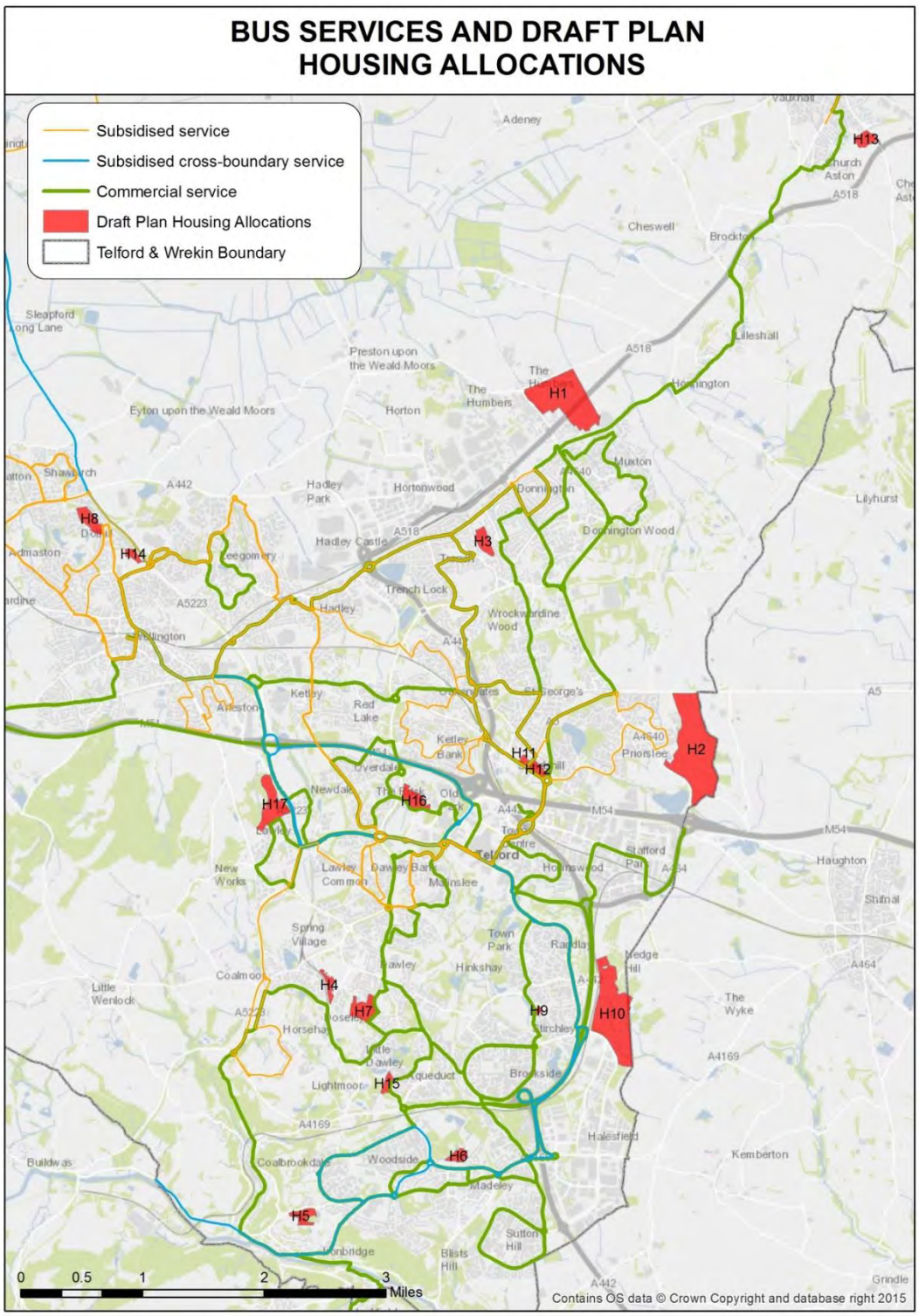

Figure 3 – Bus services in Telford and Wrekin

Many car owners rely on a stand by bus service when the car is not available. Also, the local bus service provides a lifeline for residents who do not own a car, particularly our elderly and most vulnerable residents which enables them to lead independent lives. A number of younger people do not own a car and this acts as a barrier for them when seeking access to further education and employment opportunities. The lack of scheduled bus services in rural areas is a particular problem for those people who do not own a car.

The vast majority of services are run on a commercial basis as the Council has limited resources to subsidise non-commercial services. As financial pressures mount on local authorities throughout the UK, a number of subsidised services are likely to have to be withdrawn or taken on commercially by the local bus operator if it is suitable to do so.

The numbers of passengers travelling on local bus services in Telford and Wrekin has been declining since 2006 as shown on *Figure 4* below.

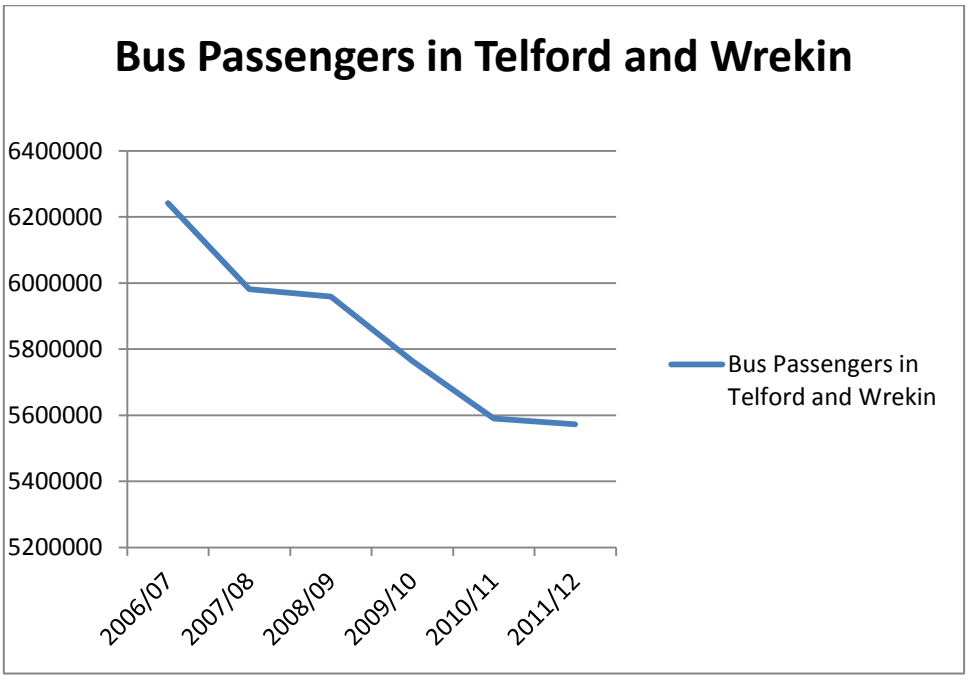

Figure 4 – Bus patronage in Telford and Wrekin

However, the DfT is forecasting that the number of passengers travelling by local bus and coach in Telford will increase from 11,272 in 2009 to 12,708 in 2031 in the AM Peak (Source: TEMPRO). The respective figures in the PM Peak are 23,818 in 2009 and 26,482 in 2031 (Source: TEMPRO). Whilst this seems optimistic, given the above historic decline in patronage, the DfT data is based on the National Trip End Model which takes account of a wide variety of criteria including increased population and jobs as well as demographic and economic changes.

TEMPRO also shows that the number of people travelling by bus that have a car available will remain relatively stable over time confirming limited modal shift by 2031(*Table 6*).

	2009 AM Peak	2009 PM Peak	2031 AM Peak	2031 PM Peak
No of passengers with no car	2,374	1,513	2,683	1,709
No of passengers with car available	520	294	588	332

Table 6 - Bus patronage and car availability

5.3 Walking and Cycling

Telford is a mixture of the old and the relatively new. The physical infrastructure of much of the town can be traced back to the New Town design philosophy of the 1960's and the Radburn Housing estate layouts. Workplaces and homes in these areas are connected by a high standard road network with segregated facilities being provided for cyclists and pedestrians. In the older settlements, such as Wellington and Oakengates, the road network is of poorer quality and the level of frontage development is quite high. Accordingly, it is difficult to provide quality facilities for cyclists and pedestrians in these areas although many of the town centres have now been pedestrianised.

Notwithstanding the above, Telford has an extensive network of cycle routes totalling 213 km of cycle routes in length. Three National Cycle Network (NCN) routes also serve the town, with a total length of 59 km, and these are complemented by a further 154 km of local routes. The cycle network consists of a mixture of route types including:

- Off Road routes;
- Segregated routes within the public highway boundary;
- Shared pedestrian/cycle routes within the public highway boundary.
- On highway cycle lanes; and
- Advanced stop line facilities at traffic signals.

Cycle parking is provided at key locations including town centres, businesses, local neighbourhood centres and Telford, Oakengates and Wellington railway stations. A new Bike Hub was provided in Telford Town Park as part of the Southwater regeneration scheme providing expert advice and cycle loan and maintenance facilities.

Some of these facilities were recently improved through the Local Sustainable Transport Fund Key Component Package which was funded by the DfT.

In addition to the above physical infrastructure, the Council promotes walking and cycling through an extensive programme of training with schoolchildren as well as working to encourage developers to implement and monitor travel plans. The Council also promotes sustainable travel with local businesses and the Princess Royal hospital.

Improved facilities for pedestrians and cyclists can make a major contribution to reducing traffic congestion as well as improving personal health, make a positive contribution to the overall character of a place and help tackle climate change through reductions in carbon emissions. Such facilities are particularly attractive for shorter journeys.

Despite the above, Government statistics show that only 43.5% of Telford residents walked at least 10 min a day at least 5 times a week in 2013/14, which is below the regional and national average. Also, only 8% of trips to work were by foot which is also below the regional and national average. Furthermore, only 6.6% of residents cycled at least once a week in 2013/2014, which was again below the regional and national average[2]. According to the Census 2011, only 2.1% of commuting trips are done by bicycle.

Short distance trips can easily be made by foot with longer distance trips being suitable for cycling. The 2011 Census showed that 16.6% of trips to work made by Telford & Wrekin residents were less than 2 km long with an additional 24.5% being between 2 and 5 km. However, for trips less than 2 km more than 60% of people use a car whilst only 4% of work trips under 2 km are made by bicycle. Almost 30% are made on foot. For trips of length between 2 and 5 km, the percentage of car use increases to more than 82% whilst cycling represents only 3.3% and walking only 4.3% share. In absolute terms, every day more than 23,000 trips to work that are less than 2 km long are made by car in Telford & Wrekin.

The number of cycling trips is forecast to increase from 4,756 in the 2009 AM Peak to 5,369 in the 2031 AM Peak. The respective number of walking trips is forecast to increase from 41,980 to 50,253 (Source: DfT Tempro).

The number of cycling trips is forecast to increase from 5,817 in the 2009 PM Peak to 6,459 in the 2031 PM Peak. The respective number of walking trips is forecast to increase from 105,967 and 117,706 (Source: DfT Tempro).

As well as helping to reduce congestion, walking and cycling can improve personal health and reduce obesity. Telford and Wrekin is facing an obesity epidemic with only 4 local

[2] https://www.gov.uk/government/statistics/local-area-walking-and-cycling-in-england-2013-to-2014

authorities[3] having higher obesity levels than Telford and Wrekin where 32.3% of adults are classed as being obese with 70.2% being overweight (including obese). These figures are much higher than the regional and national levels. In addition, excess weight amongst children is also higher than on average with 25.9% of children aged 4-5 and 37.3% of children aged 10-11 being overweight[4].

5.4 Highways

There are two local issues affecting the efficient operation of the highway network within the borough. These are the ability of the existing highway network to absorb additional traffic growth and the design life of the existing highway network.

T&WC has developed the Telford Strategic Transport Model (TSTM) to help analyse the various transport issues facing Telford in the period up to 2031 focussing in particular on the impact of the Local Plan development proposals. Establishing a clear picture of existing travel behaviour is essential to the forecasting of future traffic levels. Surveys undertaken in 2009 as part of the development of the TSTM identified a clear picture of travel patterns in Telford for both the morning and evening peak hours. The supporting Report of Survey documents the relevant data collected. The model was subject to independent scrutiny by the DfT's modelling division as part of the Council's Local Sustainable Transport Fund bid in 2011.

The section of the M54 between Junctions 4 and 7 is represented in the model and T&WC has liaised closely with Highways England with regard to the development of the model as part of the Local Plan process. The model was validated in accordance with WebTag standards and as such provides a robust platform for the forecasting of future transport demand.

This forecasting process is set out in the supporting Transport Model Forecasting Report together with the output results.

The supporting document entitled 'Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan' examines how existing problems on the highway network will change over time both with and without the Local Plan development proposals. It looks at the short term situation in 2020 as well as the longer term position at the end of the Local Plan period in 2031. It then recommends a series of measures to help mitigate the impact of the proposed Local Plan developments. The report assesses the effectiveness of these measures in operational terms and recommends a phased programme of infrastructure improvements in both the short and longer term.

The recommended strategy is then costed and a 'fair and reasonable' mechanism for developer contributions is set out in the report.

5.5 Freight

National Road Traffic Forecasts published in 2015 show that the percentage of total traffic miles made by LGVs will increase from 14% in 2010 to between 15% and 20% by 2040.

[3] of total 326 English Unitary and district local authorities
[4] http://www.noo.org.uk/LA/obesity_prev

Growth for HGVs however is much less changing from 6% in 2010 to between 4% and 6% in 2040.

LGV traffic itself(billion vehicle miles) is forecast to grow by at least 42% and perhaps as much as % between 2010 and 2040. The volume of LGV traffic nationally in 2010 is approximately 35 billion vehicle miles.HGV traffic (billion vehicle miles) is forecast to grow by between 1% and 58% between 2010 and 2040. The volume of HGV traffic nationally in 2010 is approximately 14 billion vehicle miles. This reflects the changing nature of goods distribution in the UK seen in recent years with greater use of

Currently there are no reported problems in Telford relating to volumes of HGV traffic or associated overnight parking. The majority of goods are delivered to the three main industrial estates at Stafford Park, Halesfield and Hortonwood together with the main shopping centres.

The Telford Rail Freight Interchange located adjacent to the Hortonwood Estate is relatively underused with the main operator being the Ministry of Defence.

5.6 Road Safety

The Telford and Wrekin “Road Safety Strategy” (see supporting documents) identified the causes of collisions within the Telford & Wrekin Council area, and aims to reduce the number of casualties on the highway network between 2015-2025 to align with the delivery

of Local Transport Plan 3: a 40% reduction on the 2010-2014 baseline of 22.7 which equates to around 13.6 killed or seriously injured (KSIs) per 100,000 population in 2025.

Between June 2009 to June 2014, 1,463 collisions occurred which caused 1,820 slight, 176 serious and 17 fatal casualties as shown in *Figure 5*. In terms of the most vulnerable road users, pedestrians represented 11.4% of all casualties and 20.2% of all KSI whilst cyclists represented 8.2% of all casualties and 9.8% of all KSI in the same period. Four locations were identified that are significantly above the KSI proportion for the wider Borough, these are: Church Aston & Lilleshall, Dothill, Ironbridge Gorge and Wrockwardine. In addition, within the Borough, 25 cluster sites (6 or more injury collisions) have been identified.

The cost of the casualties and accidents for society is high. In 2014, the average value of prevention per reported road accident casualty and per reported road accident was £1,836,054 per fatal casualty and £206,231 per serious casualty, arising from the loss of output due to injury, ambulance costs and the costs of hospital treatment and the human costs of casualties[5].

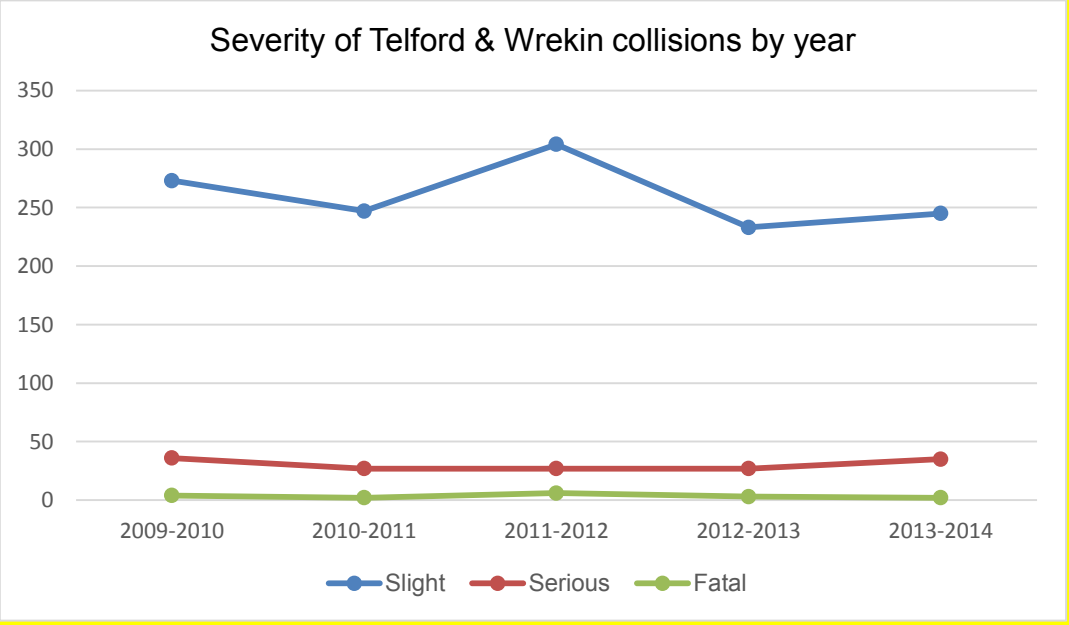

Figure 5 – Collisions in Telford and Wrekin 2009-2014

The 12 most dangerous junctions were identified in the Road Safety Strategy for remedial works to address the collisions occurring at these locations, to support the overall aim of reducing collisions within Telford & Wrekin. The scheme ranking has been determined by calculating the rate per annum, and the KSI rank and the existence of identified schemes to improve conditions at the location.

They are listed in the *Table 7* below together with the forecast change in Total Junction Inflow arising as a result of the proposed Local Plan developments in 2031. Obviously flows on the network will be higher with the Local Plan developments than if no additional development was to take place beyond that which is already committed. This is reflected in the figures in Table7.It can be seen that increases are forecast to be as high as 30% at

[5] https://www.gov.uk/government/publications/reported-road-casualties-great-britain-annual-report-2014

certain junctions. The only junction where flows are forecast to reduce is A5/A442/Hollinswood in the AM Peak.. Therefore, it can be reasonably expected that there is a potential that road safety will deteriorate as a result of the increased traffic generated by the new Local Plan developments.

However, an additional road safety appraisal will be carried out which identifies the road safety benefits of the schemes in the Strategy themselves as opposed to the impact of the Local Plan development proposals. This will assume that Local Plan development will take place and will examine road safety on the highway network for two scenarios:

- Do Minimum highway network; (ie Without Local Plan highway mitigation measures) and
- Do Something 2 highway network (ie With Local Plan highway mitigation measures)

This will be undertaken using the DfT COBALT software and will provide a fairer assessment of the safety benefits of the Transport Growth Strategy.

Junction	Description	Total collisions between 2009-14	Change in flows in 2031			
			AM		PM	
			Diff.	%	Diff.	%
1	A442/Okehampton Road/Leegate Avenue	6	842	23%	954	29%
2	Hortonwood 30 and 40	8	517	30%	541	29%
3	A5223/Apley Avenue	12	769	17%	698	18%
4	A5223/Haybridge Road	9	1,134	24%	856	21%
5	A5223/Wrekin Retail Park Access Junction	17	483	16%	514	17%
6	B5061 Watling Street/Bennetts Bank	9	76	5%	163	10%
7	B5061/Holyhead Road/Station Road	6	49	3%	103	5%
8	A5/B5061 Holyhead Road/Shifnal Road	7	279	7%	565	13%
9	A5/A442/Hollinsgate	19	-98	-1%	760	9%
10	A4169 Queensway/B4373 Castlefield Way/Majestic Way	10	317	9%	265	9%
11	B4374 Castlefields Way/Willow Bank	10	43	4%	49	5%
12	Parkway/Maddocks	7	117	7%	247	18%
Total			**4,528**	**12%**	**5,715**	**15%**

Table 7 – Changes in traffic flows at key accident sites as a result of Local Plan developments

5.7 Social exclusion

The latest Government statistics show the following key messages in terms of the Index of Multiple Deprivation (IMD):

- Telford is 86th in terms of the rank of average score (rank 1 being the most deprived).
- 26% of the borough's population live in the 30% most deprived LSOAs on the national level which places it on the 77th rank out of 326 local authorities.
- Telford and Wrekin is ranked 62nd out of a total of 326 authorities in terms of "rank of proportion of LSOAs in most deprived 10% nationally" (rank 1 being the most deprived).
- 14% of LSOAs (or 15 LSOAs) are among the 10% most deprived LSOAs on the national level which is one more LSOA than in 2010.
- A further 14% of LSOAs (or 15 LSOAs) are among the 11% to 20% most deprived nationally which is 3 LSOAs more than in 2010. Therefore more than a quarter (28%) of small areas in Telford and Wrekin were in the bottom quintile of the national Index of Multiple Deprivation. The most deprived LSOAs are shown in *Figure 11*.

