

South West Strategic Radial Corridors

Introduction

The South West Radial Corridors serve a significant part of the South East area, including Hampshire, Berkshire and the western part of Surrey. They include one of the UK's most important east – west corridors (the M4 and Great Western Railway) and serve the largest built-up area in the South East (South Hampshire). They also serve the UK's busiest airport (Heathrow) and several large ports on the South Hampshire coast (Southampton and Portsmouth).

The corridors included in this pack are:

- **SW1:** A3/A27/M275/Portsmouth Direct Line (Portsmouth – Surbiton);
- **SW2:** M3/M27/M271/A33/A326/South Western Main Line (Southampton – Sunbury);
- **SW3:** A33/Basingstoke – Reading Line (Basingstoke – Reading);
- **SW4:** A34/South Western Main Line/Basingstoke – Reading Line (Reading – Winchester);
- **SW5:** A36/Wessex Main Line (New Forest);
- **SW6:** A303/West of England Main Line (Andover – Basingstoke) ; and
- **SW7:** M4/Great Western Main Line/Reading – Taunton Line (Newbury – Slough).

The International Gateways included in this pack are:

- Heathrow Airport;
- Port of Southampton;
- Portsmouth International Port;
- Southampton Airport; and
- Farnborough Airport.

South West Strategic Radial Corridor SW1

A3/A27/M275/ Portsmouth Direct Line (Portsmouth – Surbiton)

Description

This corridor connects Portsmouth, East Hampshire, West Surrey and Guildford to London and the M25. This corridor performs an important role as an access route to Portsmouth International Port, which is the second busiest cross channel ferry port after Dover. Portsmouth is also the home of the Royal Navy.

This corridor passes through several protected landscapes. The A3 has recently been enhanced through delivering a new tunnel at the Devil's Punchbowl – a scheme that provided much needed capacity at a bottleneck while enhancing a protected landscape.

This corridor includes all of the A3 Strategic Road Network route between the M25 and Portsmouth City Centre, as well as some Major Road Network (and other key) roads connecting the Strategic Road Network to Portsmouth International Port.

The key issues affecting this corridor are:

- **Housing affordability:** Housing is not particularly affordable on this corridor due to high house prices in this area, ranking 6th highest out of the 23 corridors. This situation is unlikely to improve in the near future as the number of new homes planned for this (relatively long) corridor is low – 20th out of the 23 corridors.
- **Deprivation in Portsmouth:** While most of this corridor passes through relatively prosperous areas, there are significant pockets of deprivation in Portsmouth and its surrounding urban area.
- **Air pollution and conflicts with local traffic:** While most of the strategic road network on this corridor is segregated from other users, there are two areas where strategic roads pass through urban areas: Portsmouth City Centre (between the M275 and port entrance) and Guildford (where the A3 passes close to the town centre). This contributes to poor safety and air quality, and high levels of congestion in these areas.

The key opportunities to consider for this corridor are:

- **The South East Hampshire Rapid Transit network scheme:** How can this mass-transit scheme improve connectivity and reduce congestion along this corridor?
- **Rail journey times:** Could journey times between London and Portsmouth be accelerated to give Portsmouth a similar service to Southampton?

Economic Context

Wealth

Median resident earnings along this corridor are £33,265 which is relatively high for the South East.

Priority Industrial Sectors

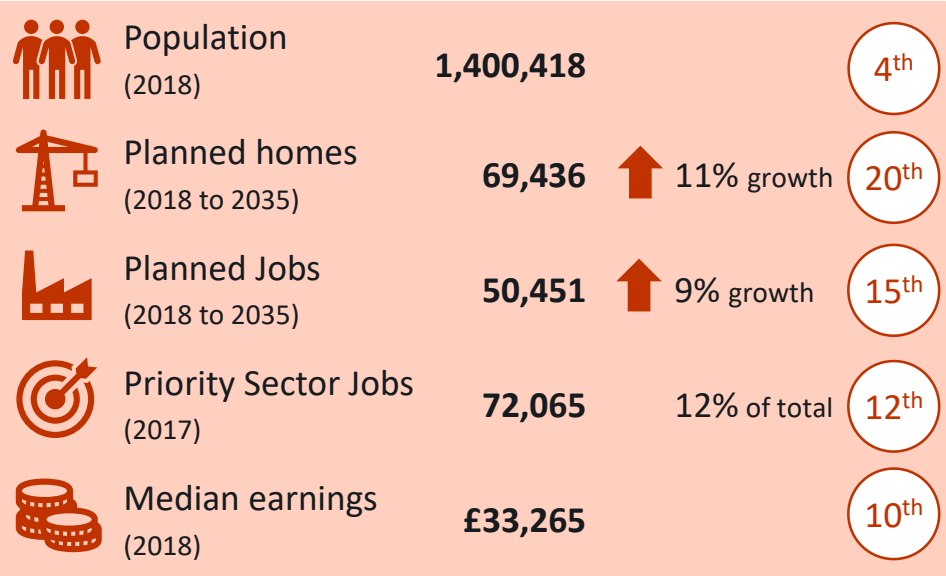
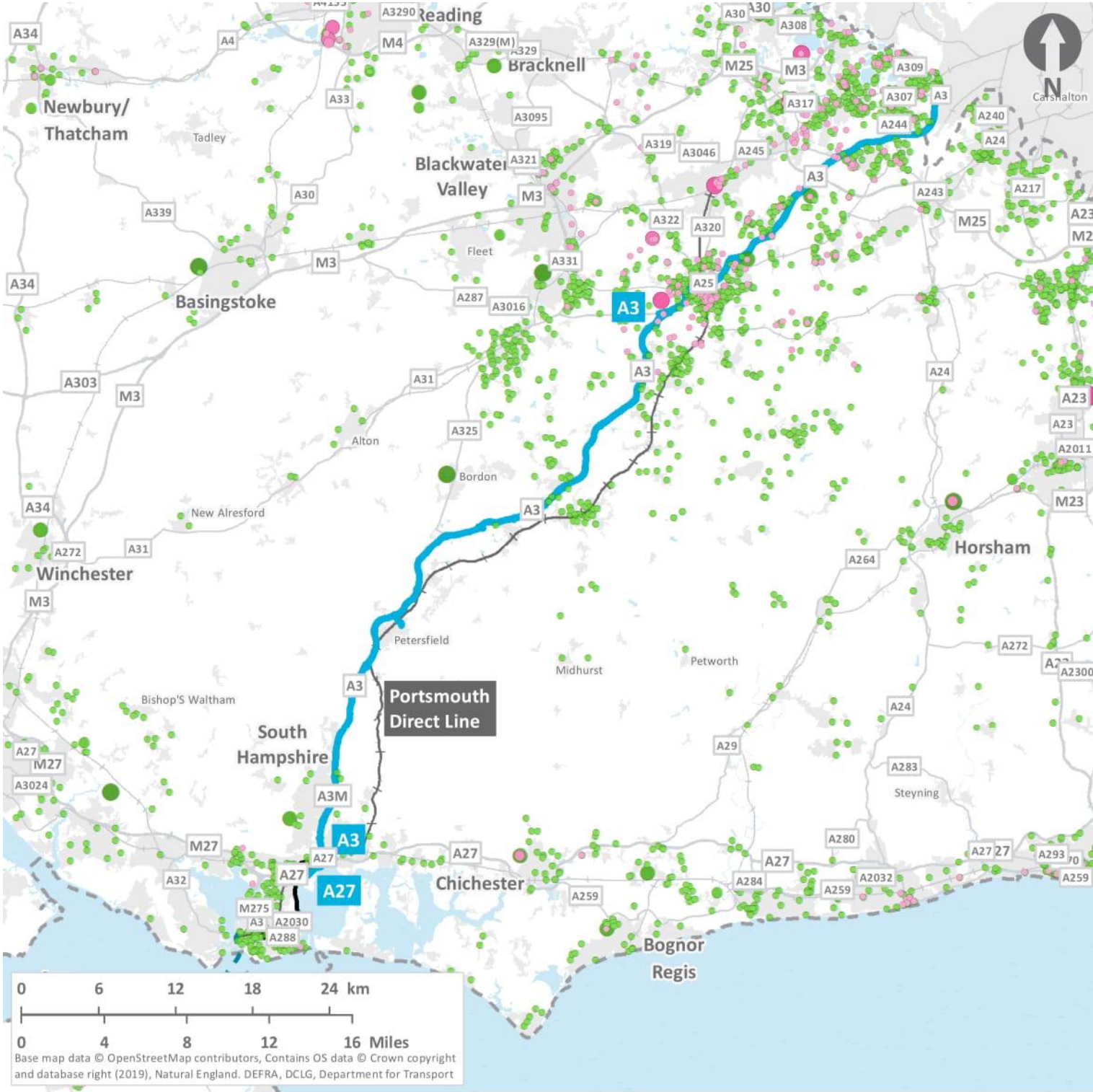
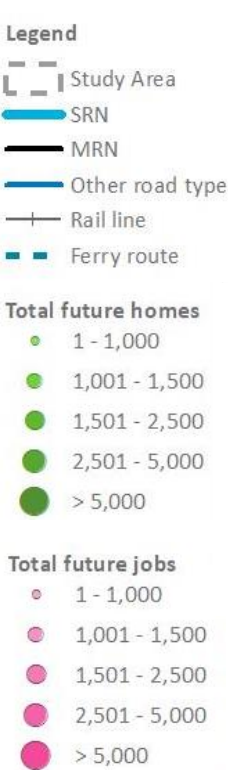
The priority industrial sectors on this corridor are:

- Advanced manufacturing;
 - Aerospace and defence;
 - Automotive manufacturing;
 - Computer and consumer electronic manufacturing;
 - Computer software programming;
 - Data processing and hosting;
 - Digital and creative;
 - Electric power generation and transmission;
 - Engineering;
- Horticulture and Food Manufacturing;
 - ICT and digital media;
 - Insurance and financial services;
 - Low carbon;
 - Marine and maritime;
 - Medical technology;
 - Pharmaceuticals;
 - Professional and business services;
 - Telecommunications;
 - Transport and logistics businesses; and
 - Visitor economy (and support services).

12% of jobs on this corridor are in priority sectors, which is below average for the South East area.

Development

This is a long corridor and is expected to support significant housing development in future years, particularly at the northern end around Guildford. A high level of development is also expected in the Portsmouth area. That said, the percentage growth in housing stock is low, and very little development is expected between Haslemere and Havant here the corridor transverses the South Downs National Park.



Social Context

Deprivation

There are significant levels of deprivation in Portsmouth and surrounding areas, but much less deprivation towards the northern end of this corridor.

Education

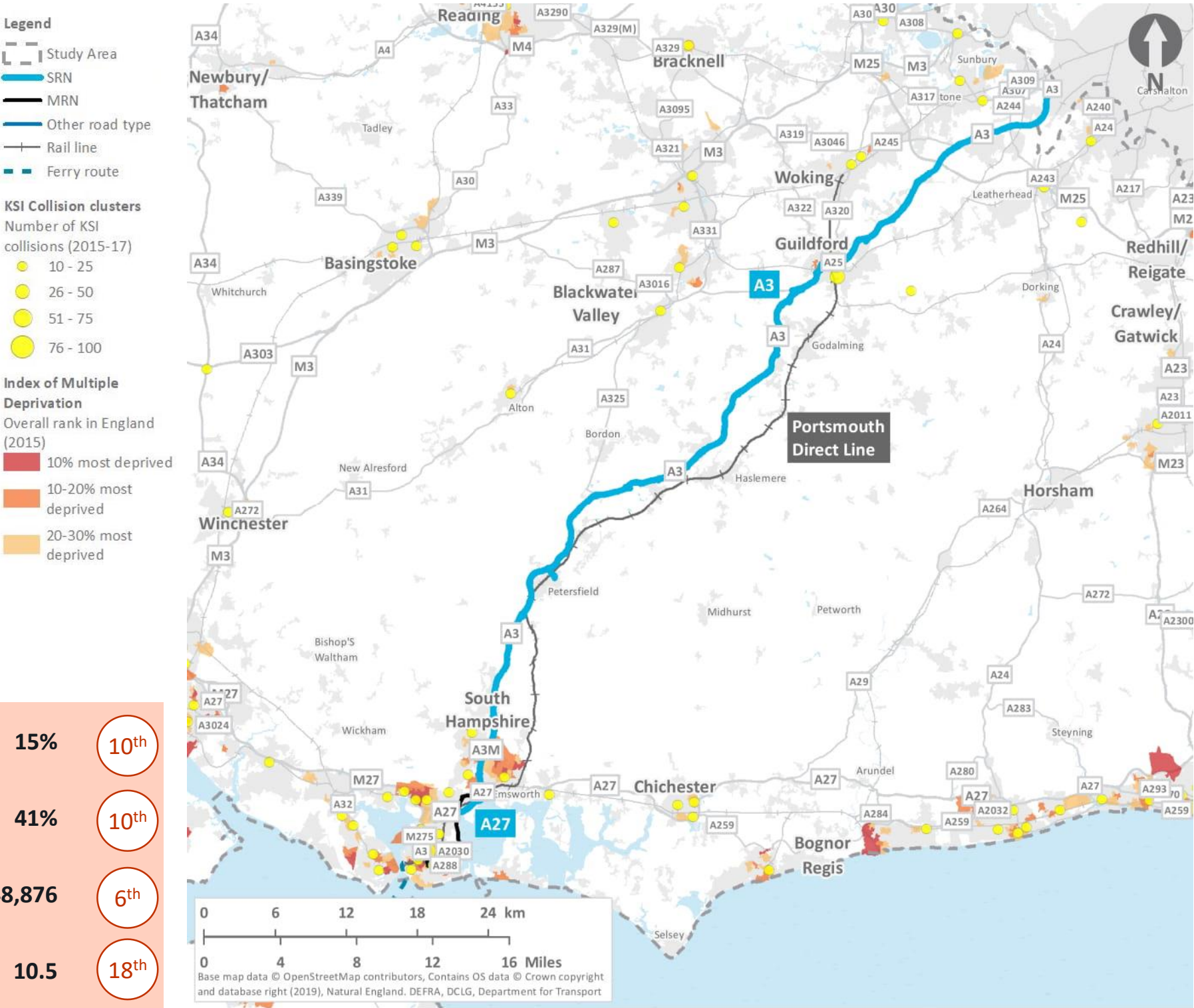
41% of the population on this corridor has at least one National Vocational Qualification at level 4 or above, which is above average for the South East. This figure is likely boosted by the presence of the University of Portsmouth, which has over 20,000 students.





