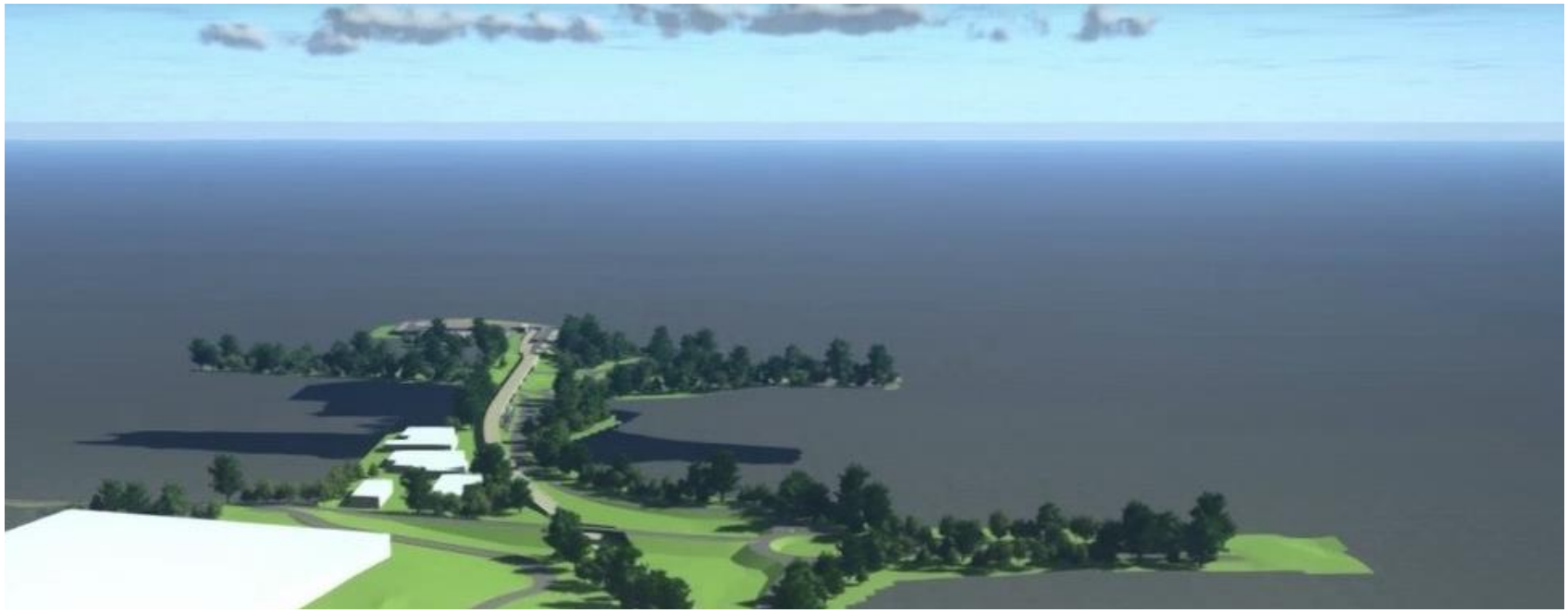

Skelmersdale Rail Link Strategic Outline Business Case (SOBC)

Summary Document

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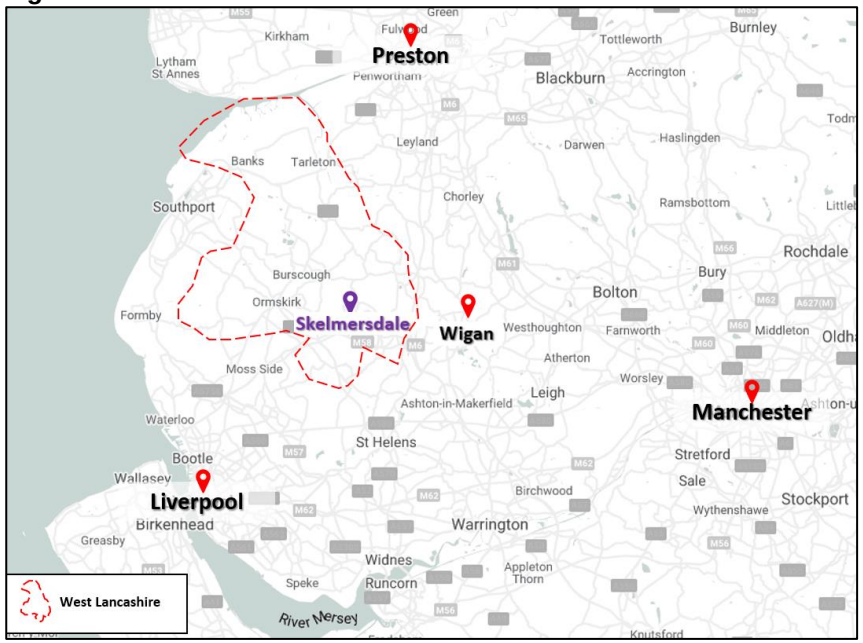
1 Introduction

1.1 The Location

Skelmersdale is a town in West Lancashire, England and is situated within the triangle of the North West's three largest cities (see Figure 1.1):

- 13 miles (21km) to the northeast of Liverpool;
- 15 miles (24km) southwest of Preston; and
- 22 miles (36km) west of Manchester.

Figure 1.1: Skelmersdale Location



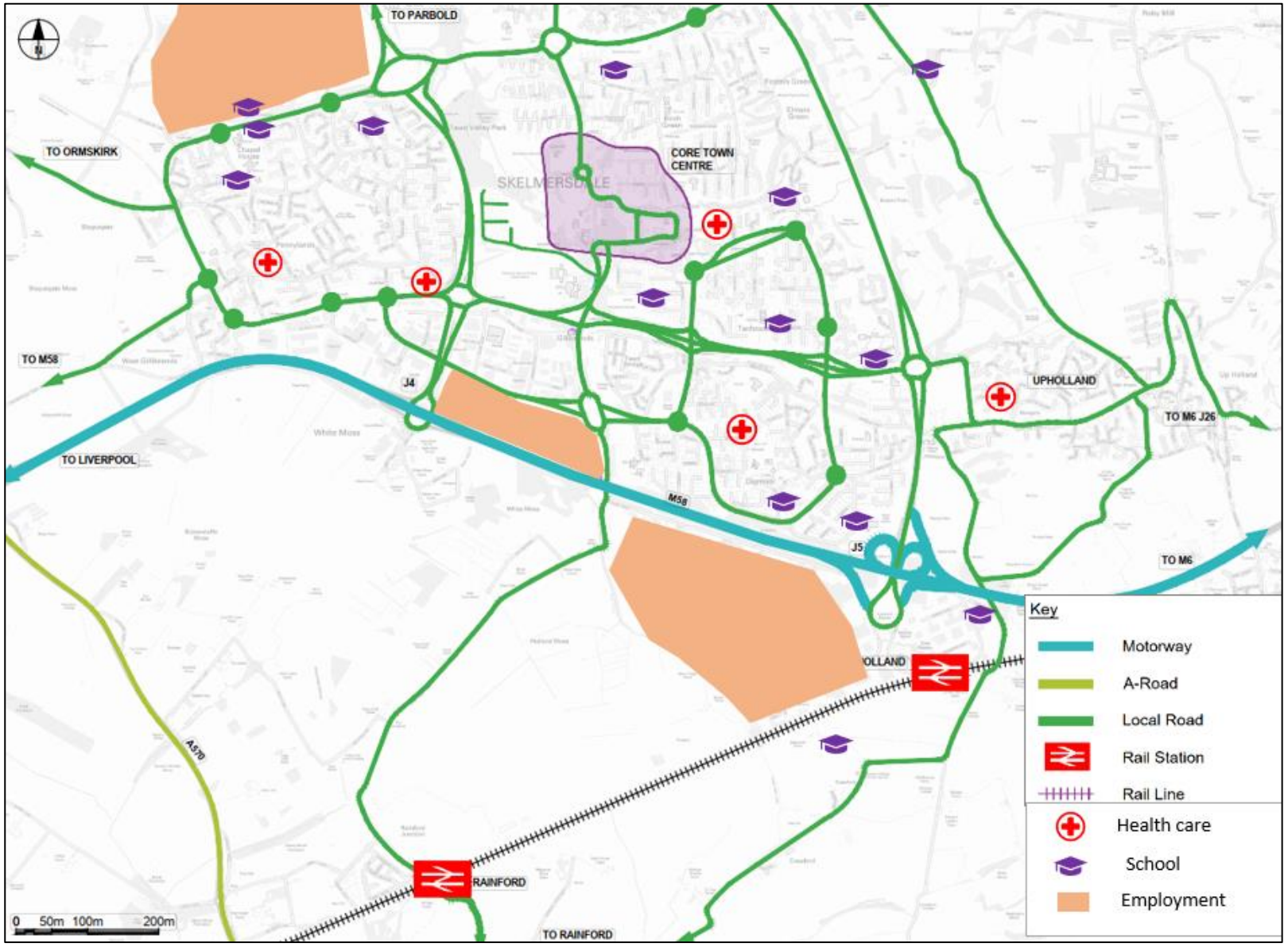
The settlement of Skelmersdale dates back over a thousand years. It expanded rapidly during the late 19th century as part of the Lancashire Coalfield. That industry had largely ceased by the 1930s. In 1961 Skelmersdale was designated as a 'New Town' to house overspill population in north Merseyside, and thereafter saw significant population growth as part of a programme to address housing issues within Liverpool. Since then, the town has experienced mixed fortunes, but has recently seen several investment programmes to regenerate the town centre and encourage employment and housing growth. Although now formally located within West Lancashire, the history of Skelmersdale means the town has strong links to Liverpool. Despite this, connectivity between the two places remains severely limited.

With a current population of around 38,800 (ONS, 2019) Skelmersdale is the largest town in West Lancashire, and one of the largest settlements in Lancashire. Despite its size and physical proximity to the North West' major cities, the town lies 'off the map', at the edge of Lancashire and close to the border of both the Greater Manchester and Liverpool city regions. Liverpool, Wigan and Manchester (should) form the core attractors of journeys from the town due to their proximity and the range of facilities and services available in these locations.

The centre of Skelmersdale is characterised by a complex highway network with multiple roundabouts and dual carriageways, providing the town with significant highway capacity. This supply outweighs the demand that has materialised since much of Skelmersdale was constructed as a 'New Town' in the 1960s, with the town 'designed' for a population twice its current size. The highway layout and main features of the town are illustrated in Figure 1.2 (overleaf).

Although local facilities offer some opportunities and services for residents, connections to major centres such as Wigan, Liverpool and Manchester are essential to the prosperity and performance of Skelmersdale increasing the importance of wider more strategic connections.

Figure 1.2: Skelmersdale Local Context



1.2 Why Invest?

Well-connected communities	The new link will close the current gap in connectivity which has led to deprivation and other adverse outcomes, with a large number of residents socially isolated and excluded as a result of poor public transport connectivity and/or low car availability. Enhanced transport provision to and from the area will ensure all communities are well connected by attractive, safe, resilient and inclusive travel opportunities.
Enhanced job, education, and training opportunities	Skelmersdale is well positioned in relation to its proximity to major regional centres including Liverpool, Manchester, and Preston. With new access to high quality transport services offering faster and more direct links to surrounding key centres, the availability of jobs, education, and training opportunities to residents of Skelmersdale would be significantly extended, particularly for those without access to a car.
A catalyst for regeneration	There is significant physical capacity for growth in the town and the opportunity to enhance the sense of place through new transit orientated development. The new transport link has the potential to encourage inward investment and act as catalyst for fore regeneration, supporting both new and existing developments. This will extend the impacts well beyond the direct users of the new links to help level up the area.
Sustainable travel	The preferred options are focussed on providing a green solution to a known economic and social challenge, with the provision of high quality and sustainable services ensuring a beneficial contribution to the climate emergency and 'net zero carbon' objectives. Provision of an attractive alternative to the car will encourage mode shift to more sustainable travel and a reduction in greenhouse gas emissions and local air pollutants.
Safer and healthier journeys	Mode shift will reduce the number of vehicles on the highway network and therefore the likelihood of accidents creating a safer environment for all road users, particularly more vulnerable road users such as pedestrians and cyclists. The promotion of walking and cycling to and from the link will contribute to enhanced health and wellbeing.

1.3 This SOBC

This business case sets out the case for investing in a new transport link for Skelmersdale. Lancashire County Council (LCC) wish to transform the current socio-economic context and level of connectivity experienced around Skelmersdale in order to enhance opportunities for residents, encourage inward investment and support economic growth. LCC are currently working with Network Rail to identify different options for a new link to Skelmersdale which would fulfil these aspirations. Analysis of these options is currently being undertaken through a Governance for Railway Investment Projects (GRIP) Stage 3 Feasibility Study. The purpose of this SOBC is to provide a robust evidence base which articulates a clear need for intervention, and presents potential solutions.

2 Strategic Case: Our vision and objectives

The aspiration for Skelmersdale has been developed with reference to the UK Government priorities, localising these to reflect the area's unique circumstances and needs. From these have stemmed a vision and accompanying objectives which are used to identify plans, policies and interventions which can deliver on national, regional, and local priorities.

2.1 National, regional and local priorities

There are three different tiers of priorities to consider when developing alternatives to the connectivity gap to and from the area.

National priorities	
1. Local economic development and housing delivery	4. Improving transport for the user
2. Levelling up and reducing inequalities	5. Increasing productivity and global competitiveness
3. Net Zero Carbon	6. Enhancing sense of place

Regional priorities in Lancashire and Liverpool City Region	
1. Make travel into and between the major economic centres more effective and efficient	4. Create more attractive neighbourhoods
2. Provide all sections of the community with safe and convenient access to services	5. Reduce the carbon impact of transport and support quality of place
3. Improve accessibility, availability and affordability of transport	6. Support economic growth, increasing employment and productivity

Local priorities in West Lancashire	
1. Strong and vibrant communities	6. Provide good quality services which are accessible to all
2. More, and better quality, training and job opportunities	7. Ensure development is design to a high quality and preserve character and features of local areas
3. Improve general health of residents and promote social wellbeing	8. Mitigate and adapt to climate change
4. Protect and enhance the natural and built environment	9. Make Skelmersdale an attractive and vibrant place to live and work, and reduce the social inequalities with the wider borough
5. Provide a range of housing types in appropriate locations	

2.2 Vision for Skelmersdale

Following collaboration between key stakeholders, a dedicated vision for the potential connectivity enhancements for Skelmersdale has been created:

Enhanced connectivity for Skelmersdale will provide a catalyst for regeneration in the area, making the town a place where people choose to live, work, visit and invest.

2.3 Investment objectives and alignment with Governmental priorities

Based on this vision and the national, regional, and local priorities, five bespoke strategic objectives have been developed. These objectives are SMART and are used to help guide the development and sifting of alternatives to enhance connectivity. The main SOBC considers the fit of the project with each tier.

Table 2.1: Skelmersdale Rail Link SOBC - Project Objectives

Theme/ Objective	Sub-objective
Social Isolation and Exclusion: Provide enhanced access for all people that live and work in Skelmersdale and surrounding areas, regardless of socio-economic situation or any mobility-related impairments	• Facilitate improvements to the socio-economic standing of residents and employees in Skelmersdale and the West Lancashire area
	• Provide physically accessible transport infrastructure and services ensuring that all new provisions and routes are step-free
	• Provide safe and secure access to all people including groups particularly at risk from social exclusion e.g. those with mobility-related disabilities and non-mobility related including sensory, cognitive and other hidden impairments
Access to Opportunity: Provide sufficiently attractive alternatives which allow people to access the major opportunities efficiently (within an acceptable amount of time), sustainably, safely, and securely	• Facilitate reductions in journey times and enhancements in direct connections
	• Provide improved access to services and employment for the population of Skelmersdale and surrounding areas
	• Provide sufficient capacity for new demand to access employment, education, retail and leisure without hinderance
	• Maximise the catchment of transport services serving Skelmersdale and the wider area
Economic Development & Regeneration: Support long-term economic growth and wider regeneration in Skelmersdale by making the town a more attractive proposition for inward investment	• Facilitate an increase in inward investment in Skelmersdale and surrounding areas
	• Support regeneration within Skelmersdale and surrounding areas
	• Supporting sustainable new development in Skelmersdale by an integrated approach to development and connectivity
	• Reduce the impact of the highway dominated environment in Skelmersdale to improve its quality of place
Sustainability & Environment: Reduce the adverse impacts of travel in Skelmersdale and surrounding areas by providing sustainable alternatives, positively contributing to enhanced wellbeing, health and environmental outcomes, including Net Zero Carbon targets	• Facilitate reduced greenhouse emissions such as CO2 and SO2
	• Improve air quality by reducing emissions such as NOx and particulate pollutants
	• Improve health by encouraging more sustainable modes of travel, better providing for existing active travel desire lines
Safety: Improve safety on the transport network	• Provide infrastructure to allow anyone that wishes to travel the ability to do this safely and securely
	• Reduce road-based accidents and increase personal safety by encouraging mode shift away from private car use

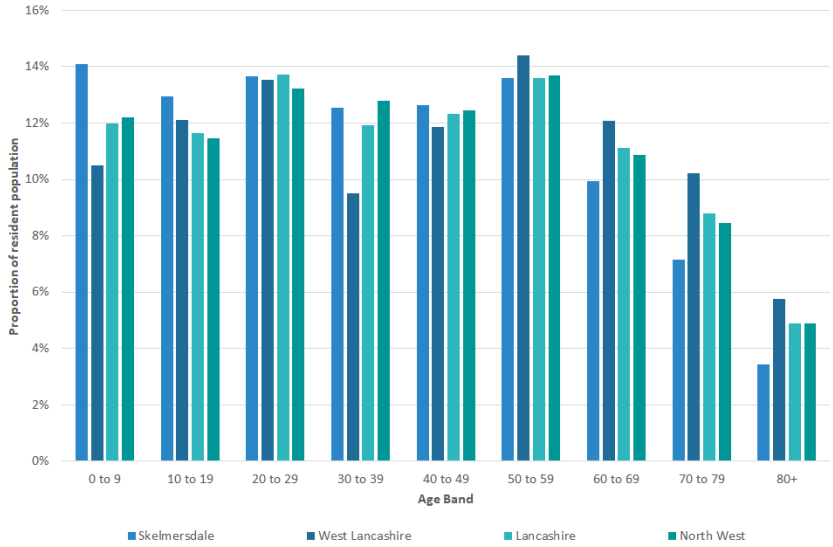
3 Strategic Case: People and place

3.1 The People

3.1.1 Population and demographics

Skelmersdale is the largest town in West Lancashire with a population of around 39,000[1] people. The population is, on average, much younger than local, regional and national age breakdown of the population within Skelmersdale is shown in Figure 3.1**Figure 3.1**.