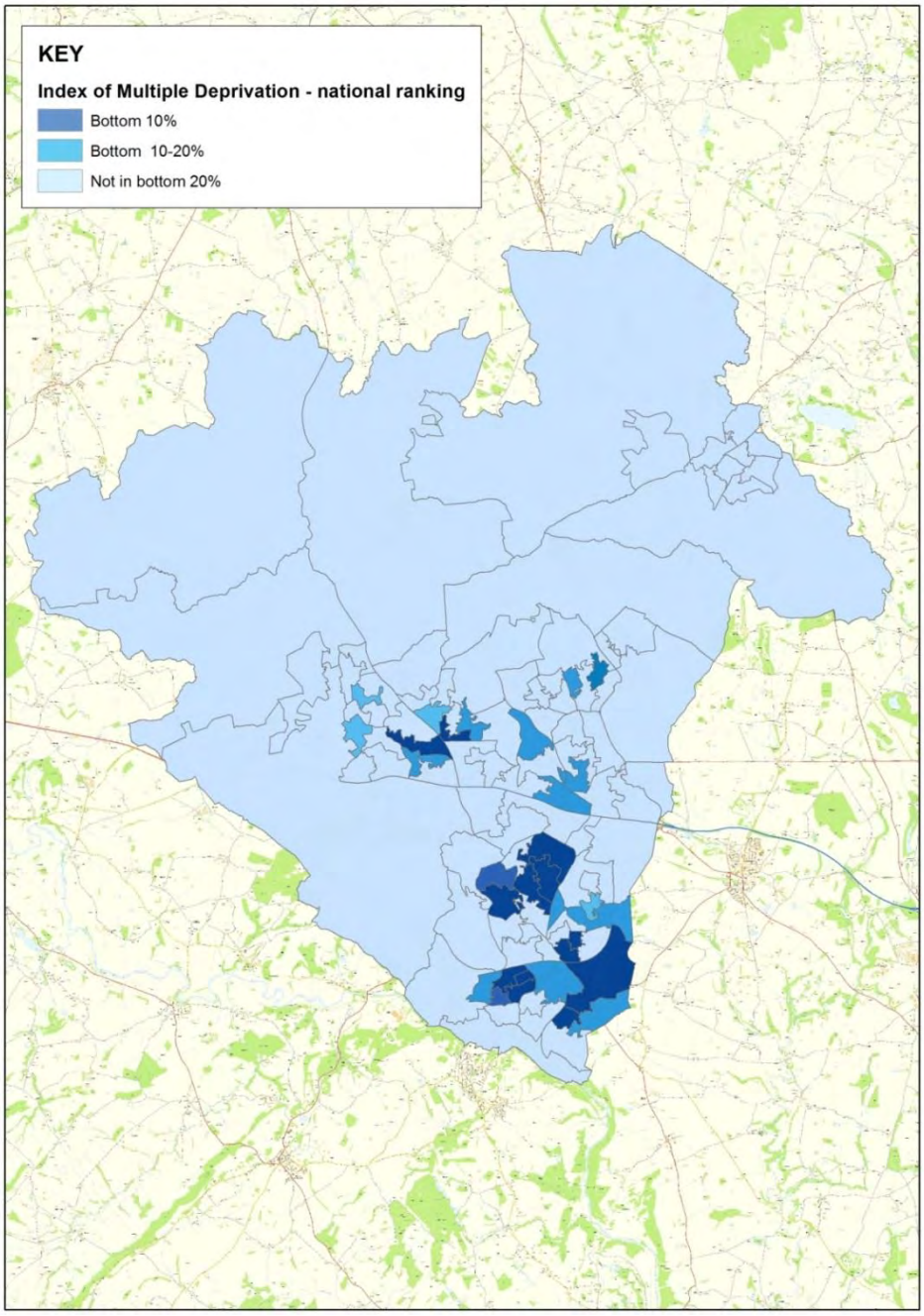

Figure 6– Index of Multiple Deprivation by Lower Super Output Areas

Importantly, the levels of deprivation differ significantly in terms of the deprivation domain as shown in *Table8*. Living Environment is the domain in which Telford and Wrekin ranks the highest in terms of average score (i.e. being in the top 8% of local authorities with none of the LSOAs in the bottom 10%) followed by the Crime domain. However, the borough's domains that score the lowest average score ranks are all three income domains (general income domain and domains affecting children and older people), all being among the bottom 20% of all local authorities.

When the proportion of LSOAs that are in bottom 10% nationally is taken into account it can be seen that the worst performing domains in Telford and Wrekin are Employment, Education and Income Deprivation Affecting Children with ranks being in the bottom 15%

nationally. Living and Barriers domain are the best performing domains in Telford and Wrekin with 6.5% and 0% of LSOA's in most deprived 10% on the national level, respectively.

Domain	Proportion of LSOAs in most deprived 10% nationally	Rank of proportion of LSOAs in most deprived 10% nationally	Rank of average score
IMD	13.9%	65	86
Income	15.7%	63	51
Employment	19.4%	47	74
Education	19.4%	45	82
Health	11.1%	77	69
Crime	11.1%	77	122
Barriers	6.5%	153	91
Living	0	232	300
Income Deprivation Affecting Children Index	16.7%	47	57
Income Deprivation Affecting Older People Index	9.3%	74	63

Table 8 – Deprivation domain in Telford and Wrekin

Woodside and Brookside are two of the areas with the highest levels of deprivation in Telford and the Council has recently invested heavily in improving facilities in these areas. Both areas are located to the south of Telford Town Centre and in transport terms both are well served by local bus services and NCN route 55. Brookside is served by Arriva service Number 3 which runs every 7.5 min with Woodside served by Number 4 which runs every 10 min. The cycling element of the Transport Growth Strategy proposes improved cycle connections from Brookside across the A442 into the adjoining Halesfield Industrial Estate, the Local Plan housing and employment sites H10 and E19 as well as improved connections into Woodside from NCN Route 55.

5.8 Climate Change

Government is working to adapt to the effects of climate change with a target ofreducing emissions by at least 80% in 2050 from 1990 levels.

Transport accounts for around a quarter of UK greenhouse gas emissions and affects air quality at the roadside, hence Government encourages reducing emissions by promoting public transport choices, supporting the market for innovative forms of transport and encouraging a move to cleaner and lower carbon vehicles.

Predicted changes in climate will affect Telford & Wrekin both directly as local weather patterns change and indirectly due to impacts in other parts of the world. The Council is obliged to cut greenhouse gas emissions, minimise vulnerability and provide resilience to, the impacts of climate change consistent with advice in the NPPF, for example by planning for new development in locations and ways which reduce greenhouse gas emissions.

The Council's strategy 'A Climate for Change' 2008-2026 aims "to address the causes of climate change by reducing greenhouse gas emissions and preparing for the impacts of a changing climate". A target was set for the reduction of emissions as to reduce annual CO_2 emissions by 60% from 1990 levels, by 2050 (36% by 2026). The Oneplace report by Audit Commission noted that more needs to be done to reduce carbon dioxide emissions in Telford and Wrekin as it failed to reach its target cut in CO_2 emissions for 2009.

In Telford and Wrekin, road transport accounts for 23% of CO_2 emissions. The local climate impact profile identified potential implications of climate projections on transport, particularly in terms of disruption to school transport due to increase in flooding and impact on public transport services through raised demand for climate controlled vehicles and reduction in disruption from winter weather. Transport therefore plays an important role in tackling climate change, both by being at risk due to climate change and through its impact on emissions.

Industry is working to improve engine technology and the numbers of hybrid and electric vehicles are likely to increase in the future.

Electric Vehicles

There is a recognition in the “Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen” White Paper that reducing carbon emissions of the vehicles themselves has a contribution to make to overall carbon reduction.

There is no doubt electric vehicles (EV) are increasing in popularity in the UK. In 2015 there are nearly thirty different electric models available in the UK and around 40,000 registered EVs on UK roads, compared with just 3,500 in 2013. 2014 alone saw a massive 166.6% increase in pure EV registrations. In 2014, sales of plug-in cars quadrupled to almost 14,500[6], of which just under half were pure battery electric vehicles rather than plug-in hybrids. This is a significant figure given only around 20,000 electric cars have been registered under the government's £5,000 plug-in grant scheme since it started in January 2011. This huge increase in electric cars in 2015 has come about because of a greater level

[6] http://www.businessgreen.com/bg/analysis/2389124/electric-car-sales-quadruple-during-2014

of choice for drivers, a shift in the public's attitude towards electric cars and a constantly improving public recharging network[7].

Consequently, there is also a growing public charge point infrastructure in the UK. EV charging points are primarily defined by the power (in kW) they can produce and therefore what speed they are capable of charging an EV. There are three main EV charging speeds: slow charging (up to 3kW) which is best suited for 6-8 hours overnight; fast charging (7-22kW) which can fully recharge some models in 3-4 hours; and rapid charging units (43-50kW) which are able to provide an 80% charge in around 30 minutes. Zap-Map[8] maps all public access charge points across the UK and shows that in October 2015 there were 9,282 UK points and 3,542 locations.

There are currently 6 sites in Telford where charging point infrastructure is located:

- Stafford Park has 3 facilities;
- ASDA Telford town centre;
- Wolverhampton University at Priorslee; and
- M54 Junction 4 motorway service area.

Planning regulations increasingly require local authorities to have regard for policies that will promote both mitigation of and adaptation to climate change effects. As part of the Ministerial announcement made in January 2011, that outlines the Government's position on certain aspects of parking policy and electric vehicle infrastructure, the Government has also taken the opportunity to encourage electric vehicle charging infrastructure in new developments, where this does not affect the development's overall viability; and has signalled its intention to proceed with proposals to introduce permitted development rights for electric vehicle charging points.

The NPPF recommends that "plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to incorporate facilities for charging plug-in and other ultra-low emission vehicles". The Council will liaise with developers in this regard, where appropriate, through the planning application process.

The DfT supported the government's commitment to making sure that the UK is a world leader in the electric car industry by investing £37 million funding package for home and on-street charging (it was available until April 2015). The government provides 75% of the cost of installing new charge points.

Traffic regulations – particularly the Road Traffic Regulation Act (RTRA) 1984 – provide broad powers to introduce lower carbon incentives in public parking schemes, both residential on-street and public off- and on-street parking. New permitted development rights have been enacted to allow local authorities to install electrical outlets for recharging EVs in off-street public and private car parks without the need to apply for planning permission, and

[7] http://www.nextgreencar.com/electric-cars/
[8] https://www.zap-map.com/

amendments have also been made to clarify that local authorities can install on-street charging points for EVs as permitted development[9].

Some local authorities encourage developers to include EV points where appropriate and reasonable (e.g. Birmingham, Cambridge, Manchester, Nottingham, Hereford) whilst some local authorities provide specific guidance in terms of electric vehicle parking standards (e.g. Bristol, Leeds, Milton Keynes).

5.9 Environment

Road transport, which is a significant source of PM_{10} (Particulate Matter less than 10µm aerodynamic diameter) and NO_2 (Nitrogen Dioxide), is one of the major sources of local air pollution, especially in our towns and cities. In urban areas, emissions from road traffic can make a significant contribution to pollutant concentrations. Telford & Wrekin has been carrying out a review and assessment of air quality since 1997, which involves measuring air pollution and trying to predict how it would change in the next few years. However, the latest report from 2011 showed that data from the previous ten years shows good compliance with air quality objectives with very little variation. The Council are not in breach of any of the air quality objectives for those substances monitored; in fact the air quality in Telford and Wrekin is significantly below the air quality objectives. In addition, no roads or junctions have been identified which would require detailed air quality assessment even though the main sources of air pollution in Telford and Wrekin are emissions from busy roads.

Noise annoyance is a feeling of displeasure evoked by noise with transport (road and rail) being a significant source of noise and vibration. In 2014 Telford Urban Area was declared as one of the 65 agglomerations in England affected by noise with further areas designated as Important Areas. The estimated population associated with the Important Areas (see *Figure 7*) to be investigated for potential action with respect to road traffic noise in this agglomeration in Telford and Wrekin was 300. There are no people affected in Important Areas due to railway noise. Noise levels associated with the Local Plan mitigation schemes will be assessed at the time of scheme design and statutory order processes.

[9] http://www.racfoundation.org/assets/rac_foundation/content/downloadables/61442_racf_lcv%20and%20la%20powers%20(author%20buchanan)_aw.2_web.pdf

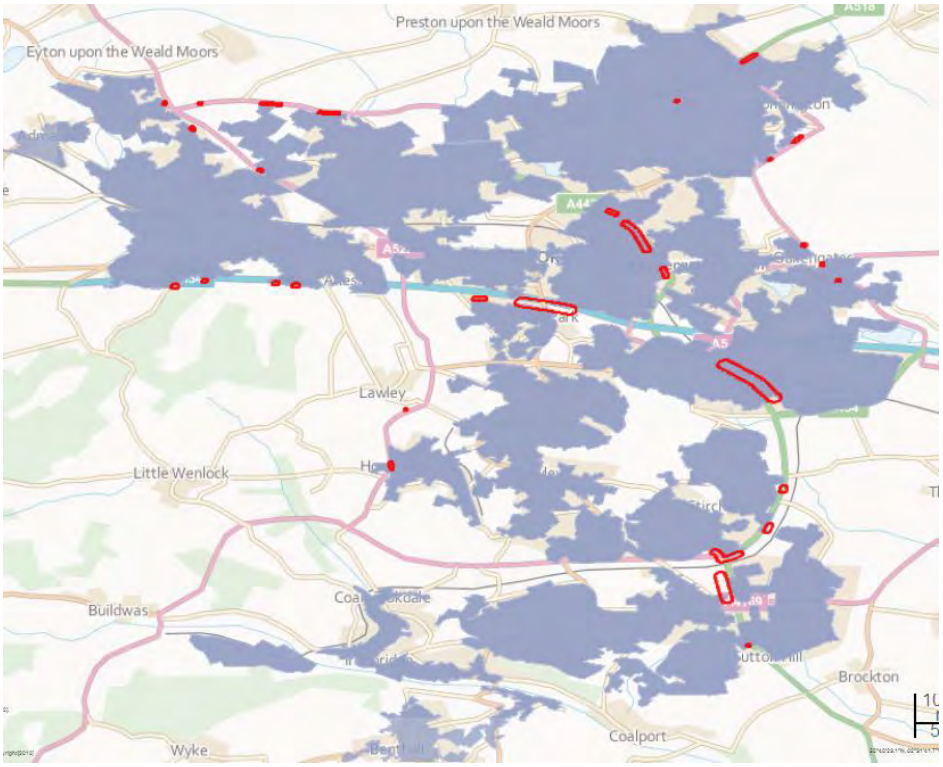

Figure 6Environmental noise directive agglomerations (grey) and Noise action planning important areas (red)[10]

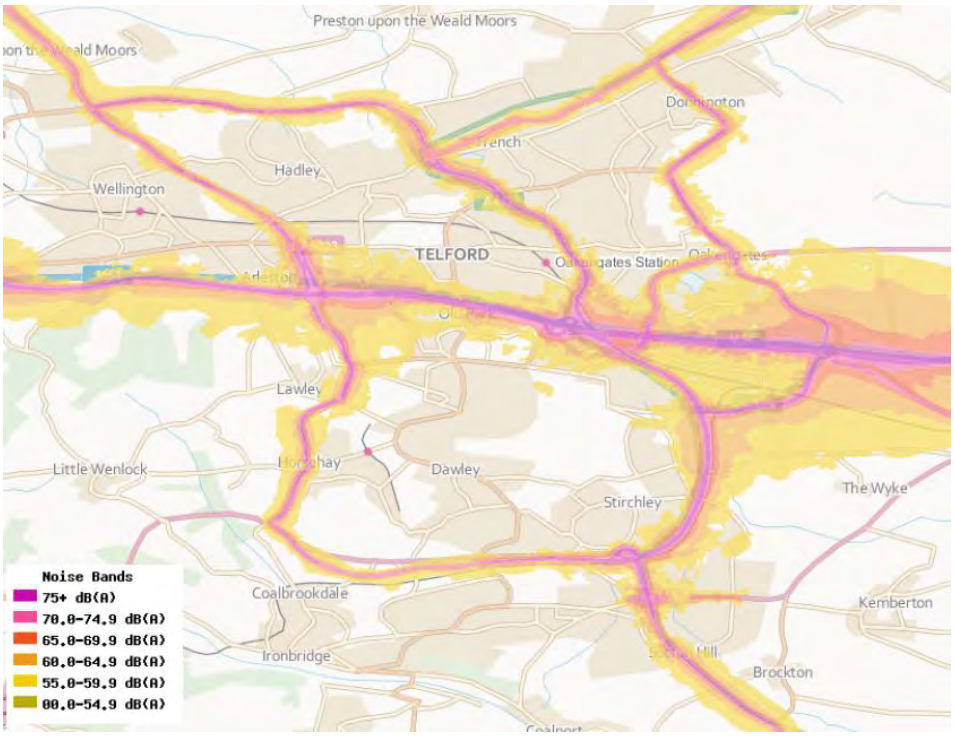

Figure 7- Noise map of Telford and Wrekin (Lden - a 24-hour annual average noise level with separate weightings for the evening and night periods)[11]

[10] https://data.gov.uk/dataset/road-noise-lden-england-round-2
[11] https://data.gov.uk/dataset/road-noise-lden-england-round-2

5.10 Car Parking

The ability to park, be it a car, lorry, bus or bicycle is an essential part of transport infrastructure with direct and indirect benefits for communities. Failure to address parking can lead to issues such as congestion, road safety concerns and displaced parking that impacts upon local residents and businesses.

The parking issues in Telford and Wrekin were summarised in the LTP 3 which listed limited amount of public off street parking under local authority control, particularly in the Telford Town Centre; enforcement of existing restrictions; and pavement parking in some areas creating hazards for pedestrians. The LTP 3 emphasises that parking is a concern in many residential areas and it is important that design principles for new developments take into account local circumstances, to ensure that appropriate levels of parking are available. This is due to the fact that striking the right balance over the availability, location and quality of parking is important to the provision of a safe, accessible and pleasant environment. In addition, through the LTP consultation exercise it was found that for car drivers the second and third highest priorities (i.e. transport areas in most need of improvement) were: “Measures to tackle illegal on street parking” and “Restrictions of parking in busy roads”.

Indeed, as a former 'New Town' the Telford urban area has some key strengths related to parking such as good highway connections but there are also challenges including high car ownership, unsustainable and unhealthy travel patterns resulting in a higher demand for public space for parking.

The opportunities for tackling these issues have already been proposed in the LTP. In terms of car parking for new developments, the Council proposes the use of the principles in the Manual for Streets to develop locally appropriate design guidance for parking in residential areas and proposes the standards for provision of parking spaces.


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6. GROWTH STRATEGY

6.1 Public Transport

Rail

In terms of longer distance trips the Council will work with Network Rail through its forward planning process to encourage modal shift from the car. The Council has already worked with The Marches LEP to derive a Rail Strategy for The Marches area and this will form the foundation for this lobbying work. The Council is also working proactively with other local authorities in the West Midlands Travel to Work area to assist Government to devolve the franchising of local rail services in the West Midlands area to help resolve the aforementioned issues affecting rail travel to and from Telford. A new company called West Midlands Rail Limited has just been set up to work on behalf of all local authorities in the region to work in partnership with DfT with regards to the renewal of the West Midlands rail franchise in 2017.

In order to encourage future growth in rail services there are a number of key schemes which are required:

- Increase in frequency, capacity and improvements to existing service pattern,;
- Electrification of Shrewsbury-Wolverhampton line;
- Increasing the freight gauge of the line to W8;
- Increased car and cycle parking capacity at Telford Central;
- Lift access to platforms at Wellington and Telford Central;
- Passenger waiting facilities;
- Improved access for pedestrians and cyclists.

The Strategy incorporates a multi-million pound scheme to improve car parking capacity at Telford Central railway station to reduce the volume of traffic commuting along the M54 to the West Midlands and Shrewsbury.

The Council has also currently secured funding through the DfT's Highways Maintenance Challenge Fund which will see the replacement of the pedestrian footbridge between Telford Central and Telford Town Centre. A key aim of this scheme is to provide a DDA compliant footbridge with lift access to the platform. The scheme will be delivered by March 2018.

Safeguarding a number of existing and former rail routes will work towards protecting existing and future transport use in order to help reduce the costs of providing new routes in the future be they for walking, cycling and or rail use.

Local Bus Services

Measures to accommodate the future increase in local bus travel, as forecast in TEMPRO, include:

- Diversion of existing commercial and/or subsidised services to serve new development sites including provision of new routes where appropriate and avoiding unduly disadvantaging existing users;

- Improving bus running times and reliability by reducing future traffic congestion on the road network. The measures proposed to reduce congestion on the highway network are set out below in the following section on Highways;
- The Council will work closely with the bus operator to make real time travel information available at key transport hubs such as bus and rail stations as well as major shopping centres;
- The Council will also look to provide bus priority either through the use of established Bus Mova traffic signal technology or physical road allocation where appropriate;
- The Council will work with developers to introduce Travel Plans for new developments aimed at marketing and promoting the use of the local bus service, as opposed to car travel;
- The Council will also work with developers to ensure provision of regular bus services into major development sites at an early stage before car dominated travel habits are established. However, such developer funding will be time limited and inevitably, in the absence of increased revenue resources for local authorities, there is an unavoidable 'use it or lose it' element to all such bus service provision;
- Where it is not viable to divert bus services into new developments, developers will be expected to fund improved walking links to the main line bus services; andDevelopers will be expected to fund improvements to local bus stop infrastructure - the bus infrastructure requirements of developments will be considered on a case by case basis at planning application stage.

The Council has involved Arriva in the Local Plan process and it is proposed to divert a number of bus services to serve the new development sites as shown on *Table9*. Further detail is set out in *Appendix 1*.