Safety

There were several clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17, notably where it enters the Portsmouth urban area (and therefore forces traffic to interact with more vulnerable road users). There are fewer clusters on this corridor where it has been engineered to near motorway standard, but some clusters on roads that traffic may use to access the A3.

Housing Affordability

Housing is not particularly affordable on this corridor due to high house prices in this area.



	Deprived areas (2018, England)	15%	10 th
	Highly educated population (2018, % NVQ Level 4 or above)	41%	10 th
	Average house price (2018, average of corridor's districts)	£348,876	6 th
	Housing affordability ratio (House price / earnings)	10.5	18 th

Environmental Context

Protected Areas

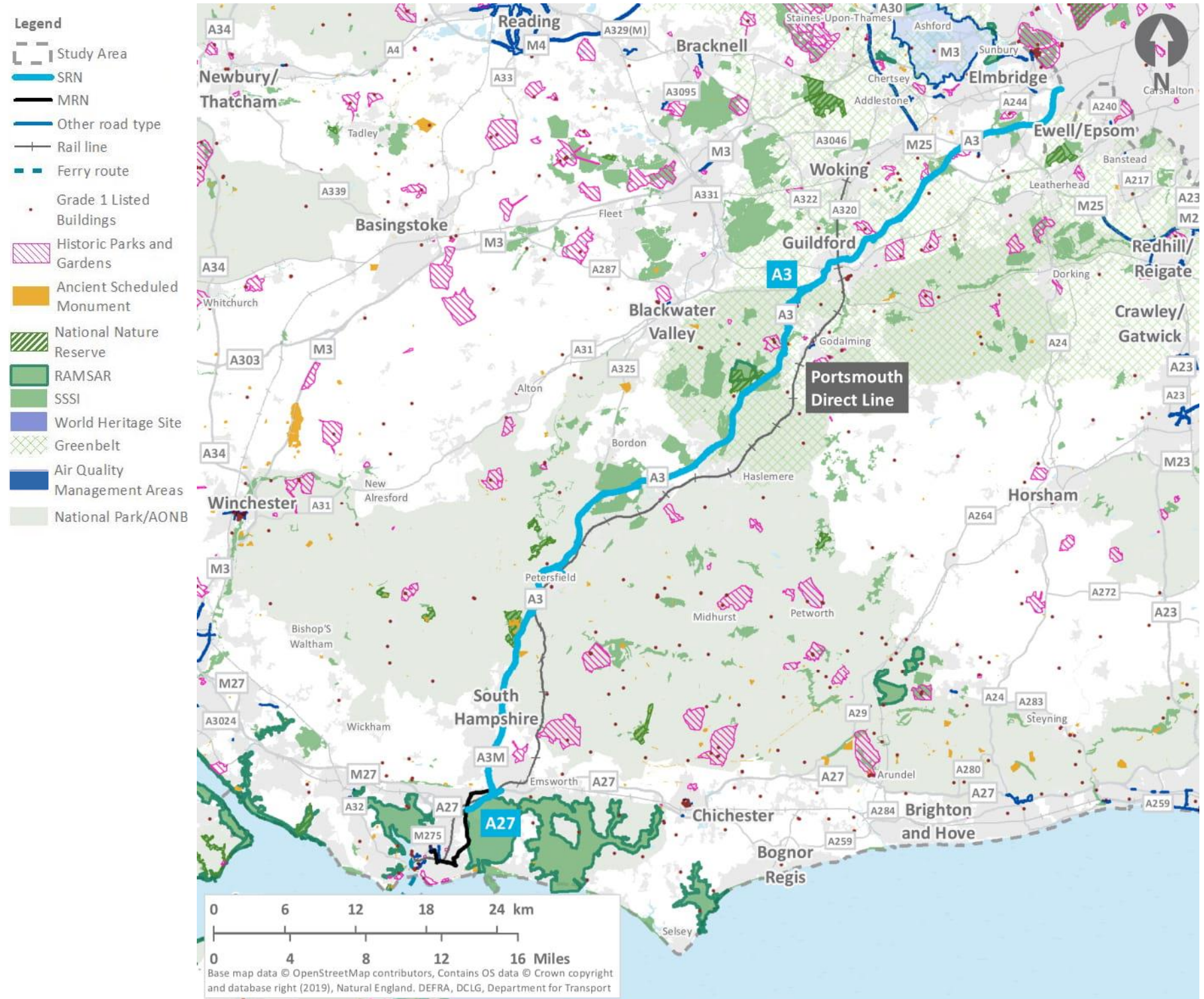
This corridor passes through several regionally important protected areas, including:

- the South Downs National Park (at the southern end of the corridor);
- the Chichester Harbour Area of Outstanding Natural Beauty (also at the southern end of the corridor); and
- the London Greenbelt (at the northern end of the corridor).

This corridor also passes alongside numerous Sites of Special Scientific Interest, as well as several historic parks and gardens.

Air Quality

There is a large Air Quality Management Area at the northern end of the corridor to the north of Elmbridge and five Air Quality Management Areas in Portsmouth.



A3/A27/M275/Portsmouth Direct Line (Portsmouth – Surbiton)

SW1

Highways

Demand

It is estimated that this corridor carries 4,679 vehicles per hour on its busiest section during the AM peak.

Issues and Opportunities

The central section of this corridor performs relatively well. There, however, are some issues with congestion around Guildford and at the southern end of the corridor in Portsmouth, where the AM peak speed drops below 40% of the night-time speed.

The A3 passes through the Guildford urban area, which contributes to local air quality, noise, and congestions issues in this area.

The 'Hog's Back' link road between the A3 and the Farnham/Aldershot area has very significant congestion where it joins the A3 south of Guildford.

Enhancements

Highways England is currently delivering improvements to junctions on the **A3 near Guildford**, which should help to relieve congestion in this area. In the longer term Transport for the South East would like to see **further improvements to the A3** between Guildford and Ripley.

Portsmouth City Council and Hampshire County Council are promoting a **South East Hampshire Rapid Transit network scheme** at the southern end of the corridor. This scheme, which has been shortlisted for Transforming City Funding, will serve the following corridors:

- Gosport – Fareham;
- Portsmouth - Fareham;
- Portsmouth – Horndean;
- Portsmouth – Wecock Farm; and
- Portsmouth – Leigh Park.

Portsmouth City Council is also promoting a Large Local Major scheme to improve the **A3 in Portsmouth City Centre**.



Peak hour highway demand
(Vehicles/hour on busiest section)

4,679

8th



Railways

Issues and Opportunities

The Portsmouth Direct Line delivers slower journey times to London than comparable services to Southampton on the South Western Main Line. Journey times between London and Portsmouth are typically 90 minutes or more, whereas journey times to Southampton (covering approximately the same distance) can be as fast as 71 minutes. This discrepancy affects the attractiveness of Portsmouth to investors. Portsmouth City Council would like to see faster journey times to London in the future.

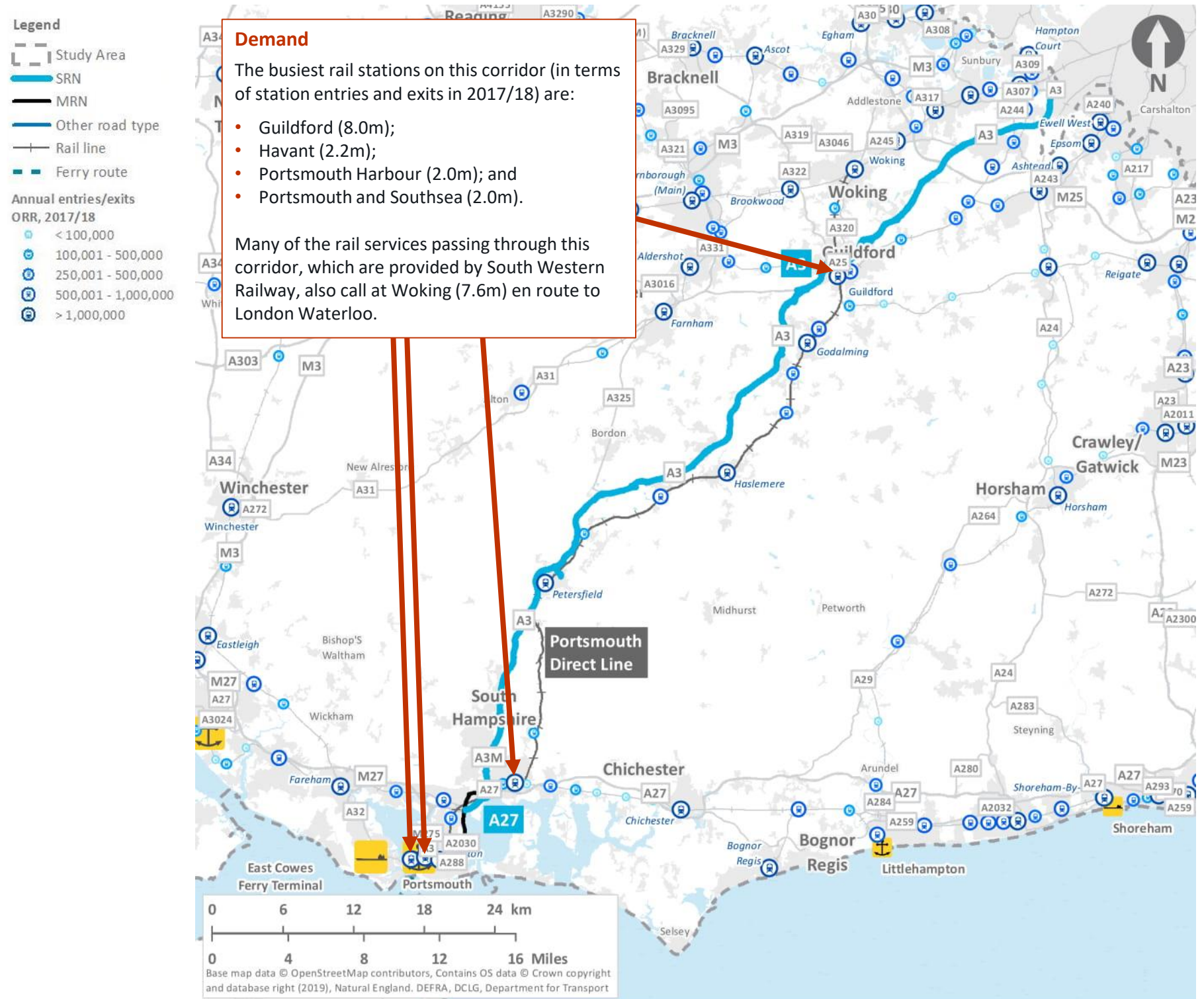
Most of the radial passenger rail services on this corridor terminate at London Waterloo. According to a Department for Transport survey held in Autumn 2018, 27.9% of passengers arriving at London Waterloo during the AM peak were forced to stand, which is the third highest level of crowding recorded in this survey. The same survey found the 07:02 Woking to Waterloo service was the 6th most crowded service in the survey. This indicates that crowding is a serious problem on the South Western Main Line and the Portsmouth Direct Line.