Figure 3.1: Skelmersdale Population Age Breakdown



Source: 2018 ONS mid-year population estimates

66% of Skelmersdale's population is agreed 49 or under, compared to 54% in the rest of West Lancashire and 62% in both Lancashire and the rest of the North West. As well as the general demographic skew towards a younger population, these differences are also, in part, a function of health and wellbeing outcomes and lower life expectancies in Skelmersdale. Good connectivity and accessibility to services and opportunities will be critical to the outcomes experienced by the younger demographic, reversing some of the adverse trends seen over the last half century.

3.1.2 Life Expectancy

Table 3.1 shows how average and healthy life expectancies are significantly lower in Skelmersdale than the North West and England, reducing the overall average for West Lancashire.

Table 3.1: Life Expectancy

	Females		Males	
Area	Life Expectancy	Healthy Life Expectancy	Life Expectancy	Healthy Life Expectancy
Skelmersdale	79.2	59.6	75.2	58.7
West Lancashire	82.1	64.2	78.7	63.5
North West	82.2	63.1	78.0	61.7
England	83.9	65.7	79.7	64.3

Source: Office for National Statistics (Life expectancy by census ward (ons.gov.uk))

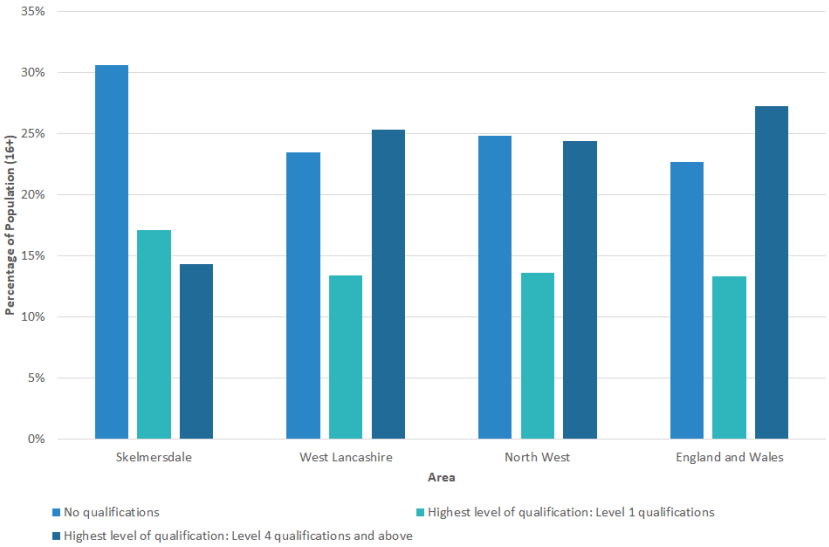
3.1.3 Skills and qualifications

Skelmersdale has a much higher proportion of the population with no qualifications. Nearly half of the population has either no qualification or a

[1] https://www.citypopulation.de/en/uk/northwestengland/lancashire/E35001425__skelmersdale/

Level 1 qualification only, over 10% more than West Lancashire (which includes Skelmersdale), the North West and England & Wales.

Figure 3.2: Proportion of residents with no, Level 1 and Level 4 qualifications

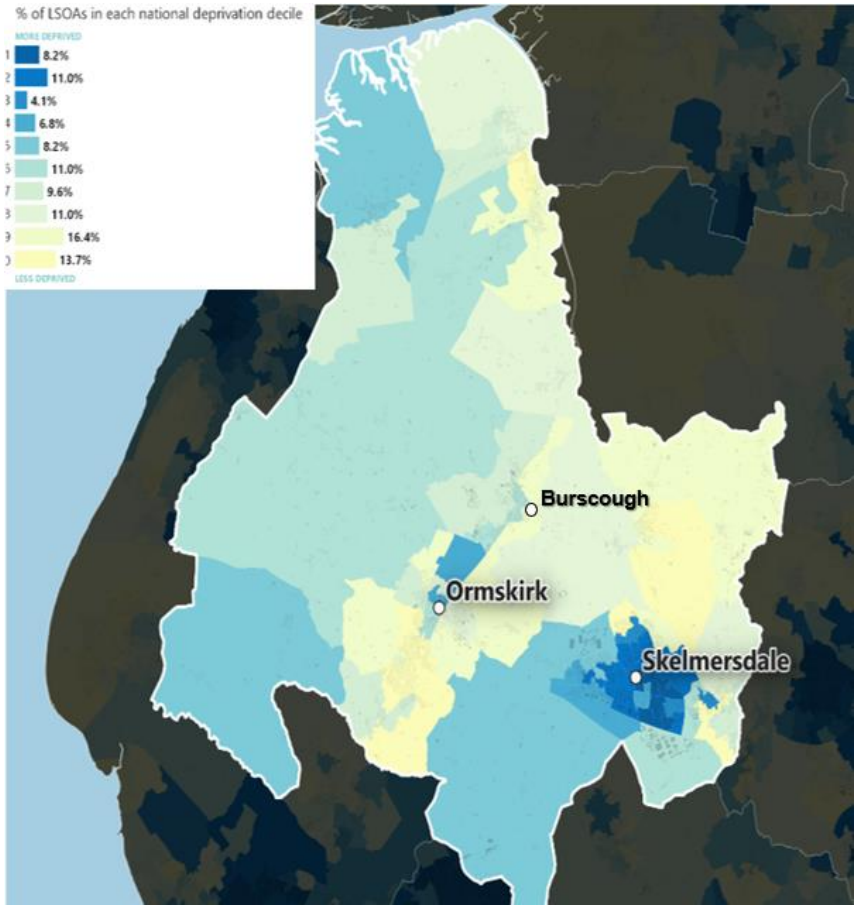


Source: ONS, 2011 Census

3.1.4 Deprivation

The majority of Skelmersdale lies within the top 10% of most deprived LSOAs across England and Wales (see Figure 3.3Figure 3.3). In contrast, the neighbouring towns of Ormskirk and Burscough demonstrate signifcantly lower levels of deprivation with the majority of the area around Burscough within the two least deprived deciles. These outcomes are reflected across most of the individual domains within the Index of Multple Deprivation (IMD).

Figure 3.3: West Lancashire according to the overall Index of Multiple Deprivation (IMD), 2019



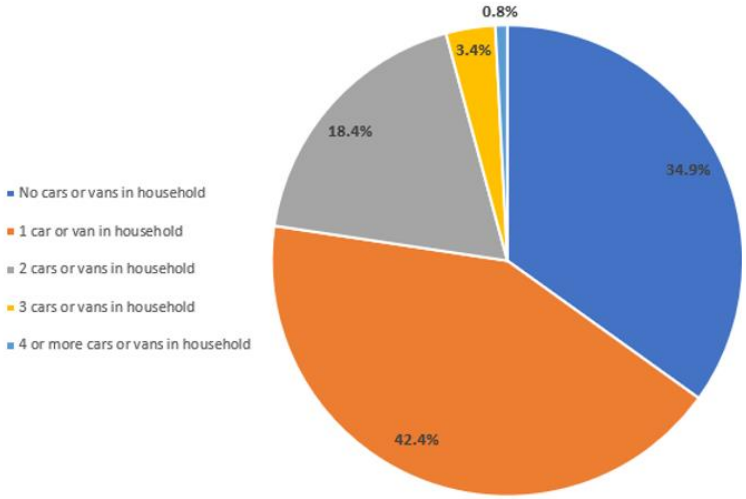
Source: Ministry of Housing, Communities and Local Government

The deprivation observed in Skelmersdale is likely to be the result of a set of interacting factors. While access to opportunities and services is only one of these, it is likely to be a significant determinant.

3.1.5 Car availability

The figure below sets out the levels of car ownership across the wards surrounding Skelmersdale where the average proportion of households without direct access to a car is almost 35%, almost double the West Lancashire average (19%) which is itself increased by the high percentage in Skelmersdale.

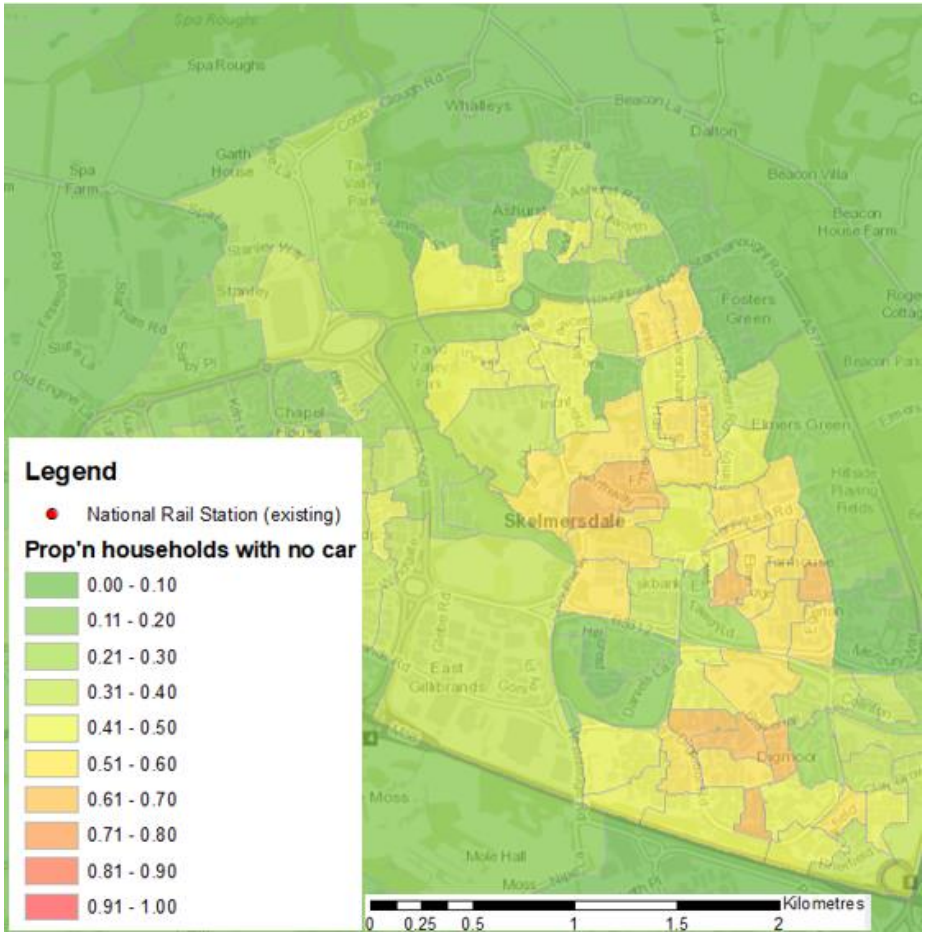
Figure 3.4: Car Ownership in Skelmersdale and surrounding areas, 2011



Source: 2011 Census

Figure 3.5 shows the proportion and distribution of households without access to a car across Skelmersdale. LSOAs where over 50% of households do not have a car available are particularly evident in the east of the town as shown in orange/red. However, there is no clear evidence that the LSOAs with greater levels of car availability benefit from corresponding greater levels of access to employment (see Figure 3.7).

Figure 3.5: 2011 Census – proportion of households with no car available



Source: 2011 Census

Low car ownership is often associated with deprivation due to greater difficulties in accessing services and opportunities deprivation (particularly outside of cities with higher levels of non-car accessibility); national data shows that car ownership in areas of high deprivation is usually lower than areas of higher employment unless the public transport alternatives are sufficiently attractive to reduce the need for a car.

The high proportion of households without access to a car in Skelmersdale indicates the need to ensure the area is well connected by alternatives to ensure those who don't own a car are able to access jobs, services and other opportunities.

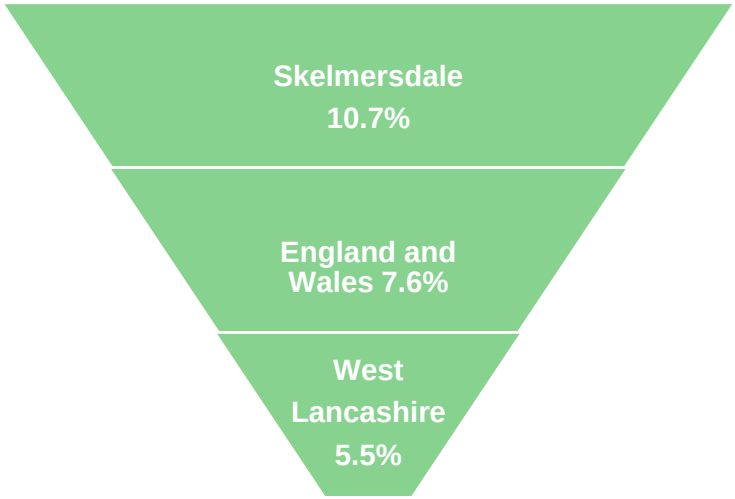
3.2 The economy

3.2.1 Unemployment

Census 2011 data shows that the average unemployment rate within Skelmersdale is almost double that of the borough as a whole at around 11%, and higher than the average for England and Wales. Within some wards, such as Tanhouse and Digmoor, 2011 unemployment rates were as high as 14%, almost twice as high as the national average.

It is therefore essential to provide an efficient transport network within the borough which offers reliable access to jobs and opportunities to increase levels of employment.

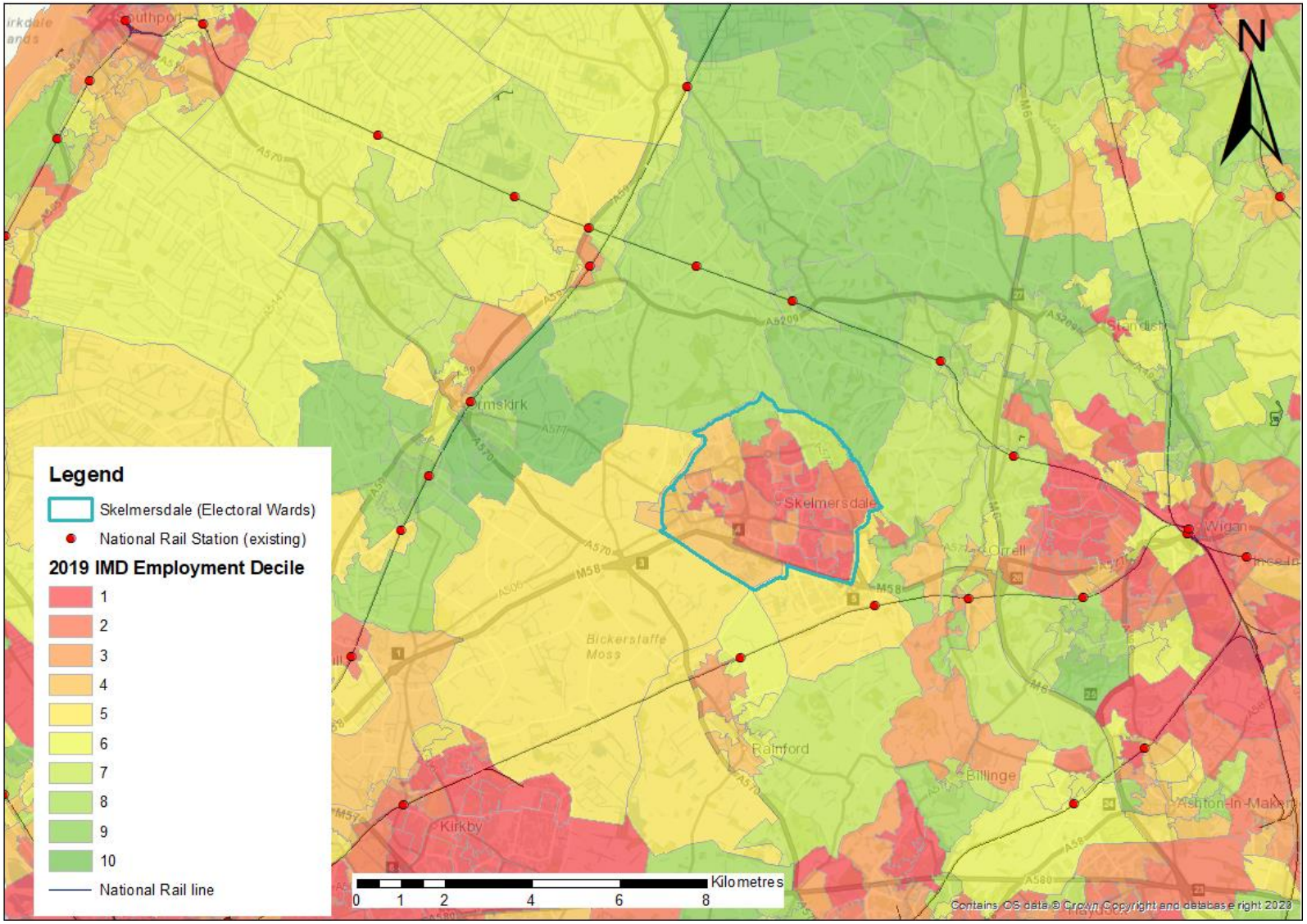
Figure 3.6: Census 2011 Unemployment Rates



2019 Index of Multiple Deprivation (IMD) for the employment domain is shown overleaf (Figure 3.7) and reflects the proportion of the working age population in each LSOA who are involuntarily excluded from the labour market. This could be due to unemployment, sickness or disability, or caring responsibilities. The vast majority of Skelmersdale sits within the bottom two deciles. Outcomes related to the IMD's 'education, skills and training domain follow the same pattern, reflecting lack of attainment and skills in the local population.

In contrast, the areas around Ormskirk and Burscough sit within the highest deciles demonstrating low levels of employment deprivation. This further reflects the outcomes of transport poverty in Skelmersdale with a high proportion of residents without access to a car and lack of provision of public transport access (see Section 4) leaving residents unable to access jobs and opportunities.