Housing / Employment Site	**Is the site served by a commercial service? If so which service?**	**Could the site be served by diverting a commercial service?**	**Could the site be served by a subsidised service? If so which service?**	**Could the site be served by the diversion of a subsidised service?**	**Would the site require a completely new service?**
H1	No	5,6,7	No	No	No
H2	No	No	14	14	Yes - £875,000 has been secured for new bus services
H3	5,5a,6,7	No	No	No	No
H4	9	No	No	No	No
H5	1/2, 4, 9	No	No	No	No
H6	4	No	No	No	No
H7	1,2	No	No	No	No
H8	No	No	15,16	15	No
H9	3, 4	No	No	No	No
H10	No	No	No	No	Yes
H11	4,5,5a,6,7	No	14	No	No

H12	4,5,5a,6,7	No	14	No	No
H13	5	No	No	No	Yes
H14	4	No	15,16	No	No
H15	1,2	No	No	No	No
H16	7	No	No	No	No
H17	6	6	No	19	Yes

Table 9 – Proposal for bus services serving the housing development sites

The Council has also secured funding to relocate Telford bus station as part of the Council's initiative to regenerate the Town Centre economy.

It should also be noted that government itself has a significant role to play in supporting bus travel through the National Concessionary Travel Scheme (NCTS). This will help maintain the viability of a number of local bus services through subsidised travel support for elderly passengers. It will continue to encourage higher levels of travel at off-peak and evening

times, thereby generating additional revenue streams for bus operators without significantly increasing operating costs. In comparison, traditional modal shift measures, which are aimed at car commuters, increase the demand for peak period services and significantly increase operating costs for operators as new vehicles and more drivers are required.

6.2 Walking and Cycling

The NPPF recommends that developments be located and designed, where practical, to give priority to pedestrian and cycle movements and to actively manage patterns of growth to make the fullest possible use of walking and cycling. It also emphasises that larger scale residential developments, in particular, should deliver a mix of uses in order to provide opportunities to undertake day-to-day activities, including work, on site. Where practical, particularly within large-scale developments, key facilities such as primary schools and local shops should be located within walking distance of most properties. In addition, street layout and design strongly influences how people make their daily journeys with the concept of 'filtered permeability' having an important role where direct access is deliberately restricted for private motor vehicles, but maximised for walking, cycling and public transport.

Manual for Streets emphasises that attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations. Making Space for Cycling guide for developers[12] emphasises that "the key to enabling high cycling levels is excellent quality infrastructure, appropriate to the location, as well as bicycle parking. People don't like mixing with heavy traffic and therefore, space for cycling is needed, away from motor vehicles, with care taken in relation to pedestrians. Sustrans [13] recommend all new developments be accessible and permeable by walking and cycling and the spatial planning and route network design within new developments aim to make cycling and walking more convenient and attractive than using a car, for people of all ages, using the filtered permeability approach. Furthermore, road design within new developments should deliver low speeds (20 mph or less) to enable cycle users to mix with traffic and to facilitate pedestrians to cross roads more freely. Cycle and pedestrian tracks alongside new road schemes should be included as standard practice within 5 miles of an urban area and in other situations where a track would provide a connection between existing or planned cycle routes and footpaths or provide for a clear desire line. Finally, secure and conveniently located cycle parking should be provided throughout the development.

[12] http://www.makingspaceforcycling.org/
[13] http://www.sustrans.org.uk/sites/default/files/images/files/Route-Design-Resources/New_Developments_27_04_15.pdf

Each major housing and employment development was assessed in order to identify the cycling connectivity to the existing cycle network, identify gaps and missing links and identify the requisite mitigation measures in terms of new cycle links, traffic calming areas, crossing improvements etc. This will provide the developers with a clear starting point and will set out the requirements of where there is a requirement for improvements and how they should be delivered. Each development site was analysed in terms of its proximity to the existing cycle paths or routes in the vicinity. Based on that the opportunities of connecting the development site to the existing cycle route were examined and took into account various factors such as the available space, existing carriageway geometry and design, opportunities for off-road infrastructure, volume of traffic, key destinations in the vicinity etc.

An area cycle route network may be achieved through a combination of measures to manage the impact of motorised traffic as well as cycle specific infrastructure. The DfT's Local Transport Note 2/08 Cycle Infrastructure Design recommends the following hierarchical approach to cycling provision:

Consider first	Traffic volume reduction
	Traffic speed reduction
	Junction treatment, hazard site treatment, traffic management
	Reallocation of carriageway space
	Cycle tracks away from roads
Consider last	Conversion of footways/footpaths to shared use for pedestrians and cyclists

Figure 8. Hierarchical approach to cycling provision

Where appropriate, the Council will adopt the following principles when developing the cycle network in association with the Local Plan development sites:

- Convenience;
- Accessibility;
- Attractiveness;
- Safety; and
- Comfort.

Whilst all the above characteristics are important in the planning and in the design phase, convenience and accessibility were given particular emphasis as they are the most relevant in the planning phase whilst the safety, attractiveness and comfort are principally design related features. The key characteristics of convenient and accessible routes are:

Convenience: Networks should serve all the main destinations, and new facilities should offer an advantage in terms of directness and/or reduced delay compared with existing provision.

Accessibility: Cycling networks should link trip origins and key destinations, including public transport access points. The routes should be continuous and coherent. There should be provision for crossing busy roads and other barriers, and in some areas there should be a positive advantage over private motor traffic. Routes should be provided into and through areas normally inaccessible to motor vehicles, such as parks and vehicle restricted areas.

Therefore, the following measures are proposed as a set of design guidelines for each housing and employment development:

- Area wide measures:
    - Additional traffic speed reduction with traffic calming measures on streets with low volumes of traffic, including chicanes, 20mph speed limit and removing centrelines or hatchings

    - Route signage
    - Street lighting
- New cycle infrastructure on links:
    - New off-road cycle paths by converting the existing footpaths into shared use or by resurfacing the existing informal links and paths
    - New on-road cycle lanes where traffic volumes and width permit
    - New stepped cycle tracks
    - Widening footways and creating segregated shared use paths
    - Dropped kerbs
- Crossing facilities
    - New toucan crossings or converting pelican crossings into toucan crossings
    - New underpasses or bridges
    - Improving access with ramps instead of steps

Figure 10 below shows the cycling infrastructure that is proposed as part of the Strategy. It identifies new routes, extensions to existing routes, crossing points and locations where area wide measures are required. More detailed plans are provided in *Appendix 2*.

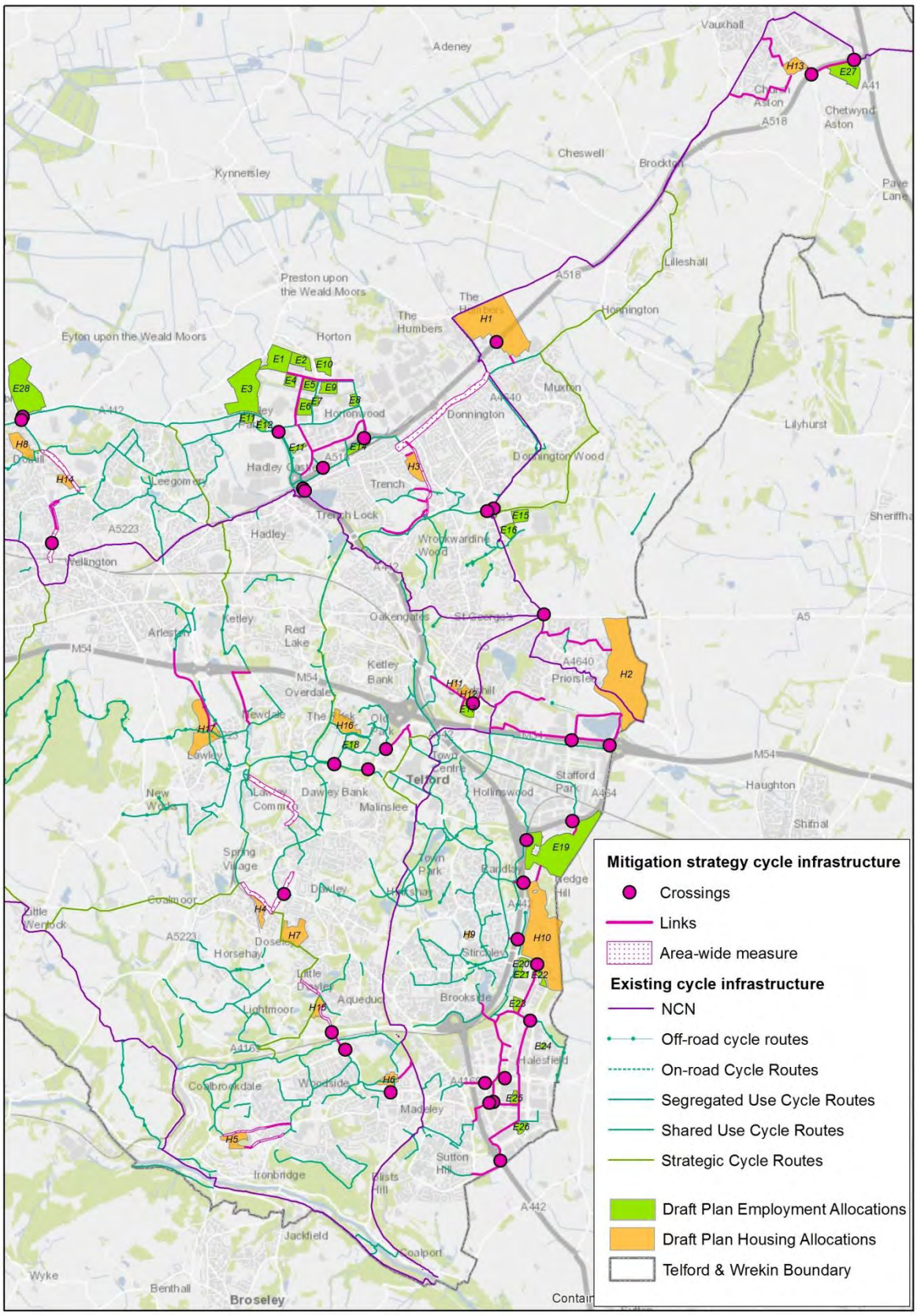

Figure 9– Existing and proposed cycling infrastructure

6.3 Travel planning

A travel plan is a long-term management strategy for an organisation or site that seeks to deliver sustainable transport objectives through action and is articulated in a document that is regularly reviewed.

The NPPF suggests that local plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people and a key tool to facilitate this is a Travel Plan. All developments which generate significant amounts of movement will be required to provide a Travel Plan as part of the Council's development control process.

The report commissioned by the DfT's "Good Practice Guidelines: Delivering Travel Plans through the Planning Process"[14] sets out the key requirements for effective integration of travel planning into the planning process. It emphasises that travel plans provide the key opportunity to ensure that new development can be effectively accessed by everyone who needs to get to and from a site, minimise the impact of developments on the transport infrastructure and help to reduce CO_2. There are other benefits for developments, for example a travel plan can also result in a development that is more attractive to potential occupiers, for example through environmental credentials or improved accessibility.

The document acknowledges that it is important to choose locations for development that are capable of being accessed by a range of modes of transport.

In relation to the transport assessment which set out the transport issues relating to a proposed development, travel plans are often a primary outcome from these assessments. Considering the assessment and travel plan as an integrated package of information and proposals to deal with the transport impacts of the development is the most effective approach so they should be submitted together with the planning application wherever possible.

The Council will encourage the early involvement of all parties – local authority, developer, transport operators, Highways England, the community – to help ensure that the travel plan is integrated fully into the preparation of the development and is an integral part of the implementation. Travel plans will be secured by a condition or planning obligation (Section 106 agreements). Planning conditions may be appropriate with smaller developments or when the range of measures required is simple. Conditions are not considered appropriate when payments are required. The complexity of most travel plans will mean that a planning obligation is the most effective means of securing its delivery. Wherever possible, the content and form of the travel plan will be agreed before the grant of planning permission.

Local Plan Policy C1 requires the developers to adopt an Area Wide Travel Planning approach for traffic major traffic generating destinations, for example Telford Town Centre, and prepare site based travel plans in support of this. Policy C3 expects developers to: assess the cumulative impact of new developments by using the TSTM, or other means, including Transport Assessments, if these are deemed to be more robust.

[14] http://webarchive.nationalarchives.gov.uk/20120214193900/http://dft.gov.uk/pgr/sustainable/travelplans/tpp/goodpracticeguidelines-main.pdf

School travel plans

A school travel plan is a series of practical steps for improving children's safety on the journey to and from school, benefiting both the school and the wider community. It helps reduce the numbers of cars on the road at peak times and contributes to the improvement of the environment around the school. The Council already offers considerable School Travel Planning support and a template is available for the developers of the travel plans together with the Quality Assurance document.

The DfT's "Guide on travel plans for developers"[15] touches the School developments and emphasises that "safety considerations should be at the forefront of design and layout in order to give parents and teachers the confidence to encourage children to walk or cycle to school."

The Department for Education and Skills published guidance on "Designing school grounds"[16] which mentions the points that will be considered for new school developments:

- A rigorous Green Travel Plan can significantly reduce the most area hungry needs of pupil pick-up and drop-off;
- Designing bus drop-off areas that can be closed to vehicles through the school day can allow for additional playground space during this time and additional parking for community activities in the evening;
- There may need to be off-site road works to bring adjacent roads up to standard to accommodate the school traffic and to slow traffic down outside the school gates.

At the same time, access and circulation will be carefully considered in terms of efficiency, security and safety and the grounds zoned by their activity, including the size and location of

[15] http://webarchive.nationalarchives.gov.uk/20101124142120/http:/www.dft.gov.uk/pgr/sustainable/travelplans/work/deontravelplansfordevelopers.pdf

[16] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/276691/schools_for_the_future_-_designing_school_grounds.pdf

entrance, safe access for delivery and maintenance vehicles, dropping off points for buses and cars, and routes and facilities for pedestrians and cyclists. It points out that cars should ideally be located off-site where possible but nonetheless car parking needs to be where it doesn't interfere with break time activities or movement around the school and is sited with health and safety in mind. Finally, the design should be linked to the School Traffic Plan.

6.4 Highways

The Council has secured partial funding for the following transport schemes as part of the Growth Deal agreed by The Marches LEP with Government in July 2014:

- Telford Growth Package;
- Telford Eastern Gateway (J4 M54 improvement); and
- Telford Bus Station.

However, the LEP funding is dependent on additional local contributions being secured and negotiations with developers continue in this regard. As such, the schemes have not been treated as firmly committed schemes in the modelling process.

The Council has also secured additional funding for the widening of Hall Park Way and Rampart Way in Telford Town Centre adjacent to Junction 5 on the M54 through the Government's recent Highway Maintenance Challenge Fund.

The TSTM has been used to assess the impact of both committed and Local Plan developments on the highway network. This work is set out in two supporting documents:

- Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan; and
- Telford Strategic Transport Model – Forecasting Report.

The former report identifies future operating conditions on the highway network in both 2020 and 2031 taking account of programmed schemes for which 100% funding has already been secured. This is termed the Do Minimum highway scenario. Both with and without Local Plan development scenarios are considered:

- Town Centre – Box Road Conversion to two way operation from one way;
- Partial Signalisation of Malinslee Roundabout;
- Partial Signalisation of M54 J5 Forge Roundabout;
- Lawley phasing scheme and junction signalisation;
- New roundabout at A5223/Wellington Road;
- B4373 Springhill Road / New Street Signal junction and widening; and
- A41 / A518 junction improvements, Newport.

It also considers the impact of additional schemes for which only partial funding has been secured. This is termed the Do Something 1 scenario. Again, both with and without Local Plan development scenarios are considered:

- M54 Junction 4 Eastern Gateway - Signalisation Scheme;
- Connectivity Package (Hall Park Way / Rampart Way Dualling Scheme);
- Growth Point Package Schemes
    - Trench Lock Interchange
    - Clock Tower Roundabout
    - Shawbirch Roundabout
    - Ketley Brook Roundabout
    - Lime Kiln Roundabout
    - Randlay Interchange
- Leegomery roundabout improvement works – Developer Scheme;
- B5061 Holyhead Road / Haygate Road junction improvements.

The DS1 scenario was analysed to identify those parts of the network where congestion would occur if the proposed Local Plan developments proceeded. This analysis was used to determine the additional schemes which would be required to mitigate the impact of these developments. Schemes required in the short term (2020) are:

- A518 at Garrison Roundabout;
- West Centre Way between Old Park Roundabout and Thomas Telford School Roundabout; and
- Brockton Interchange (A442 East to A442 South).

Additional schemes required by 2031 are:

- Brockton Interchange (A442 South to A442 East);
- A518 / Wellington Road Junction;
- A518 / Limekiln Lane Junction;
- Apley Roundabout;
- Naird Roundabout;
- Priorslee Roundabout;
- A442 dualling between Leegomery Roundabout and Hadley Park Roundabout;

- Upgrade of Leegomery Roundabout and Hadley Park Roundabout to accommodate dualling; and
- A5223 Haybridge Roundabout to Ketley Brook Roundabout

The TSTM has then been used to assess the impact of these highway improvements in operational terms both in 2020 and 2031.

This initial list of measures has then been subject to a further assessment process as set out below in Section 7.

6.5 Parking

NPPF suggest that when setting local parking standards for residential and non-residential development, local planning authorities should take into account:

- the accessibility of the development;
- the type, mix and use of development;
- the availability of and opportunities for public transport;
- local car ownership levels; and
- the overall need to reduce the use of high-emission vehicles.

Two types of car and cycle parking standards are set out in the Strategy: non-residential and residential. Both types of parking standards were based on the extensive research and analysis of factors suggested by the NPPF, and are outlined below. The standards were developed to encourage developers to invest in Telford and to ensure that the increased demand for parking in residential areas arising as a result of increased car ownership up to 2031 was met. Such an approach will help avoid an increase in the level of on street and footway parking both in residential and employment areas. This will increase safety for pedestrians and cyclists, particularly the disabled and partially sighted, improve bus circulation, maintain swift access for emergency service vehicles and reduce congestion due to reduced carriageway widths.

Non-residential car parking standards were based on consideration of the previous Wrekin Local Plan parking standards, standards in other local authorities with similar urban structure and travel patterns and, although no longer mandatory, PPG13 recommendations. Cycle parking standards were taken directly from "Design for Security - Cycle Parking Design Guidance"[17] and should be considered as minimal. Disabled parking standards were based on the "Inclusive Mobility" document by the DfT[18].

The residential parking standards were set by analysing car ownership and identifying the most important factors influencing car ownership in Telford and Wrekin which are:

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[18] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3695/inclusive-mobility.pdf

- Location (urban, suburban and rural - there is generally a lower car ownership in areas closer to borough town centres) – see *Figure 11*;
- Dwelling size, type and tenure (there is a lower car ownership in flats and in rented dwellings).

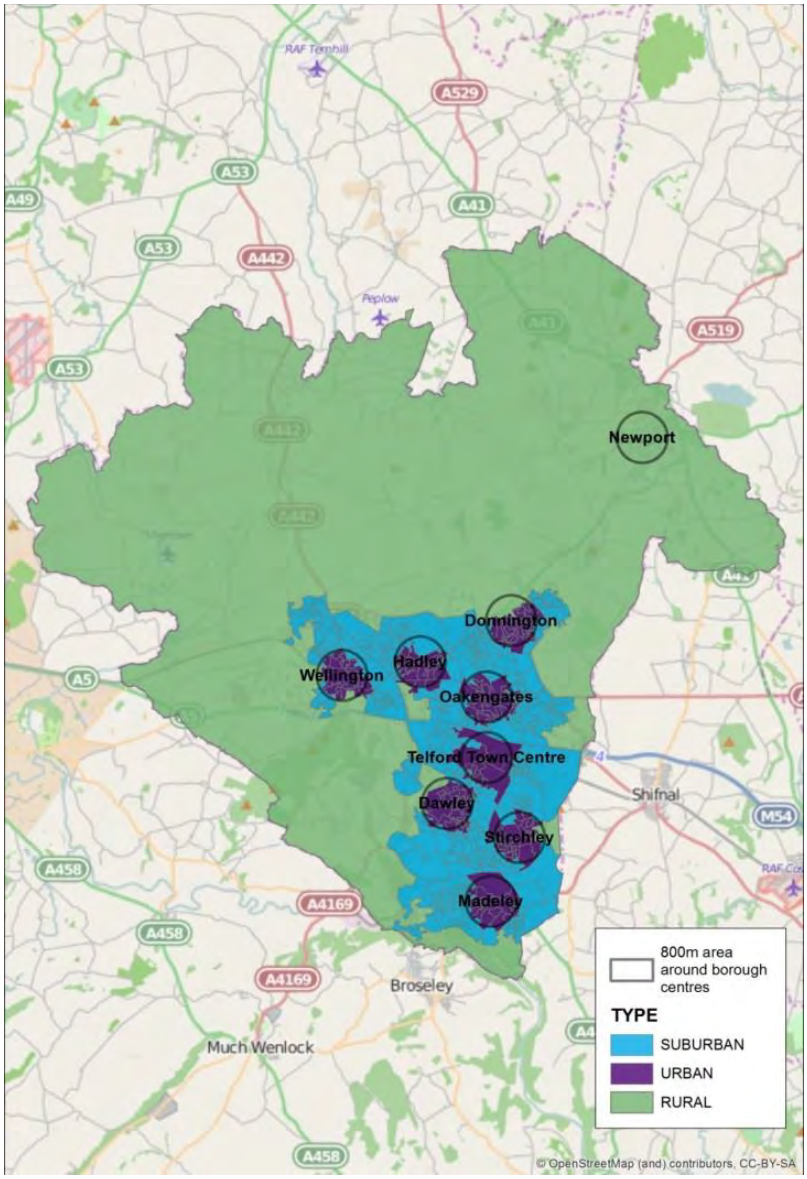


Figure 10- Areas defined for setting parking standards

A matrix approach to parking provision was adopted in this strategy based on national guidance published by the Department of Communities and Local Government in May 2007 entitled "Residential Parking Research". One of the main underlying principles was that overall numbers of car parking spaces in a development could be reduced if some spaces were provided that were not allocated to specific properties. This is because the allocation of spaces to individual dwellings can have an adverse impact upon the efficiency of car parking provision.