Enhancements

Plans are being developed by Solent Transport and Network Rail to reinstate platform 2 at **Portsmouth Harbour station**, which will improve the operating performance of the railway.

Network Rail is developing proposals for **Woking**, **Clapham Junction** and **London Waterloo station**, which will deliver capacity and reliability improvements for services using the Portsmouth Direct Line. Network Rail is also developing a **Solent Mini Route Utilisation Strategy**, which might identify proposed rail infrastructure improvements that would support local growth in the South Hampshire area.

Looking further ahead, the **Southern Rail Access to Heathrow Airport** scheme could be utilised to provide direct services between Portsmouth and Heathrow. Portsmouth City Council would also like to see the reinstatement of **Cross Country** rail services between Reading, the Midlands, and Portsmouth.



South West Strategic Radial Corridor SW2

M3/M27/M271/A33/A326
/South Western Main Line
(Southampton – Sunbury)

Description

This corridor connects the largest city in the region, Southampton, with London and the M25. It also serves Winchester, Basingstoke (one of the fastest growing towns in the region) and the Blackwater Valley towns. Southampton is home to one of the busiest ports in the country and this corridor carries significant freight on the M3 and connecting roads and railways. It is a relatively prosperous corridor and has a high density of economic hubs and employment centres. It is expected to support significant housing and employment development in the future.

This corridor has very high capacity, particularly towards its northern end (which is served by an eight lane Smart Motorway and a four-track railway). However, this corridor also accommodates very high demand and suffers from significant congestion, particularly at its southern end. There is a risk that capacity constraints on the railway network could hold back the future development of this corridor.

This corridor includes roads that connect the Port of Southampton to the M3 (via the M27) as well as the A326, which will connect the Strategic Road Network to a new site at Fawley, which has been earmarked for residential and employment development.

The key issues affecting this corridor are:

- **Economic imbalances:** There is a significant imbalance in the development of jobs and homes along this corridor. Housing development is focused in Basingstoke, while employment growth is more concentrated in Southampton.
- **Congestion:** The M3 is particularly congested between Winchester and Southampton. This section of the corridor carries significant freight flows, so the economic cost of this congestion is particularly high on this corridor.

The key opportunities to consider for this corridor are:

- **Port of Southampton expansion:** How should the highway and railway network evolve to serve an expanded port in Southampton?
- **Crossrail 2:** Could a future Crossrail scheme – which is unlikely to directly serve many stations in the South East area – provide additional rail capacity between Basingstoke and London Waterloo?

Economic Context

Wealth

Median resident earnings along this corridor are £33,488, which is relatively high for the South East.

Priority Industrial Sectors






The priority industrial sectors on this corridor are:

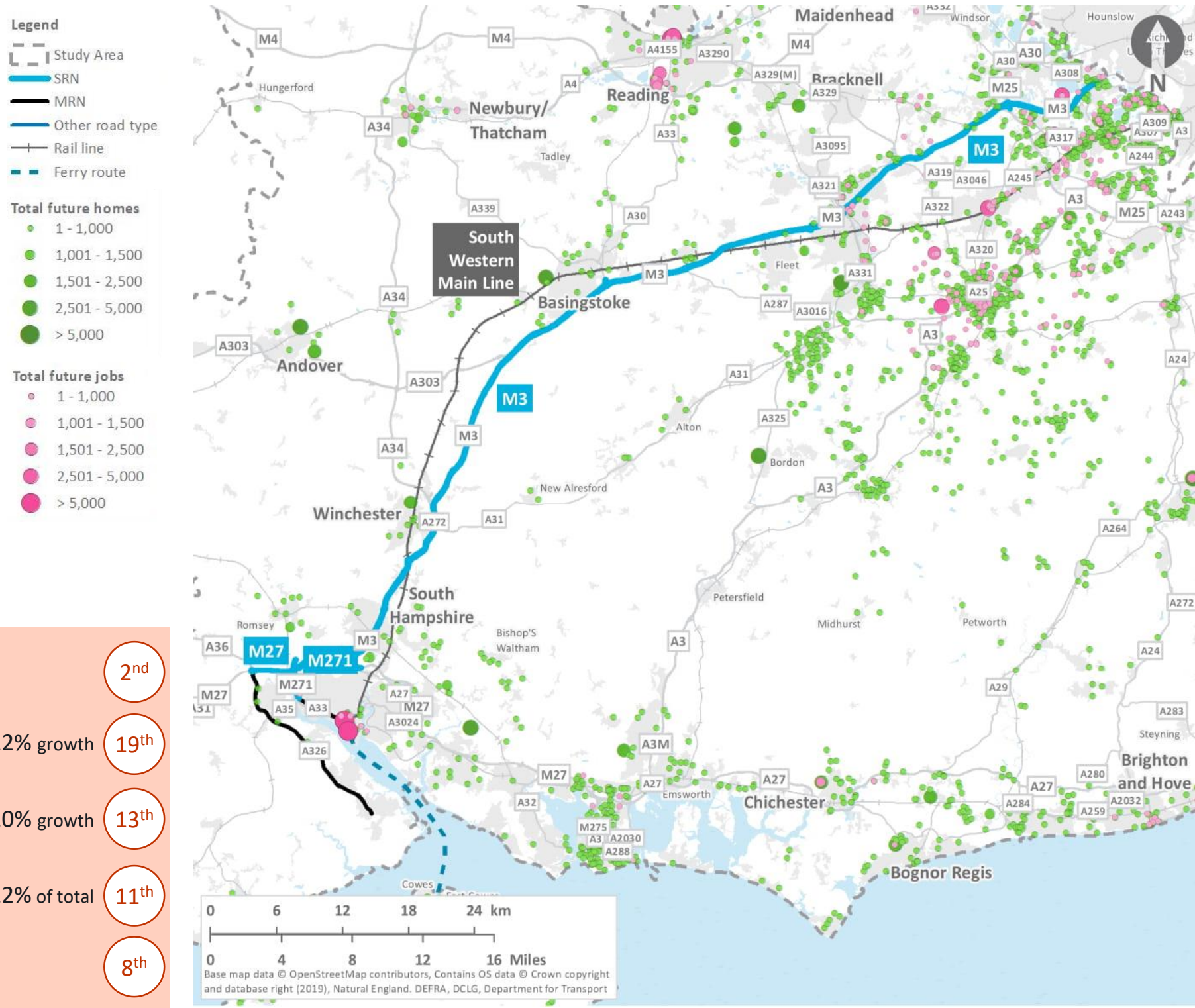
- Advanced manufacturing;
 - Aerospace and defence;
 - Automotive manufacturing;
 - Computer and consumer electronic manufacturing;
 - Computer software programming;
 - Data processing and hosting;
 - Digital and creative;
 - Electric power generation and transmission;
 - Engineering;
- Horticulture and Food Manufacturing;
 - ICT and digital media;
 - Insurance and financial services;
 - Low carbon;
 - Marine and maritime;
 - Medical technology;
 - Pharmaceuticals;
 - Professional and business services;
 - Telecommunications;
 - Transport and logistics businesses; and
 - Visitor economy (and support services).

12% of jobs on this corridor are in priority sectors, which is below average for the South East area.

Development

Most of the housing growth is focussed on the northern end of the corridor between Basingstoke and Greater London. Basingstoke is expected to host one of the largest housing development sites in the South East area. There are some particularly large employment development sites in Southampton (which hide smaller adjacent residential developments on the map to the right). Some data may be underreported as not all local plans have been adopted by all planning authorities on this corridor.

	Population (2018)	1,569,828		2 nd
	Planned homes (2018 to 2035)	77,711	↑ 12% growth	19 th
	Planned Jobs (2018 to 2035)	76,336	↑ 10% growth	13 th
	Priority Sector Jobs (2017)	91,690	12% of total	11 th
	Median earnings (2018)	£33,488		8 th



Social Context

Deprivation

This corridor is relatively prosperous. That said, there are pockets of deprivation in Southampton, notably in areas close to the port. There is also some deprivation around Basingstoke and the Blackwater Valley.

Education

44% of the population on this corridor has at least one National Vocational Qualification at level 4 or above, placing it in the top 10 corridors in the South East for educational attainment. Southampton is home to two universities – University of Southampton with over 25,000 students and Southampton Solent University, with approximately 11,000 students.

Safety

There were several clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17, notably where it enters the Southampton built-up urban area. There are fewer clusters on this corridor where it has been engineered to near motorway standard, but some clusters on roads that traffic may use to access the M3.

Housing Affordability

Housing affordability is relatively low on this corridor due to high house prices in this area. There are significant variations in the affordability ratio along this corridor, from 8.2 in Southampton to 13.3 in Elmbridge.



Environmental Context

Protected Areas

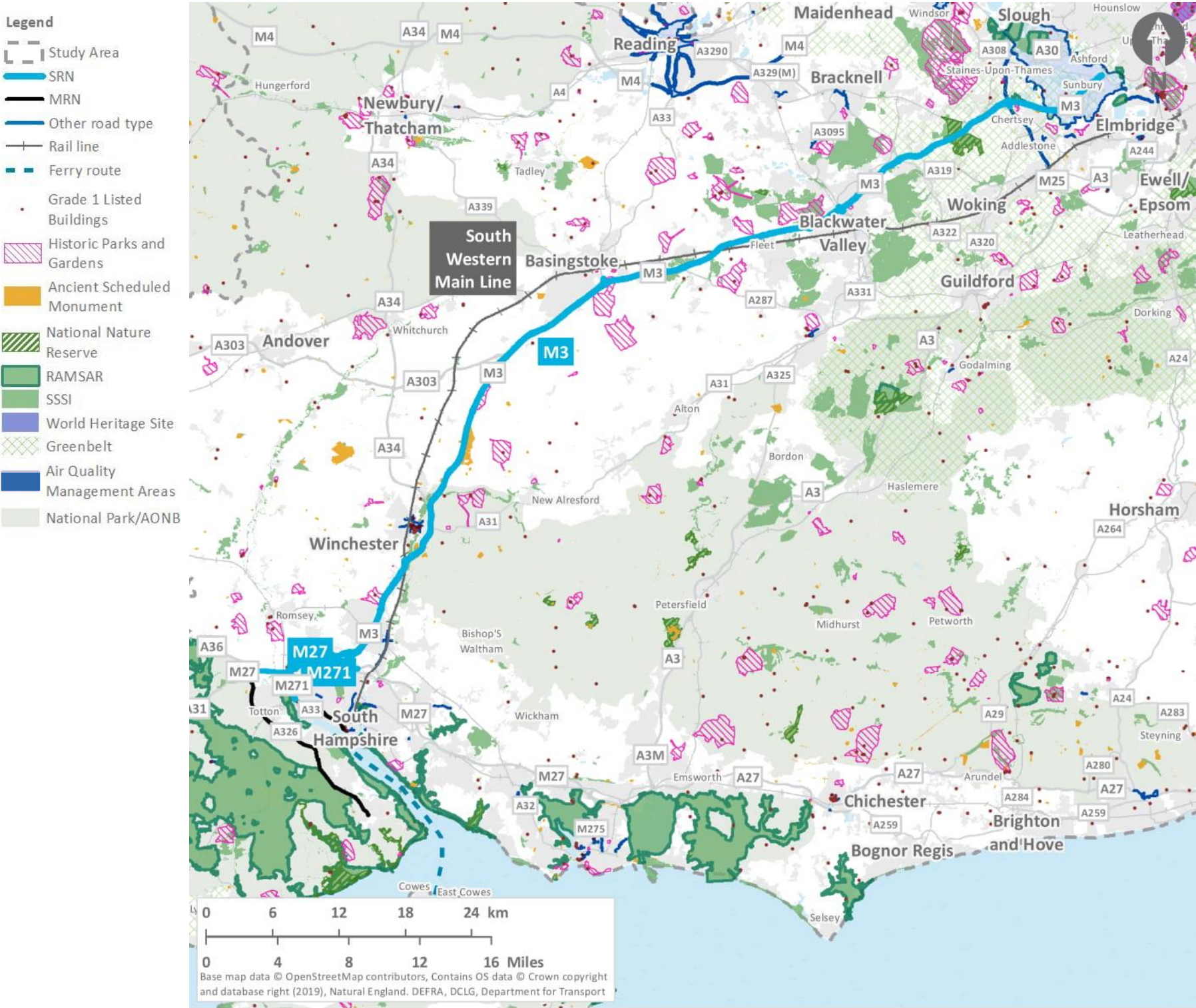
This corridor cuts across the South Downs National Park at its southern end and the London Green Belt at its northern end. There are fewer protected areas in the middle section of the corridor, which is where significant housing development is planned.