Figure 3.7: 2019 Index of Multiple Deprivation – Employment Domain (1 = most deprived decile)

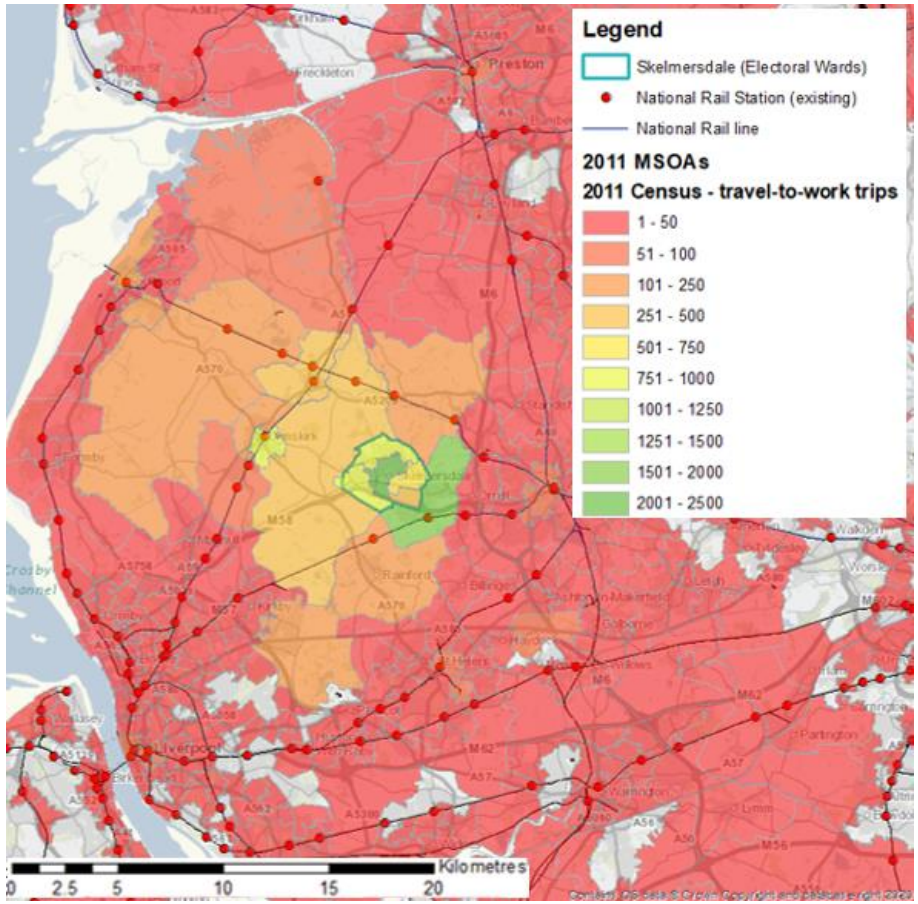


Source: Ministry of Housing, Communities and Local Government

3.2.2 Travel to work patterns

Existing travel constraints are amply demonstrated in Figure 3.8, which show the attractions (destinations) of travel-to-work trips by Skelmersdale residents in the 2011 Census.

Figure 3.8: 2011 Census travel-to-work attractions – all modes



Beyond the immediate environs of Skelmersdale itself, the rapid decay in propensity to travel is evident. The only significant flows of 100 daily trips or more are towards Ormskirk and south to St Helens district.

3.3 The environment

3.3.1 Natural and recreational assets

Skelmersdale is surrounded by attractive wooded valleys and cloughs and numerous wide green open spaces. Skelmersdale lies on the River Tawd, with the Tawd Valley County Park providing a popular attraction for visitors and recreational facility for residents. Beacon Country park also lies to the east of the town and provides an important natural asset comprising a mix of woodland, grassland and wetland and offering panoramic views over miles of rolling landscapes both to the east and west.

Promotion and protection of these natural assets are fundamental to the success of the town, promoting sense of place and offering quality of life opportunities for existing and new residents.

3.3.2 Local air quality

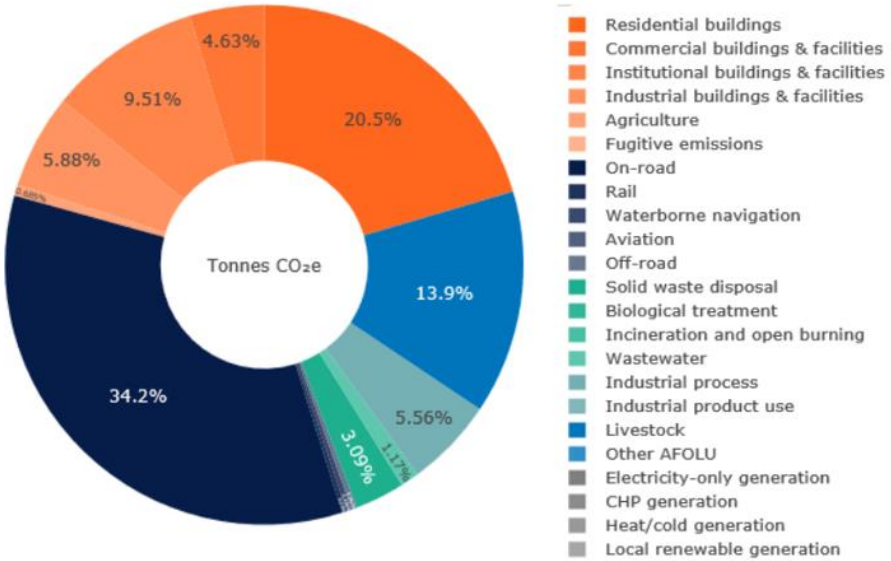
At present there is one Air Quality Management Area (AQMA) within West Lancashire. This covers the Moor Street area of Ormskirk town centre and came into effect on the 20th January 2010. AQMAs are reflective of location which have breached EU regulations, and not the sole representator of places where air quality is likely to be having an impact on health and wellbeing.

Localised issues with Nitrogen Dioxide (NO_2) and Particular Matter (PM) pollution are primarily associated with road traffic and congestion. Therefore, it is important that travel by public transport and active modes is promoted across the borough, reducing the number of vehicles on the network as a result and helping manage growth in a sustainable manner.

3.3.3 Net zero carbon ambition

Concerns over the environment and especially climate change fuelled by growing greenhouse gas emissions have increased in recent years and are viewed as a primary issue to be addressed at a national, regional and local level. The move to a net zero carbon economy at the national level has been reflected in local actions. West Lancashire declared a climate emergency in July 2019 with the aim to achieve carbon neutrality by 2030.

Figure 3.9: Direct Emissions Greenhouse Gas Emissions for West Lancashire by Subsector



Source: West Lancashire Borough Council Climate Change Strategy and Action Plan 2020 – 2030

On-road emissions from transport make up 34% of greenhouse gas emissions across West Lancashire[2] and this is the largest source across the borough. Reducing emissions from this source will therefore be vital in reducing the borough's carbon footprint and tackling climate change. In order for this to be achieved, the public transport network will need to adapt to new markets and prevalent travel patterns and provide efficient and reliable services which offer an attractive alternative to the use of the private car.

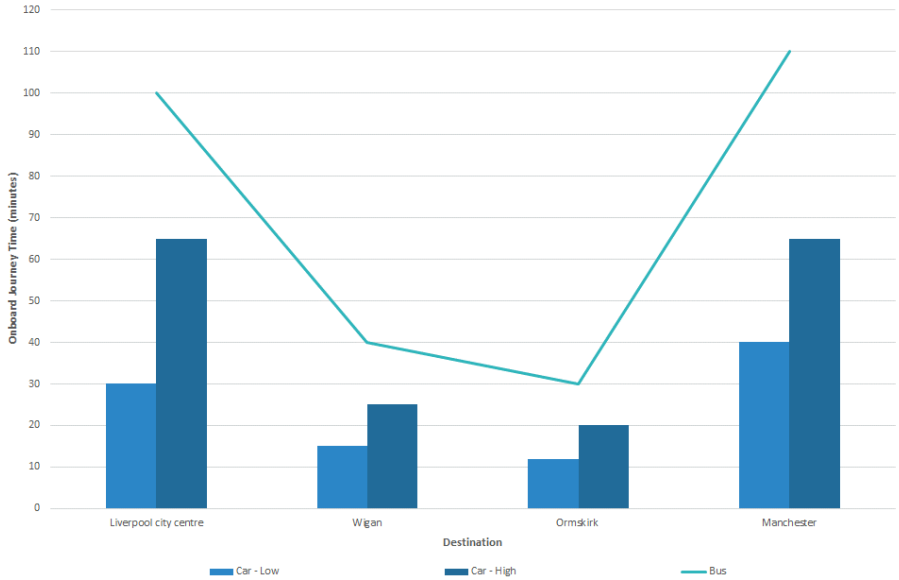
3.4 The transport network

Despite its proximity to major centres and the strategic road network, Skelmersdale remains poorly connected to the wider area.

In the current absence of a rail station in Skelmersdale to serve the town and its hinterland, residents in the area are heavily reliant on bus services and car travel to access services and opportunities across the borough of West Lancashire and within surrounding key centres. However, there are a number of issues associated with this as bus routes to key centres such as Liverpool suffer from congestion and therefore create long and unreliable journey times (journey times between 90 minutes and 120 minutes). The convoluted highway network layout seen within Skelmersdale also limits bus provision as buses are unable to directly reach neighbourhoods leaving communities a significant walking distance from the nearest bus stop. Figure 3.10 (overleaf) summarises existing journey times for travel between the centre of Skelmersdale and surrounding key centres

[2] https://democracy.westlancs.gov.uk/documents/s20969/Climate%20Change%20Strategy%20and%20Action%20Plan%202030.pdf

Figure 3.10: To/from Skelmersdale – Public Transport versus Car In-Vehicle Times



Source: Mott MacDonald/Google Journey Planner
Note: Onboard journey times comprise typical journey times for trips undertaken on a weekday at around 9am under congested 'high' and uncongested 'low' operating conditions;

The times in Figure 3.10 for public transport are exclusive of the additional time associated with:

- Frequencies of service (or service intervals), capturing both the actual wait time at the stop or station and perceptions of this[3] relative to time onboard the vehicle; and
- Interchange – travel to/from Manchester requires a change between bus and rail services in Wigan. In addition to the actual time involved, this also imposes an additional 'interchange penalty' on passengers which reflects the inconvenience and uncertainty involved.

With most bus services running at half hourly frequencies or lower, and onboard times approximately twice as long as the equivalent car journey, those residents without access to a car face significantly longer overall journey times to the major centres.

When combined with significantly low levels of car ownership (as high as 45% of residents without access to a car in some areas) these long and unreliable public transport journey times present major issues for a large proportion of residents in Skelmersdale who have limited travel options available and are therefore unable to access key services, facilities and opportunities.

3.5 Key takeaways

In comparison to West Lancashire, the wider North West region, and England as a whole, Skelmersdale experiences a number of adverse economic, social and environmental outcomes. Levels of deprivation and unemployment are amongst the highest in the country.

The above statistics identify a significant proportion of the population within Skelmersdale which are 'left behind' and are not presented with the same opportunities as residents within neighbouring communities of Ormskirk and Burscough where greater levels of connectivity and thus access to opportunities and services is provided. Low levels of car availability are both a symptom, as households cannot afford the costs of ownership and operation, and also a cause, as residents cannot access the opportunities to transform their lives, of the observed outcomes. The situation is exacerbated by:

[3] In demand modelling and economic appraisal this time is, as in the Economic Case, this is typically assumed to impose twice the disutility of time onboard the vehicle.

- Poor connectivity to the surrounding major centres by both public transport and the car (due to congestion), which while close geographically are 'out of reach' by existing public transport; and
- Low levels of inward investment, characterised by a poor 'sense of place' and the connectivity gap, limiting the immediate opportunities available 'on the doorstep'.

Intervention is therefore required to bring significant improvement to the connectivity of Skelmersdale and ensure its residents are able to access jobs, opportunities, services and key facilities and the town capitalises on development opportunities.

35% of households in Skelmersdale area **don't have access to a car**- almost double the West Lancashire average.

Majority of Skelmersdale lies within the top **10%** of **most deprived LSOAs** across England and Wales (IMD 2019)

Unemployment rate in Skelmersdale is around **11%** almost double that of the borough as a whole, and higher than the national average

Higher % of population within Skelmersdale (**32%**) with **no qualifications** compared to neighbouring Ormskirk (18%)

Climate emergency declared in West Lancashire in **2019**

4 Strategic Case: The challenge and opportunity explored

Skelmersdale lies between 3 major centres in the north of England and has great potential for growth and prosperity. However, to do this it must overcome a series of challenges and issues which its people, places, and economy face.

Better connectivity will be central to reversing the declining socio-economic status of residents in Skelmersdale, however it is recognised that a holistic approach to development will be required. In order to create transformational change within Skelmersdale, additional investment into retail, employment and educational facilities will be required alongside improved transport services in order to continue to increase inward investment.

Addressing the major challenges relating to the socio-economic context of Skelmersdale, and the area's connectivity, are at the heart of this project and include:

4.1 The lack of transport alternatives

As noted in Section 3.4, there are a lack of alternative transport options available to residents in Skelmersdale. The key connectivity issues and opportunities include:

- Long, unreliable and extended bus journey times between Skelmersdale and key centres, such as Liverpool, despite close proximity due to congestion and low frequencies.
- Poor highway network layout characterised by large junctions creates unsafe and unattractive environments for pedestrians and cyclists and therefore reduces opportunities for walking and cycling.
- Reduced pedestrian and cycle safety is further evidenced by accident cluster hotspots evident in and around Skelmersdale town centre.
- The nature of the highway network layout within Skelmersdale creates difficulty for buses accessing local neighbourhoods therefore reducing direct access for a large number of residents.
- Lack of direct rail access within the town and poor connectivity to nearby stations via bus, walking and cycling for reasons noted above.
- Nearest rail station at Upholland does not offer a direct rail service to Liverpool requiring the need for interchange and increased journey times as a result.

4.2 The lack of access to social and economic opportunities

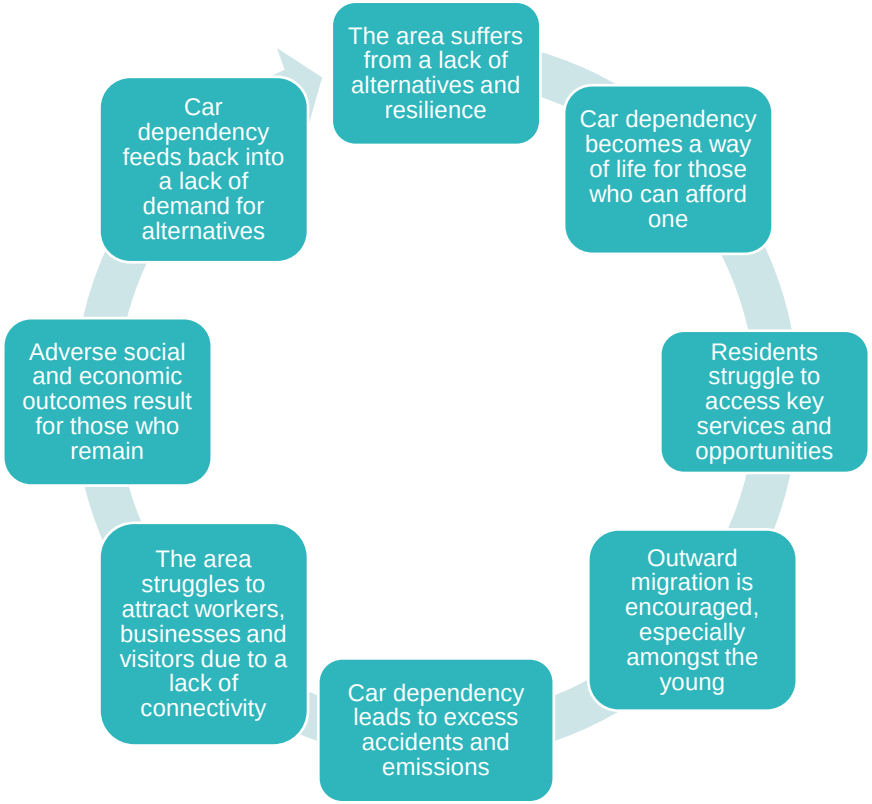
The connectivity issues experienced in Skelmersdale and noted above are exacerbated by the significantly low levels of car ownership amongst residents leaving a high proportion of the population experiencing difficulty in travelling to and from the area to access opportunity.

The lack of access to and from the town severely hinders social and economic opportunities for its residents and for the borough as a whole which further contributes to current adverse economic, social and environmental outcomes (as observed in preceding chapters):

- The inability for a large proportion of residents to access jobs and opportunities further afield increases deprivation
- New businesses are deterred from locating and investing in the area
- Lack of accessibility and local opportunities is unlikely to attract new residents contributing to a decline in investment
- Social inequalities rise within Skelmersdale and the gap in equality between the town and other parts of the borough further increases.

The future cycle of challenges caused by this lack of connectivity is illustrated in the figure which outlines the key outcomes facing Skelmersdale if we 'do nothing':

Figure 4.1: The cycle of challenges facing Skelmersdale



4.3 The opportunity available

Place-making is central to how West Lancashire Borough Council (WLBC) wish to bring forward the regeneration and improvement of Skelmersdale with partners including LCC, West Lancashire CCG and Homes England among others. Skelmersdale is the largest town in West Lancashire, and is therefore the focal point of the Borough's adopted Local Plan. As noted previously, the Local Plan currently stretches to 2027, meaning that there is a significant opportunity within the next iteration(s) to link sustainable transport and land use planning solutions together, e.g. through Transit Orientated Development (TOD).

The town has its own character and environment, with a strong business community and strong residential communities, but can lack an identity as a place, predominantly due to the absence of a true town centre. As a result, WLBC are now developing a new Regeneration Plan for Skelmersdale Town Centre.

The Regeneration Plan will build upon the new developments already underway in the town centre, and ensure that what is created in the town centre becomes the heart of Skelmersdale and connects out to the different neighbourhoods and employment areas surrounding it, complementing the various strands of work ongoing in those areas. This will include the current ongoing work by WLBC to improve the Tawd Valley Country Park, which runs right through the heart of the town centre, creating a feature unique to Skelmersdale town centre. The Regeneration Plan will then create a framework for new development in the town centre, focusing on two main locations:

- Land to the west of the Concourse Shopping Centre; and
- Land at the former Glenburn College Site and at Yewdale.