Existing car ownership levels were established from the 2011 census for five dwelling types based on the number of bedrooms. Figures were broken down according to three locations; Central, Suburban and Rural. Future car ownership levels were determined by factoring the existing 2011 values by forecast car ownership growth between 2011 and 2031 (Source: Tempro). A number of spaces were then allocated to each dwelling type based on the forecast car ownership in each category. A number of additional community or unallocated spaces was then determined in accordance with the methodology again based on the forecast car ownership levels. The final car parking standards are attached as *Appendix ?* in the Local Plan.

The Council will encourage developers to include EV points and cycle/motorcycle parking where appropriate and reasonable.

7. STRATEGY ASSESSMENT

At this stage in the planning process, the strategy has been assessed in light of the following criteria:

- Operational;
- Value for Money;
- Carbon Emissions; and
- Resilience.

7.1 Operational

As set out in section 6.4 above, the initial list of Do Something highway mitigation schemes was determined following an assessment of the impact of the proposed developments on the highway network on operational grounds. Measures assessed were forecast flows, capacity and congestion levels on both links and junctions. The results of this operational assessment are set out in the supporting report 'Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan'

7.2 Value for Money

Value for money(VfM) is a key factor when assessing schemes for inclusion in the Transport Growth Strategy. Accordingly schemes costing more than £5m were assessed using the standard DfT TUBA software package as recommended in WebTag. An assessment was also undertaken for the whole strategy.

The key factors to consider in this regard are the Net Present Value (NPV) and the Benefit to Cost Ratio (BCR) of a strategy or an individual scheme. The former is an absolute measure that examines both the monetary benefits arising from a scheme as well as the cost of the scheme itself. From an economic standpoint, it is worthwhile implementing any scheme with a positive NPV. Where budgetary constraints are an issue, the BCR provides a comparative measure of the benefits and costs in ratio form. For example, a BCR of 2 confirms that the benefits of the scheme are double the cost of the scheme.

The following table sets out the Present Value of the Benefits(PVB), Present Value of the Costs (PVC) together with the Net Present Value of the scheme (NPV) and BCR. It can be seen that the Transport Growth Strategy, in its entirety, provides excellent value for money having a BCR of 4.935. All the individual constituent major schemes also provide good value for money with the exception of the proposed improvements at Apley roundabout. However, in view of the forecast operational problems at this junction in 2031 combined with the excellent value for money for the strategy overall, this scheme remains a part of the recommended strategy.

Scheme Location	PVB	PVC	NPV	BCR
A518 Garrison Roundabout	50,385	14,458	35,927	3.485
A442 Leegomery RBT to Hadley Park RBT	61,502	13,697	47,805	4.490

A5223 Haybridge to Ketley Brook	23,726	6,070	17,656	3.909
Apley Roundabout	-7,298	4,811	-12,109	-1.517
A5223 Combined (*Estimated)	16,428	10,881	5,547	1.510
All Schemes (Inc Minor Schemes)	259,191	52,520	206,671	4.935

Table 10 Cost Benefit Appraisal

Guidance for Local Authorities seeking Government Funding for Major Schemes, previously issued by the DfT, classified schemes into four categories according to the BCR:

- **High** - where benefits are at least double the costs
- **Medium** - where benefits are between 1.5 and 2 times costs
- **Low** - where benefits are between 1 and 1.5 times costs
- **Poor** - where benefits are less than costs

Previous DfT policy was to generally fund most, if not all, projects with high vfm some, but by no means all, projects with medium VfM, very few projects with low VfM and no projects with poor VfM.

As part of the Government's devolution initiative, funding for the majority of major schemes is now provided by Government through the LEPs and the associated Growth Deal process although more expensive schemes are still subject to close scrutiny by DfT.

It should be noted that the above assessment is highway based only and excludes any cost benefit appraisal of the bus, walking and cycling measures. These measures have still to be costed and likely benefits quantified.

7.3 Carbon Emissions

The impact of the Strategy on CO_2 emissions was also appraised using the DfT TUBA software.

Table 11 shows that the Transport Growth Strategy will reduce CO_2 emissions for all vehicles by 659 tonnes in 2031 and by 39,186 tonnes in all appraisal years.

	2031					All years	
	Change in fuel consumption (DS-DM) (kilounits)			Change in CO2 emissions (tonnes)	Cost (central) (£)	Change in CO2 emissions (tonnes)	Cost (central) (£)
	Diesel	Petrol	EV				
All Schemes (Inc Minor Schemes)	-149	-174	5	-659	-24,000	-39,186	-1,833,000

Table 11 –CO2 emission forecasts

7.4 Strategy Resilience

Whilst the strategy incorporates substantial measures to encourage people to travel by more sustainable modes, there is ultimately no guarantee that people will actually change travel mode as a result of such measures being introduced. Accordingly, the highway schemes have been designed and assessed on the basis that no modal shift will occur in order to avoid the potential for under-design of highway infrastructure and the associated safety and congestion problems that would arise. In the event that modal shift does occur, the highway infrastructure will have a design life beyond 2031. This should ensure that the strategy is resilient to any reluctance for people to change their travel behaviour.

In this regard, key outcomes from the strategy will be monitored on an annual basis and the effectiveness of the strategy reviewed at regular intervals.

7.5 Other factors

Each major scheme component in the strategy will be the subject of a more detailed appraisal as the schemes progress through the various statutory planning and funding processes. This will accord with the advice set out in the Department for Transport's (DfT) WebTag advice including preparation of Appraisal Summary Tables (ASTs) including full consideration of the following areas:

- Economy;
- Environmental;
- Social; and
- Public Accounts.

This will involve the preparation of Business Cases for all major schemes in accordance with current Marches Local Enterprise Partnership (LEP) funding approval processes. A COBALT appraisal of road safety benefits will also be undertaken at this stage.

All bus, walking and cycling measures will also be costed and an analysis of likely benefits undertaken and monetised or quantified as appropriate in due course.

Implementation of all schemes in the Strategy will depend on 'fair and reasonable' contributions from developers as set out in the Local Plan Developer Transport Contribution Strategy in the supporting document. 'Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan'

8. AFFORDABILITY

CAPITAL FUNDING

The cost of the highways off-site strategic infrastructure is set out in Tables 1-4 below. Table 1 sets out the short term schemes to be delivered by 2020 for which funding has been partially secured through the LEP, DfT and developer contributions. Table 2 sets out other off-site highway improvements that may be required by 2020, however this will be subject to the way funding and developments come forward and as such there maybe some re-profiling of scheme delivery between tables 2 and 3 as the plan progresses. Table 3 sets out the longer term infrastructure requirements to deliver the full plan allocations up to 2031.

Table 1 - Partially Funded Schemes within Short Term IDP

Location	Total Scheme Cost	LEP/DfT/Developer Funding already secured	Remaining Contribution Required
GPP – Shawbirch Rbt	£2,195,861	£1,947,000	£248,861
GPP – Limekiln Rbt	£2,654,203	£2,654,203	£0
GPP – Clock Tower Rbt	£1,720,399	£1,359,115	£361,284
GPP – Trench Lock	£433,934	£342,808	£91,126
GPP – Ketley Brook	£1,077,079	£850,892	£226,187
GPP – Randlay Int	£723,201	£571,329	£151,872
Eastern Gateway – M54 J4	£3,600,000	£3,040,915	£559,085
TTC Connectivity Package	£12,300,000	£10,700,000	£1,600,000
Leegomery Roundabout	£352,150	£110,928	£241,222
Holyhead/Haygate Road Signals	£721,459	£0	£295,957
Holyhead/Haygate Road/Oaks Crescent	£980,977	£80,020	£900,957
Holyhead Road/Roman Road	£1,277,229	£166,100	£1,111,129
Partially Funded Scheme Total	**£28,036,492**	**£21,823,310**	**£6,213,182**

Table 2 - Short Term Schemes IDP

Location	Construction Cost	Risk (25%)	Optimism Bias (44%)	Total Cost
A518 at Garrison Rbt	£10,158,395	£2,539,599	£4,837,331	£17,535,325
West Centre Way	£1,517,149	£379,287	£722,452	£2,618,887
Brockton Interchange	£192,308	£48,077	£84,615	£325,000
Short Term IDP Total	**£11,867,852**	**£2,966,963**	**£5,644,398**	**£20,479,212**

Table 3 - Long Term Infrastructure Costs

Location	Construction Cost	Risk (25%)	Optimism Bias (44%)	Total Cost
Brockton Interchange	£95,276	£23,819	£41,922	£161,017
Apley Rbt	£3,380,078	£845,020	£1,609,561	£5,834,659
Naird Rbt	£712,022	£179,255	£341,439	£1,237,716
Priorslee Rbt	£1,659,898	£414,975	£790,428	£2,865,301
A518/Limekiln Lane	£2,614,726	£653,681	£1,245,108	£4,513,515
A518/Wellington Rbt	£2,628,293	£670,681	£1,277,759	£4,631,875
A442 Leegomery Rbt to Hadley Rbt	£9,623,827	£2,405,957	£4,582,775	£16,612,558
A5223 Haybridge Rbt to Ketley Brook Rbt	£4,265,171	£1,066,293	£2,031,034	£7,362,497
Long Term IDP Total	**£24,984,291**	**£6,259,823**	**£11,920,026**	**£43,219,138**

Table 4 - Combined Short Term and Long Term IDP Costs

Construction Cost	Risk (25%)	Optimism Bias (44%)	Total Cost
£36,852,143	**£11,904,221**	**£14,886,989**	**£69,911,532**

The total cost of the strategy is £91,734,842 of which the Council has already secured £21,823,310 through the Marches Local Enterprise Partnership, Central Government funding and developer contributions. This leaves a funding gap of £69,911,532 as such it is vital that the Council continues to secure contributions from developers towards transport

infrastructure however given the high levels of committed development and current restrictions on S106 funding the Council will also be highly reliant on securing funding through other sources.

Other contributions will be secured on a site by site basis, such as improvements for bus services or cycling and walking or will be delivered by the developer under Section 278 agreements such as their site accesses.

The main source of public funding for transport in the future is expected to be the Government's Growth Deal process. It is currently understood that all previous significant sources of Government funding such as Major Schemes, Local Sustainable Transport Fund, Community Infrastructure Fund etc. will now be subsumed within the Growth Deal process and that no further support will be available apart from the Local Transport Plan settlements.

An example of recent ad hoc Government bidding opportunities was the Highway Maintenance Challenge Fund through which the Council secured £10m for the dualling of Hall Park & Rampart Way and the replacement of Telford Central Footbridge. Other opportunities available to T&WC will be the Home and Community Agency growth deal which is expected to provide pipeline funding of £12.5m for highways funding.

Developer Funding

The supporting document entitled 'Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan' sets out the basis of a 'Fair and reasonable developer contribution strategy'. In the absence of the imposition of a Community Infrastructure Levy (CIL) through the Local Plan process, this will be the main platform for securing developer contributions in Telford.

The cost of the funding gap is identified as £69,911,532 and is apportioned between the developer and the public sector according to the ratio of traffic generated by the new Local Plan developments and total traffic, including that generated by committed developments and non-development traffic. This provides a cost per trip of £1,263.83 and ensures that the contribution is fair and reasonable to the developer and moves away from a first past the post approach whereby developers would be expected to pick up the full cost of mitigation. The cost per trip that has been calculated will be used as an initial starting point for discussion with developers and will then be allocated to a specific item of infrastructure identified within the strategy that is relevant to the development. This will ensure that the approach meets the requirements of both the CIL and S106 regulations.

Public Sector Funding

The primary source of public funding for transport is expected to be the Government's Growth deal process. The potential sum from future growth deals between Government and The Marches LEP has been estimated using a simple extrapolation of the settlement for the first Growth deal between 2015/16 and 2020/21 as announced in July 2014 as set out below:

Telford Growth Point Package – this is a £17m package of improvements on the network across the Borough aimed at supporting jobs & housing delivery including some funding for sustainable transport. Some of this is for non-related transport schemes but the majority of

the funding (£14.9m) is for transport. The money available is spread across 2015/16 & 2016/17.

M54 J4 – capacity improvements at J4. The funding for this scheme (£3.6m) is currently classed as a pipeline scheme for 2016/17. Final confirmation is expected shortly in the December 2015 spending review.

Telford Bus Station – relocation of the existing bus station to unlock development. Funding for this scheme (£1.3m) is currently classed as a pipeline scheme for 2016/17. Again final confirmation is expected shortly in the December 2015 spending review.

This gives a sum of £19.8m for transport over the 6 year period 2015/16- 2020/21. At an average of £3.3m per annum this gives a budget estimate from future growth deals for Telford based transport schemes of £33m. This leaves a net funding gap of just over £19m to be funded out of the public purse in the period up to 2030/31. The Council expect the funding gap to reduce as pipeline funding comes on stream including £12.5m for highways funding from the Homes and Communities Agency Land Deal. Future bids submitted as part of The Marches Local Enterprise Partnership Growth Deal 2 will be developed in due course to address the residual sum.

In the short term the total cost of projects identified in the Infrastructure Delivery Schedule, for the first five years of the Local Plan is £28,036,492. A total of £21,823,310 has already been secured via LEP, DfT and developer funding leaving a funding gap of £6,213,182. This will need to be funded by the HCA Land Deal, ongoing developer contributions, external bidding opportunities and local contributions.

Strategic Network Funding

The impact of the Local Plan developments on the Strategic Road Network will be assessed by Highways England after due discussion with developers. T&WC has liaised closely with Highways England in this regard including making the TSTM available for use with the associated impact assessment work. Appropriate developer contributions will be agreed by Highways England and secured through Section 278/106 agreements between the developer and the Local Planning authority. Any residual problems on the SRN not funded through the above process will then need to be funded by Highways England.

REVENUE FUNDING

The main revenue impacts of the Transport Growth Strategy are expected to be:

- Additional funding to enable appropriate sustainable access to be provided to all the development sites including bus services; and
- Site based travel planning and promotion.

These costs will be met by developers through Section 106 agreements and agreed on a site by site basis.

Risk

The cost of all schemes included The 'Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan' contain a significant allowance for risk and optimism bias. All costs have

been determined at outturn prices and increased by a further 25% to allow for risk. The costs have then been subject to a further 44% increase in accordance with Treasury advice. This latter element will be reduced throughout the design process again in accordance with Treasury advice.

The high level of risk and optimism bias reflects the proposed schemes early stage of development and as the scheme progresses it is expected that these costs will reduce. Similarly this £69m represents a worst case scenario of delivering the full housing and employment allocations which may not come forward within the lifetime of the plan. The remaining funding gap will then have to be met by Central Government/LEP funding, HCA growth deal, Council capital and securing developer contributions.

It can be seen, therefore, that the cost of the strategy has been determined in a most robust fashion at this early stage in the planning process.

9. CONCLUSION

This report has examined the impact of the proposed Local Plan development sites on the highway network and derived a cost effective strategy to mitigate this impact. This work has taken account of background traffic growth as well as that generated by committed developments.

The methodology used in the report accords with the advice in the National Planning Policy Framework and an extensive evidence base has been developed as recommended.

Measures to provide sustainable access to the proposed Local Plan development sites including facilities for bus users, cyclists and pedestrians have been investigated in some detail.

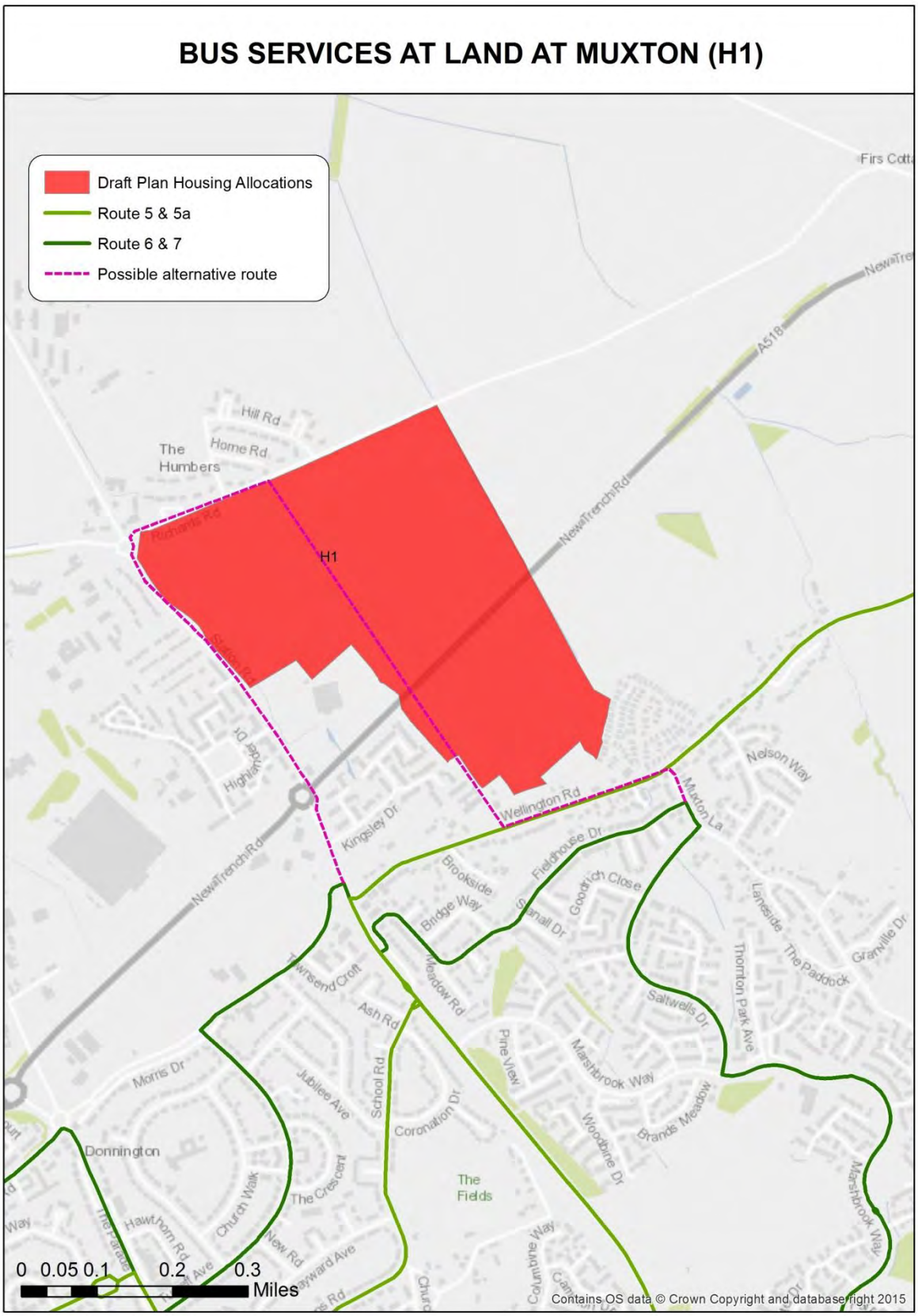
The issues raised by continued car ownership in terms of congestion, car parking, safety and the environment has been taken into account as part of the appraisal of the recommended Transport Growth Strategy.

The issue of affordability in both the short and long term has been addressed and the need for ongoing monitoring of key outcomes is acknowledged.

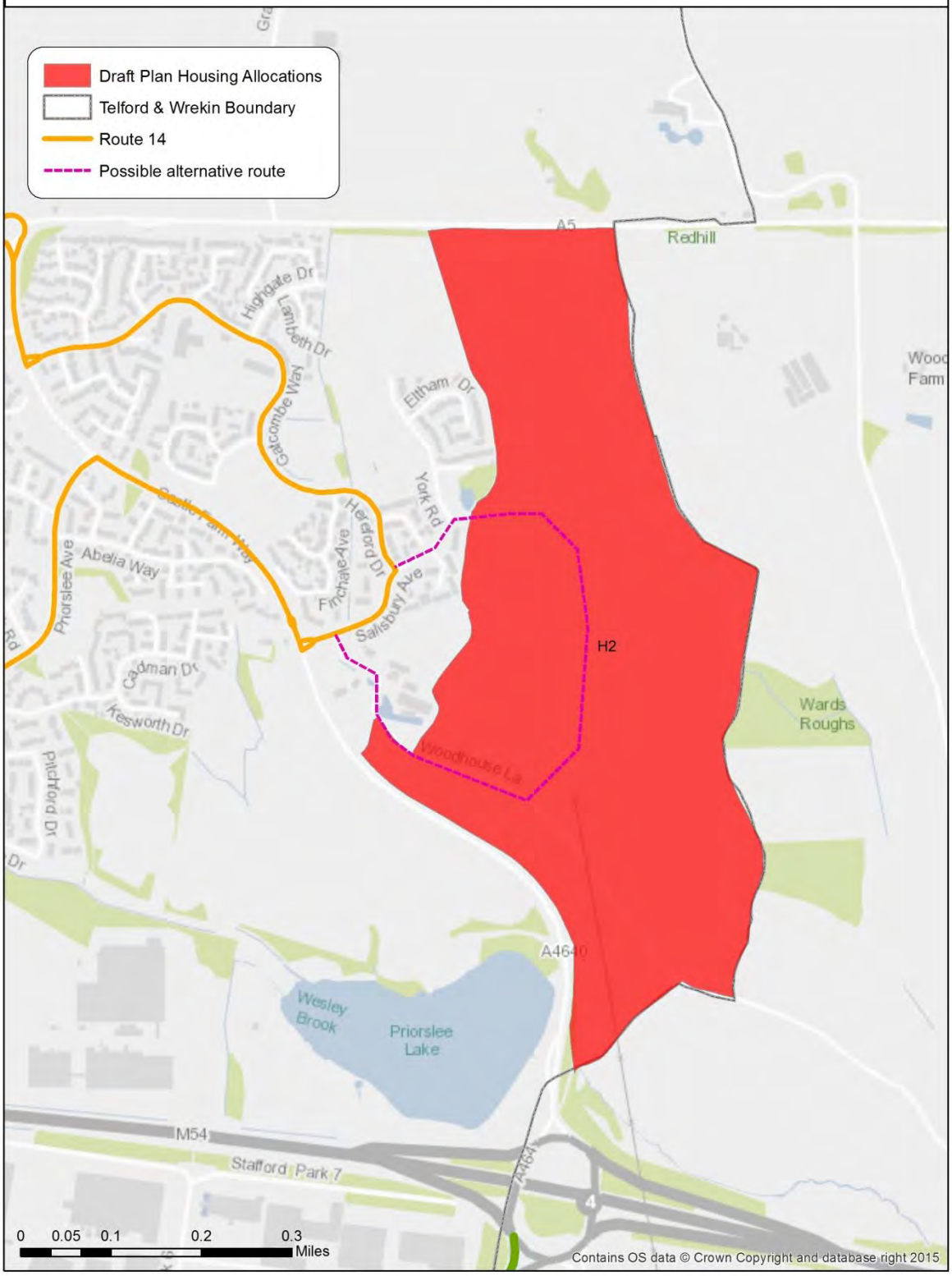
Finally, it should be noted that the preparation of the Local Plan is the first step in the development and highway planning processes and additional work will be undertaken at the relevant statutory stages including planning applications, bidding applications and highway order making processes.