This corridor also passes alongside several Sites of Special Scientific Interest, historic parks and gardens.

There are several areas protected by maritime designations around the Test/Itchen estuaries and Southampton Water areas, which are important to port expansion in this area.

Air Quality

There are Air Quality Management Areas at the northern end on this corridor, where it intersects with the M25 motorway, and in the Southampton urban area at the southern end of the corridor.



Highways

Demand

It is estimated that this corridor carries 5,625 vehicles per hour on its busiest section during the AM peak.

Issues and Opportunities

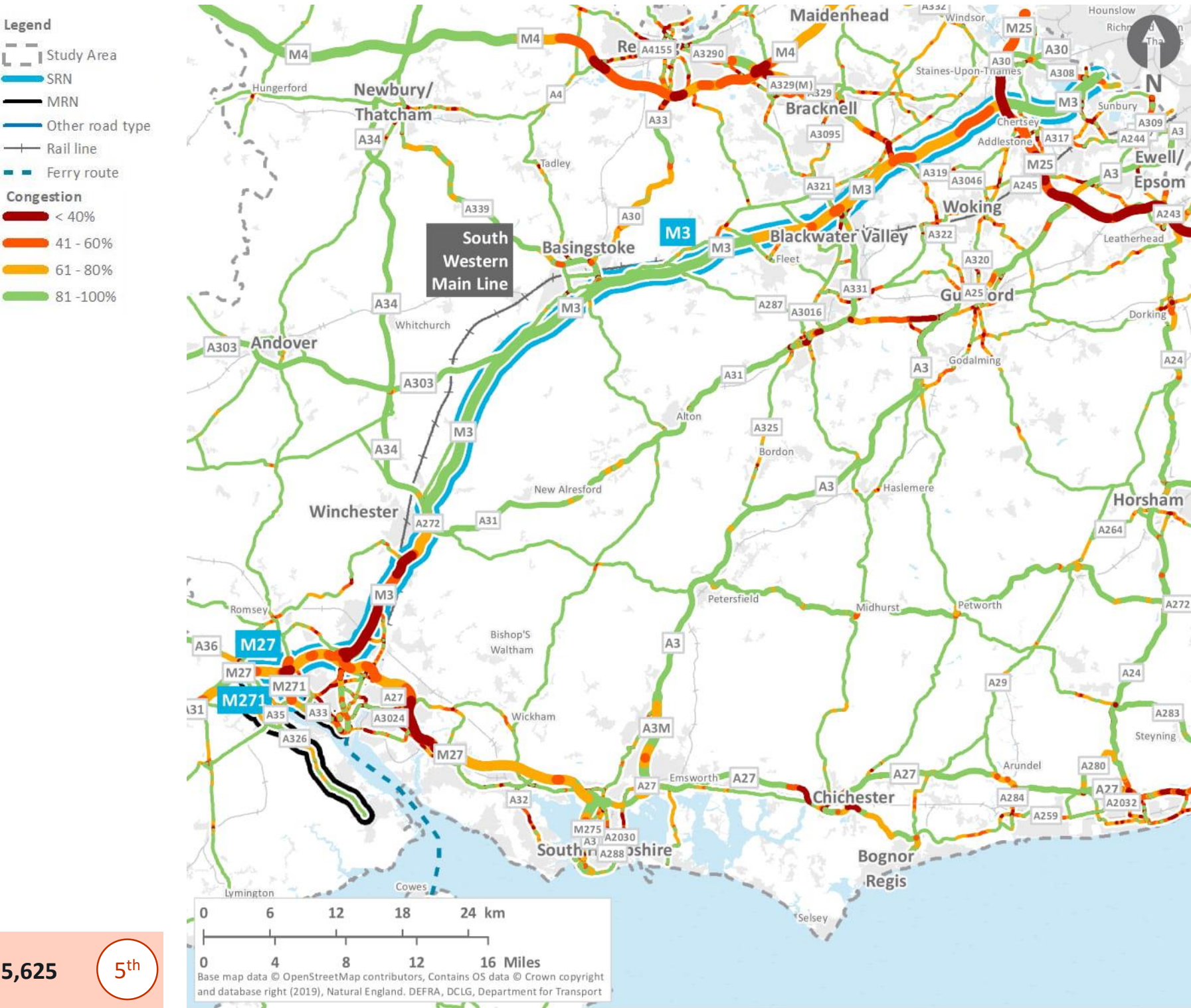
There are significant issues with congestion on this corridor, particularly at its southern end between Winchester and Southampton where the AM peak speed drops below 40% of the night-time free flow speed for significant sections of the corridor. The M3 also experiences congestion at its northern end between Fleet and the M25, although this is less serious than it used to be thanks to the introduction of Smart Motorway technology in this area.


Some of the access roads and junctions between the M3 and the Port of Southampton also suffer from congestion, which slows down freight movements on this corridor. This issue has the potential to worsen as the Port of Southampton expands in the future.

Enhancements

Highways England has recently upgraded the **M3** to a **Smart Motorway** between **junctions 2 and 4** and are currently upgrading the M27 to a Smart Motorway between **junctions 9 and 14**. They are also planning improvements to several junctions on the M3, M27 and M271, including improvements to the M3 Junction 9 (where the A34 merges with the M3).

Hampshire County Council and boroughs and districts in South Hampshire are developing proposals for a mass transit scheme, called the **Solent Metro**, which could serve a large part of the South Hampshire built-up urban area. Southampton City Council and Hampshire County Council are also promoting several Major Road Network and Large Local Major schemes in South Hampshire, including the **A326, Redbridge Causeway, Northam Rail Bridge** and **West Quay realignment** schemes.





Peak hour highway demand
(Vehicles/hour on busiest section)

5,625

5th

Railways

Issues and Opportunities

This corridor is the second busiest rail corridor in the South East area and includes four of the top ten busiest stations in the South East area.

The South Western Main Line suffers significant crowding at peak hours. The current franchisee is investing in new rolling stock, which will help increase capacity, however most of this is expected to be used for London/metro services. Many peak hour trains are already operating at maximum length, limiting scope for additional capacity on these services.

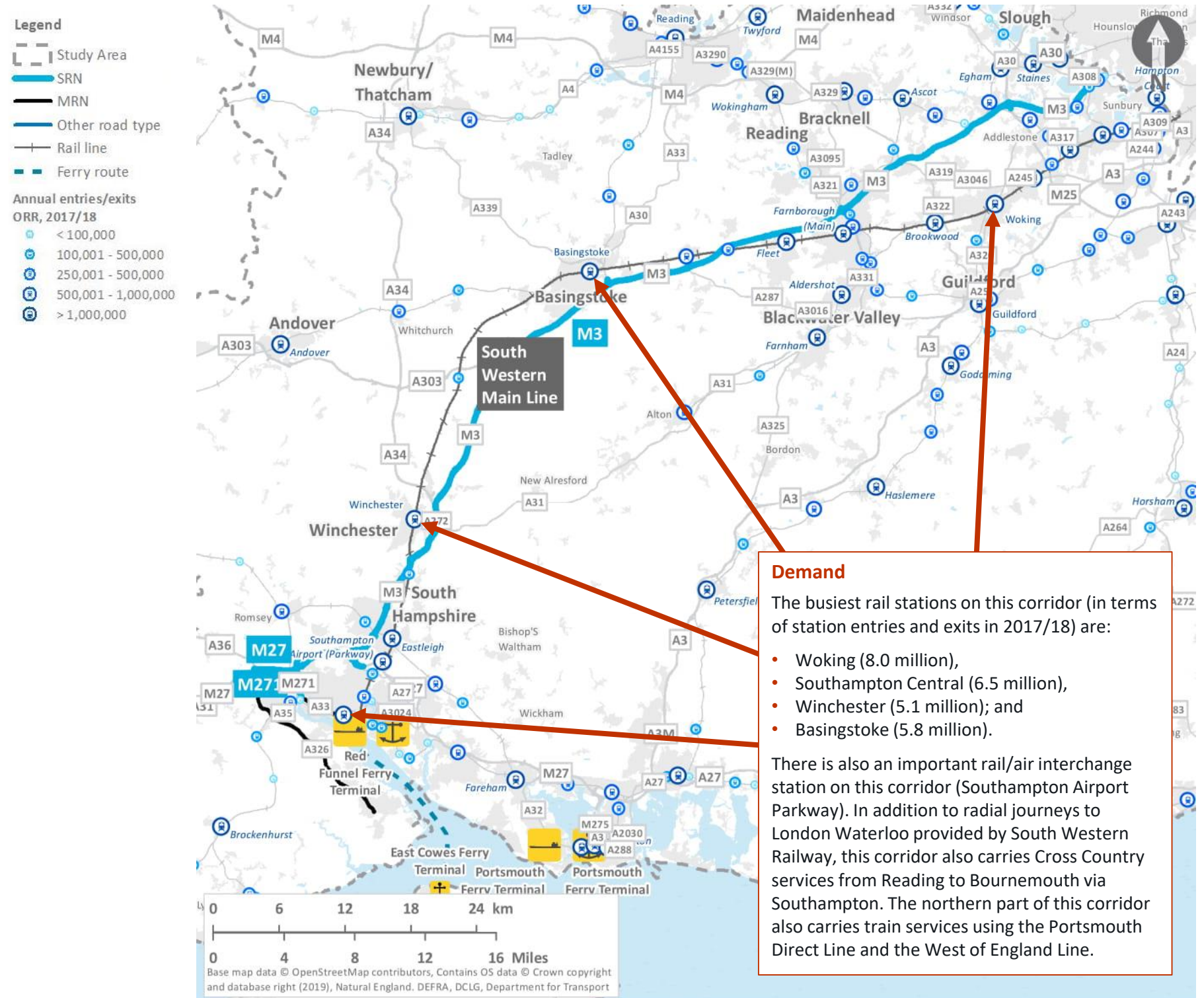
Most of the radial passenger rail services on this corridor terminate at London Waterloo. According to a Department for Transport survey held in Autumn 2018, 27.9% of passengers arriving at London Waterloo during the AM peak were forced to stand, which is the third highest level of crowding recorded in this survey. The same survey found the 07:02 Woking to Waterloo service was the 6th most crowded service in the survey.

Enhancements

Network Rail is developing proposals to increase capacity by enabling more trains to use the South Western Main Line corridor during peak hours. These proposals, which are not yet funded, include improvements at **Woking**, **Clapham Junction** and **London Waterloo**. Network Rail is also developing a **Solent Mini Route Utilisation Strategy**, which might identify proposed rail infrastructure improvements that would support local growth in the South Hampshire area.

Transport for London is developing a business case for a **second Crossrail line** in London, which will increase capacity in South West London (with some knock-on benefits for services on the South Western Mainline). However, this scheme is also unfunded.

Looking further ahead, the **Southern Rail Access to Heathrow Airport** scheme could be utilised to provide direct services between Southampton and Heathrow.



South West Strategic Radial Corridor SW3

A33/Basingstoke – Reading Line (Basingstoke – Reading)

Description

This corridor connects Basingstoke and Reading, which are two of the key economic hubs in the South East. This road is a mixture of dual and single carriageway. It connects to the Strategic Road Network at Junction 11 of the M4 and Junction 5 of the M3.

The key issues affecting this corridor are:

- **Congestion:** There is some congestion on this corridor where the A33 intersects with the M4 (Junction 11).
- **Imbalance in development:** Significant housing development is planned for this corridor. However, the number of planned homes outnumbers the number of planned jobs by nearly 3 to 1.

The key opportunities to consider for this corridor are:

- **Modal shift:** Could there be more shift from car to public and active transport on this corridor, particularly north of the M4 (Junction 11)?

Economic Context

Wealth

Median resident earnings along this corridor are £35,165, which is among the highest for the strategic corridors in the South East area.