5 Strategic Case: The options available

5.1 Option generation

At this stage we have considered the strategic alternatives available to address the connectivity deficit the area faces. The approach taken is consistent with 'Stage 1' of option assessment from the DfT's Transport Analysis Guidance (TAG). All modes and infrastructure solutions considered include:

Table 5.1: Long List of Strategic Alternative Options

Option	Description
Do Nothing	• Retain network in Skelmersdale as it is at present.
Increase Highway Capacity	• Increase capacity of highway network between Skelmersdale and Liverpool City Centre, Wigan and Ormskirk • Address current congestion issues, maximise throughput, reduce journey time.
Increased Bus Capacity	• Strengthen the existing bus network between Skelmersdale and Liverpool City Centre and other major centres • New express routes to the town centre, increased frequencies, quality and vehicle capacities.
Rapid Transit Network	• Invest in the creation of a new mode of transport, such as a BRT network, connecting the south of West Lancashire to Liverpool, Wigan and Manchester. • Serve key residential areas and Skelmersdale town centre with high frequencies and high quality transit vehicles.
Bus links to rail stations	• Explore opportunities with bus operators to provide enhanced bus links to nearby rail stations such as Headbolt Lane or Maghull North
Skelmersdale Rail Link	• Development of a new rail link to Skelmersdale with direct connectivity between Skelmersdale, Wigan (and Manchester) and Liverpool.

Source: Mott MacDonald

Each alternative was assessed against a set of criteria developed from the objectives described in Section 4, plus consideration of the option's deliverability. Results of the Multi-Criteria Analysis (MCA) are shown in the table below.

Table 5.2: Strategic alternative sift results

Rank	Scheme	Social Isolation & Exclusion	Access to Opportunity	Economic Development & Regeneration	Sustainability & Environment	Safety	Deliverability	Total Score (average)
1	**Skelmersdale Rail Link**	2.00	2.00	2.00	2.00	1.50	0.00	**1.58**
2	**Rapid Transit Network**	1.67	1.25	2.00	1.75	1.00	-0.50	**1.19**
3	**Bus Links to rail stations**	1.00	0.75	0.25	0.50	0.50	-1.50	**0.25**
4	**Increased Bus Capacity**	1.00	0.50	0.75	1.00	0.00	-2.50	**0.13**
5	**Do Nothing**	1.33	2.00	-0.25	-1.75	-1.00	-3.50	**-0.53**
6	**Increase Highway Capacity**	0.00	-0.25	-0.75	-0.75	-0.50	-1.50	**-0.63**

Source: Mott MacDonald

This demonstrates the highest ranking option was the development of the rail solution providing Skelmersdale with access to the rail network and services.

Following the identification of rail as the preferred mode, a number of rail options were further developed and assessed. Similarly, a number of bus

alternatives were also developed further at this stage to assess the potential benefits of lower cost solutions.

Table 5.3 summarises the shortlisted options for further consideration within this SOBC and Economic Case. This shortlist of options was identified using multi criteria analysis and SWOT analysis methodologies, full detail of which can be found within the supporting Options Assessment Report (OAR).

Table 5.3: Rail Alternatives Shortlist

ID	Mode	Option	Description	Frequency	Journey times
B1	Bus	A direct link to Headbolt Lane Station	A new feeder service to/from Headbolt Lane (new station on the MEL line to the east of the existing terminus at Kirkby);	• 4bph Headbolt Lane – Skelmersdale	• Approx' 50 minutes to Liverpool Central plus interchange at Headbolt Lane • Existing buses to Wigan will be more attractive
R1	Rail	Town Centre rail station-Glenburn College Site	Development of a new rail link to Skelmersdale and rail hub in Skelmersdale town centre to provide a direct heavy rail link between Skelmersdale, Wigan (and Manchester) and Liverpool.	• 2tph Liverpool Central – Skelmersdale • 1tph Manchester/Wigan Wallgate - Skelmersdale	• Approx' 35 minutes to Liverpool Central • Approx' 18 minutes to Wigan Wallgate
R2	Rail	Town Centre rail station-Glenburn College Site value engineered	As above with some single track sections and reduced level of service	• 2tph Liverpool Central – Skelmersdale • 1tph Manchester/Wigan Wallgate - Skelmersdale	• Approx' 35 minutes to Liverpool Central • Approx' 18 minutes to Wigan Wallgate
R3	Rail	M58 Junction 4 Parkway	Modified alignment to south of M58 with a new rail station in proximity or adjacent to Junction 4.	• 2tph Liverpool Central - Skelmersdale Parkway • 1tph Manchester/Wigan Wallgate – Headbolt Lane	• Approx' 33 minutes to Liverpool Central • 8 minutes to Headbolt Lane + interchange + 24 minutes to Wigan Wallgate
R4	Rail	Town Centre South Thorn Island Site	As Option R1 but terminating at a site adjacent to Thorn Island Roundabout, potentially including value engineered alignment.	• 2tph Liverpool Central – Skelmersdale • 1tph Manchester/Wigan Wallgate - Skelmersdale	• Approx' 34 minutes to Liverpool Central • Approx' 17 minutes to Wigan Wallgate
R5	Rail	Upholland Station upgraded at current location	Existing Wigan - Kirkby alignment, with extension of 2 MEL tph from Kirkby/Headbolt Lane	• 2tph Liverpool Central – Skelmersdale • 1tph Manchester/Wigan Wallgate - Skelmersdale	• Approx' 32 minutes to Liverpool Central • Approx' 12 minutes to Wigan Wallgate

It should be noted that although the above rail options are considered further within the economic case, the M58 junction 4 parkway is not considered deliverable due to lack of support from the public and stakeholders and its limited ability to improve the socio-economic standing of residents within Skelmersdale.

5.2 Alternatives

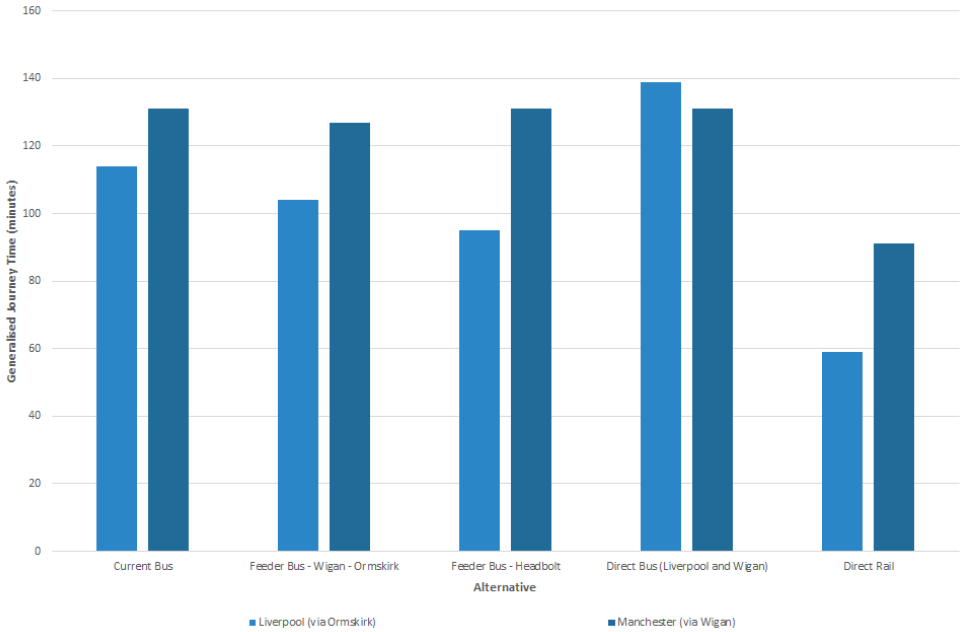
It became clear from the analysis of bus options that most bus-based alternatives seem unlikely, without significant capital and revenue expenditure (e.g. an express route to/from Liverpool),to offer significant benefits to the residents, visitors and businesses of Skelmersdale, and that the principal attraction of pursuing a bus based alternative is the overall lower capital cost involved.

It should be noted that all bus-based options are likely to require greater ongoing costs to the public accounts as they would be much more likely to require an ongoing subsidy as demand and revenue would not be sufficient to meet costs (as evidenced by the fact that they are not provided by the market now).

Figure 5.1 shows the estimated Generalised Journey Time[4] (GJT) for travel to/from Liverpool and Manchester from five public transport alternatives. It can be seen that:

- Towards Liverpool, a direct rail service offers the opportunity to reduce the GJT by approximately 40 minutes, and up to 80 minutes compared to the existing bus service; and
- Towards Manchester, a direct rail service offers a GJT saving of 30+minutes compared to bus connections via Wigan.

Figure 5.1: Skelmersdale Public Transport Alternatives - Level of Service to Liverpool and Manchester



[4] GJT combines all the timetable related aspects of travel into a single measure. This includes onboard, or in-vehicle, time, time spent waiting, and any interchanges. Each aspect is weighted to reflect the inconvenience (or disutility) it imposes on the average traveller, including direct time penalties for each interchange. Access and egress times are assumed to be the same for all alternatives.

Considering what else could be done to enhance bus services, to reduce this differential, then:

- Further frequency enhancements will offer diminishing returns (particularly for the feeders to/from Headbolt Lane and Ormskirk which operate at the same frequency as the MEL Mon-Sat daytime timetable) as the wait time reductions will be small; and
- Substantial journey time reductions would be required to then bring bus-based alternatives to be competitive versus the indicative train service, e.g. more than one hour for a direct bus service to Liverpool.

The options identification and appraisal processes described above have considered a long list of potential rail solutions based on identification of this as the mode best able to achieve the project objectives. Bus based alternative solutions were also considered and assessed as a lower cost alternative will be required within the economic case for the purposes of comparison and in response to recent government strategy publication such as 'Bus back better'[5].

5.3 Complementary transport investment

It has been recognised within the options assessment that complementary investment will be required alongside the above options in order for them to become successful. A holistic approach to development will be required to reverse the socio-economic issues experienced amongst residents.

Regardless of the final preferred option, walking and cycling enhancements will be central for establishing a central travel hub within Skelmersdale for access to the bus or rail network.

Current provision for walking and cycling around Skelmersdale is limited with a surplus of highway capacity creating unsafe and intimidating environments for pedestrians and poorly maintained, poorly lit walkways further reducing the safety and attractiveness of pedestrian activity and access.

Enhancements to walking and cycling networks across Skelmersdale will not only maximise the success of a new transport link through improved access but will increase opportunities for walking ad cycling for more local journeys in and around the creating health and wellbeing benefit amongst the local population.

[5] See: Bus back better - GOV.UK (www.gov.uk)

6 Strategic Case: Project scope

This section summarises the scope of work associated with shortlisted options arising from the Stage 1 options assessment.

6.1 Scope

Shortlisted options aim to enhance medium to long distance connectivity to/from Skelmersdale, with the aim of making the town a more attractive proposition for living, working, and doing business, and improving access to services and opportunities for existing residents.

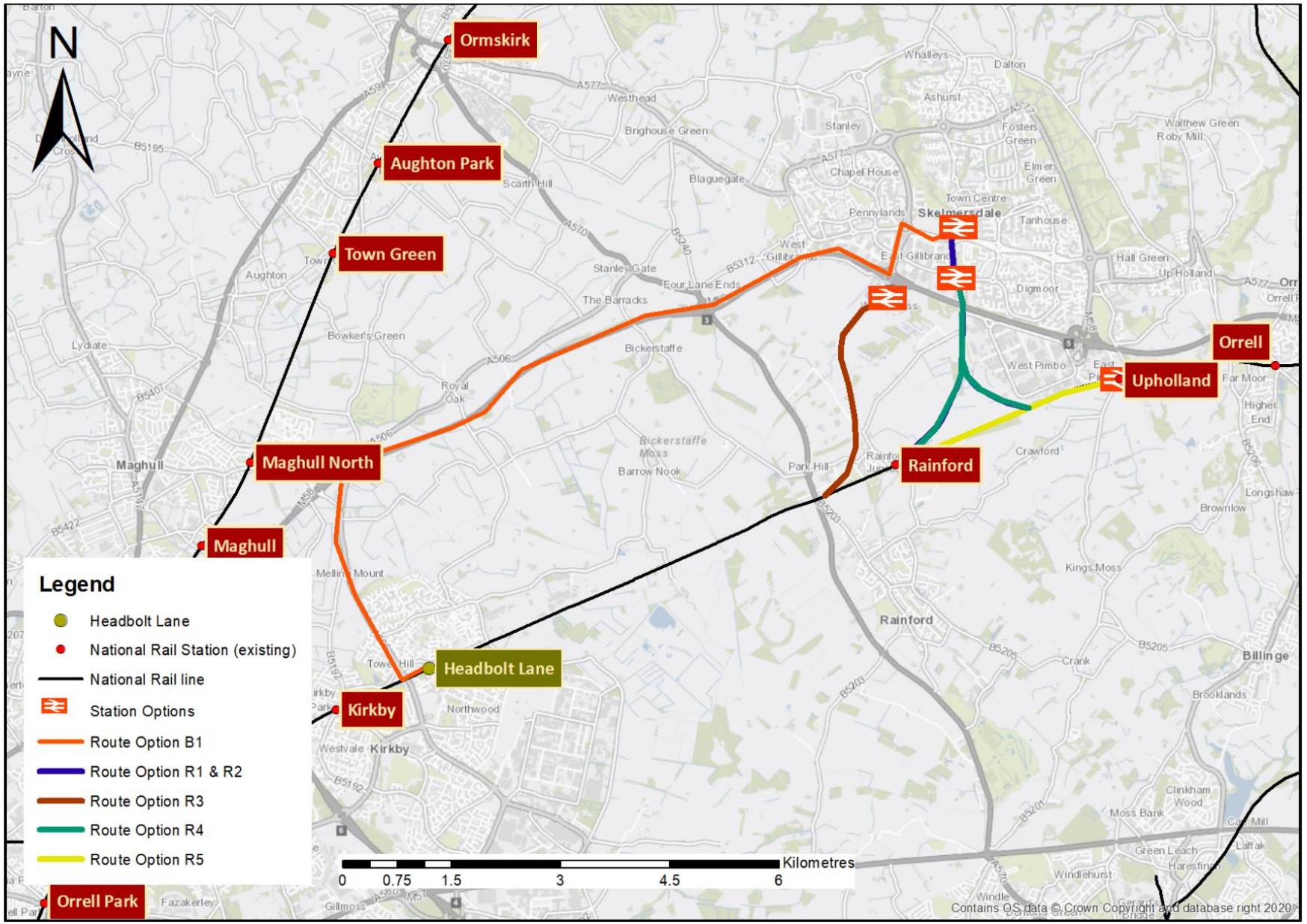
The current definition of the alternatives shown previously in Table 5.3 comprises:

- A new multi-modal interchange for Skelmersdale, providing direct connections to Liverpool (not B1), Manchester (not B1 or R3), and Wigan (not B1 or R3). Option B1 would provide a connection to Liverpool via a bus-rail interchange at Headbolt Lane;
- For R1, R4, and R5, physically separate networks for the MEL and Northern services on approach to Skelmersdale. At this stage it is envisaged that the Northern service will continue to be unelectrified and powered by diesel or successor traction power. GRIP work on the SRL has considered alternative traction power for the MEL network in considerable detail. Emerging from these GRIP stages, provision of AC Overhead Line Equipment (OLE) and operation using dual source DC[6]/AC Class 777 rolling stock is the preferred solution. However, as of June 2021, active testing of battery power for the new Class 777 rolling stock is ongoing, and this may provide a feasible alternative for both the Headbolt Lane and Skelmersdale extensions. Option R2 investigates joint running, while Option R3 retains Northern services at Headbolt Lane with physically separate networks as far as Rainford;
- For R1 to R5, the extension of two, of the planned four, MEL trains per hour between Liverpool Central and Headbolt Lane to Skelmersdale. These would also call at Rainford (not R3). The existing hourly Northern service between Kirkby and Wigan (and Manchester Victoria) is assumed to remain at that frequency and divert to Skelmersdale under options R1, R2, R4 and R5 (not R3);
- For R1, R2, R4 and R5, changes in the termini for both of these services from Headbolt Lane (currently Kirkby) to Skelmersdale, with any interchange between MEL and Northern undertaken there;
- Enhancements to Rainford Station;
- New rail alignment from the existing Wigan-Kirkby line to serve a new station for Skelmersdale (R1 to R4); and
- Upgrades to the existing line between Wigan and Upholland.

Indicative alignments and the station locations, both of which are common to a number of the alternatives, are shown overleaf in Figure 6.1.

[6] The existing MEL network is currently powered using third rail, Direct Current (DC), traction power.