10. APPENDICES

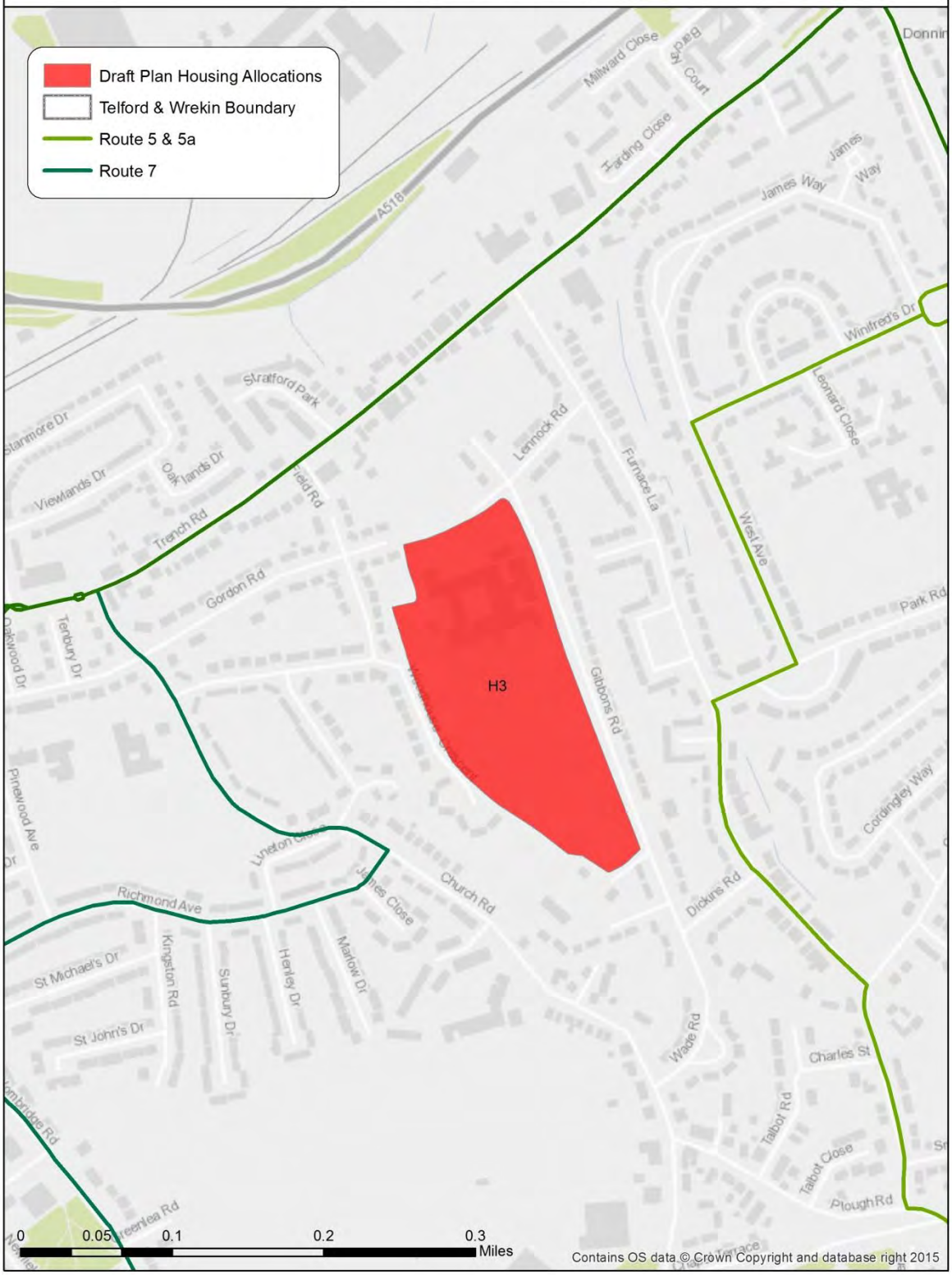
Appendix 1. Bus Access to Local Plan Developments



BUS SERVICES AT WOODHOUSE, PRIORSLEE (H2)

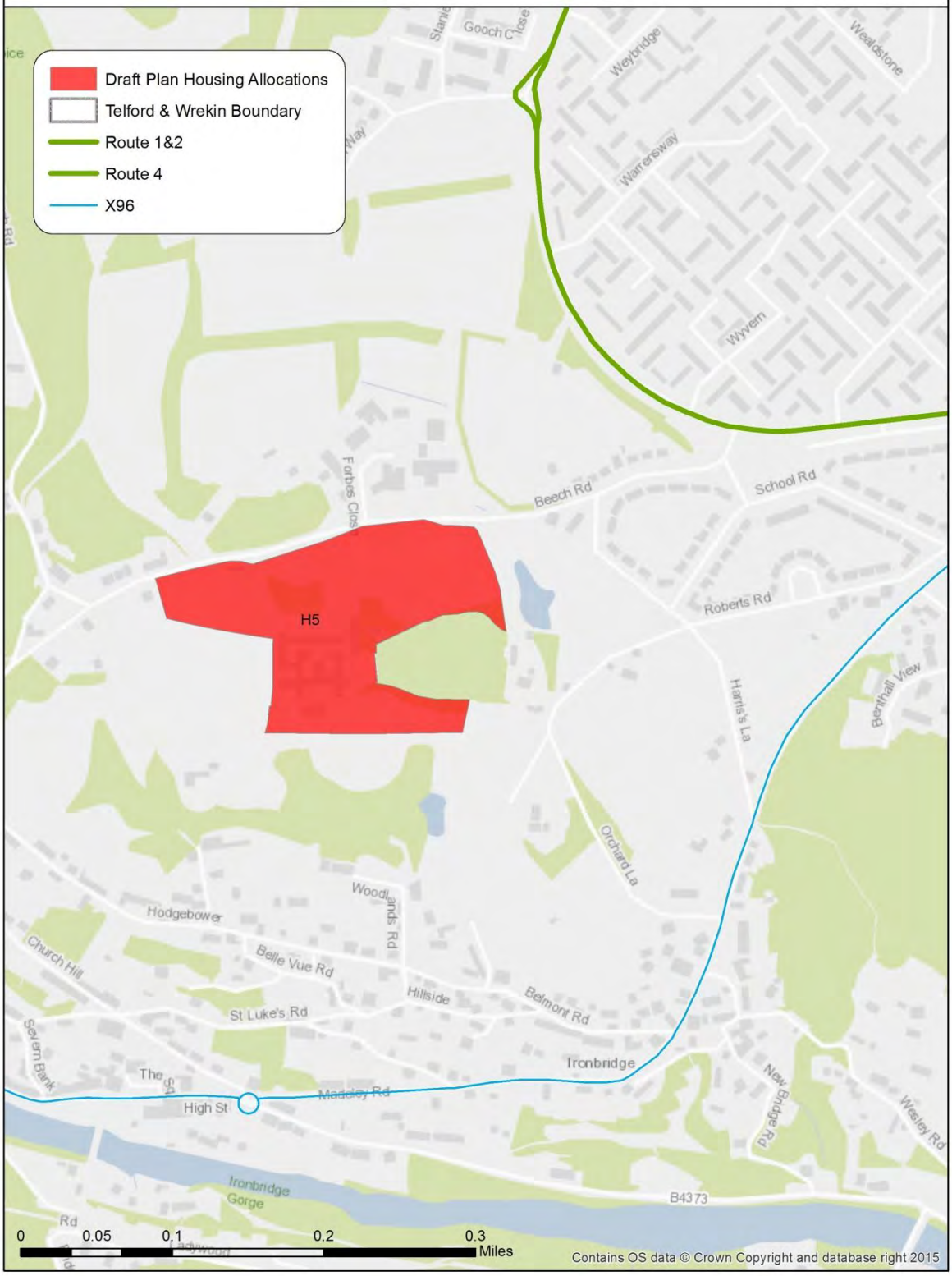


BUS SERVICES AT SUTHERLAND SCHOOL, GIBBONS ROAD (H3)

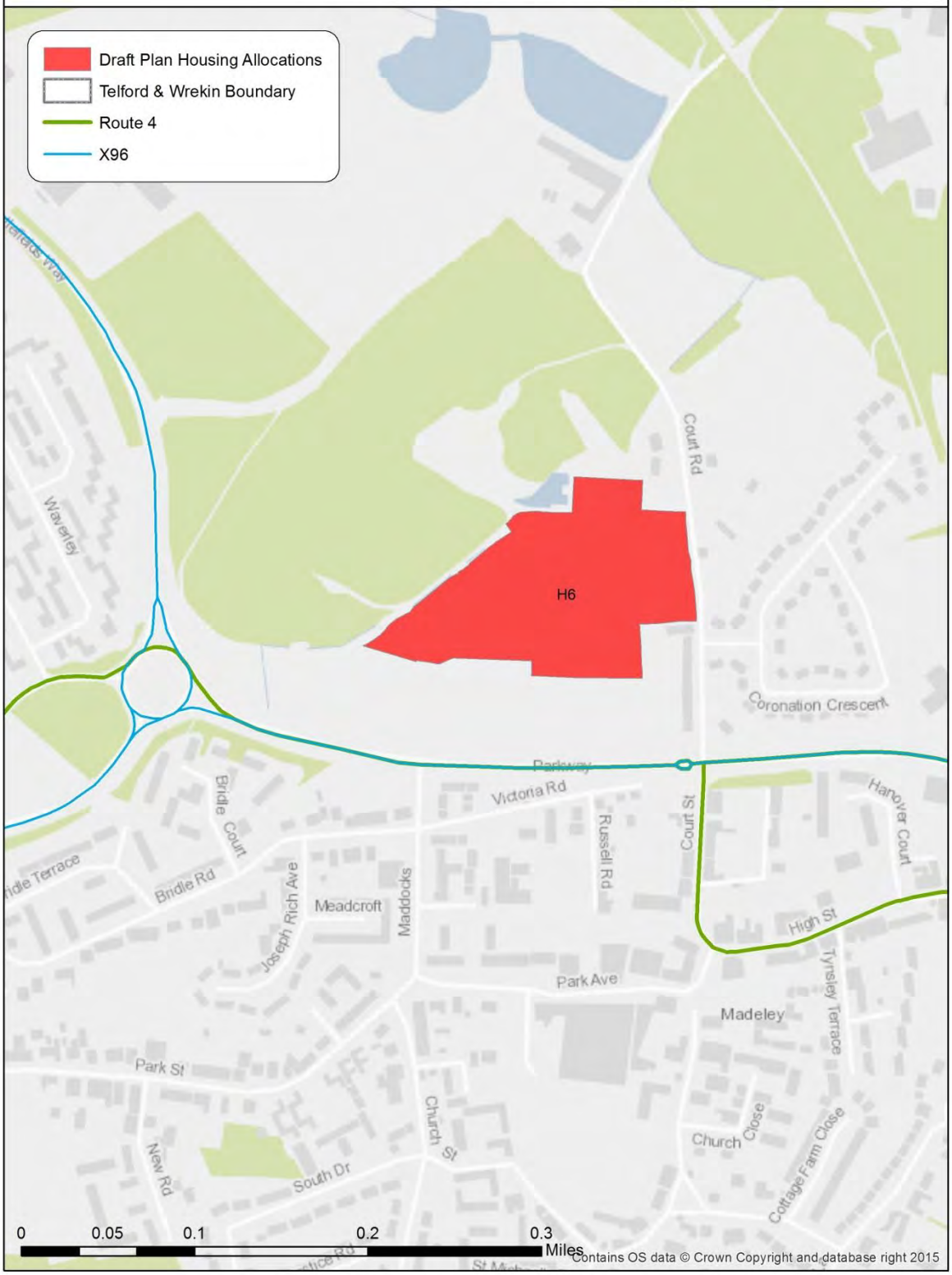


BUS SERVICES AT PLOT D, POOL HILL ROAD, DAWLEY (H4)

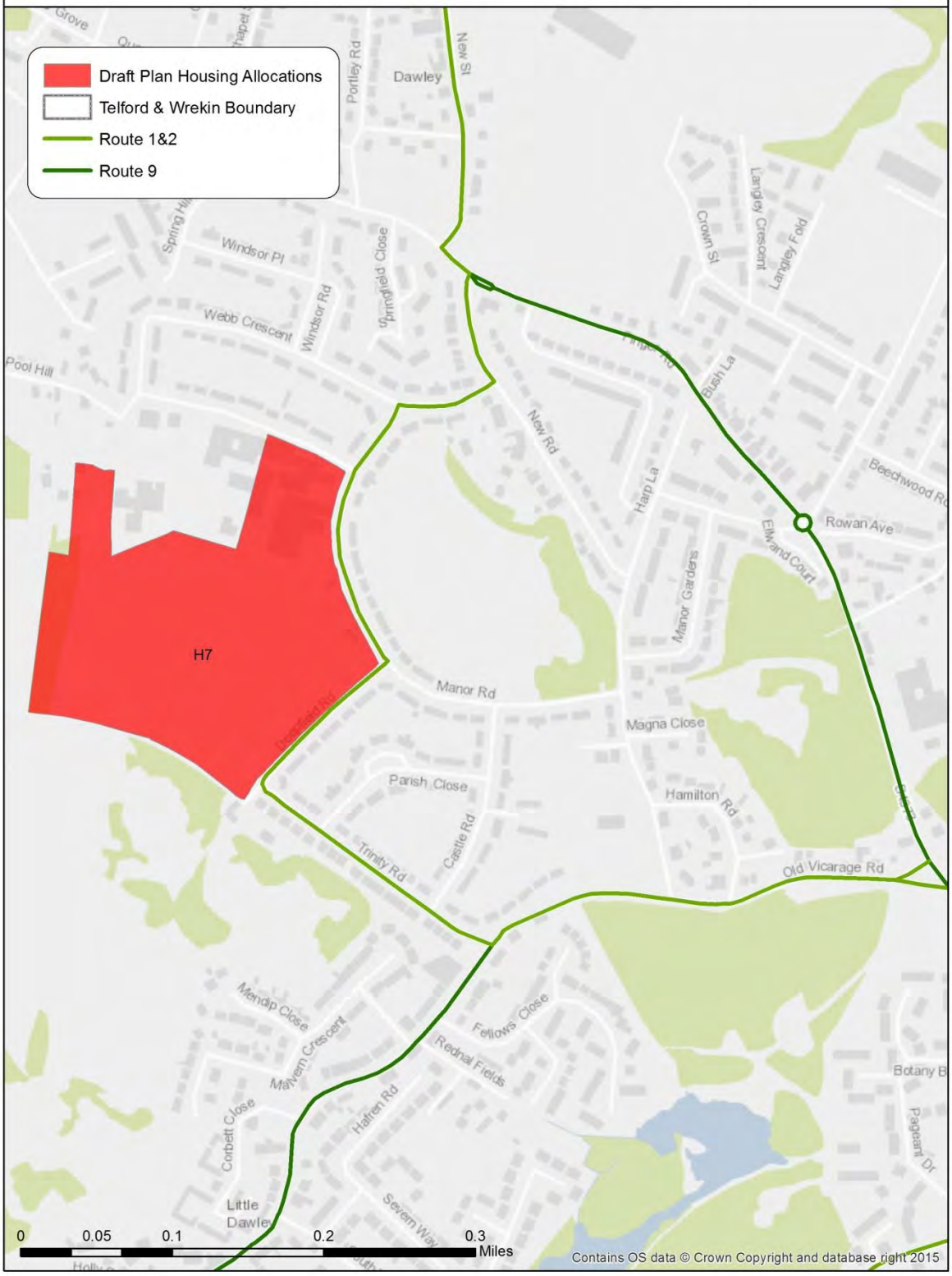
BUS SERVICES AT BEECHES HOSPITAL (H5)



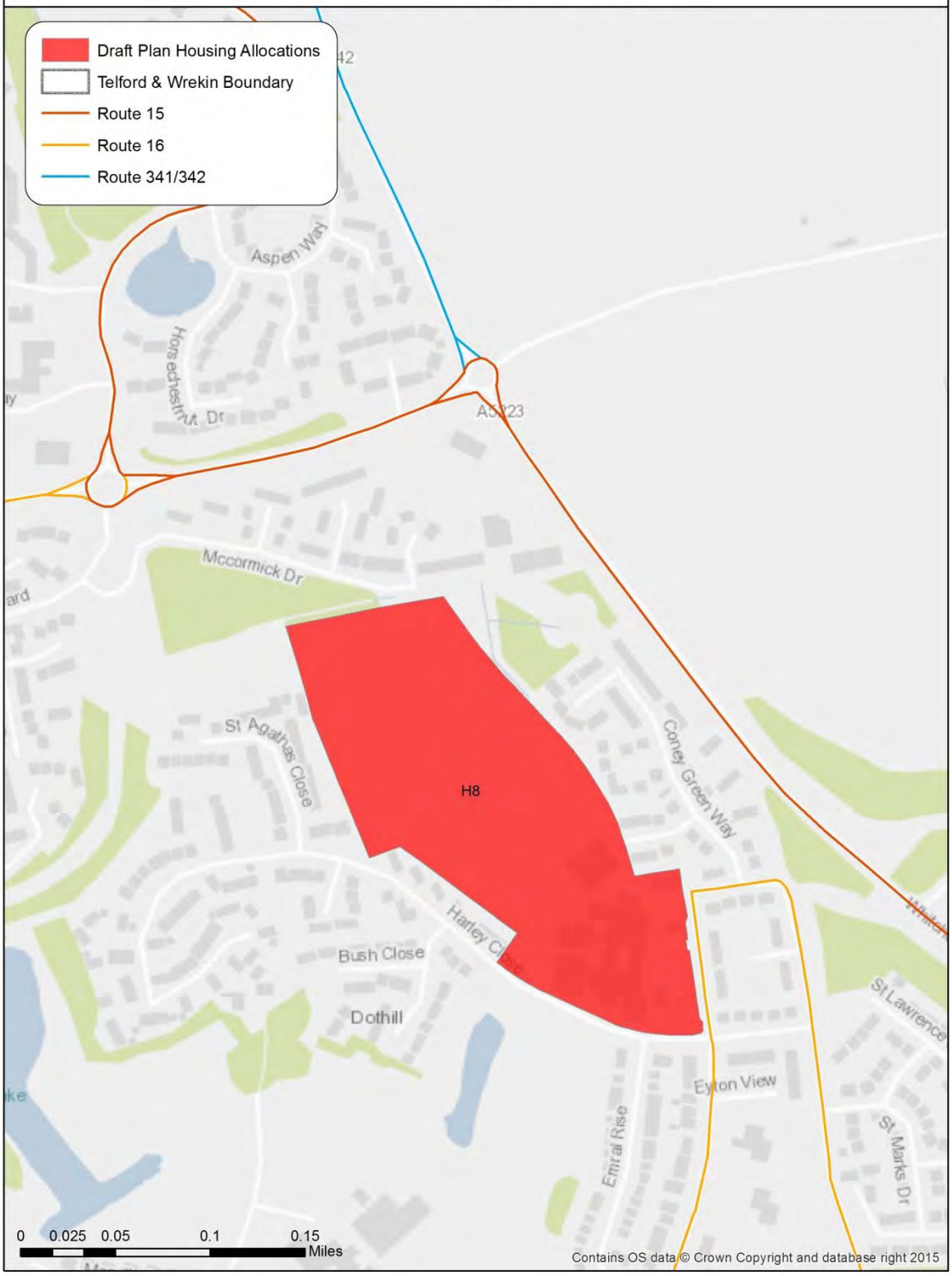
BUS SERVICES AT FORMER MADELEY COURT SCHOOL SITE (H6)