Priority Industrial Sectors






The priority industrial sectors on this corridor are:

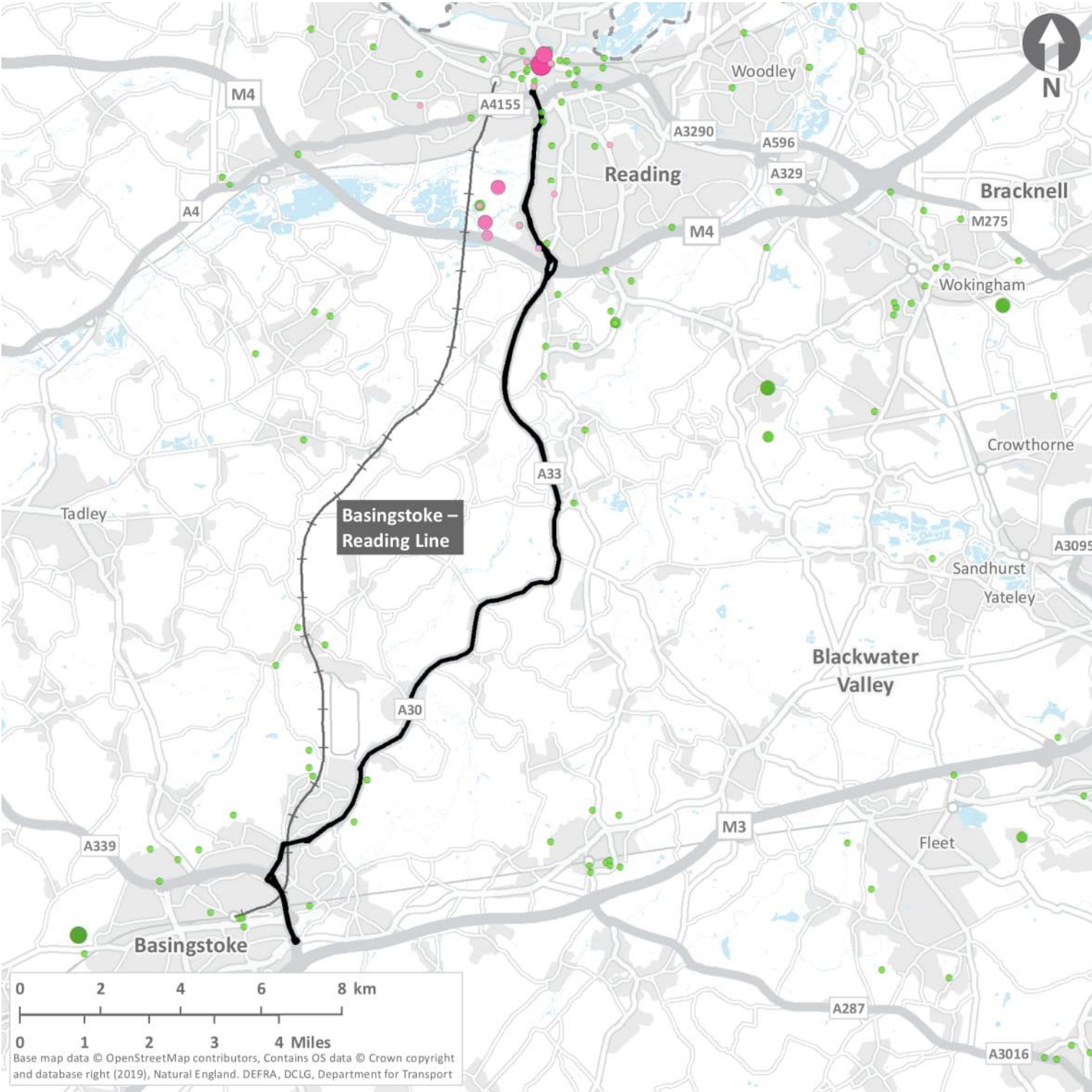
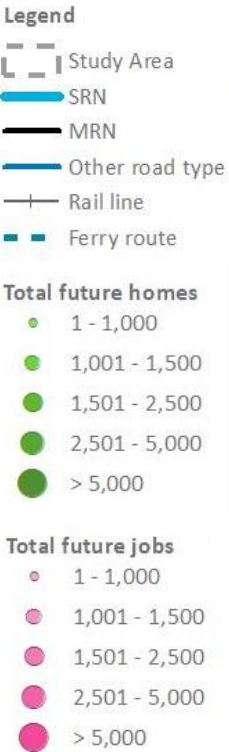
- Advanced manufacturing;
- Aerospace and defence;
- Corporate (HQ Operations, etc.);
- Digital and creative
- Foreign-owned businesses;
- ICT and digital media;
- Pharmaceuticals; and
- Professional and business services

13% of jobs on this corridor are in priority sectors, which is above average for the South East area.

Development

Planned development on this corridor is focussed on the west and east of Basingstoke and to the south of Junction 11 of the M4. Significant employment growth is also expected just to the north of Junction 11. Some data may be underreported as not all local plans have been adopted by all planning authorities on this corridor. In this case, a major development (c.10k homes) is planned at Shapley Heath Garden Village near Hook.

	Population (2018)	761,731		12 th
	Planned homes (2018 to 2035)	54,813	↑ 17% growth	10 th
	Planned Jobs (2018 to 2035)	20,418	↑ 5% growth	19 th
	Priority Sector Jobs (2017)	51,190	13% of total	9 th
	Median earnings (2018)	£35,165		5 th



Social Context

Deprivation

There are small pockets of deprivation in Reading and, to a lesser extent, Basingstoke. That said, deprivation levels on this corridor are relatively low.

Education

This corridor has one of the highest educated populations in the South East. Just under half of the residents on this corridor have at least one National Vocational Qualification at level 4 or above.

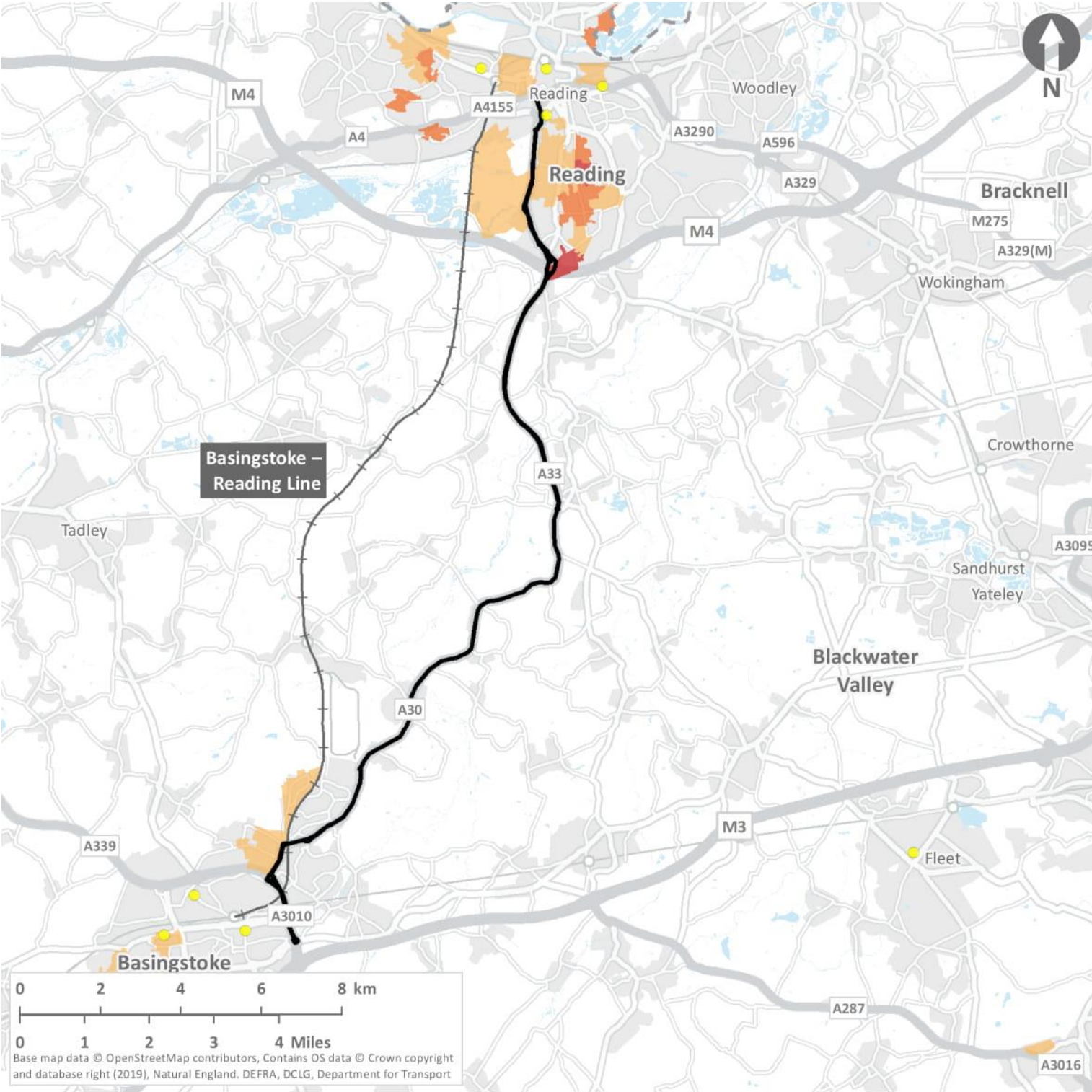
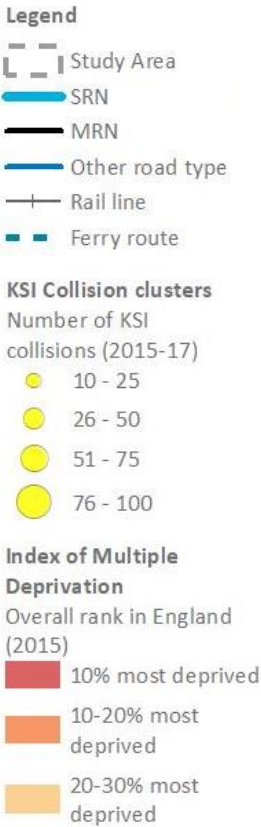
Safety





There were relatively few clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17. That said, there was one small cluster of incidents at the northern end in Reading Town Centre.

It should be noted that some of the road safety data for this area is understood to be underreported, so the actual position may be more serious than presented on this map.

Housing Affordability

Although high prices are relatively high on this corridor, earnings are also high, meaning housing is relatively affordable for residents who live on this corridor.



	Deprived areas (2018, England)	7%	20 th
	Highly educated population (2018, % NVQ Level 4 or above)	47%	4 th
	Average house price (2018, average of corridor's districts)	£347,217	7 th
	Housing affordability ratio (House price / earnings)	9.9	11 th

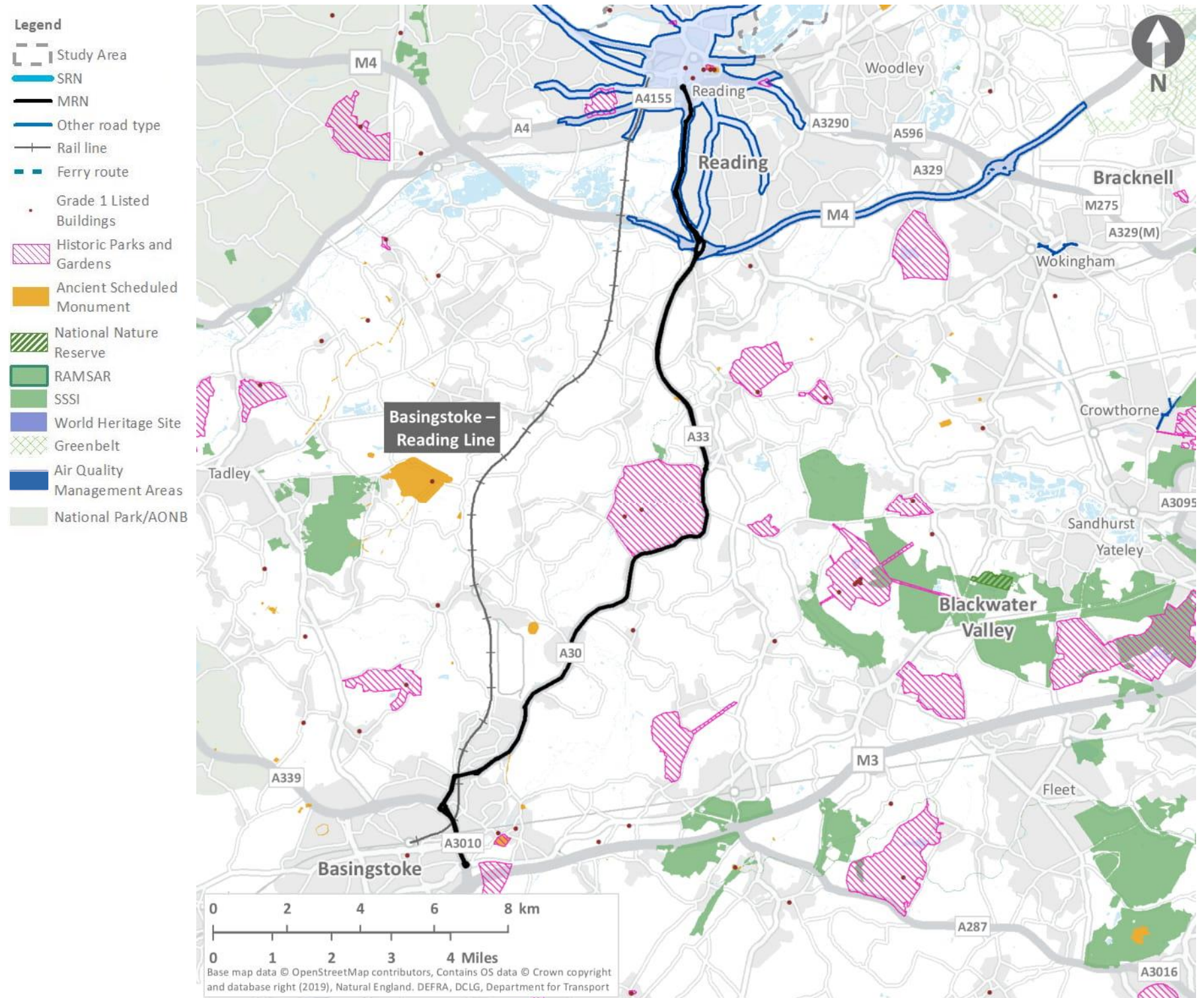
Environmental Context

Protected Areas

This corridor is relatively unaffected by environmental constraints. The closest Site of Special Scientific Interest lies 3km to the East of the A33 at Bramshill. There are several historic monuments surrounding the road, including a roman road near Basingstoke. The centre of the corridor passes through Stratfield Saye Park, which is a Historic Park and Garden.