Figure 6.1: Skelmersdale Shortlisted Options – Indicative Alignments and Station Locations



6.2 Proposed services

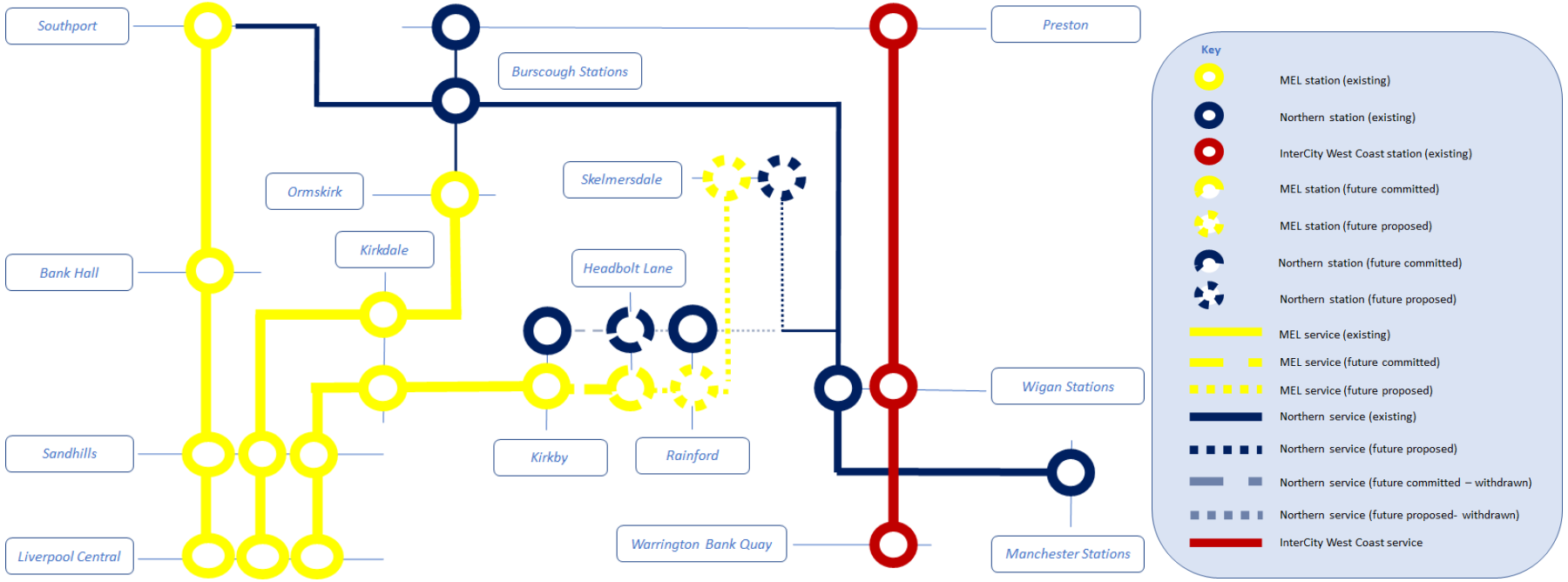
The proposed integration of services to/from Skelmersdale with the wider rail network is shown overleaf in Figure 6.2. They comprise:

- 2 MEL services per hour extended from Headbolt Lane to Skelmersdale (R1 to R5), or 4 dedicated buses per hour (B1). These services will also call at Rainford (not R3 or B1); and
- Diversion of the hourly Northern service from Manchester/Wigan to Skelmersdale from its future terminus at Headbolt Lane (not R3 or B1).

Infrastructure works include:

- Development of a new multi-modal connectivity hub;
- Enhancements to Rainford Station (not R3 or B1);
- A new bi-directional single line 25kV AC electrified line for Merseyrail services between Rainford and Skelmersdale. This is common to R1 to R4, but varies in its length;
- For options R1, R2 and R4, a new single bi-directional unelectrified line between Skelmersdale and Upholland passing through Pimbo;
- Development of a new rail control centre in the area;
- Single track for the new lines between Skelmersdale and junctions with the existing line between Rainford and Upholland; and
- Double tracking between Headbolt Lane and Rainford. The proposed double track alignment will run on redundant formation where possible in order to reduce land take.

Figure 6.2: Skelmersdale Alternatives – Indicative Network Changes



Source: Mott MacDonald

7 Strategic Case: The opportunities available

In this section we explore what a potential extension of the rail network to Skelmersdale could look like, the impacts it could deliver, and how these, with complementary proposals, can lead to the desired economic, social and environmental outcomes for the town and wider hinterland.

7.1 Transport investment at the heart of wider investment

A new public transport link to Skelmersdale has the potential to be a catalyst for change. However, wider investment will be required in order to maximise the benefits of the rail link and improve socio-economic conditions. The new hub will therefore form one key component in programme of investment into housing, health services and educational facilities which will bring transformational change to the people of Skelmersdale.

A number of wider complementary investments are planned or underway in Skelmersdale and are summarised in the points below. Further details of these projects can be found within the Strategic Case of the main SOBC document:

- **Place making**- Skelmersdale is the largest town in West Lancashire, and the focal point of the Borough's adopted Local Plan. The town has its own character and environment, with a strong business community and residential communities, but can lack an identity as a place, predominantly due to the absence of a true town centre. As a result, WLBC are now developing a new Regeneration Plan for Skelmersdale Town Centre.
- **Education and Training**- Skelmersdale is home to West Lancashire College, which has a modern campus in the town centre, including a brand new Construction Academy. Students from across West Lancashire and adjoining boroughs attend the College, and so the connectivity project would help more young people from the Liverpool City Region and Greater Manchester access the courses at West Lancashire College. West Lancashire is also home to the award-winning Edge Hill University, in Ormskirk.
- **Green Infrastructure and Recreation**- WLBC, LCC and partner organisations are working to improve the quality of green infrastructure and, most crucially, access to it from within the town. This includes £2m investment in Tawd Valley Country Park, creation of an Eco Park at Beacon Country Park, improvement of the Valley Cloughs and improvements to playing fields and their facilities in the Skelmersdale area.
- **Culture and Leisure**- Development of a new Wellness & Leisure Hub is currently underway within the Concourse Shopping Centre. In addition, the planned opening of a new two-screen cinema is to go ahead after COVID restrictions have eased, while plans for a new entertainment complex taking up the vacant second floor of the Concourse Centre have recently been submitted to WLBC.
- **Employment Development**- West Lancashire's projected growth of employment areas over the local plan period focuses on Skelmersdale (52ha) and Burscough (13ha). The current low level of accessibility by public transport around Skelmersdale makes the area unattractive to potential investors. The current network does not allow for the development of more sustainable communities where residents are well connected to a variety of

jobs and opportunities by sustainable modes which provide attractive alternatives to private car journeys.

- **Housing**- The adopted West Lancashire Local Plan 2012-2027 targeted the delivery of over 2,000 new homes in Skelmersdale. Looking forward, the new Local Plan for 2028 and beyond will look to allocate further housing sites in and around Skelmersdale, given it is the borough's main town and economic heart. The location and quantum of these allocations will, in turn, be dependent on the scale and location of investment on connectivity.

Transport investment in Skelmersdale will be critical in generating and supporting the wider investment proposals outlined above which are planned or underway in and around the town.

Improved access to the area will be central to facilitating these developments and attracting further inward investment which will enhance the success of these developments and unlock improved prosperity for the town, dramatically increasing opportunities for residents.

In Section 4 we explored the consequences of a continuation of recent trends in Skelmersdale, i.e. the 'Business As Usual'. Here we set out the alternative future scenario where connectivity enhancements work in partnership with other plans, policies and interventions to deliver a transformational change. It can be seen that completing the Skelmersdale Rail Link has the potential to deliver significant contributions across all strategic objectives

Figure 7.1 and Figure 7.2 illustrate a cycle of how improved connectivity plus complementary investment in Skelmersdale can deliver on the desired outcomes.

Figure 7.1: Cycle of opportunity and desired outcomes in Skelmersdale

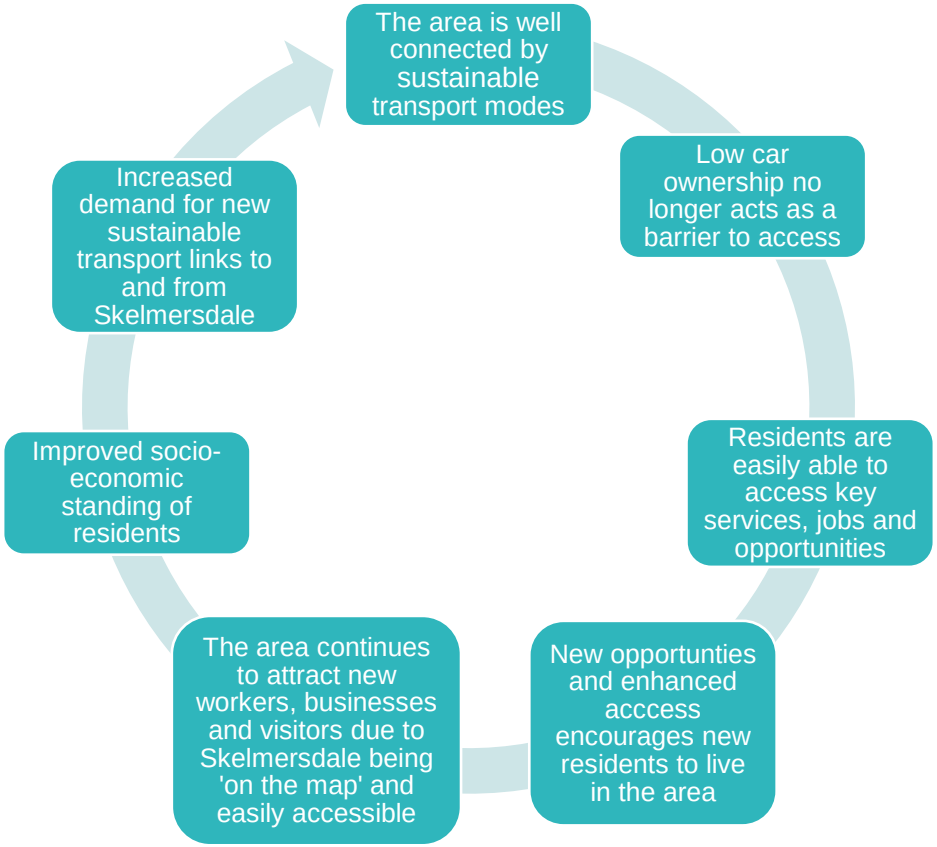
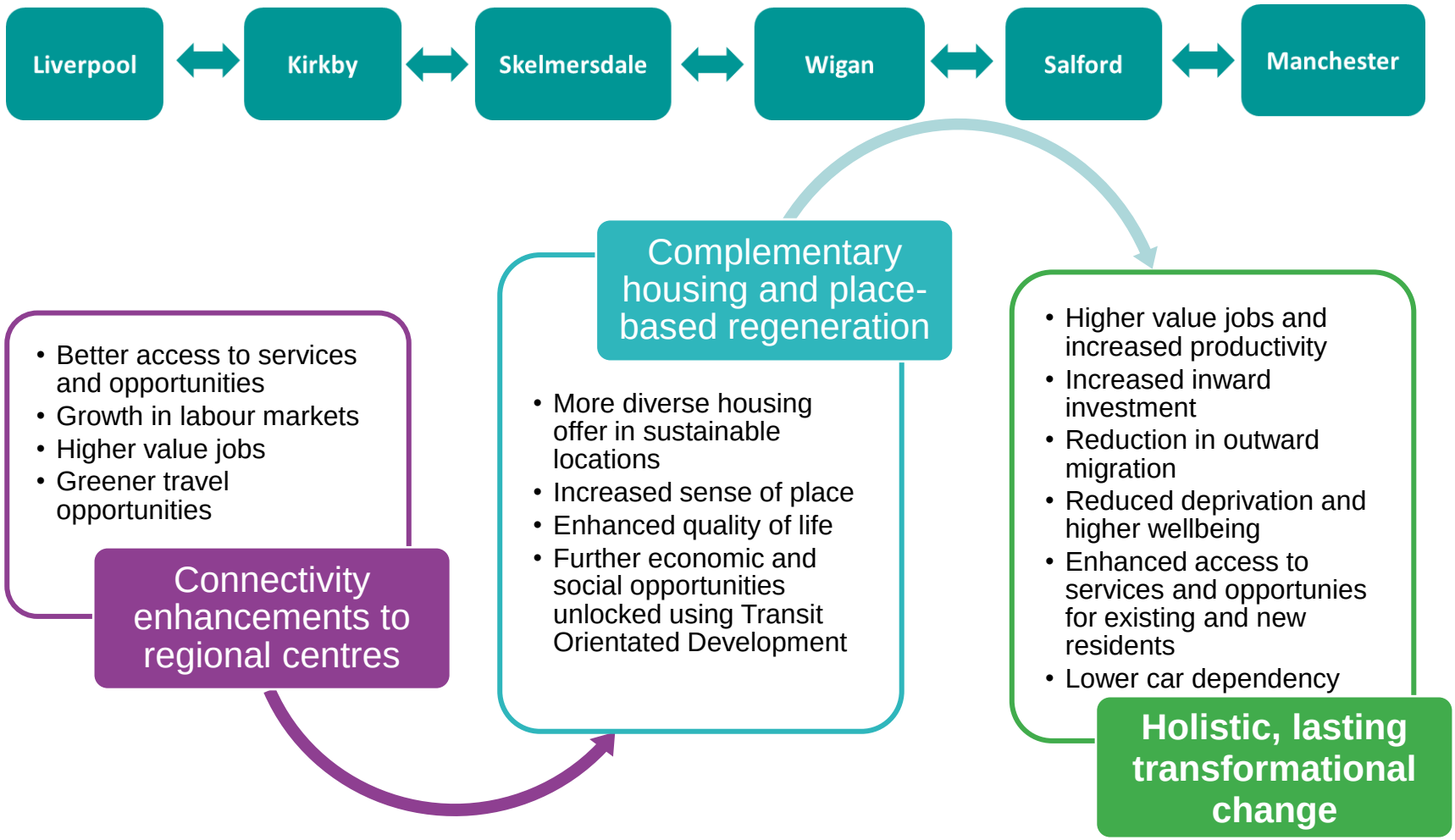


Figure 7.2: Skelmersdale Connectivity Cycle of Change



8 Strategic Case: What success looks like

The project creates the opportunity to produce a range of outcomes and impacts which will can contribute to transformational change for Skelmersdale. By reducing public transport journey times to Liverpool by around 40 minutes and to Manchester by around 30+ minutes (see section 5.2), new opportunities will be opened up for residents and the attractiveness of the area to live, work and invest will be increased.

The dramatic enhancements in the connectivity of the area lends itself to a significant improvement in the quality of life of residents. Enhanced access to opportunities and key services will reduce deprivation amongst residents and contribute towards improved quality of life, health and wellbeing.

8.1 Potential impacts & outcomes

The opportunities and potential associated with the project are considerable for the town itself, the wider area of West Lancashire, its economy, residents and visitors, and the travelling public using the new hub. If all the objectives are met:

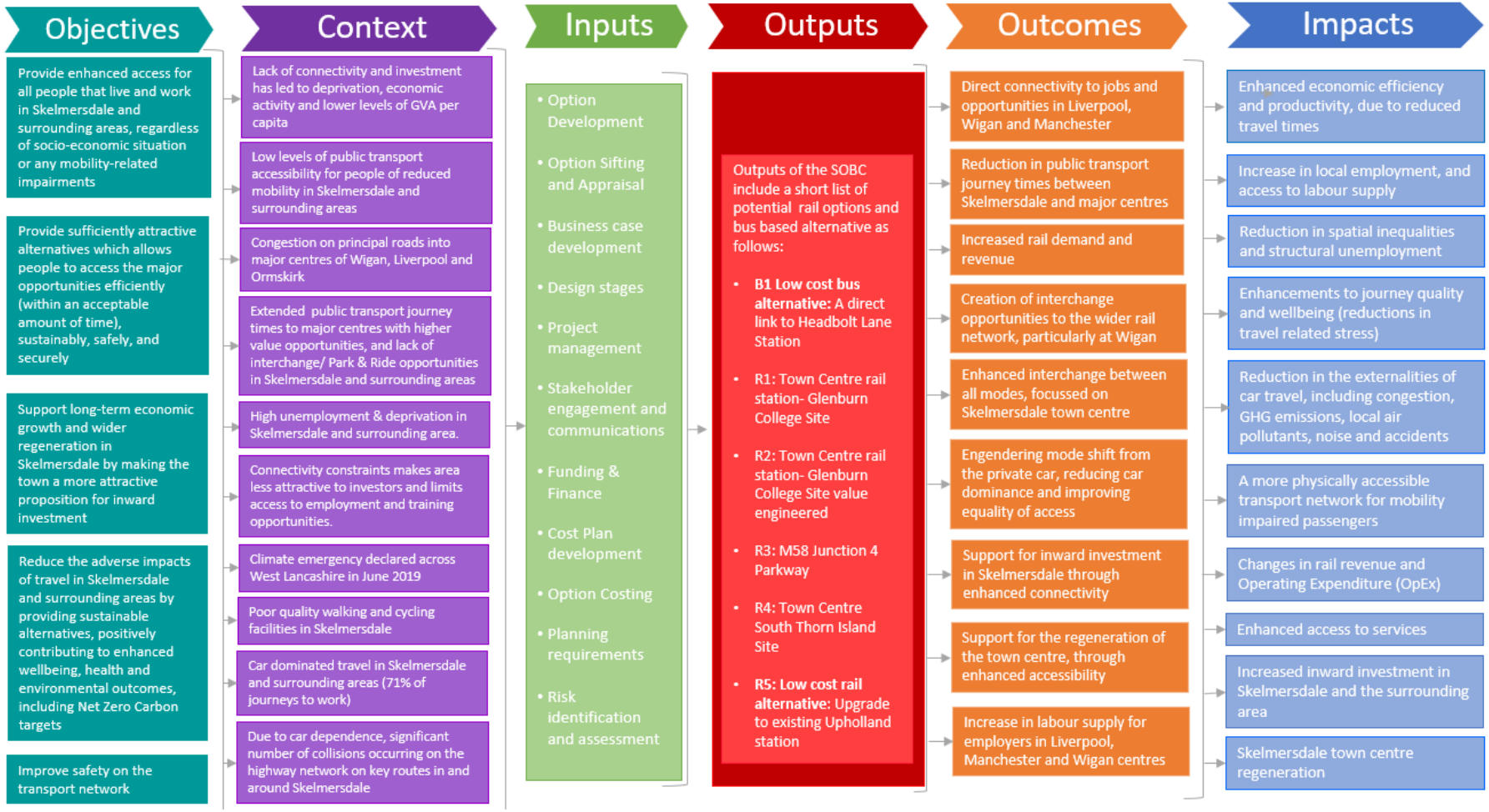
- Provision of new public transport services will connect the area of Skelmersdale to surrounding centres with a new, higher quality, green travel alternative.
- Overall journey times and direct connectivity into key surrounding centres such as Liverpool, Manchester and Wigan will be significantly improved.
- Better access for pedestrians and cyclists and easier interchange between bus, rail, and taxi will be provided within the centre of Skelmersdale.
- Skelmersdale and West Lancashire will see a % GVA uplift a result of inward investment around the town centre and wider area.
- Residents will experience improved access to jobs and opportunities in Liverpool City Region, Greater Manchester, Preston and Wigan.
- There will be a reduction in the level of deprivation in Skelmersdale as people are able to access opportunities and services.
- Safer highway networks will create better environments for pedestrians and cyclists as more people choose to travel by rail as an alternative to the private car, reducing the number of accidents occurring on the network in and around Skelmersdale.
- Connectivity will be provided to support redevelopment and economic growth of Skelmersdale and the wider area
- Skelmersdale, West Lancashire and beyond will see reductions in levels of NO_X and polluting particulates as a result of fewer car trips to and from the area
- The rail network will see operational improvements as a result of a new interchange hub at Skelmersdale. In particular, the reduced journey time between Wigan Wallgate and Skelmersdale compared to that between Wigan and Kirkby / Headbolt Lane will provide increased turnaround times and greater reliability and punctuality for Northern services.