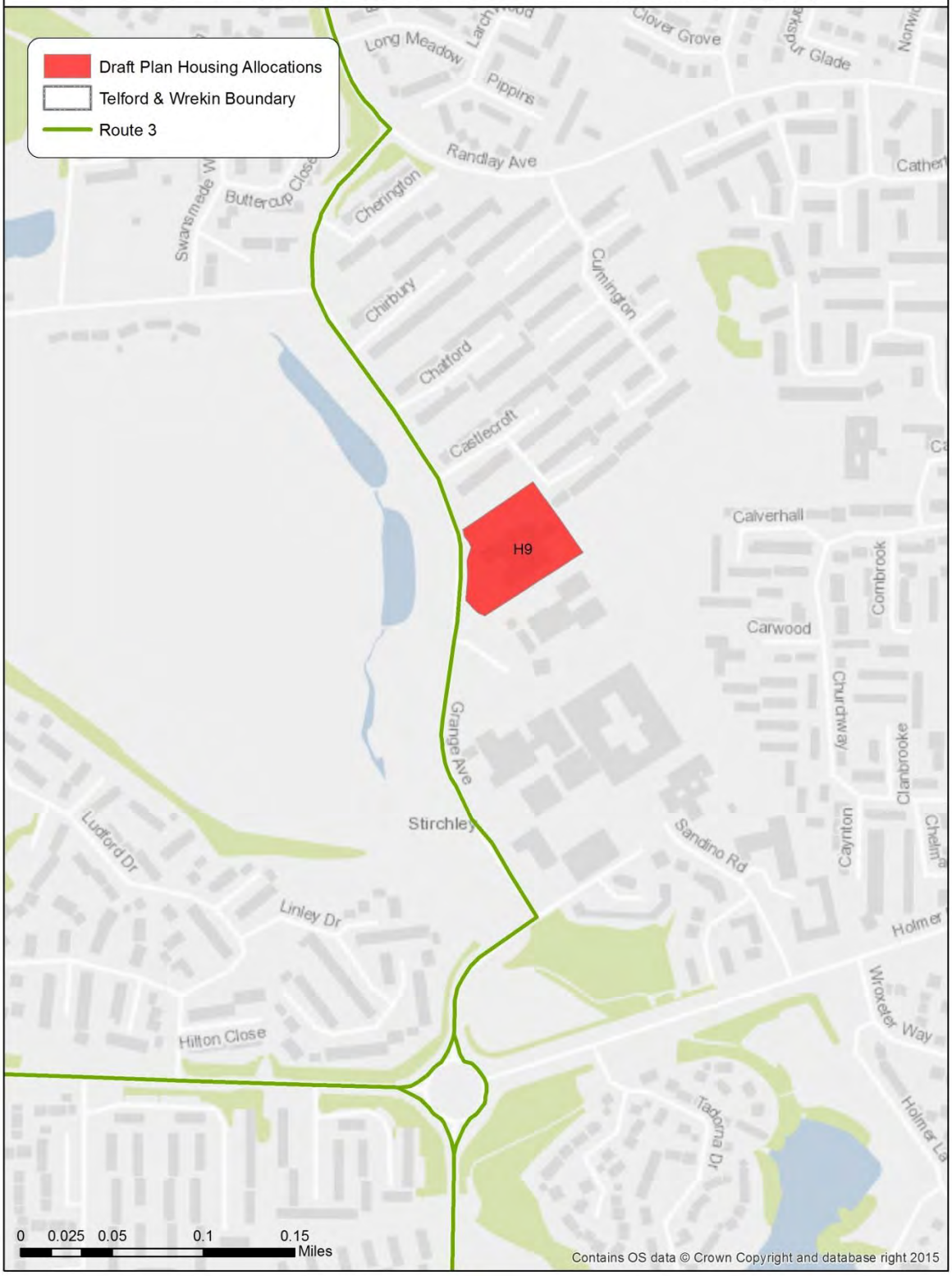
BUS SERVICES AT THE FORMER PHOENIX SECONDARY SCHOOL (H7)



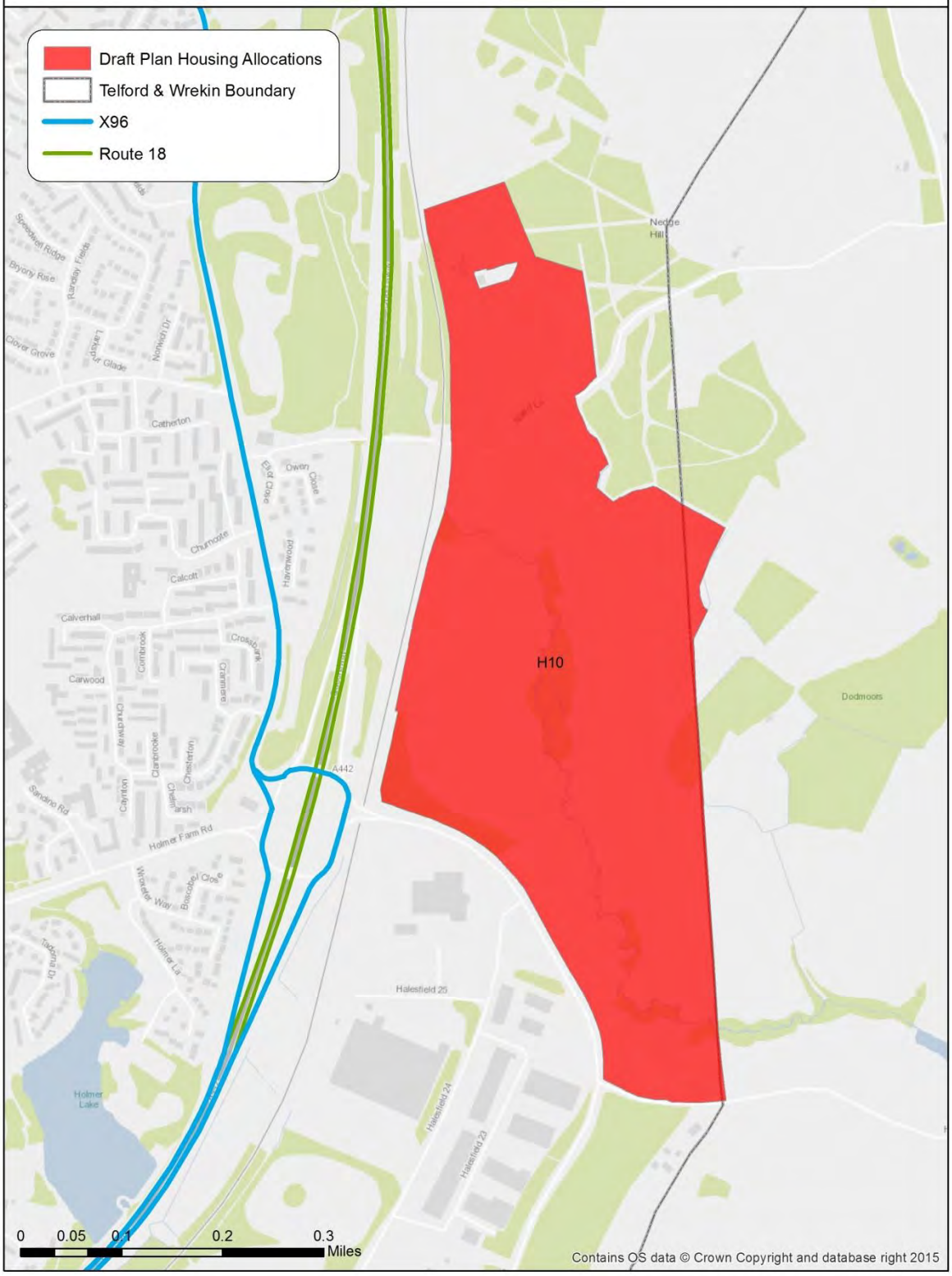
BUS SERVICES AT THE CHARLTON SCHOOL, SEVERN DRIVE, DOTHILL (H8)



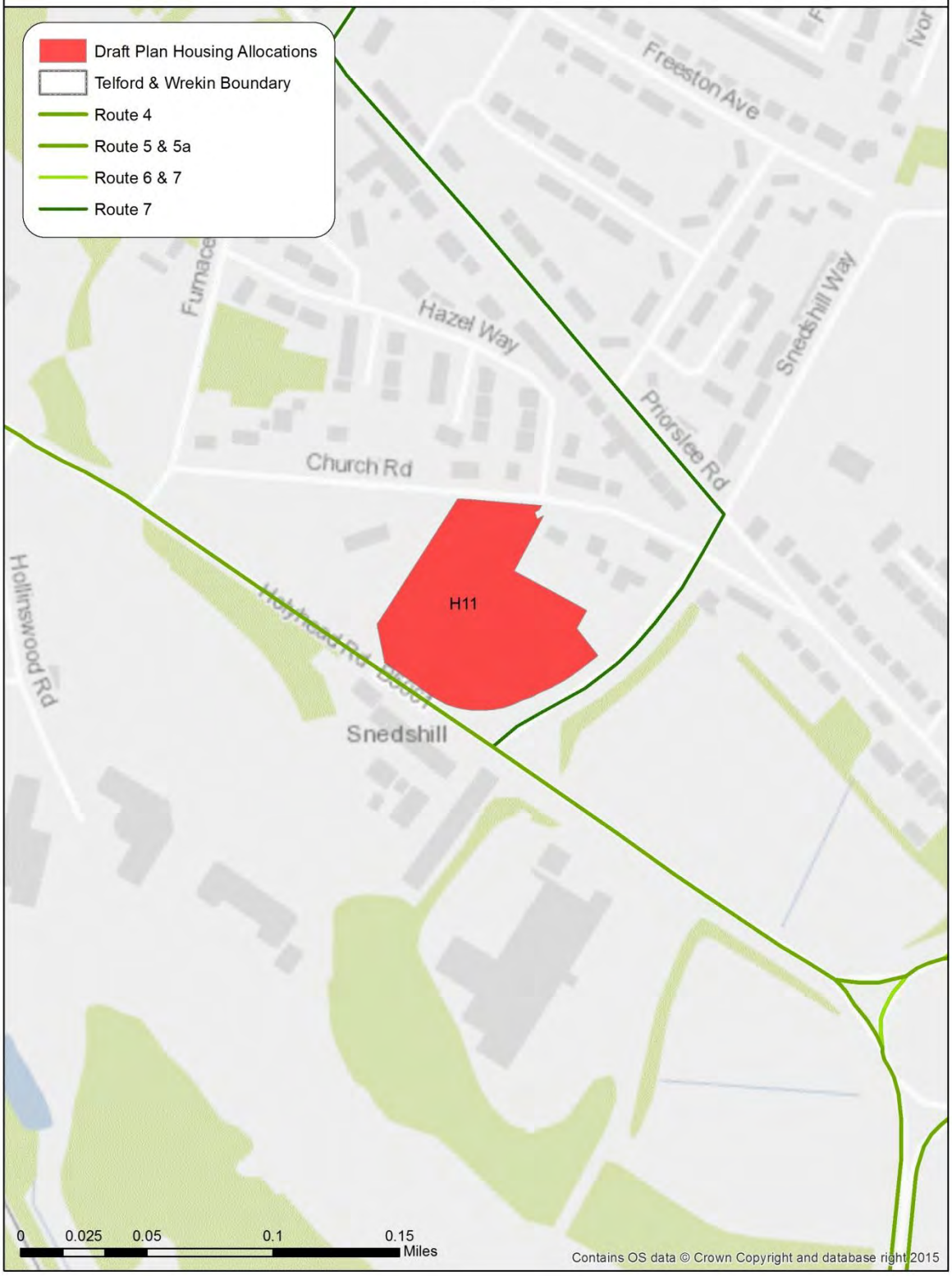
BUS SERVICES AT THE FORMER SWAN CENTRE, GRANGE AVENUE, STIRCHLEY (H9)



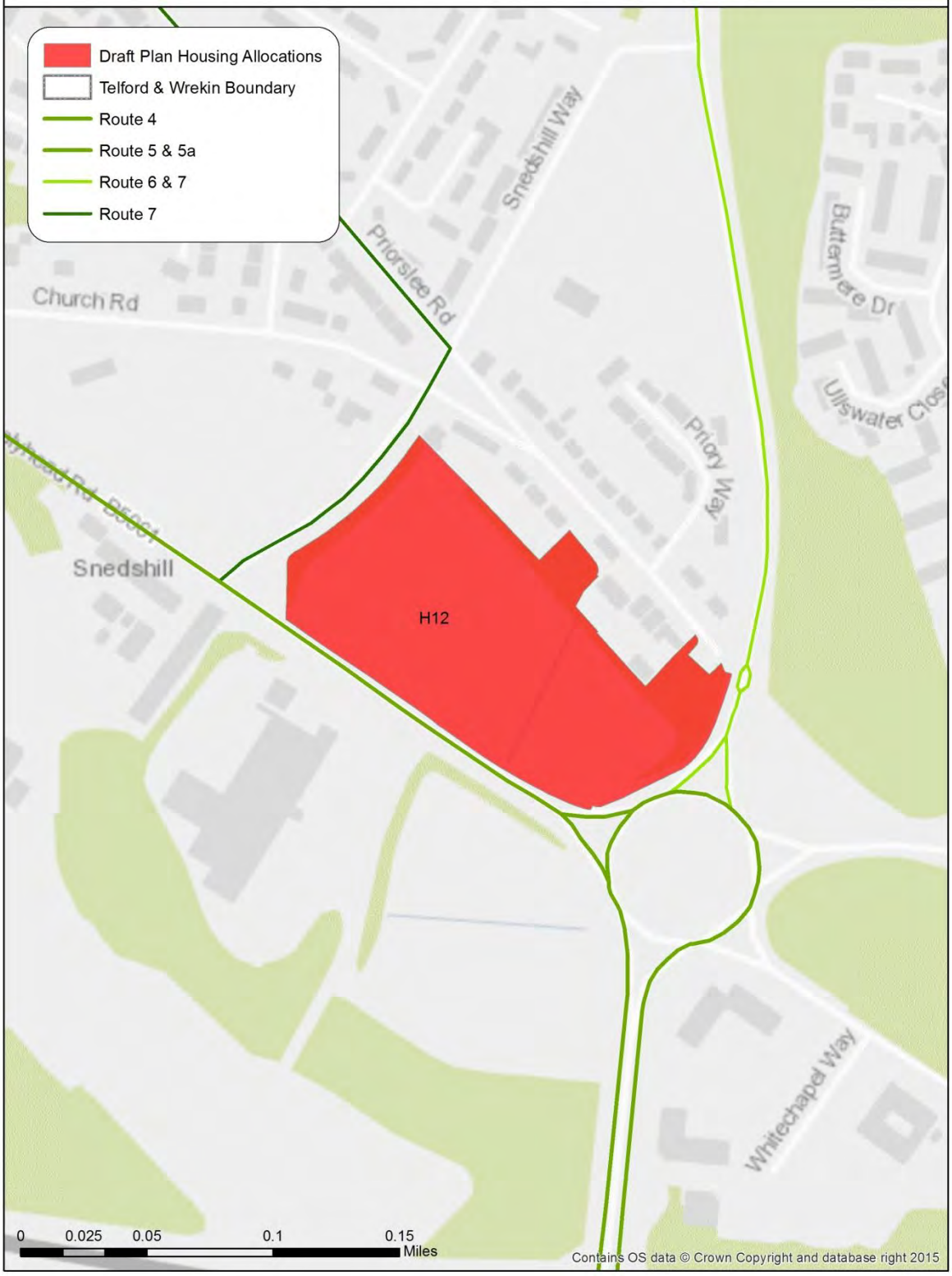
BUS SERVICES AT THE LAND AT THE HEM (H10)



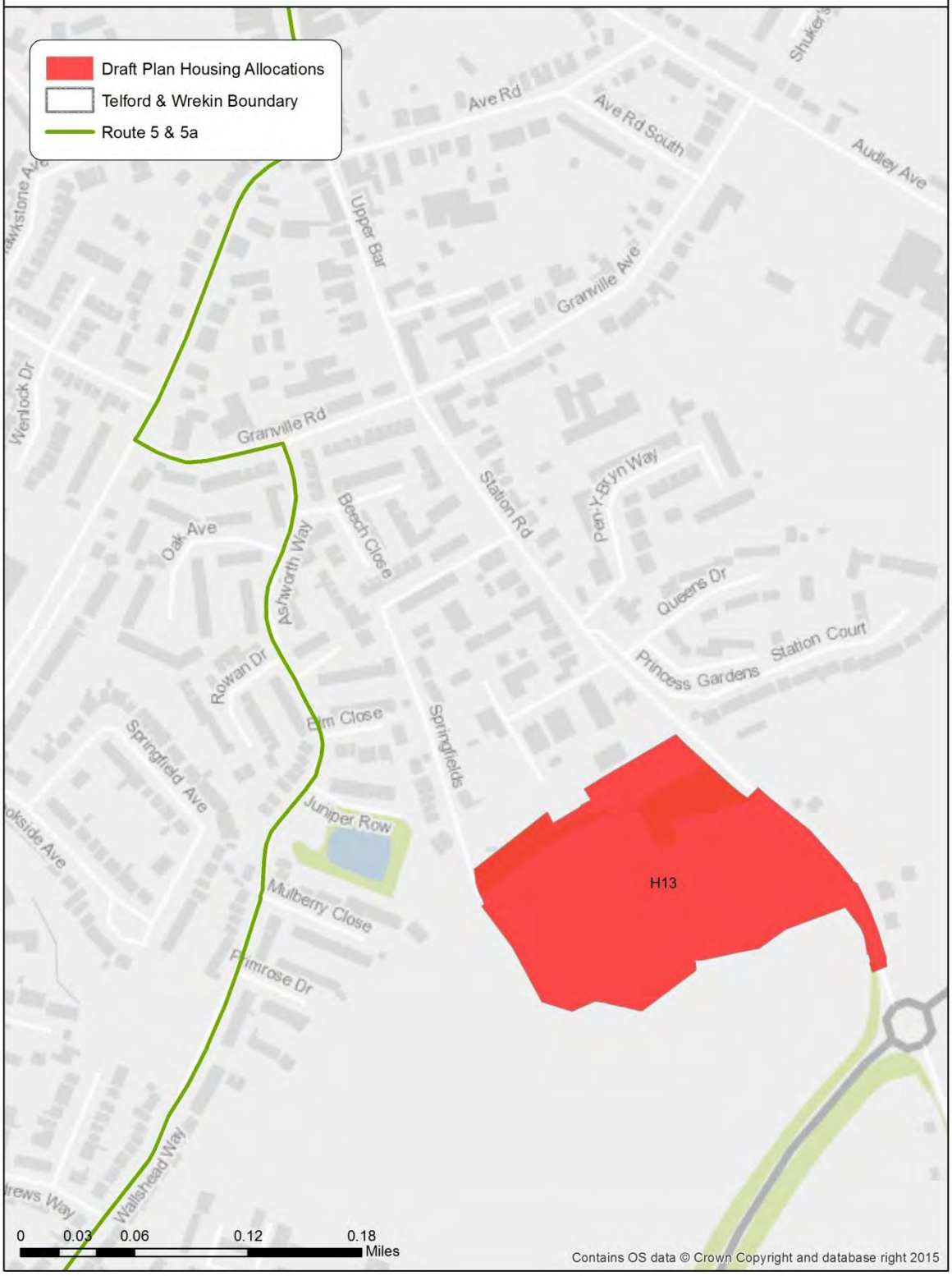
BUS SERVICES AT THE LAND AT HOLYHEAD ROAD, ST GEORGES (H11)



BUS SERVICES AT THE LAND NORTH OF PRIORSLEE ROUNDABOUT (H12)



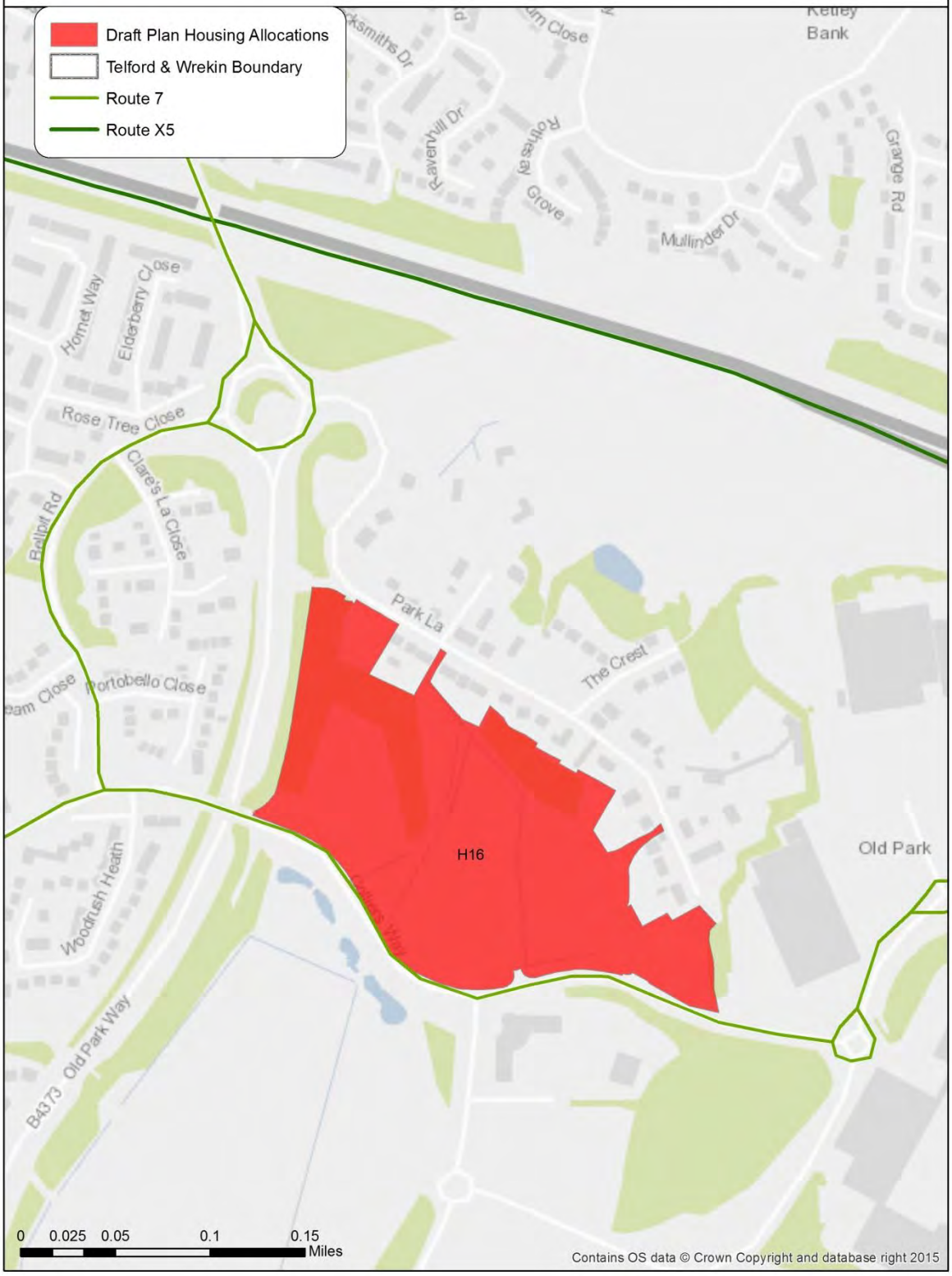
BUS SERVICES AT THE LAND SOUTH OF SPRINGFIELD INDUSTRIAL ESTATE, NEWPORT (H13)