Air Quality

The northern end of the A33 is covered by a relatively large Air Quality Management Area, which covers a large part of the Reading urban area. Part of the M4 is also covered by an Air Quality Management Area.



A33/Basingstoke – Reading Line (Basingstoke – Reading)

Highways

Demand

It is estimated that this corridor carries 3,561 vehicles per hour on its busiest section during the AM peak.

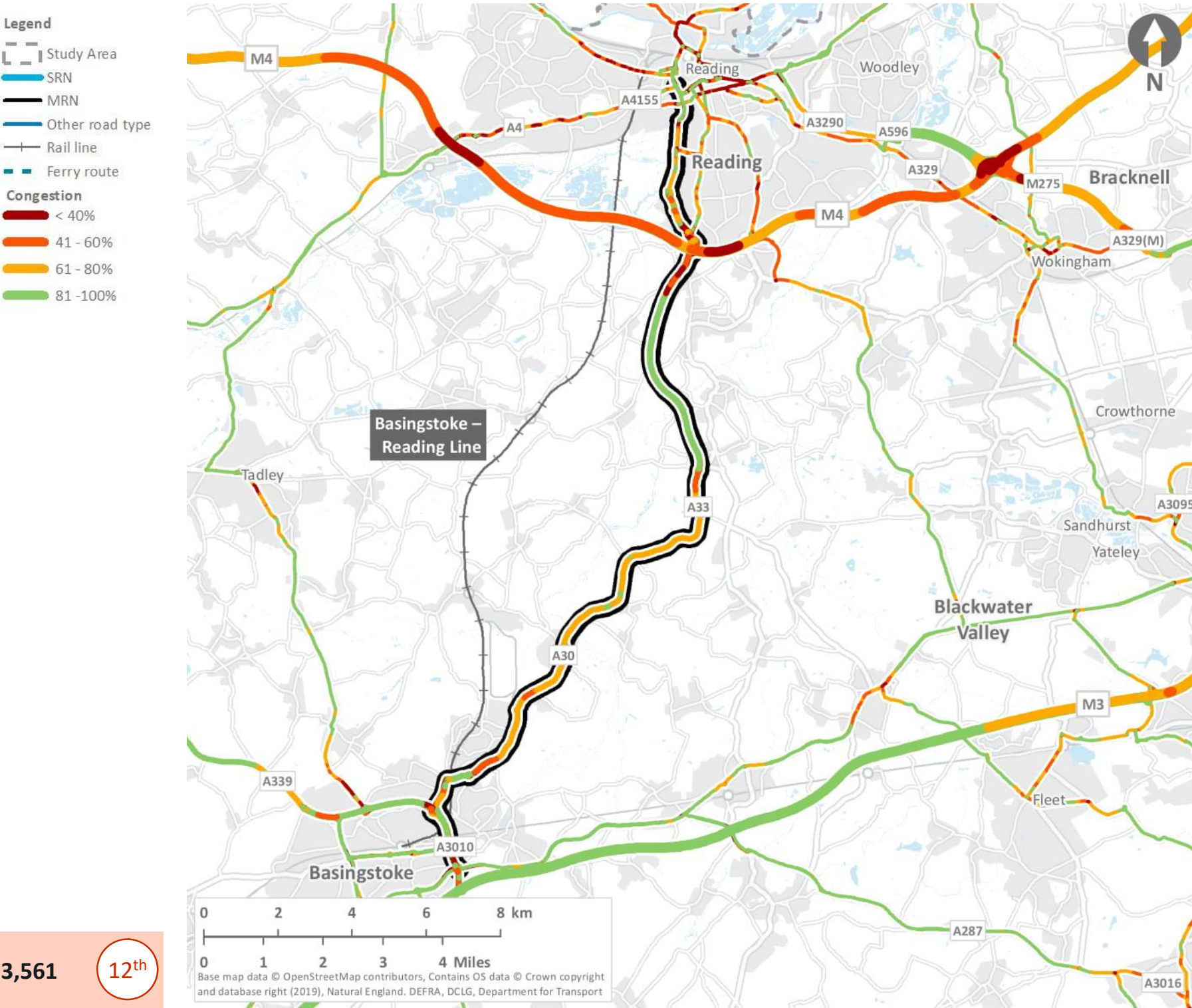
Issues and Opportunities


Delays on this corridor are particularly common during the AM peak at each end of the corridor (within the urban areas they serve). Delays are most severe at the northern end of the corridor near the M4, where traffic speed during the AM peak is less than 25% of the night time speed. The middle section of the A33 is also relatively congested. Here, some sections have AM peak speeds that are below 60% free flow speeds.

Enhancements

Several enhancements are planned on this corridor including additional lanes and signal improvements to the **A33/Thornhill Road** and a new merging lane after the junction on the **A33/Gaiger Avenue** roundabout to allow two lanes of vehicles.

Highways England is in the process of upgrading the **M4 to a Smart Motorway between Junction 4b and Junction 12**, which will have some impact on this corridor.



 Peak hour highway demand
(Vehicles/hour on busiest section)

3,561

12th

Railways

Issues and Opportunities

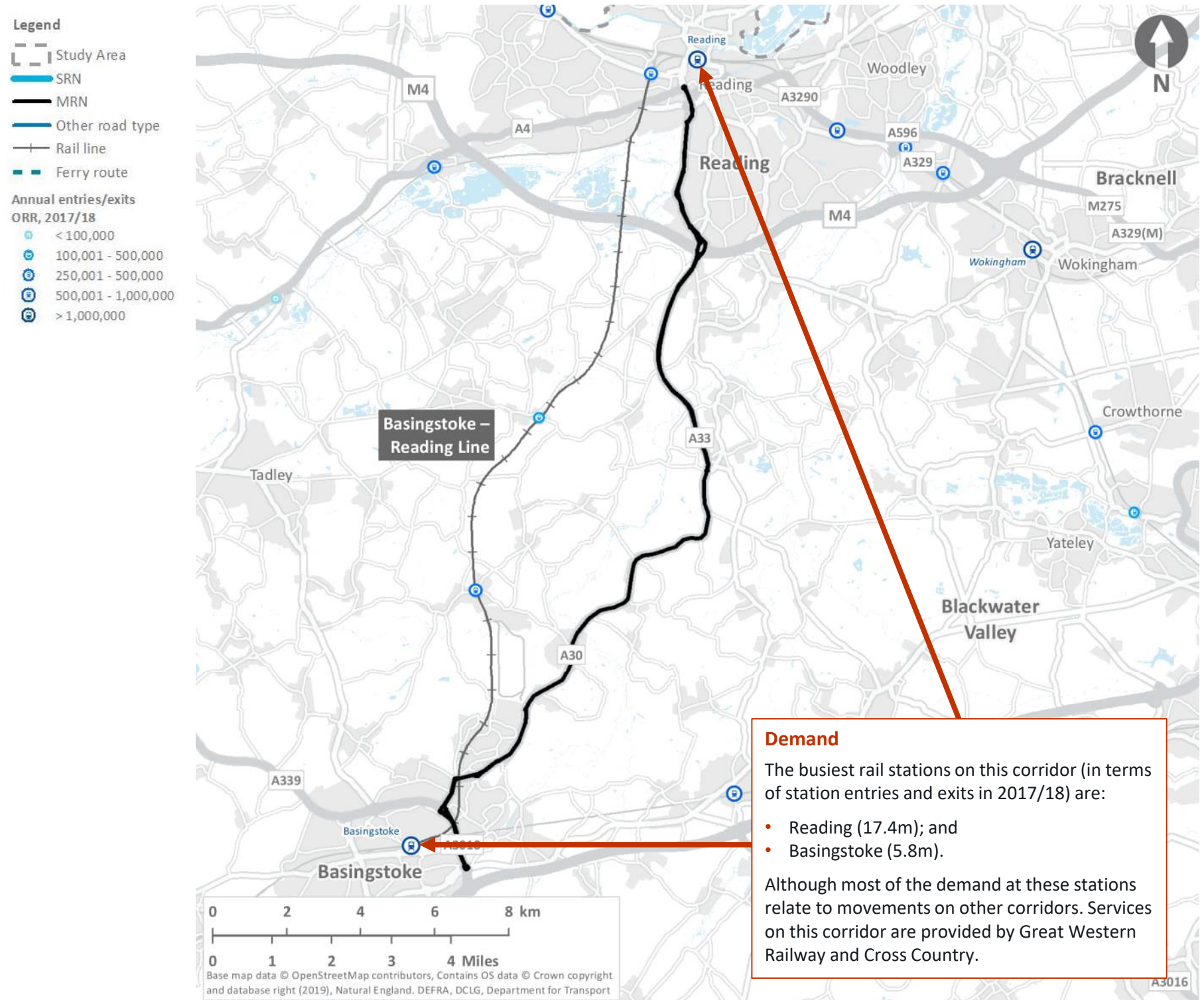
The railway serving this corridor is reportedly very crowded during peak hours. The percentage of passengers standing at Reading in the AM peak was 3.2% in 2018, which represents an increase from the previous year. Some Cross-Country trains are reportedly so full in the AM peak that some passengers are unable to board.

The Basingstoke – Reading railway could be electrified to enable more electric through services from Reading to destinations such as Southampton. This could allow electric services from Paddington to serve this corridor, which would relieve capacity for Basingstoke – Waterloo services.

Some of the intermediate stations on this railway have short platforms, which limits the capacity for stopping services on this corridor.

Enhancements

No railway enhancements are currently planned for this corridor.



South West Strategic Radial Corridor SW4

A34/South Western Main Line/Basingstoke – Reading Line (Reading – Winchester)

Description

The A34/ South Western Main Line/Basingstoke – Reading Line Corridor connects the Port of Southampton to the Midlands via Newbury. This corridor has a high level of freight traffic. It could potentially connect with a new Oxford – Milton Keynes – Cambridge expressway just north of Newbury in the future. This corridor therefore plays an important role in supporting orbital freight movements in the region.

This corridor is shadowed, to some extent, by long-distance Cross-Country rail services (via Reading). These services offer relatively fast and frequent connections to the Midlands and the North. That said, they used to operate deeper in the region than they do today (e.g. as Gatwick Airport, Brighton and Ramsgate).

The key issues affecting this corridor are:

- **Imbalance in development:** Significant housing development is planned for this corridor. However, the number of planned homes outnumbers the number of planned jobs by over 12 to 1. This means many new residents will need to travel outside this corridor to seek employment.

The key opportunities to consider for this corridor are:

- **Cross Country rail services:** How could a future Cross Country rail service better serve this corridor (and other parts of the South East)?

Economic Context

Wealth

Median resident earnings along this corridor are £34,350, which is high for the South East area.