8.2 Logic mapping

The logic mapping (overleaf) shows how project objectives have led to the identification of potential outputs (options) and how these aim

to translate into outcomes and impacts. These are explored further in the Economic Case (see Section 10).

Figure 8.1: Logic Map



9 Strategic Case: Project delivery

9.1 Stakeholders

Key stakeholders have been identified who will need to be engaged with throughout the development of the scheme, a number of which have been engaged throughout the development of this SOBC:

- West Lancashire Borough Council
- Lancashire County Council
- Network Rail
- Transport for the North
- Department for Transport
- Public Transport Operators and Taxi Operators
- Liverpool City Region Combined Authority
- Transport for Greater Manchester
- Merseyrail Electrics
- Northern Rail
- Stadler
- British Transport Police

9.2 Interfacing and interdependent projects

There are a number of other projects planned and currently being undertaken on the local and regional rail network which will need to be considered throughout the development of the Skelmersdale connectivity project. These include:

- **Liverpool City Region Long Term Rail Strategy** – the strategy includes a set of network extensions and new routes including a proposed Skelmersdale Rail Link. Many of these are reliant on the ongoing project to increased capacity at Liverpool Central Station for both passengers and rail services.
- **HS2**- services to/from Wigan North Western, and Liverpool Lime Street, coupled with associated revisions to the operations of current franchises, will provide new journey opportunities.
- **Wigan Station(s), Atherton Tram-Train and Castlefield Corridor**- series of proposals being developed within Greater Manchester which could have a material impact on proposed services between Skelmersdale and Manchester
- **Parkside Strategic Rail Freight Terminal-** proposed new rail freight terminal in the local area which could handle 12 or more freight trains per day. This proposal could ultimately change the volume and balance of freight movements on the local network
- **Maghull North**- recently completed new station at Maghull North provides additional Park & Ride capacity along the Northern Line. However, within a year of station opening the car park demand exceeded capacity
- **Northern Powerhouse Rail-** Northern Powerhouse Rail (NPR) is a proposed new rail network between the North's major centres, increasing network capacity and reducing journey times. For Skelmersdale the main interaction would be on the potential use of residual capacity on the existing network.

9.3 Uncertainties and risks

The key strategic risks and opportunities identified for the scheme at this stage of the business case process include:

- Change of policies leads to reduced availability of funding
- Limited current understanding of the scope of submission required for the DCO process
- Government's current positive policy on 'levelling up' and investing in new / restored infrastructure provides an opportunity
- Unknown ground conditions, utilities, highway interactions, land access and acquisition.

10 Economic case

Preceding logic mapping has identified how shortlisted options aim to translate outputs into tangible outcomes and impacts. This Economic Case section provides an estimation of these outcomes and impacts, monetising these where proportionate and appropriate, to identify the likely Value for Money (VfM)

10.1 Options appraised

Sections 5Strategic Case: Project scope and 6 provide details of the six shortlisted alternatives which were assessed in more detail (R1 to R5, and B1).

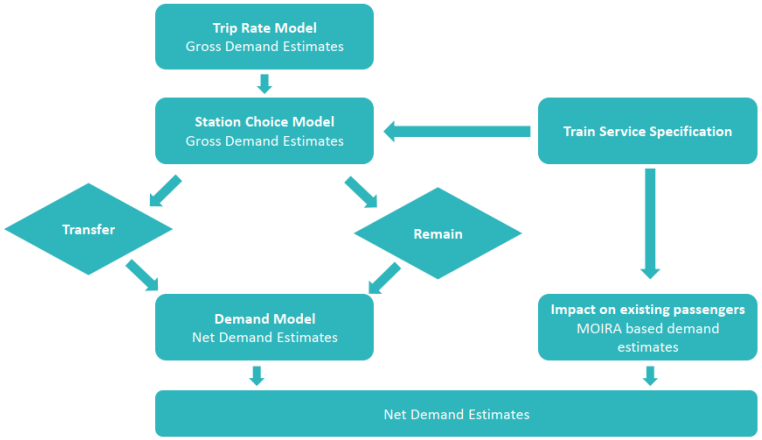
10.2 The approach

Figure 10.1 provides an overview of the demand modelling approach, for which there are four main stages:

1. Trip rate based estimates for Skelmersdale and Rainford (as a new station on the MEL network with direct services to Liverpool) based on local comparator stations and residential and commercial catchments. These provide an initial 'gross' estimate without competition with existing stations.
2. A station choice model reflecting Level of Service (LoS) differentials between competing stations. LoS reflects both the Generalised Journey Time[7] (GJT) of rail travel (resulting from the Train Service Specification (TSS)) and access/egress times and costs from the station. This uses a Multinomial logit (MNL) model which forecasts the probability of choosing each station, and therefore the absolute number from the gross estimate who would remain at an existing station or transfer to Skelmersdale or Rainford.
3. Separately, the TSS is also used to estimate the demand change arising from the changes to the existing network, i.e. the termination of Northern services at Skelmersdale meaning passengers travelling from Kirkby and Headbolt Lane to the east must interchange at Skelmersdale if they don't travel directly to Skelmersdale instead (transfer). This is captured through changes in GJT.
4. Cumulative impacts are brought together to provide the net change in rail demand across all the changes.

[7] GJT combines the In-Vehicle (onboard Time, service interval penalty (a combination of headway, expected distribution of departures and arrivals and the inconvenience of wait time), time spent interchanging (if applicable), and a 'pure' interchange penalty (if applicable) which reflects the inconvenience of having to change trains over and above the time spent doing so. It therefore aims to capture the total station-to-station generalised time with individual components weighted.

Figure 10.1: Demand Modelling Approach



Source: Mott MacDonald

This approach provides an initial set of base year (2019) demand estimates. These are then used to forecast future year demand with application of:

- UK rail industry's Passenger Demand Forecasting Handbook (PDFH) v6 guidance on the impacts of changes in the 'External Environment', e.g. population, employment, competing modes etc.; and
- An assumed change in rail fares. It is assumed that a policy of RPI+0% is applied from 2021 to 2040 (when fare changes are capped in line with TAG). This is in line with LCRCA fares policy for the MEL network; and
- Demand ramp-up, reflecting the lag between changes in transport supply and the associated changes in travel behaviour.

10.3 The potential market

Skelmersdale is a centre in its own right and acts as a hub for a wider hinterland. Kirkby, Maghull and Ormskirk all fulfil similar local functions, and have annual demand in the range of 1.6 to 2.1 million trips. Each is served by four tph to/from Liverpool City Centre. Kirkby and Ormskirk are also served by Northern services to/from Manchester and Preston respectively, with the former planned to be diverted to Skelmersdale as part of this project.

Table 10.1: 2019 Passenger Demand Estimates for Comparator Stations

ID	Station	Productions	Attractions	TOTAL
1	Kirkby (Merseyside)	1,593,699	506,370	2,100,068
2	Maghull	1,223,492	421,875	1,645,366
3	Ormskirk	871,414	1,003,802	1,875,216

Source: Merseyrail Electrics Demand Matrices

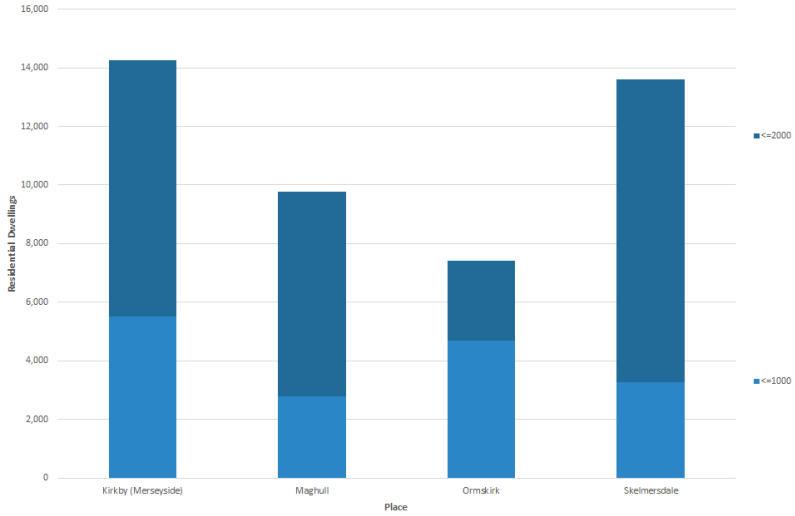
Catchment analysis

Figure 10.2 and Figure 10.3 (overleaf) show the residential and commercial catchments, respectively, for a centrally located station in Skelmersdale and the three selected comparator stations. It can be seen that:

- Skelmersdale has a comparable residential catchment to Kirkby within 2km, and this is a significant factor higher than both Maghull and Ormskirk;
- The immediate walk up residential catchment within 1km at Skelmersdale is lower than Ormskirk and comparable to Maghull. This reflects the urban fabric of Skelmersdale and the relatively low density of residential development;

- Ormskirk has a high commercial catchment within 1km, reflecting the central location of the station and the town's role as a service centre for both West Lancashire and parts of the LCR; and
- Within 2km the commercial catchment in Skelmersdale is lower than all comparators, reflecting a more limited set of opportunities for local residents, which are, in turn, a function of the lack of inward investment caused by poor connectivity.

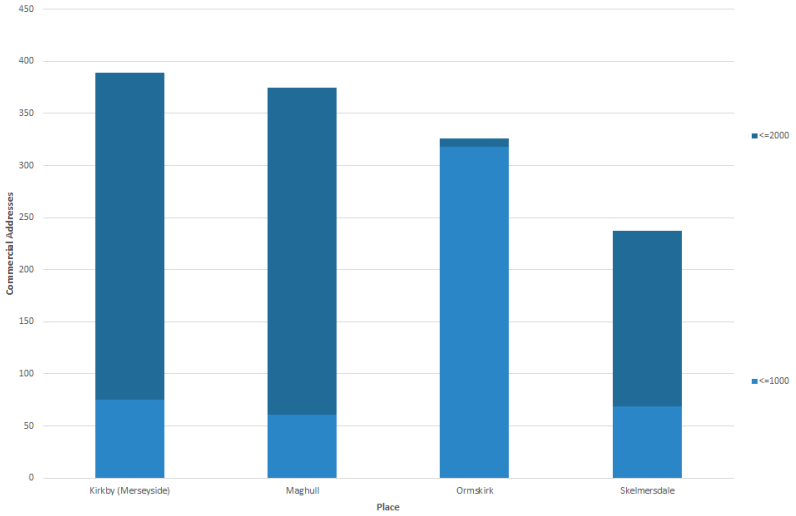
Figure 10.2: 2019 Station Catchment Analysis - Residential



Source: OS AddressBase

Comparing annual demand with these catchments, using passenger survey data to help understand passengers' ultimate origins and destinations, allows the following average trip rates ('decay curves') to be derived for the comparator stations. These can then be applied to the catchment in Skelmersdale, with adjustments then made for LoS and competition between stations.

Figure 10.3: 2019 Station Catchment Analysis – Commercial



Source: OS AddressBase

Passenger demand

Table 10.2 (overleaf) shows the following overall patterns in passenger demand:

- The centrally located station in options R1 and R2 naturally generates the greatest demand at Skelmersdale, which naturally also drives the largest overall change in rail demand;

- The M58 junction parkway site in R3, as a result of its location away from the major residential catchment and serving primarily low density commercial development in its immediate walk up, generates less than half the demand of the town centre location. As MEL services cannot serve Rainford, the absence of this demand growth means that net demand change is comparable with R5;
- The Thorn Island site in R4 generates demand which is factor lower than R1/R2 as the large residential catchment in the north of the town is now further from the station site, and there is not the corresponding increase in catchment to the south of the town;
- Demand at Skelmersdale (Upholland) is lowest in R5 as the catchment diminishes further; and
- There is a small net change for existing flows from the enhanced connectivity between points west of Kirkby and those east of Skelmersdale. These outweigh the small amount of abstraction from existing stations by Skelmersdale (c 50,000 trips per annum).

Considering these forecasts relative to the 'present day' (2019) annual demand at comparator stations, shown in Table 10.1, it can be seen that the demand estimates at Skelmersdale are a factor lower. The factors behind the difference are:

- A lower LoS, with only 2tph to/from Liverpool Central compared to 4tph at the comparators;
- An extended GJT, caused by the lower frequency and longer travel distance (deterring rail demand on the key flow to/from Liverpool); and
- Lower immediate residential and commercial catchments within 1km of the station from which the majority of demand will be drawn.

While these factors constrain demand now, it is important to note that the project itself aims to act as a catalyst which will help to indirectly:

- Stimulate additional development and activity around the proposed station location, thereby growing the immediate walk up catchment and demand; and
- With that additional demand, help justify 4tph instead of 2tph to/from Liverpool Central, which, in turn, would generate a further step change in rail demand to/from Skelmersdale.

Table 10.2: Skelmersdale Rail Link Passenger Demand Forecasts

Year	Skelmersdale	Rainford	Existing stations	TOTAL
Option B1: 4bph shuttle bus between Skelmersdale and Headbolt Lane				
2028	325,000	-	-5,000	320,000
2035	340,000	-	-5,000	330,000
2040	360,000	-	-5,000	350,000
Option R1 & R2: 2tph MEL and 1tph Northern service to Skelmersdale town centre (Glenburn College site)				
2028	1,000,000	175,000	15,000	1,190,000
2035	1,035,000	190,000	20,000	1,245,000
2040	1,100,000	205,000	25,000	1,330,000
Option R3: 2tph MEL to M58 Junction 4 Parkway				
2028	445,000	-	-50,000	400,000
2035	465,000	-	-50,000	415,000
2040	495,000	-	-55,000	440,000
Option R4: 2tph MEL and 1tph Northern service to Skelmersdale (Thorn Island site)				
2028	790,000	175,000	-40,000	925,000
2035	820,000	190,000	-40,000	970,000
2040	870,000	205,000	-45,000	1,030,000
Option R5: 2tph MEL and 1tph Northern service to Upholland (upgraded existing station)				
2028	190,000	175,000	20,000	390,000
2035	200,000	190,000	25,000	415,000
2040	215,000	205,000	30,000	450,000

Source: Mott MacDonald

10.4 What benefits?

The shortlisted DS options do not materially differ in the outcomes they will deliver as they all seek to address the same connectivity issue. It naturally follows that their expected impacts will be similar, albeit with significant differences in magnitude on an impact by impact basis. Table 10.3 shows how the main expected outcomes (for the passenger) are, in turn, expected to translate into both monetised and non-monetised impacts.

Table 10.3: Skelmersdale Rail Link Outcomes and Expected Impacts

Outcome	Journey time changes	Journey quality	MECCs (accidents et al)	Physical activity	Reliability	WEIs	Townscape	Other non-monetised	Option and non-use values
Skelmersdale station hub, rail link, and service changes	●	●	●	●	●	●	●	●	●
Rainford station upgrade and service change	●	●	●	●				●	
Diversion of Northern services to Skelmersdale	●	●	●		●				
Enhancements to local walking and cycling routes	●	●	●	●			●	●	

Notes: ● = direct impact ● = indirect impact (e.g. via demand change)

10.5 The indicative cost

Project costs include:

- Direct capital expenditure to deliver the project;
- Whole Life Costs (WLCs) to renew the project assets;
- Operating Expenditure (OpEx) to maintain and operate the assets, including smaller scale regular renewals, including the services themselves.

10.5.1 Direct Capital Expenditure

Capital Expenditure (CapEx) estimates were produced for the Skelmersdale Rail Link (SRL) GRIP 2 study (December 2019). These were for shortlisted option R1 only and were inclusive of Costs for the Headbolt Lane project, which was, at that moment in time, part of the wider SRL project. To produce estimates for all shortlisted options, the following steps were undertaken:

- The Bill of Quantities (BoQ) was adjusted to reduce or remove items associated with the works to deliver the Headbolt Lane project;
- From this new estimate for R1, proportionate GRIP/PACE Stage 'Zero' estimates were made by Mott MacDonald for shortlisted options R2 to R5, estimating the change in the scope of works at the broad cost item level from the Rail Method of Measurement (RMM) summary;
- Costs for the bus alternative were estimated. This involve the creation of a centrally located station/interchange and local walking and cycling enhancement measures; and
- For all rail alternatives, known exclusions from the December 2019 Cost Plan were added in a proportionate manner. These included:
  - Land cost estimates
  - Local walking and cycling enhancements, i.e. an 'access package'
  - Environmental assessment and remediation costs
  - Rolling stock investment costs

It follows that each step away from the original December 2019 Cost Plan estimate therefore adds a tier of uncertainty to the estimates.

Table 10.4 compares the cost for R1, derived from the original Cost Plan estimate (inclusive of Headbolt Lane), with the estimates for the other rail alternatives derived for this SOBC using proportionate techniques. Relative to R1:

- R2 reduces some twin track sections to single track, and also reduces the width of the viaduct used to access the town centre site;
- R3 eliminates the need for viaduct and reduces the scope of works on a number of other items due to a shorter section of new alignment. Works at Rainford are removed;
- R4 also eliminates the need for the viaduct, but, relative to R3, retains a longer new alignment to access Skelmersdale itself; and
- R5 solely involves works on the existing Kirkby to Wigan line to permit extension of two MEL services as far as Upholland from their currently planned terminus at Headbolt Lane.