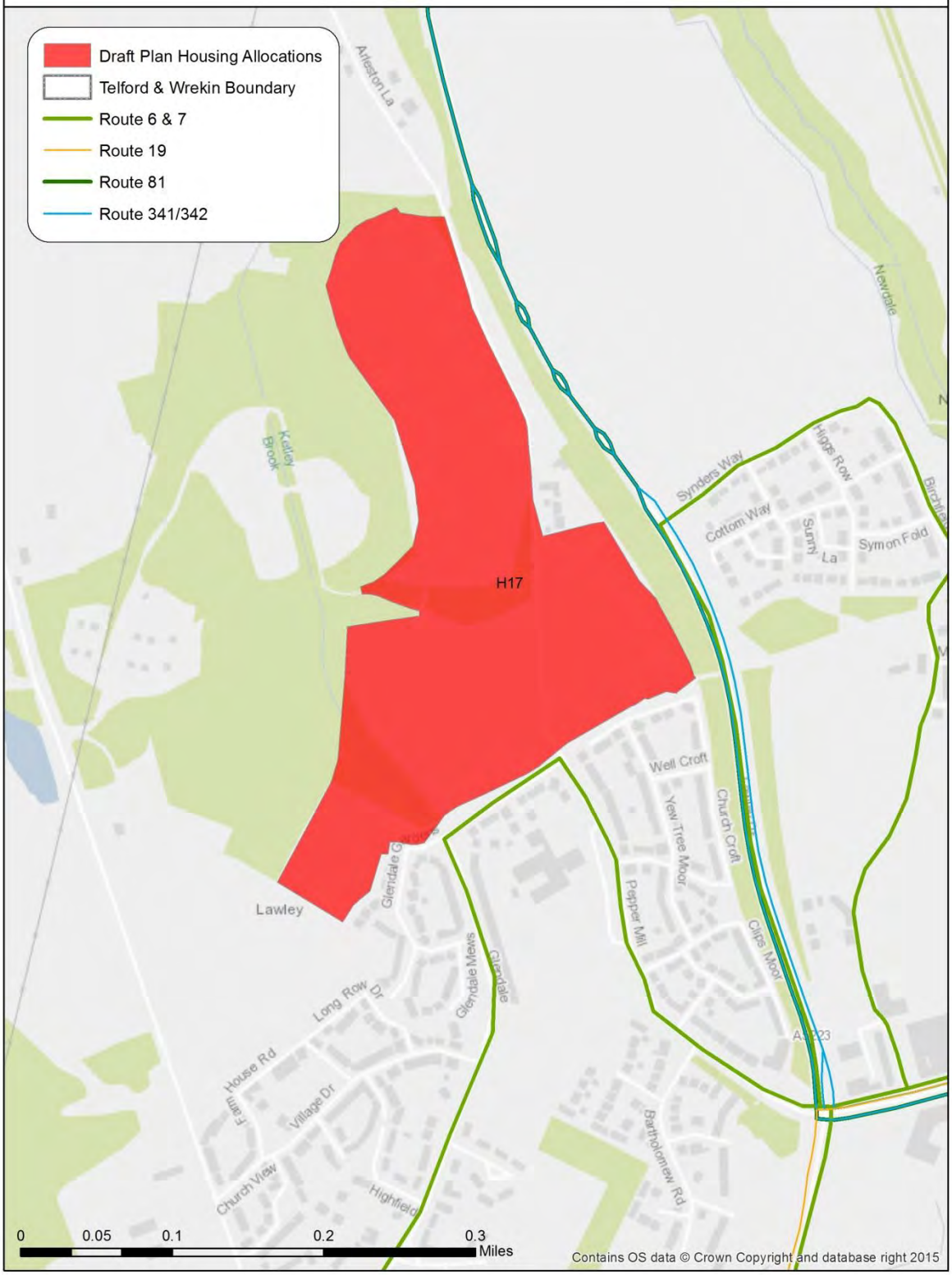
BUS SERVICES AT THE BLESSED ROBERT JOHNSON, WHITCHURCH DRIVE (H14)

BUS SERVICES AT THE LAND OFF MAJESTIC WAY (H15)

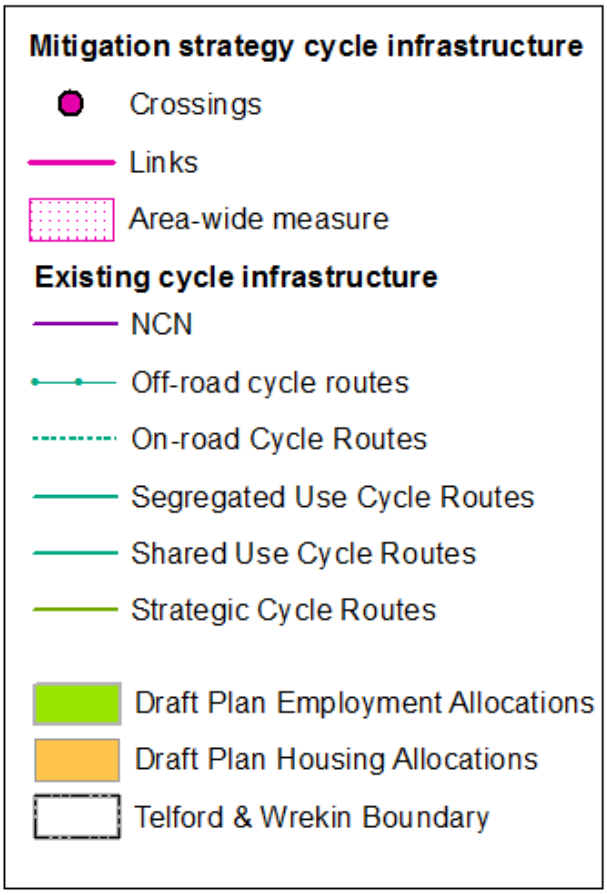
BUS SERVICES AT THE OLD PARK 2, PARK LANE (H16)

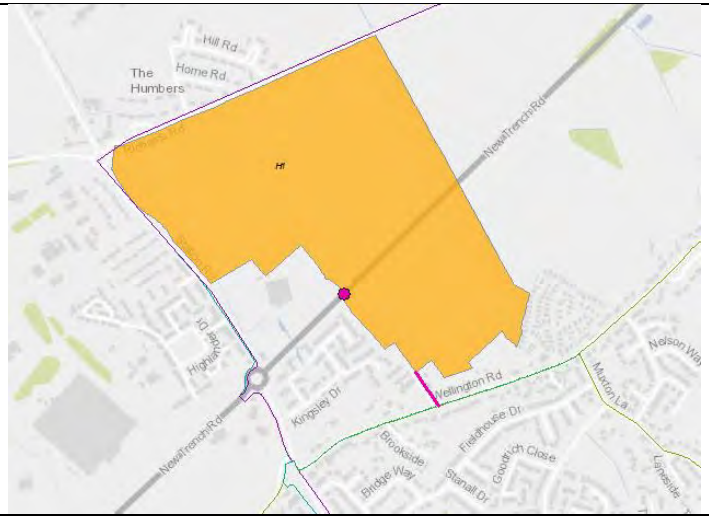


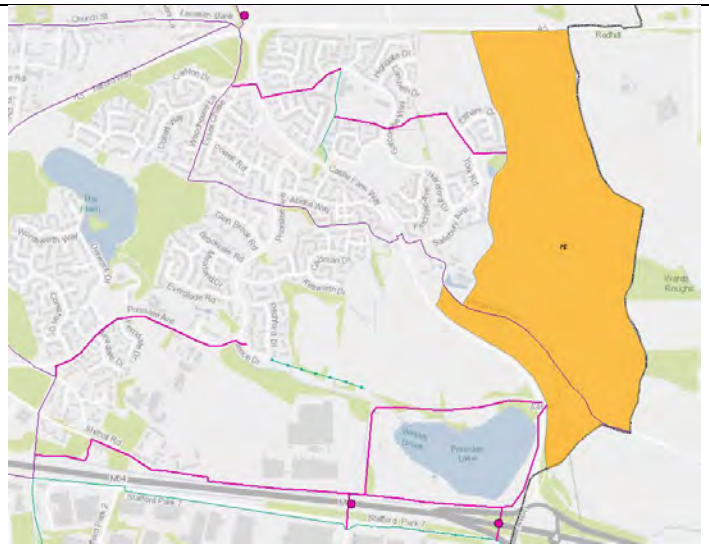
BUS SERVICES AT LAWLEY WEST (H17)

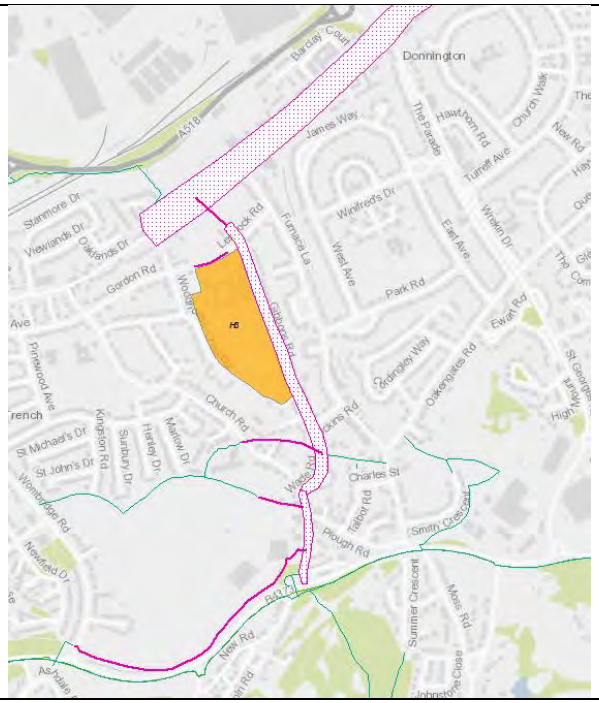


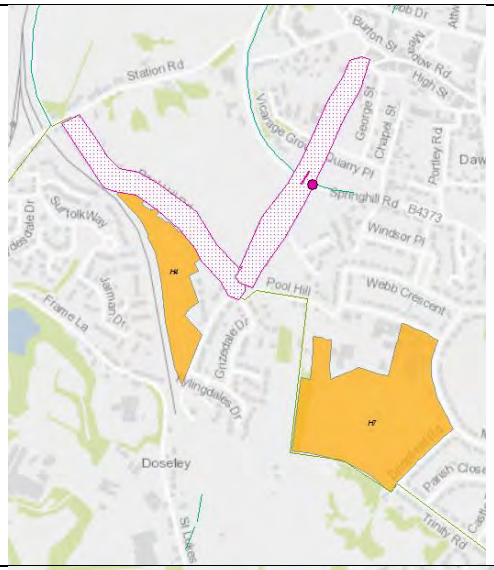
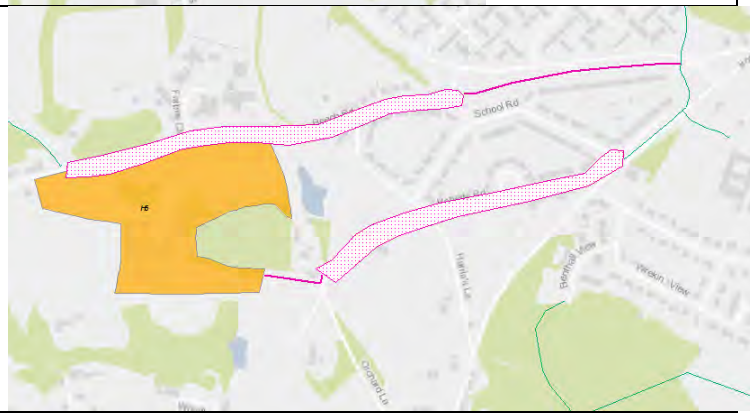
Appendix 2. Cycling Mitigation Schemes

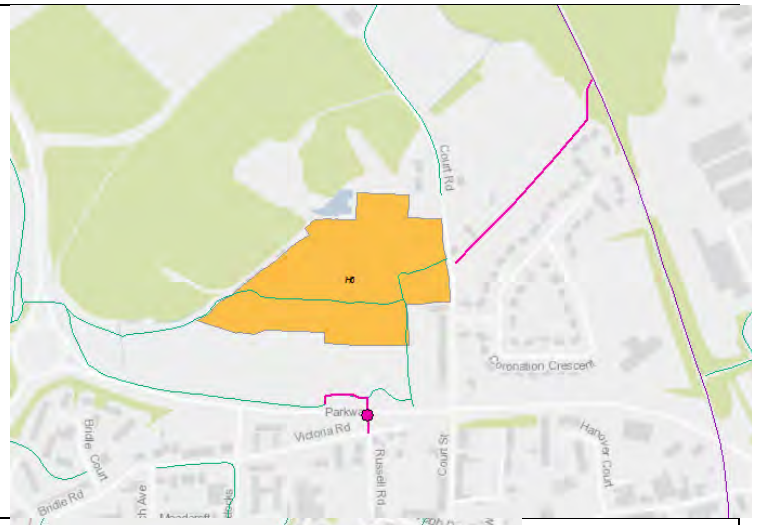
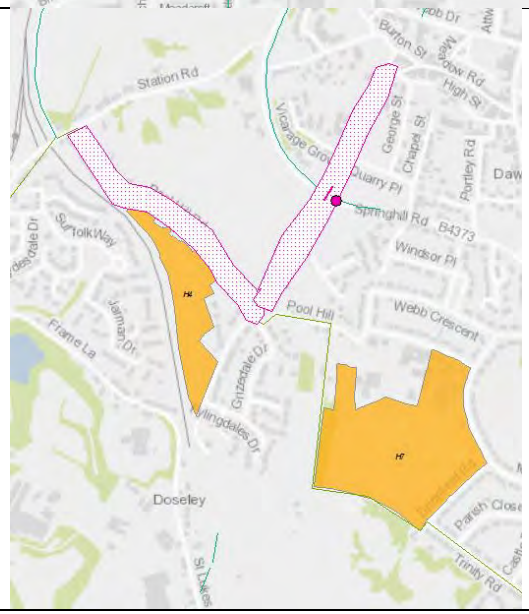


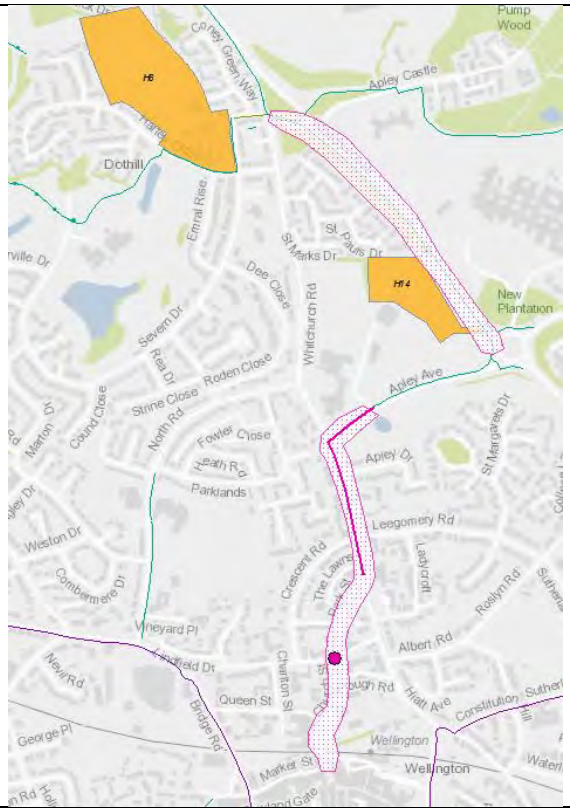
Ref	Name	Missing infrastructure	Proposed mitigation measure	Map
H1	Land at Muxton	Missing connection to the strategic cycle route on Wellington Road.	Connect to the route with signage and traffic calming.	

H2	Woodhouse, Priorslee	M54 presents big severance for access to Telford Town Centre, railway station and Stafford park for jobs - 3km distance. Existing bridge opposite to Stafford Park 6 is only 2m wide (NCN55 bridge is 5m wide). If there is no direct, safe and easy to use link, people will not walk or cycle. Direct link to Telford Town centre and Stafford park- 2000 m. Another shorter link would be useful to connect to NCN81 more to the north-west and to the Land north of A5 development.	• Resurface NCN81 (probably a part of the redevelopment).
			• Underpass under J4 or new walking/cycling bridge to connect to the cycle path on Stafford 7.
			  ○ Option 1- Pave the footway along the lake, widen the footway all the way to and along Shifnal road and make share use, step free access to a bridge to Stafford Park and bridge opposite Stafford Park 6 (note that this would be a large scale project, check feasibility and natural protection and ownership)
			  ○ Option2- Create cycle path between the cycle path on Teese Drive and Castle Farm Way. Create cycle track on Priorslee Avenue where currently there is grass verge.
			  ○ Widen and convert the footpath into shared use between A5 and Woodhouse Development.
			  ○ Convert footways in Redhill into shared use paths to provide cycling and walking access to NCN 81 from the north of the development
				

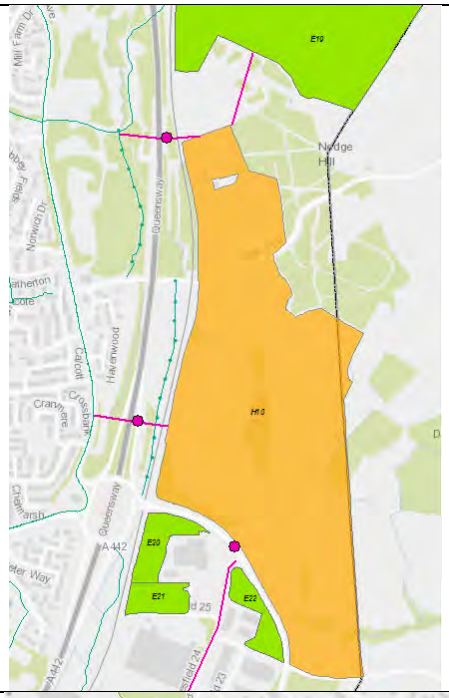
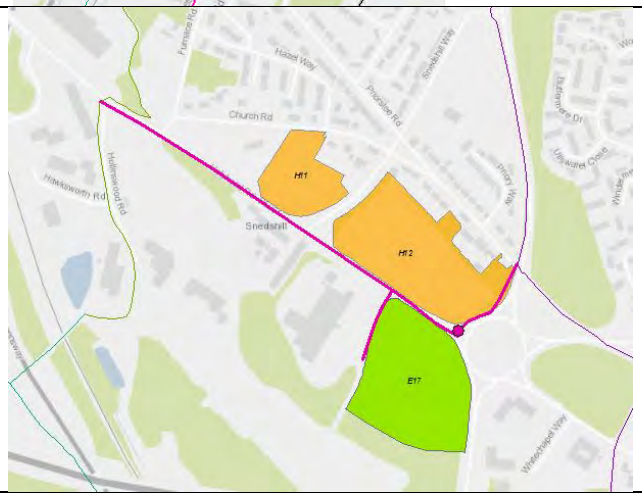
H3	Sutherland School, Gibbons Road	Missing connection to the off-road routes to the south and cycle route to the north on A518.	• To connect to the north: Introduce 20mph speed limit on entire Gibbons road. At the northern end of Gibbons Road, make the entrance more cycle friendly, remove bollards, introduce shared use. On Trench Road, introduce 20mph limit, connect to NCN81 with signage. • To connect to south: convert to shared use on the footpath parallel to Wrockwardine Wood Way to create an off-road cycle path. Convert to shared use path both footways, north and south of WW Infant School. Connect them through the leisure centre. 20mph zone on Gibbons road.	