Priority Industrial Sectors

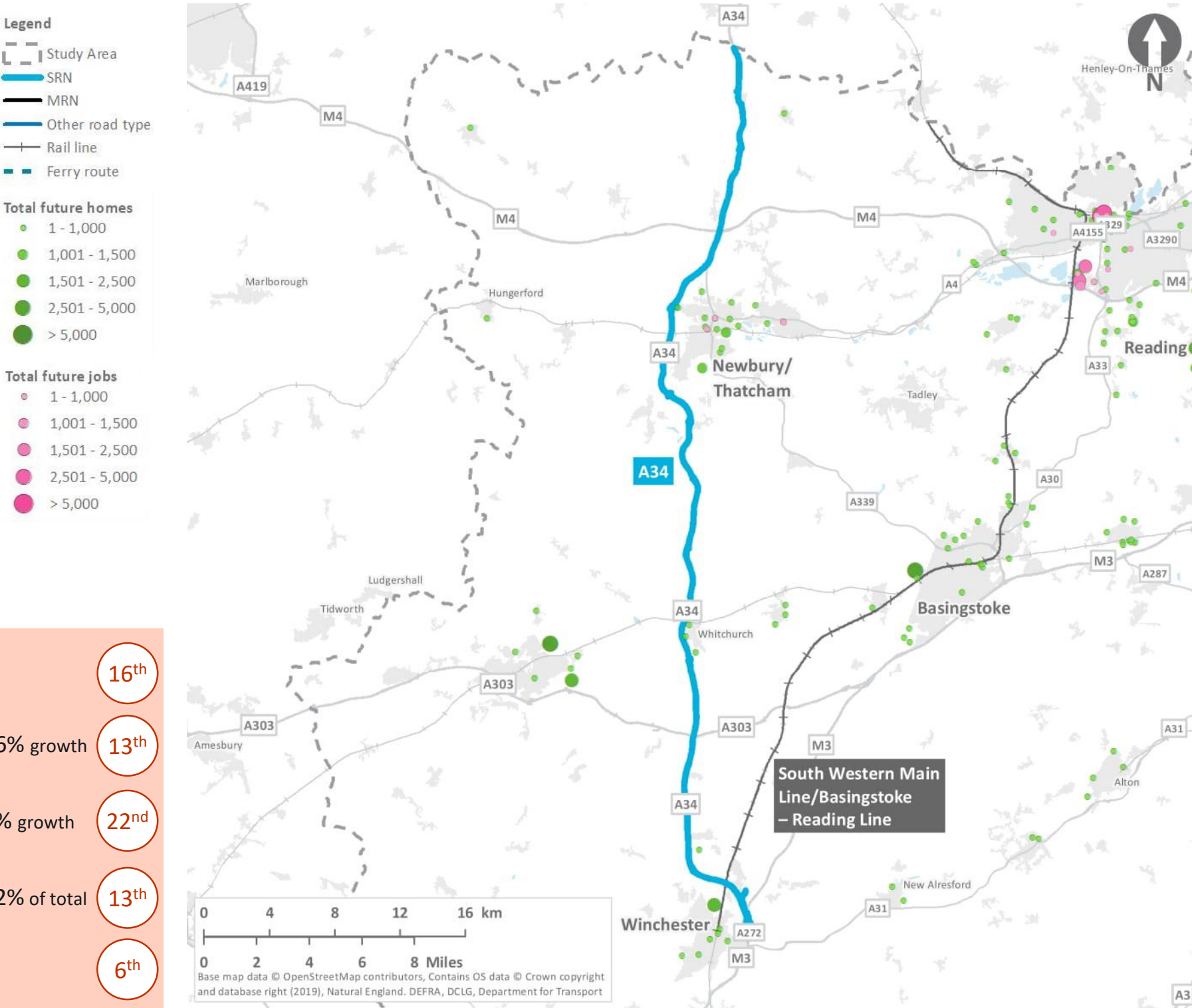
The priority industrial sectors on this corridor are:

- Advanced manufacturing;
- Aerospace and defence;
- Corporate (e.g. Headquarter operations);
- Digital and creative;
- Engineering;
- Foreign-owned businesses;
- ICT and digital media;
- Low carbon;
- Marine and maritime;
- Pharmaceuticals;
- Professional and business services;
- Transport and logistics businesses; and
- Visitor economy.

12% of jobs on this corridor are in priority sectors, which is below average for the South East area.

Development

Significant housing development is expected to take place around Winchester and Newbury. Along the South Western Main Line railway (which runs along a slightly different route to the A34 road), development will be focussed around Basingstoke and Reading.



	Population (2018)	583,720		16 th
	Planned homes (2018 to 2035)	38,816	↑ 16% growth	13 th
	Planned Jobs (2018 to 2035)	3,054	↑ 1% growth	22 nd
	Priority Sector Jobs (2017)	37,055	12% of total	13 th
	Median earnings (2018)	£34,350		6 th

Social Context

Deprivation

There are no significant pockets of deprivation on or near to this corridor.

Education

42% of the population on this corridor has at least one National Vocational Qualification at level 4 or above which is above average for the South East area.

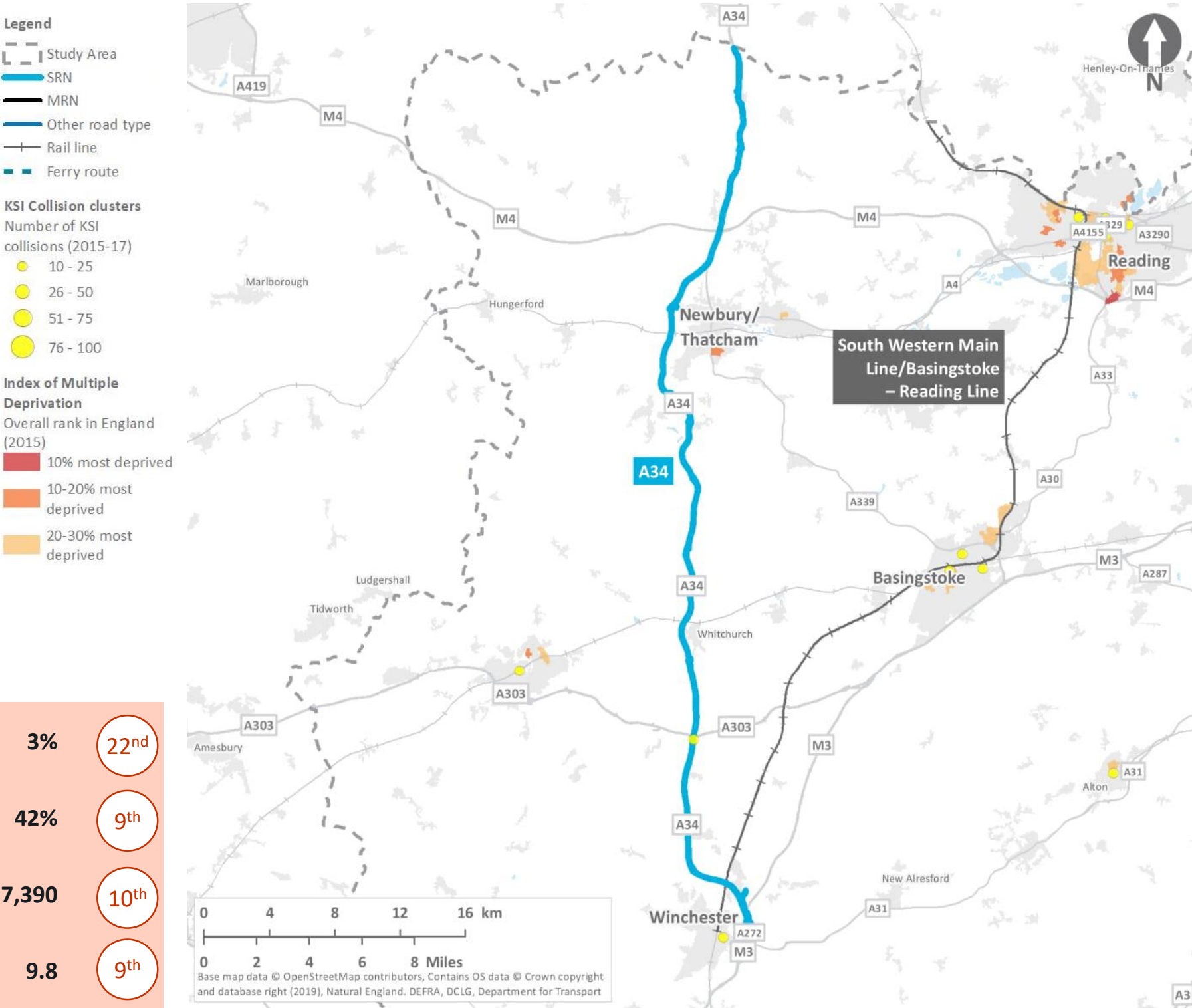
Safety





There were several clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17, notably where the A34 intersects with the A303.

It should be noted that some of the road safety data for this area is understood to be underreported, so the actual position may be more serious than presented on this map.

Housing Affordability

Although high prices are average on this corridor, earnings are high, meaning housing is relatively affordable for residents who live on this corridor.



	Deprived areas (2018, England)	3%	22 nd
	Highly educated population (2018, % NVQ Level 4 or above)	42%	9 th
	Average house price (2018, average of corridor's districts)	£337,390	10 th
	Housing affordability ratio (House price / earnings)	9.8	9 th

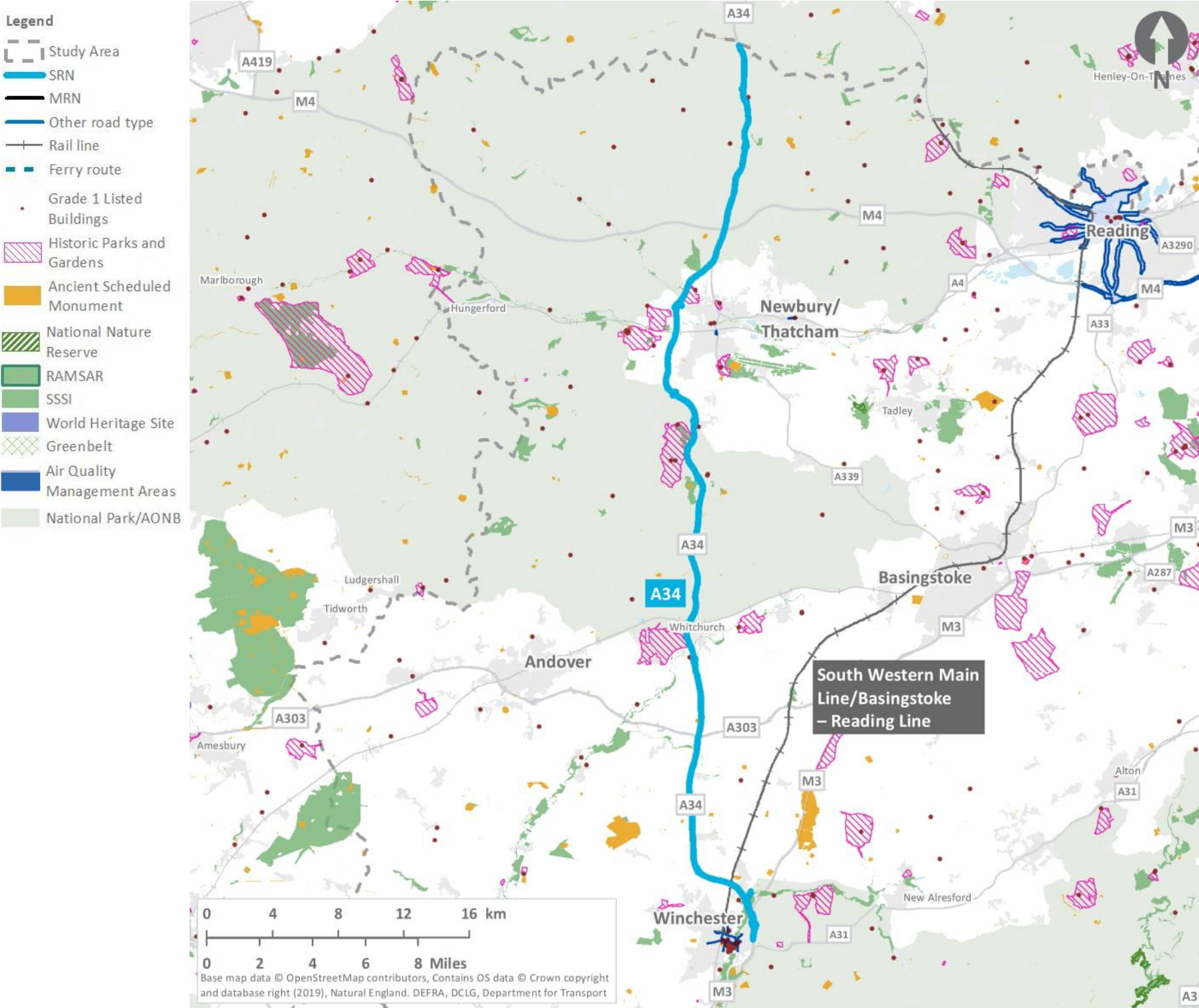
Environmental Context

Protected Areas

This corridor passes through the North Wessex Downs Area of Outstanding Natural Beauty at its northern end and alongside several historic parks and gardens near Newbury/Thatcham. This corridor also enters the South Downs National Park at its southern end.