Table 10.4: Skelmersdale Rail Alternatives Cost Estimates (£000s in 2019 Q4 prices)

Ref.	Group Element	R1	R2	R3	R4	R5
1	Direct construction	238,000	203,000	144,000	184,000	62,000
2	Indirect construction	78,800	67,000	48,000	61,000	21,000
3	Project Management et al	72,800	62,000	44,000	56,000	19,000
4	Risk allowance	97,400	83,000	59,000	75,000	26,000
	TOTAL	**487,000**	**415,000**	**294,000**	**377,000**	**128,000**

Source: Mott MacDonald

10.5.2 Other Project Investment Costs

Land Costs

Quantums of land acquisition have been estimated for each alternative. This primarily relates to land south of the M58 motorway, as all land to the north is in public ownership and will be granted free of charge. Estimates for the remaining private land have been made based on the site area required and values obtained from the latest MHCLG estimates. For the economic appraisal this is a project cost but also a private sector benefit as they receive the payments from public accounts.

Access Package

The Strategic Case has emphasised that movement by walking and cycling within Skelmersdale is constrained by the layout and dominance of highways. Where walking and cycling routes do exist, negative perceptions of personal security appear to dampen walking and cycling use, as evidenced in the mode share statistics. To ensure that the project fulfils its remit and integrates with surrounding residential communities and other land uses, an access package of £12.5 million (2019 Q4 prices) has been included to enhance walking and cycling routes to and from the station site. It is noted that in practice the size of this package may need to differ by alternative e.g. options R3 and R5 in particular may necessitate a greater level of intervention due to their relative remoteness from the residential neighbourhoods of the town.

Environmental Assessment and Mitigation

The original Cost Plan provided by Network Rail has not included estimates for any works to mitigate adverse environmental impacts. This would require further investigation, assessment and design during any subsequent GRIP/PACE stages. For each alternative, an allowance of 1% of the AFCs presented in Table 10.4 has been included.

Rolling Stock

The GRIP 2 study excludes the cost of rolling stock. Extension of MEL services requires the acquisition of two additional four-car Class 777 Electric Multiple Unit (EMU). This can be added to the existing order between Merseytravel and the manufacturers (Stadler). The latest estimate is an additional capital cost of approximately £6.5 million per train, inclusive of mobilisation. Part of the cost is dependent on exchange rates, with Merseytravel holding that risk.

Operating Expenditure

Table 10.5 shows the OpEx estimates for the rail alternatives in 2028. These are post a series of adjustments for the economic appraisal, including conversion to a 2010 price base and the application of the market price adjuster. The comparable estimated

annual cost for option B1 is £850,000 (2010 undiscounted market prices) in 2028.

Table 10.5: Skelmersdale Rail Alternatives 2028 Operating Expenditure Estimates (£000s in 2010 undiscounted market prices)

Ref.	Group Element	R1	R2	R3	R4	R5
1	Labour	925	925	845	925	925
2	Track Usage, including traction power	1,040	1,040	885	965	1,000
3	Station Usage	290	290	145	290	290
4	**TOTAL**	**2,255**	**2,250**	**1,875**	**2,175**	**2,215**

Source: LCRCA and Network Rail

10.6 Monetised costs and benefits

The methodology used in the economic appraisal follows that set out in the Government's Transport Appraisal Guidance (TAG) for rail business cases. This is primarily contained in TAG Units A1.1[8], A5.3[9] and M4[10]. There are a number of high level assumptions made, including:

- Base year (e.g. for demand): 2019
- Scheme opening year: 2028
- Demand growth cap: 2040 (20 years from current year)
- Appraisal period: 60 years after scheme opening (to 2087)
- Price base: 2010 market prices, with both costs and revenue line converted using the GDP Deflator
- Discounting: 3.5% for 30 years (to 2050), then 3.0% thereafter

All values are sourced from the TAG Databook May 2020 (July update) where appropriate.

The combined economic appraisal metrics from preceding sections are shown in Table 10.6. The full set of TAG economic tables are contained in Appendix I of the main SOBC. Based solely on the established monetised impacts, then it can be seen that the:

- Lower costs for R5 relative to R3 means that, given they have comparable PVBs, this option displays greater VfM;
- Reduced demand, revenue and impacts for R5 (and also R3) mean that, despite the cost saving, they result in a lower BCR than the other rail options;
- Negative NPV observed for all rail options is smallest for R5, reflecting the lower investment costs;
- Reduced costs of only building a link to the Thorn Island site are more than offset by the reduction in benefits, resulting in a BCR for R3 which is lower than R1 and R2;
- Initial VE of option R1 to create R2 has reduced the total PVC by approximately 15%, but this is only sufficient to increase the BCR from 0.45 to 0.53 (due to the initial high investment costs); and
- The low cost alternative B1 generates the greatest BCR and a positive NPV, but with the lowest PVB (and PVC). This indicates it could be a suitable early phase of the project, but will not

[8] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/712699/tag-unit-a1.1-cost-benefit-analysis-may-18.pdf

[9] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/715482/tag-unit-a5-3-rail-appraisal-may-2018.pdf

[10] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805256/tag-unit-m4-forecasting-and-uncertainty.pdf

generate the long-term transformational benefits that form the key objectives of the project.

Table 10.6: Skelmersdale Rail Link Shortlisted Options Analysis of Monetised Costs and Benefits (£000s in 2010 present values and market prices)

Option	PVB	PVC	NPV	BCR
R1	184,000	407,000	-222,000	0.45
R2	184,000	347,000	-163,000	0.53
R3	51,000	281,000	-230,000	0.18
R4	138,000	328,000	-189,000	0.42
R5	49,000	155,000	-106,000	0.32
B1	36,000	25,000	11,000	1.42

Source: Mott MacDonald

10.7 The wider impacts of investment

Wider economic impacts

At this SOBC stage, the potential WEIs have not been monetarily quantified as this requires estimation of the net UK impact for inclusion within the Economic Case metrics and a bespoke study of localised impacts. As with all local transport investment, the WEIs are likely to be much larger at the sub-national level, e.g. West Lancashire and the immediately adjacent authorities, the LCR, or North West and may be marginal at the UK level in comparison to the 'established' impacts. The UK level estimates account for displacement of activity between regions to provide the net effect.

These WEIs are likely to include:

- Stimulus for inward investment into Skelmersdale, helping create new housing and jobs;
- The potential for a diversification of economic activity to include higher value jobs and/or support for reducing the productivity gap so that local and regional GVA per worker is increased;
- An increase in local employment levels, with particular regard to areas with structural unemployment and/or evidence of spatial inequalities (e.g. as evidenced in the IMD statistics);
- Linked to the above, changes in land values;
- Enhanced labour market catchments for businesses in Skelmersdale and other places served direction by the planned services, e.g. Liverpool, Manchester, and Wigan; and
- Opening of new markets, including via the planned HS2 services at Wigan.

The quantum of these WEIs will naturally be dependent on creating the complementary conditions for change within the town, focussed on proactive land use proposals which can capitalise on a new hub for transport services. The location of such a hub is believed to have implications for the quantum and type of change which can be brought forward, not just in terms of the surrounding land which is available, but also differences in the type of activity each location would attract and sustain.

Based on location relative to existing development, land availability for future development, and links to surrounding regional centres, it is believed that WEIs will be:

- Maximised under options R1 and R2, with the difference between the two being linked to the LoS provided (R2 requiring subsequent investment to enable an enhanced LoS towards the LCR). This would be due to the:
  - existing land use proposals within the Local Plan and supplementary documents, coupled with the availability of additional land;

  - ability to serve areas with higher levels of deprivation and/or structural unemployment;
  - provision of direct services to both the LCR and GM; and
  - Place-making potential linked to complementary investment proposals.
- Lower under R4 but still significant, as there is land available around the hub to provide a masterplanned Transit Orientated Development (TOD);
- Much reduced with B1 due to the difficulties with stimulating inward investment through bus links; and
- Also much reduced under options R3 and R5, which would require the creation of new centres away from the existing town centre and therefore in competition. They would also only benefit a limited subset of the existing population and generate much reduced gains in labour market metrics.

Non-monetised impacts

An initial screening of non-monetised impacts was undertaken using TAG Units A3[11], A4-1[12] and A4-2[13], drawing on the evidence assembled for the Strategic Case, and analysis from the GRIP 2 study. Table 10.7 summarises the principal considerations and provides initial consideration of whether these are likely to be a net disbenefit, neutral, or a benefit.

11 See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/825064/tag-unit-a3-environmental-impact-appraisal.pdf

12 See: https://www.gov.uk/government/publications/tag-unit-a4-1-social-impact-appraisal

13 See: https://www.gov.uk/government/publications/webtag-tag-unit-a4-2-distributional-impact-appraisal-december-2015

Table 10.7: Preferred Option Non-Monetised Impacts – Assessment

Impact	Project Considerations	Assessment
Severance	• Rail alignments should not materially increase localised severance • Access packages should help to diminish existing issues	Slight benefit (+1) – localised connectivity to/from the hub and other key opportunities and amenities should be increased
Reliability	• Curtailing Northern services at Skelmersdale instead of Headbolt Lane may offer increased recovery time and/or an opportunity to reschedule units • The additional train and GRIP 2 operational modelling has been undertaken to ensure there is no adverse impact to MEL services from the extension under R1 • Option R2 would be likely to lead to a degradation in resilience and performance compared with R1	Slight benefit (+1) – may be opportunity for Northern services
Accessibility to Services	• Addition of new mode for non-car available travellers, and much enhanced connectivity to jobs, services and other opportunities across the study area • A significant number of further and higher education opportunities, and key medical services are located in the major centres, e.g. Liverpool City Centre, Wigan and Manchester City Centre	Moderate Beneficial (+2) – the addition of new public transport services to/from Skelmersdale (and Rainford) will significantly enhance accessibility to a range of services and opportunities. This is particularly true for selected groups at risk of social exclusion without access to a car
Townscape	• The station is located in a brownfield site, currently with only limited adjoining development • Option R1 involves the construction of viaduct to access the central station site • There are limited buildings of cultural value within the immediate vicinity	Slight adverse (-1) – the viaduct has the potential to adversely impact on townscape (R1 only)
Landscape	• Loss of existing undeveloped land of an agricultural nature	Slight adverse (negative) effect (-1). The project is not very visually intrusive, but new infrastructure will impact on selected views given the flat rural terrain in the area
Biodiversity	• Potential adverse impacts on local flora and fauna	Neutral (Zero) – construction of both rail and highway infrastructure is likely to have a minor negative effect on biodiversity. Mitigation measures will be included in scheme design to ensure neutrality or net positivity
Water Environment	• Potential adverse impacts on local watercourses	Neutral (Zero) – construction of the new station could have a negative impact on the water environment and mitigation measures are required (and have been costed for to ensure a minimum of neutrality)
Option & Non-Use Values	• The Scheme will introduce a new mode for residents of Skelmersdale and its hinterland, with connectivity to several destinations that cannot currently be conveniently reached, particularly for those without access to a car. This will provide impact over and above those current to use it through option and non-use values	Strong beneficial (+3) – new mode and connections for significant volume of people (40,000+)

10.8 Uncertainties

A series of sensitivity tests were run for option R1 to reflect some of the main project uncertainties. The BCR remained in the range of 0.3 to 0.7, with the greatest changes from:

- Greater demand, more akin to the levels seen in Kirkby, Maghull and Ormskirk;
- A similar test looking at higher levels of local development;
- Battery traction power;
- More optimistic assumptions around the background GJT trend variable; and
- Reduction in investment costs.

Based on the DfT's Uncertainty Toolkit[14], Table 10.8 shows the likelihood of being to achieve a change in the PVB and PVC sufficient to provide a BCR for Option R1 of greater than 0.5 seems 'possible' (currently 0.45), but the likelihood of any one single change being sufficient to move the VfM category to 'low' (BCR >1.0) seems 'very unlikely'. It is apparent that a set of complementary changes will be required to achieve a significant change in VfM.

Table 10.8: Switching Value Analysis for Option R1

VfM Category / Threshold	PVC		PVB	
	Change	Likelihood	Change	Likelihood
0.5 to 1.0	-£38 million	Possible	+£19 million	Possible
1.0+	-£222 million	Very unlikely	+£222 million	Very unlikely

Source: Mott MacDonald

[14] See: TAG: uncertainty toolkit - GOV.UK (www.gov.uk).

10.9 Value adding opportunities

The initial monetised assessment of impacts has revealed that the VfM[15] offered by the existing option R1, as identified in the GRIP option selection process, is likely to be 'poor' according to Economic Case metrics only. This initial assessment is only under 'central case' inputs and excludes monetised Level 2 or 3 WEIs at either the national or local level. It also excludes non-monetised impacts and the potential for variations in both endogenous and exogenous inputs.

There are five main project parameters which would be most likely to lead to a positive change in the material VfM:

1. **Value engineering**. An initial assessment has been made of how project costs in options R1 could be reduced through minimum viable infrastructure provision in R2. The potential station location in option R4 (Thorn Island) is another means of seeking to reduce these costs. There may be further opportunities to re-examine scope for options R1 and R4 in order to drive down costs while delivering comparable outputs.
2. **Land use change**. Options R1/R2 and, to a lesser extent, R4 offer significant opportunities for land use change. This would be in a comparable timescale to the expiry of the existing Local Plan which runs to 2027. If development beyond this horizon was proactively planned around the new connectivity provision, then there would be corresponding gains in passenger demand and the PVB provided.
3. **Level of Service change**. 2tph to/from Liverpool and 1tph to/from Manchester is believed to be the minimum required to offer viable commuting alternatives to the residents of Skelmersdale. Kirkby, Maghull and Ormskirk are all served by

[15] See: Value for money framework (publishing.service.gov.uk)

4tph to/from Liverpool Central, while GM stations serving comparable population would be expected to have 2+ tph. It seems likely there would be multiplier effects on the PVB by considering enhanced LoS in tandem with the localised land use change discussed immediately above.

4. **Traction power**. Provision of OLE AC electrification is a costly component of the project. The LCRCA is currently trialling battery technology for the new Class 777 MEL fleet. This may offer an alternative to OLE AC (or third rail DC which is unlikely to be authorised by the ORR) within the timescales of this project, e.g. the technology should be established by the 2020s and advances in efficiency and costs made.
5. **Access package**. The benefits of this are wider than the users of the new transport links, potentially encompassing a multitude of local journey opportunities within Skelmersdale and providing further links to the overall place-making objectives and potential land use change for the town. Consideration of these impacts, and how they can be maximised, as part of the project is likely to lead to gains in the PVB and VfM provided.

Table 10.9 shows a revised set of economic appraisal metrics. The PVC is still greater than the PVB but the project is closer to parity considering 'established' monetised impacts only at the UK level.

10.10 Options for further development

The Economic Case analysis has identified three alternatives for further development, namely:

- R1 – the town centre location. This provides the largest monetised benefit but at the greatest cost. It is therefore critical that the potential opportunities for adding value (see Section 10.9) are investigated as part of the next steps (this includes evolution of the early work on R2);
- R4 – the Thorn Island location. Essentially linked to the value adding opportunities above, the option to curtail the alignment south of the town centre remains a valid option for further investigation, including VE opportunities; and
- B1 – provision of a shuttle or feeder bus service to/from Headbolt Lane, as the low cost alternative.

Table 10.9: Skelmersdale Rail Link Value Added Opportunity Present Value of Benefits Estimates (£000s in 2010 present values and market prices)

Ref.	Item	R1
1	Noise	470
2	Local Air Quality	815
3	Greenhouse Gases	1,795
4	Physical Activity	74,145
5	Road Traffic Accidents	6,980
6	Economic Efficiency - Commuters	110,395
7	Economic Efficiency – Other Users	101,430
8	Economic Efficiency – Employer's Business	25,095
9	Indirect Taxation	-17,395
PVB Total ('Established', inc' Level 1 economic only)		**303,730**
PVC		**373,100**
NPV		**-69,370**
BCR		**0.81**

Source: Mott MacDonald

Value for money statement

Skelmersdale, a town of 40,000 people with significant capacity for growth, has been left behind. Its residents experience a number of adverse socio-economic outcomes and inward investment is held back by a lack of medium to long distance connectivity. The project, and the options described in this SOBC, have been developed to **a catalyst for regeneration in the area, making the town a place where people choose to live, work, visit and invest,** with the following objectives:

- Reducing social isolation and exclusion;
- Enhancing access to opportunity;
- Stimulating regeneration and investment;
- Developing new options which contribute positively to carbon neutrality, net zero, and clean air; and
- Promote safer travel to, from and within the town.

Failure to address the connectivity 'gap' is likely to lead to deepening deprivation, continued high levels of unemployment, low levels of inward investment, and unsustainable travel choices. The option development and assessment considered a range of alternatives to generate change for Skelmersdale, and how complementary investment can and could link to the connectivity enhancement to enable lasting change. Investment in rail connections was identified as the most viable means of delivering the magnitude of change the town requires. Multiple options remain for achieving this, with the following broad components:

- Provision of a station or hub location which is as close to the centre as technically and economically viable, maximising the catchment, benefits, and potential to act as a catalyst for inward investment;
- Direct services to Liverpool, Manchester and Wigan to capitalise on the town's location at the core of the North West; and
- Enhancements to local walking and cycling routes to overcome real and perceived barriers to movement to and from the station or hub, while also catering for local travel.

Work has been undertaken by Network Rail to identify the scope of works required to deliver a centrally located option, and 'lighter touch' work has investigated alternatives to this. It is clear that the scope of works for a new rail link is likely to be in the £100s of millions, principally because both the local and strategic highway network impose highly significant constraints on the alignment and the work required. Environmental constraints, and issues around industrial legacy, exacerbate the challenge.

The assessment of the preferred option's costs and benefits has been undertaken in line with DfT's TAG suite, referencing both modelling and appraisal units. Cost have had appropriate risk and optimism bias adjustments applied. Taken together, the project benefits and costs for the preferred rail link to a central location result in a BCR of 0.45. This is considerate of 'established' impacts only (including only direct Level 1 economic impacts). The initial assessment is therefore 'Poor' VfM[1], falling below the 1.00 threshold; however, this is exclusive of non-monetised impacts, excluding both national and sub-national Wider Economic Impacts (WEIs). At this stage the monetised assessment therefore does not include the local economic impacts linked to place-making and the levelling up of the town within West Lancashire, the North West and the UK. Provision of a centrally located station (options R1, R2 and R4) is the means of delivering these place-based, transformational, impacts.