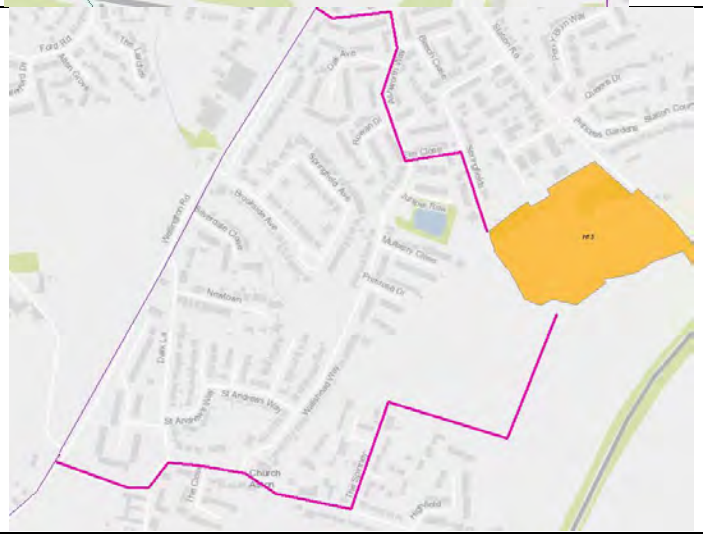
H4	Plot D, Pool Hill Road, Dawley	Missing connection to Pool Hill, Doseley Road, crossing in the junction with Springhill Rd, and north end of Doseley road to High Street.	• 20mph zone with traffic calming • Toucan crossing in the junction with Springhill Road. • Resurface and widen currently informal link to northern end of Doseley Road (west of the football pitch), remove central line on Doseley Road.	
H5	Beeches Hospital	Missing link on Beech Road to cycle paths in the junction with Ironbridge Road.	• Traffic calming, 20mph zone and signage on Beech Road. • On-road cycle lane on the closed residential road shared use link to the existing cycle paths.	

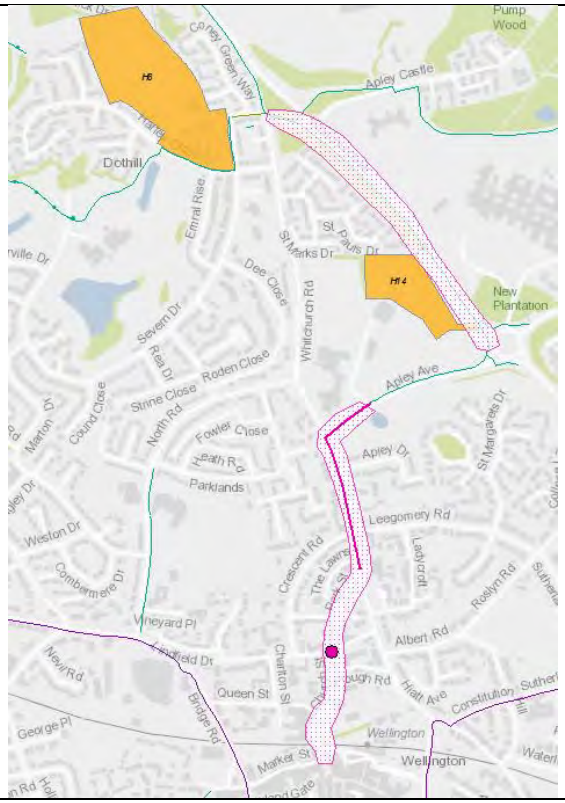
H6	Former Madeley Court School Site	Missing connection between the site and Russel Road to allow access to Madeley town centre. Shortcut to NCN55.	• Widen the footpath, convert to shared use. • Install ramp instead of stairs in the underpass. • Install directional signage.	
H7	The Former Phoenix Secondary School	Missing connection to Pool Hill, Missing link on Doseley Road, crossing in the junction with Springhill Rd, and north end of Doseley road to High Street.	• 20mph zone with traffic calming, • toucan crossing in the junction with Springhill Road. • Resurface and widen currently informal link to northern end of Doseley Road (west of the football pitch), remove central line on Doseley Road.	

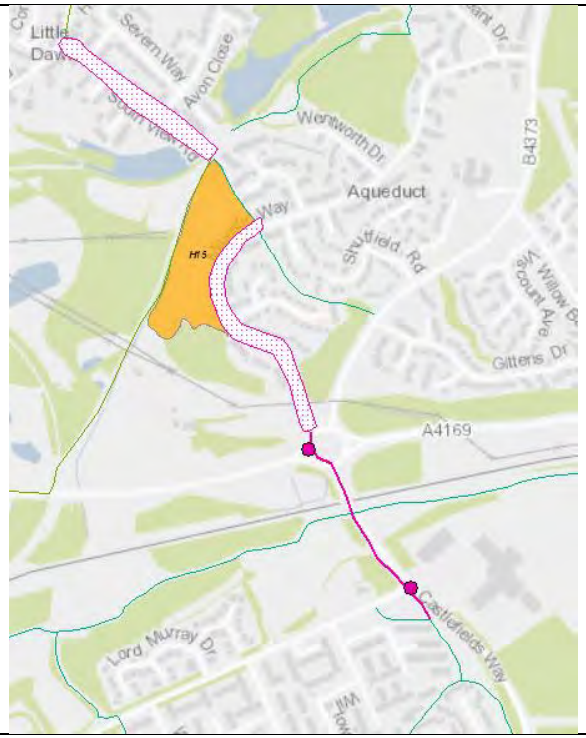
H8	The Charlton School, Severn Drive, Dothill	Missing direct link to Wellington Railway station. Preferred option: Whitchurch Drive, Park Street to Church Street and railway station - direct and short, 1km	• On-road cycle lane on Whitchurch road between Appley Avenue and Park Street, introduce double yellow lines. • Island at the junction with Park Street, redesign to provide tighter northbound radius and segregated turn of cyclists. • Install toucan crossing between Park Street and Church Street, remove guardrails. • 20mph zone, install directional signage to Wellington centre and railway station. • Install contra flow lane on Queens Street to connect to NCN81.	

H9	The Former Swan Centre, Grange Avenue, Stirchley	Missing link to the shared use paths to the south.	• Signpost the route and introduce traffic calming.	

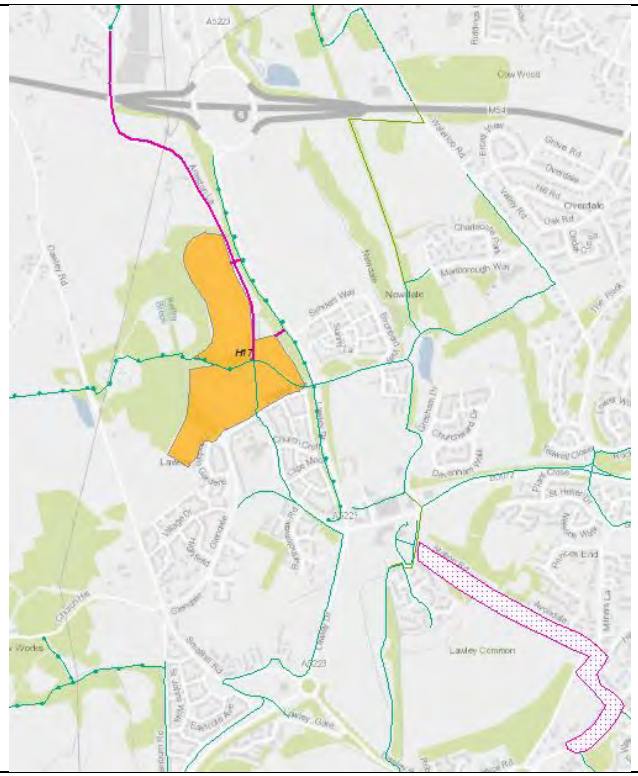
H10	Land at the Hem	To Telford centre: missing link on Naird Lane across Stirchley Avenue and Randlay Avenue. Missing link to the Halesfield employment site, Nedge Hill employment site.	• New underpass for pedestrians and cyclists under A442 and railway to connect to off road routes. These should be resurfaced and lighting should be installed. • Build link to Nedge Hill employment site. • Toucan crossing across Halesfield 1.	
H11	Land at Holyhead Road	Missing link to NCN55 and off-road cycle paths to the west of the development.	• Widen the pavement for 300 m length and convert to shared use.	

H12	Land north of Priorslee Roundabout	Missing link to NCN55.	• New cycle path and toucan crossing in Priorslee Roundabout.	
H13	Land South of Springfield Industrial Estate, Station Road, Newport	Missing link to NCN 55, particularly towards the west to make a short cut and towards north to connect to High Street.	• New off-road route to the south-west of the development at the existing informal path. • Signpost the route and introduce traffic calming and 20mph limit to connect to NCN55.	

H14	Blessed Robert Johnson, Whitchurch Drive	Missing direct link to Wellington Railway station. Preferred option: Whitchurch Drive, Park Street to Church Street and railway station - direct and short, 1km	• On-road cycle lane on Whitchurch road between Appley Avenue and Park Street, introduce double yellow lines. • Island at the junction with Park Street, redesign to provide tighter northbound radius and segregated turn of cyclists. • Toucan crossing between Park Street and Church Street, removal of guardrails. • 20mph zone, install directional signage to Wellington centre and railway station. • Install contra flow lane on Queens Street to connect to NCN81.	

H15	Land off Majestic Way, Aqueduct	Missing connection to strategic cycle route on South View Rd and Holly Road.	• 20mph zone, directional signage to Dawley centre. • Consider one way system with contra flow cycle lanes.	

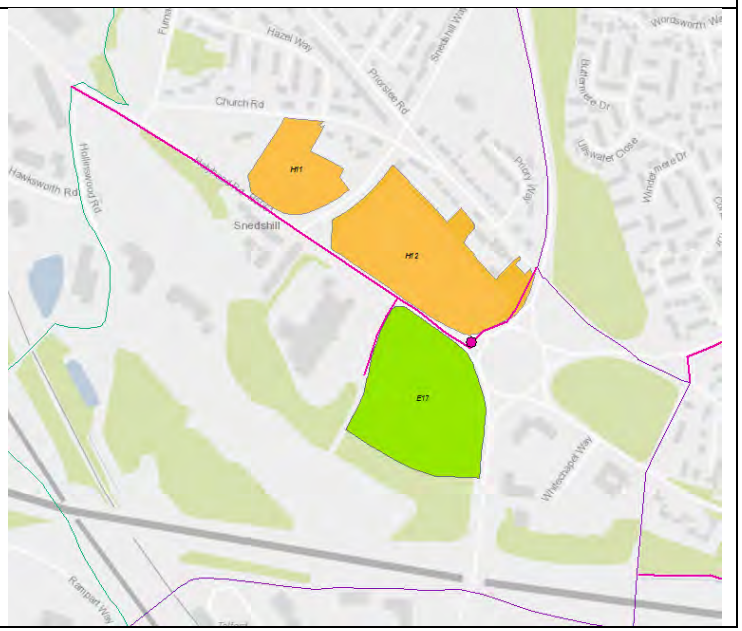
H16	Old Park 2, Park Lane	Missing direct link to NCN55 along Woodhouse Central and railway station - 250m.	• Convert to shared use on Hall Park Way and Forge Lane. • Two toucan crossings on West Centre Way.	

H17	Lawley West	Missing link towards Dawley town centre with a missing connection on Station Road and Old Office road. Missing connection to the Wrekin Retail Park via Arleston Lane.	• On missing links introduce 20mph zone, signage, dropped kerbs, traffic calming, removal of central lines. • Provide short links to the existing cycle path on Lawley Drive A5223.	

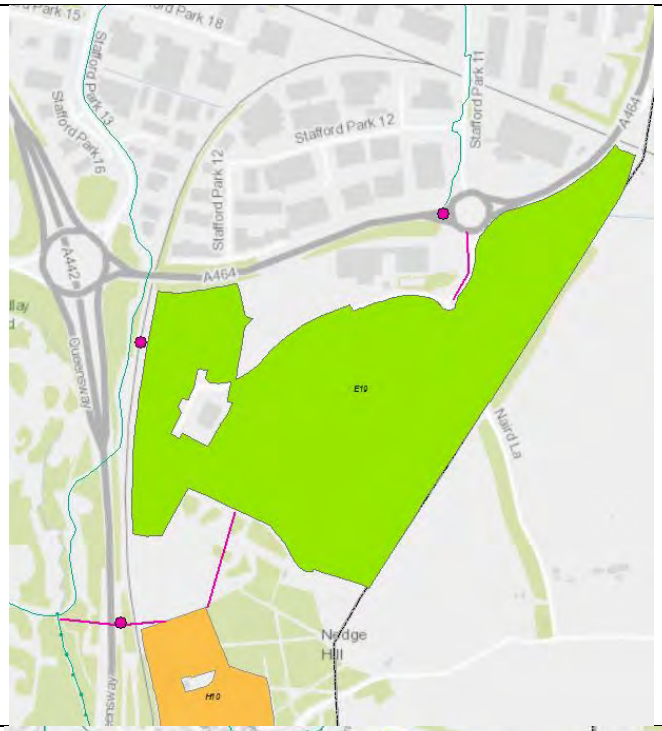
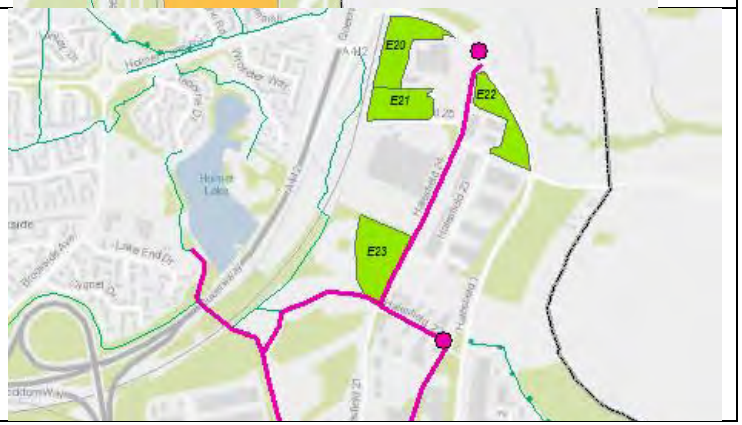
Ref	Name	Missing infrastructure	Proposed mitigation measure	Map
E1	Hortonwood 45, Hortonwood	Missing connections between different developments. Severance caused by unsuitable facilities at Hadley Park Roundabout (cyclists dismount signs, uncontrolled crossings), toucan crossing only on northern arm. Unsuitable facilities at Leegomery Roundabout - in spite of shared use on the map, there is no shared use in reality, only very narrow and overgrown footpath on southern and western arm. Unsuitable facilities at Hortonwood Roundabout with missing connection to the Hortonwood site. Unsafe crossing from Horton Road to Horton Lane across A518.	• Provide cycle paths between the different developments, particularly on Hortonwood 7, 1, 37, 40, 60. Convert and widen footways to shared paths or convert one side to cycle track and leave one side as footpath. • Install toucan crossings on A442 southern arm of Hadley Park Roundabout and on western arm of Hortonwood Roundabout (with dropped kerbs). • Improve Leegomery Roundabout by widening the footpaths, installing a cycle path and toucan crossings. • Install toucan crossing beyween Horton Road and Horton Lane across A518.	
E2	Hortonwood 45, Hortonwood			
E3	Hortonwood West, Hortonwood			
E4	Hortonwood 45, Hortonwood			
E5	Hortonwood 40-45, Hortonwood			
E6	Hortonwood 40, Hortonwood			
E7	Hortonwood 35, Hortonwood			
E8	Hortonwood 50, Hortonwood			
E9	Hortonwood 60, Hortonwood			
E10	Hortonwood 65, Hortonwood			
E13	Hortonwood 1, Hortonwood			
E11	Hadley Park	Severance caused by	• Install toucan crossings	

	East, Hadley Park	unsuitable facilities at Hadley Park Roundabout (cyclists dismount signs, uncontrolled crossings), toucan crossing only on northern arm. Unsuitable facilities at Leegomery Roundabout - in spite of shared use on the map, there is no shared use in reality, only very narrow and overgrown footpath on southern and western arm. Unsuitable facilities at Hortonwood Roundabout with missing connection to the Hortonwood site. Unsafe crossing from Horton Road to Horton Lane across A518.	on A442 southern arm of Hadley Park. • Improve Leegomery Roundabout by widening the footpaths, installing a cycle path and toucan crossings. • Install toucan crossing beyween Horton Road and Horton Lane across A518.	
E12	Hadley Park East, Hadley Park			

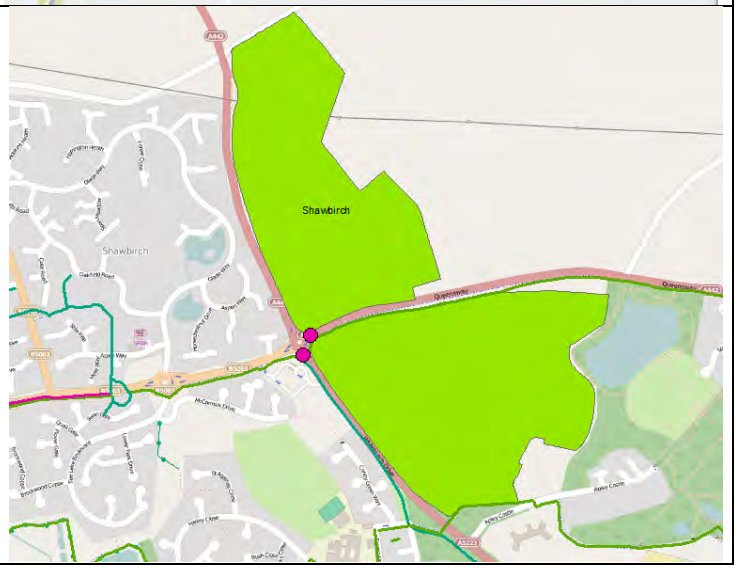
E14	Land at Telford International Rail Terminal, Hortonwood	Severance caused by unsuitable facilities at Hortonwood Roundabout with missing connection to the Hortonwood site and unsafe crossing from Horton Road to Horton Lane across A518.	• Install toucan crossing on the western arm of Hortonwood Roundabout (with dropped kerbs). • Improve Leegomery Roundabout by widening the footpaths, installing a cycle path and toucan crossings. • Install toucan crossing between Horton Road and Horton Lane across A518.	
E15	Granville Road, Donnington Wood	There are good links in all directions. However, Granville Roundabout is hostile due to uncontrolled	• At minimum install toucan crossing on western and northern arm of the	

E16	Deer Park Court, Donnington Wood1	crossings (except in the south arm where it is grade separated) providing severance for cyclists and pedestrians.	roundabout.	
E17	Telford Way, Snedshill	It should meaningfully connect to NCN55 via Holyhead Road.	• Create cycle track along Holyhead Road, widen the existing footpath at the roundabout and connect to the lane along A5. • Install toucan crossing in Priorslee Roundabout on western arm (Holyhead Road).	

E18	Colliers Way, Old Park	Missing direct link to NCN55 along Woodhouse Central and railway station - 250m.	• Convert to shared use on Hall Park Way and Forge Lane. • Install two toucan crossings on West Centre Way.	

E19	Naird Lane, Nedge Hill (T54)	From the railway station and north of Telford through Stafford Park there is a missing link to the existing cycle paths. From the south there is a missing link to the existing off-road cycle path.	• Install toucan crossing on western arm of Naird Roundabout. • Build underpass under the railway to connect to the existing paths - both for northbound and southbound movements. • Provide street lighting along the off-road routes.	
E20	Halesfield 25, Halesfield	• In spite of the extensive off-road routes, many are neglected, overgrown, unlit and inconvenient to use. • Unlit and muddy off-road paths to the south without crossing facilities. • Overgrown and unlit off-road paths to the west. • Unreasonable barriers at	• Resurface the off-road paths at Halesfield 10 and install toucan crossing across Brockton Way A442 • Remove the guardrails blocking the cycle paths at Halesfield 17 (two sites, one at the roundabout and 18. • Cut the vegetation (particularly at Halesfield	
E21	Halesfield 25, Halesfield			
E22	Halesfield 1, Halesfield			
E23	Halesfield 24, Halesfield			
E24	Halesfield 2, Halesfield			
E25	Halesfield 15, Halesfield			

E26	Halesfield 10, Halesfield	the end of cycle routes (guardrails) whilst some routes finish in the middle of nowhere without a connection to the carriageway. • The cycle path between the railway and A442 is unsurfaced, has a dead end at the roundabout and is not usable for everyday cycling. Hence, due to severance caused by A442, there is no connection between Stirchley and the north of Halesfield (E20-E23). • Off-road route across A442 is not lit and paved (direction towards Holmer Lake). • No direct connection to the shared use paths for E24. Off-road route to the north of E24 only usable with a mountain bike (grassy surface).	17) and provide lighting on off-road routes) • Finish the route at Halesfield 16 (between Halesfield Rdbt and Coppice Farm Rdbt). • Surface the off-road route between A442 and railway and provide a new cycle track on Halesfield 24 to connect the north part with the south. • An underpass is proposed between H10 and Stirchley – examine the potential for cycle routes through H10 which would allow for access to the north of Halesfield. • Alternatively, provide a new underpass under A442 at north of Halesfield. • Install dropped kerbs at route at Halesfield 22.	

E27	Land South of A518, Newport	Missing link to NCN 55, particularly towards the west to make a short cut.	• Install toucan crossing at A518. • Build new cycle path and pavement along A518 to the roundabout with Station Road, another toucan crossing.	
E28	Land off A442 Queensway, Shawbirch	Severance due to unsuitable crossing facilities on Queensway.	• Install toucan crossings to Whitchurch Drive across Queensway on eastern and southern arm.	

SUPPORTING DOCUMENTS

1.TSTM 2009 Report of Survey
2.Telford Local Plan – Supporting Modelling & Highway Infrastructure Plan
3.Telford Strategic Transport Model – Forecasting Report
4.Road Safety Strategy