To achieve greater VfM a series of opportunities are available, including greater volumes of Transit Orientated Development (TOD) around the new hub, Value Engineered (VE) solutions, the use of batteries to avoid electrification costs, and a virtuous circle of increased Level of Service linked to greater volumes of demand from local development. Sensitivity testing has shown how the net UK VfM of the project can be greatly increased through positive movements across these inputs.

11 Financial case

This section describes the project costs, funding and finance options, the overall affordability of the project, considering both initial Capital Expenditure (CapEx) for construction and ongoing financing of the operation of the extended rail services.

11.1 Approach

Assessment of the project costs and revenues has been undertaken for a thirty year appraisal period to 2057.

11.2 Investment costs

Network Rail's original Anticipated Final Cost (AFC) estimate for the AC traction power version of option R1 was £425.6 million (2019 Q4 prices) from the GRIP 2 Cost Plan Report, exclusive of the risk allowance. This included works to provide the extension to Headbolt Lane, east of the existing MEL terminus at Kirkby, which has now been advanced as a separate project. Mott MacDonald undertook an exercise to remove these works from the GRIP 2 Cost Plan, resulting in a revised estimate for R1 of £389.6 million (2019 Q4 prices). This was done with cross-reference to the separate Headbolt Lane AFC GRIP 2 Cost Plan. In the absence of a Quantified Risk Assessment (QRA), which will be added should the scheme progress to further GRIP/PACE stages, the estimates are inclusive of an industry standard risk allowance of 25%.

Exclusions from the original GRIP 2 Cost Plan have been addressed for all rail options. These were:

- **Cost of additional Class 777 rolling stock**. For all rail options an additional two four-car trains will be required. For option B1 four new buses (assumed electric or hydrogen) will be required;
- **Land.** This has been estimated based on the GRIP 2 alignments, considerate of the land use type and current ownership;
- **Environmental assessment and mitigation.** A percentage allowance has been added; and
- **Complementary access and egress works** to enhance the catchment of the new connectivity hub and promote active mode use.

The combined estimate for all capital works is shown in Table 11.1, inclusive of risk allowance and real terms construction inflation (2019 Q4 undiscounted prices). Prices are shown exclusive of indirect taxation in non-market prices, and then in market prices.

Table 11.1: Skelmersdale Rail Link Shortlisted Options Cost Estimates (£millions in undiscounted 2019 Q4 prices)

Ref	Group Element	B1	R1	R2	R3	R4	R5
I	Total Rail Works	11	550.8	469.2	332.8	426.4	144.5
II	Stock	3.6	12.5	12.5	12.5	12.5	12.5
III	Land (private only)	0	0.4	0.4	0.4	0.4	0
IV	Environmental Assessment & Mitigation	0	6.4	5.4	3.8	4.9	1.7
V	Access Package	17.8	17.8	17.8	17.8	17.8	17.8
TOTAL (non-market prices)		**30.7**	**587.9**	**505.4**	**367.4**	**462.1**	**176.5**
TOTAL (market prices)		**36.5**	**699.6**	**601.4**	**437.2**	**549.9**	**210.1**

Source: Mott MacDonald

11.3 Major renewals

The capital works set out above will incur ongoing costs, including:

- Incremental operating costs for the additional infrastructure;
- Maintenance costs for new infrastructure; and
- Periodic renewals for the above infrastructure.

It has been assumed that there is no requirement for periodic renewal expenditure on the scheme during the model forecast period, noting the expected asset life for comparable schemes. Major renewals are forecast to fall in the late 2050s (assuming new permanent way), which falls outside of the 30-year financial appraisal period. Estimates over the 60-year period are detailed in the Economic Case.

11.4 Operating expenditure

Under the existing regulatory regime operated by the Office for Rail and Road (ORR), these asset charges primarily comprise:

- Station Long Term Charge (LTC) (regulated) covers MRR costs at stations.
- Qualifying Expenditure Charge (part-regulated) covers day-to-day running costs of stations.
- Track Access Charge (regulated), a majority fixed charge, with small variable component based on usage, designed to cover track MRR costs.

For the MEL network, the relevant charges are:

- Train Availability and Reliability Agreement (TARA): £2.11 per train mile, comprising a fixed and variable rate for MRR
- Electric Current for Traction (EC4T): 28.52 pence per mile
- Variable Usage Charge (VUC): 4.86 pence per mile

Table 11.2: Skelmersdale Rail Link Shortlisted Options 30-Year Operating Expenditure Estimates (£millions in undiscounted 2019 Q4, constant, market prices)

Ref.	Item	B1	R1	R2	R3	R4	R5
I	Labour (B1 includes fuel etc.)	24.9	47.4	47.4	43.5	47.4	47.4
II	Track	0	41.0	41.0	35.0	38.0	39.5
III	Station Usage	4.9	9.8	9.8	4.9	9.8	9.8
TOTAL (market prices)		**29.8**	**98.3**	**98.3**	**83.3**	**95.2**	**96.8**

Source: Mott MacDonald

11.5 Cost recovery

The estimated farebox revenue over the period 2028 to 2057 is shown in both 2019 constant prices and nominal prices in Table 11.3. As rail fares are exclusive of VAT, these are presented in non-market prices.

Table 11.3: Skelmersdale Rail Link Shortlisted Options 30-Year Farebox Revenue Estimates (£millions in undiscounted prices)

Ref.	Item	B1	R1	R2	R3	R4	R5
I	2019 constant prices	37.6	133.8	133.8	44.0	104.2	30.6
II	Nominal prices	65.7	234.3	234.3	77.1	182.4	53.5

Source: Mott MacDonald

11.6 Funding and finance opportunities

Viable funding options for major rail projects include:

- Grant funding;
- Railway-related funding sources; and
- Property-related funding sources.

Most rail capital programmes and projects are predominantly grant funded, as they do not generate sufficient operating surplus to cover the costs of funding the infrastructure works – at least in the short to medium term. Increased emphasis is being given as to how development related funding sources can be used to supplement public sector grants.

11.7 Affordability Assessment

It is assumed that the scheme will only progress via grant funding coupled with other sources linked to local development. Table 11.4 summarises the costs in 2019 constant market prices for the period 2020 to 2057 inclusive.

Table 11.4: Affordability Assessment – 2019 Project Costs, 2020 to 2057 (£ millions in 2019 constant market prices)

Item	B1	R1	R2	R3	R4	R5
Station and track infrastructure	13.2	655.4	558.4	396.0	507.5	172.0
Additional four-car Class 777 train (N = 2) or buses (N = 8, including one renewal)	4.3	14.9	14.9	14.9	14.9	14.9
Land	0	0.5	0.5	0.5	0.5	0
Environmental assessment and mitigation	0	7.6	6.4	4.6	5.9	2.0
Access package	21.2	21.2	21.2	21.2	21.2	21.2
Operating expenditure	29.8	98.3	98.3	83.3	95.2	96.8
Passenger farebox revenue	-37.6	-133.8	-133.8	-44.1	-104.2	-30.5
TOTAL	**30.9**	**664.0**	**565.8**	**476.4**	**540.9**	**276.3**

12 Commercial and Management cases

12.1 Introduction

This section sets out a high level summary of how the scheme will be procured, managed and delivered including a consideration of the key risks facing the scheme at this stage and their potential mitigations.

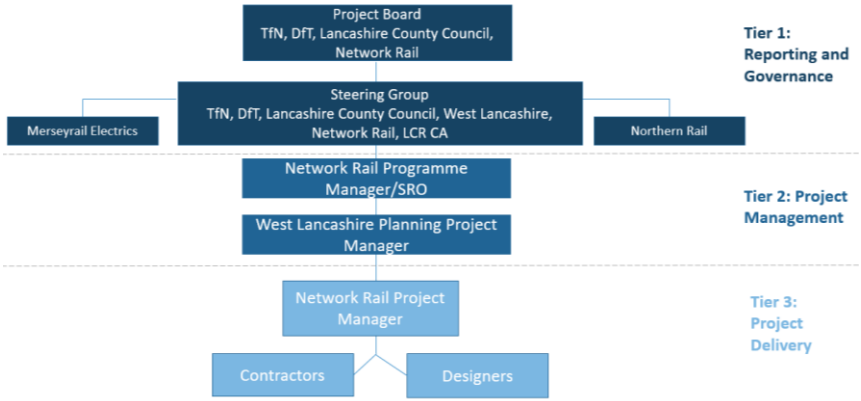
The commercial and management cases for the scheme will be developed further as the scheme progresses through the business case process, with more detail to be provided at OBC.

12.2 How will the scheme be delivered?

It is envisaged that the lead promoters for this scheme going forward into Outline Business Case will be the Department for Transport (DfT) with Network Rail acting as the main delivery agent. Funding for this scheme will be provided predominantly by DfT with opportunities for a number of other bodies, namely Lancashire County Council, West Lancashire, Transport for the North and Merseytravel/ LCR CA in relation to the relevant services provided.

Figure 12.1 illustrates the envisaged arrangements for how the project will be governed/delivered by the relevant bodies and how these will be communicated with West Lancashire and potential funding agents.

Figure 12.1: Project Delivery



- **Tier 1: Reporting and Governance-** will provide the strategic direction to the project, the necessary approvals for the project to proceed at key stages, and hold the project management and delivery tiers to account.
- **Tier 2: Project Management-** will provide ongoing management of the project. A dedicated Senior Responsible Owner and Project Manager will be appointed, who will be responsible for the implementation of the scheme.
- **Tier 3: Project Delivery- m**embers of the project delivery team will be responsible for the delivery of the scheme on a day-to-day basis. It is currently envisaged that most of the day-to-day running of the project will be undertaken by Network Rail.

12.3 How risks will be managed

The production of a risk register forms an integral task associated with standard project management procedures that are conducted by either West Lancashire or Network Rail.

A risk workshop was held in October 2020 between Mott MacDonald, West Lancashire, Lancashire County Council, Network Rail, Liverpool City Region Combined Authority and Transport for North (TfN) to identify the key risks and opportunities associated with the schemes delivery, potential mitigation measures and owners of actions to be taken to mitigate risks. The development of the risk register discussed within the workshop followed the structure of project risks as outlined within TAG Unit A1.2 Scheme Costs[16].

The risk register for the scheme will be reviewed regularly throughout the detailed design, procurement, construction and also post-construction phases of the scheme as a standard item to be addressed by the Project Delivery Group. Any unresolved or significant issues or problems which are identified or that occur will be escalated through the appropriate governance procedures that are put in place.

12.4 Principal risks

The key risks and opportunities identified for the scheme at this stage are outlined within the table below alongside potential mitigation measures, their likelihood and exposure and owners.

The full risk register can be found within the Management Case of the main SOBC document.

Table 12.1: Skelmersdale Rail Link SOBC - Key Risks

Type	Specific Risk & Impact	Likelihood/ Exposure	Mitigation Action	Owner
Policy	Change of policies leads to reduced availability of funding. The scheme may need to proceed at reduced scope, or it may be postponed or cancelled.	Medium/ High	Ongoing active engagement with the DfT to maintain support and the priority of this scheme	Lancashire County Council / Network Rail
Construction	Unknown ground conditions, utilities, highway interactions, land access and acquisition. The construction of the scheme is delayed and/or goes overbudget due to variation, unforeseen, or incorrectly valued costs	Medium/ High	Undertake site investigation surveys.	Lancashire County Council
Demand	Unknowns in the alignment and environment for construction lead to significant uncertainty in construction and operations costs. Scheme is unable to demonstrate acceptable levels of value for money due to high capital costs	High/ high	Ensuring sufficient detail is available to calculate BCR Explore full range of potential benefits	Lancashire County Council
Volume	Planned active travel access improvements do not go ahead as planned limiting the catchment area of the station and therefore demand. Civil engineering works do not maximize opportunity from increase in the size of Skelmersdale	Medium/ High	Include costs and benefits of wider works proposed within the Highways and Transport Masterplan within the scheme and SOBC	Lancashire County Council

[16] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933464/tag-a1-2-cost-estimation.pdf

13 Synopsis

In this final section we summarise the need for change and what the project could deliver for the residents, businesses and visitors of Skelmersdale.

13.1 The need for change

Skelmersdale and its residents face a series of challenges and issues that have led to adverse economic and social outcomes:

- **Labour market skills** – there is a larger proportion (than national averages) of people with no qualifications. Skelmersdale also has a much larger proportion of people with no qualifications in comparison to nearby towns of Burscough and Ormskirk.
- **Deprivation** – The majority of Skelmersdale lies within the top 10% of most deprived LSOAs across England and Wales. In contrast, the neighbouring towns of Ormskirk and Burscough demonstrate signifcantly lower levels of deprivation.
- **Car availability** - 35% of households in Skelmersdale do have access to a car, almost double the West Lancashire average. LSOAs with over 50% of households not having a car available are also evident in the east of the town.
- **Unemployment** – at around 11%, the unemployment rate within Skelmersdale is almost double that of the borough as a whole and much higher than the average for England and Wales. Within some wards, such as Tanhouse and Digmoor, 2011 unemployment rates were as high as 14%, almost twice as high as the national average.

These outcomes are intrinsically linked to the lack of connectivity presented by limited alternatives to private car use and a low level of car ownership amongst residents, which is leading to:

- A lack of access to opportunities and key services for local residents, increasing levels of unemployment and deprivation and reducing health and wellbeing of residents. This is true for all residents, but particularly for the significant proportion of the population without a car available.
- A failure to attract inward investment, adversely impacting on the economy. Current levels of accessibility do not attract or retain higher value businesses alongside other constraints such including labour supply.
- An inability to attract new residents limiting opportunities to create a vibrant town and enhance sense of place and contributing to a decline in new investment.

13.2 The vision

Enhanced connectivity for Skelmersdale will provide a catalyst for regeneration in the area, making the town a place where people choose to live, work, visit and invest.

13.3 The opportunity

Better connectivity for Skelmersdale has the potential to be a catalyst for change. The station will form one key component in programme of investment into housing, health services and educational facilities which will bring transformational change to the place and its people.

West Lancashire have identified the issues that must be addressed to achieve national, regional and local priorities, and have begun the identification of plans, programmes and projects to deliver success. The aspirations to transform Skelmersdale into a more vibrant town are clear and encouraging. They comprise a wealth of planned development in and around the town in health, leisure, educational and recreational facilities. However, this complementary investment will not succeed without the 'glue' that physical connectivity can provide.

Improved access to the area will be central to facilitating these developments and attracting further inward investment which will enhance the success of these developments and unlock improved prosperity for the town, dramatically increasing opportunities for residents.

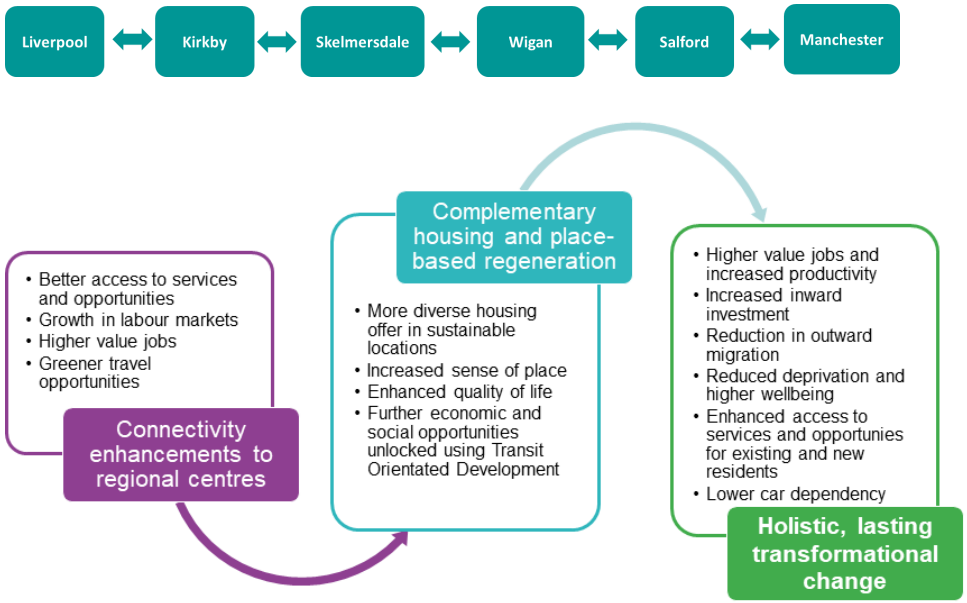
13.4 The shortlist of options

ID	*Mode*	*Option*	*Description*
B1	Bus (low cost alternative)	A direct link to Headbolt Lane Station	A new feeder service to/from Headbolt Lane (new station on the MEL line to the east of the existing terminus at Kirkby);
R1	Rail	Town Centre rail station- Glenburn College Site	Development of a new rail link and hub in Skelmersdale town centre to provide a direct link to Wigan (and Manchester) and Liverpool.
R2	Rail	Town Centre rail station- Glenburn College Site	As above with some Value Engineered (VE) single track sections and reduced level of service
R4	Rail	Town Centre South Thorn Island Site	As Option R1 but terminating at a site adjacent to Thorn Island Roundabout, potentially including value engineered alignment.

13.5 The cycle of change

Investment in transport connectivity aims to integrate with complementary investment in places, housing, and economic development to deliver the transformational change required to truly 'level up' Skelmersdale with other areas in Lancashire, Northern England and the wider UK. The opportunity offered by significant enhancements to medium to long distance connectivity can only be realised with complementary investment in:

- Places, as per the investment proposals in Section 7;
- Housing, as per the existing Local Plan proposals, which could then be coupled with more expansive and aspirational development once the connectivity enhancement is confirmed.



13.6 Next Steps

Should this SOBC be approved as anticipated in Autumn 2021, the project will continue to be progressed through GRIP/PACE Stage 3 and development of an Outline Business Case which look in further detail at the shortlisted options in order to develop a preferred solution for a new link to Skelmersdale.

The indicative timescales for the key project milestones are outlined within the table below.

Table 13.1: Project Delivery Milestones

Milestone	Indicative Timescale
Completion of SOBC	August 2021
Approval of SOBC	September 2021
Development of OBC	Autumn 2021 - Autumn 2022
Completion of GRIP/PACE 3	Autumn 2021 - Autumn 2022
Development of FBC	Winter 2022 - Autumn 2023
GRIP/PACE Stage 4-8	Winter 2022 - Winter 2027
Construction works complete	2027
Station Opening	2027/2028

Source: Network Rail/LCC/TfN