Air Quality

There are no Air Quality Management Areas on this corridor.



Highways

Demand

It is estimated that this corridor carries 3,378 vehicles per hour on its busiest section during the AM peak.

Issues and Opportunities


This corridor has relatively few issues with congestion. At its northern end there are some issues with congestion, where the AM peak speed drops below 80% of the night-time speed.

Enhancements

Highways England is developing proposals to improve **M3 Junction 9 (Winnall)** to enable easier access between the M3 and A34.

In the longer term, Transport for the South East believes there is a case for **upgrading the A34 to a motorway standard expressway** between the M4 (Junction 13) and the M3 (Junction 9).





Peak hour highway demand
(Vehicles/hour on busiest section)

3,378

9th

Railways

Issues and Opportunities

The railway has the same issues as the A33/Basingstoke – Reading Line corridor. Trains serving this corridor are reportedly very crowded during peak hours. Some Cross-Country trains are so full, passengers are unable to board. The Basingstoke – Reading railway could be electrified to enable more electric through services from Reading to destinations such as Southampton. This could allow electric services from Paddington to serve this corridor, which would relieve Basingstoke – Waterloo capacity.

According to a Department for Transport survey held in Autumn 2018, 3.2% of passengers arriving at Reading were forced to stand during the AM peak – an increase compared to the previous year's survey.

Enhancements

No railway enhancements are currently planned for this corridor. That said, improvements to the South Western Main Line (closer to London) will have knock-on benefits for this corridor.

Looking further ahead, the **Southern Rail Access to Heathrow Airport** scheme could be utilised to provide direct services between Portsmouth and Heathrow. Portsmouth City Council would also like to see the reinstatement of Cross Country rail services between Reading, the Midlands, and Portsmouth.

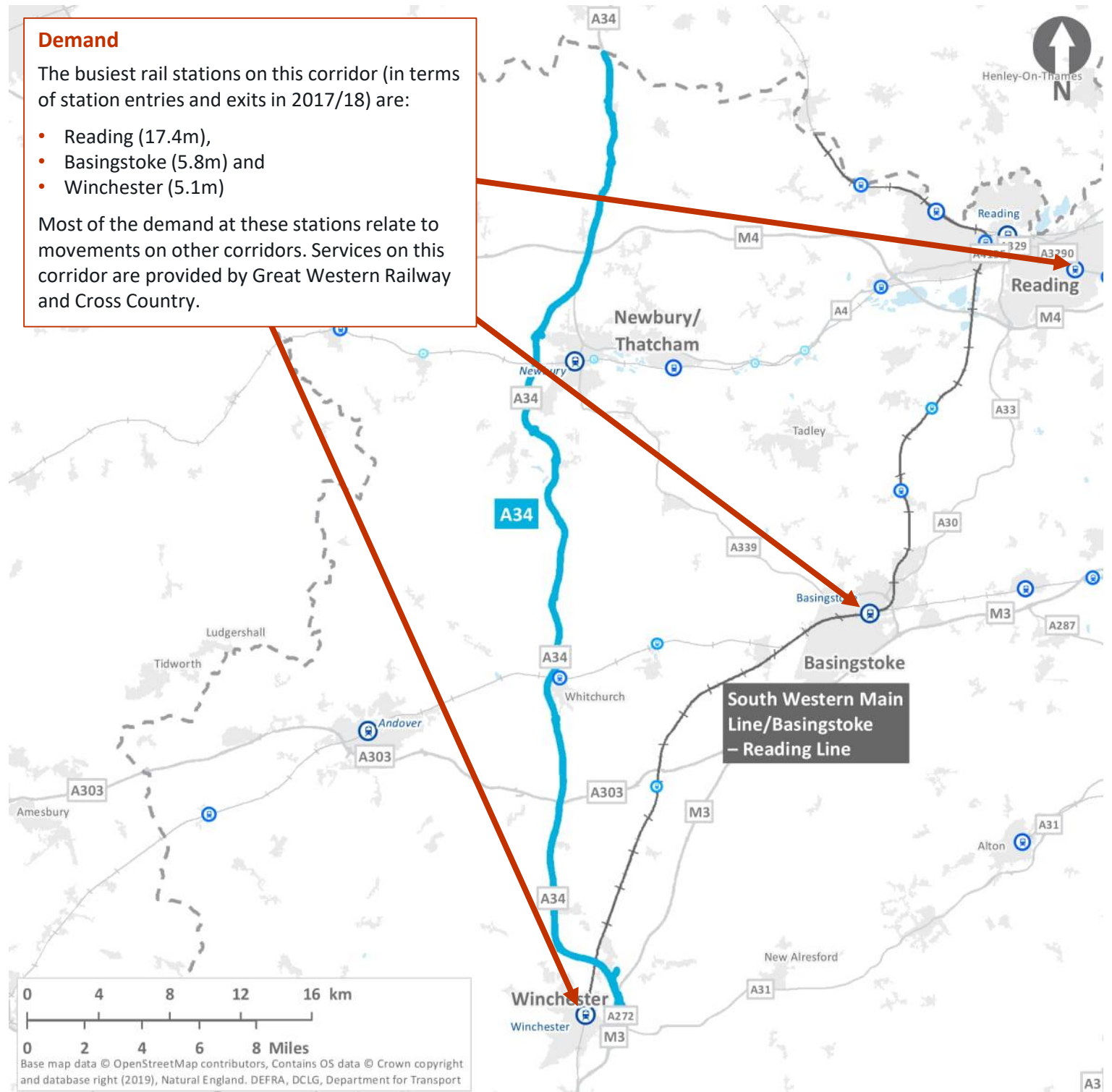


Demand

The busiest rail stations on this corridor (in terms of station entries and exits in 2017/18) are:

- Reading (17.4m),
- Basingstoke (5.8m) and
- Winchester (5.1m)

Most of the demand at these stations relate to movements on other corridors. Services on this corridor are provided by Great Western Railway and Cross Country.



South West Strategic Radial Corridor SW5

A36/Wessex Main Line (New Forest)

Description

This is a relatively short corridor that runs along the border of the New Forest National Park to the West of Southampton. It runs through largely rural areas, and as such has a very particular set of socioeconomic characteristics.

While this corridor is relatively short, it provides important east – west connectivity between the South East and the South West and West of England.

The key issues affecting this corridor are:

- **Deprivation in Southampton:** There are significant pockets of deprivation in the Southampton urban area at the southern end of this corridor.

The key opportunities to consider for this corridor are:

- **East – west rail services:** Could east – west rail services be accelerated to improve connectivity between the South East and South West of England?

Economic Context

Wealth

Median resident earnings along this corridor are £29,176 which is significantly below average for the South East area.

Priority Industrial Sectors






The priority industrial sectors on this corridor are:

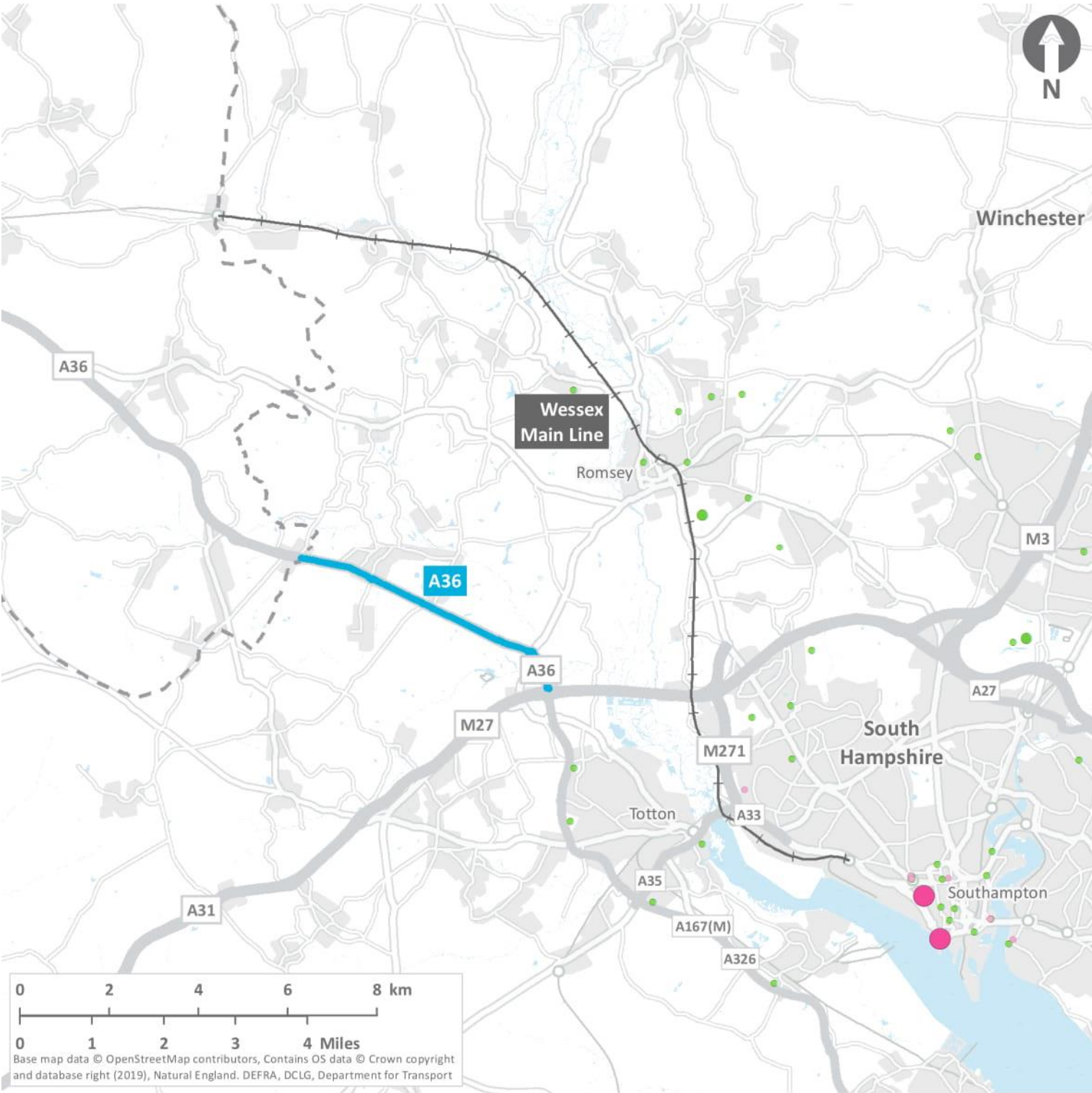
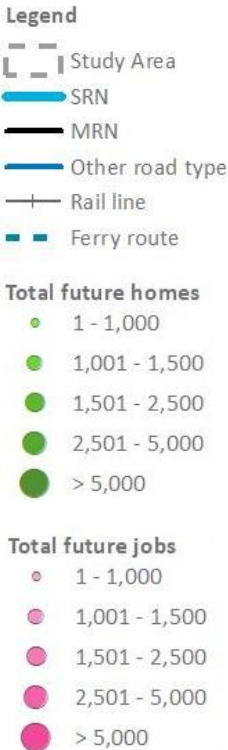
- Advanced manufacturing;
 - Aerospace and defence;
 - Digital and creative;
 - Engineering;
 - Low carbon;
- Marine and maritime;
 - Transport and logistics businesses; and
 - Visitor economy.

17% of jobs on this corridor are in priority sectors, which is the highest concentration in the South East (this estimate covers the whole of the New Forest, Southampton, and Test Valley areas and not just the areas immediately adjacent to the A36 highway).

Development

Although the percentage of new dwellings planned on this corridor is comparable to the South East average (16%), the actual number of planned dwellings is relatively low (18,054). Very few development sites lie on the A36 road, although some (e.g. Romsey) will be served by the Wessex Main Line railway, which shadows part of this corridor.

	Population (2018)	557,718		17 th
	Planned homes (2018 to 2035)	18,358	↑ 8% growth	23 rd
	Planned Jobs (2018 to 2035)	20,950	↑ 9% growth	14 th
	Priority Sector Jobs (2017)	32,565	14% of total	5 th
	Median earnings (2018)	£29,176		20 th



Social Context

Deprivation

While there are no significant areas of deprivation immediately on the A36 corridor, this corridor provides access to eastern and central Southampton, which does have significant areas of deprivation.

Education

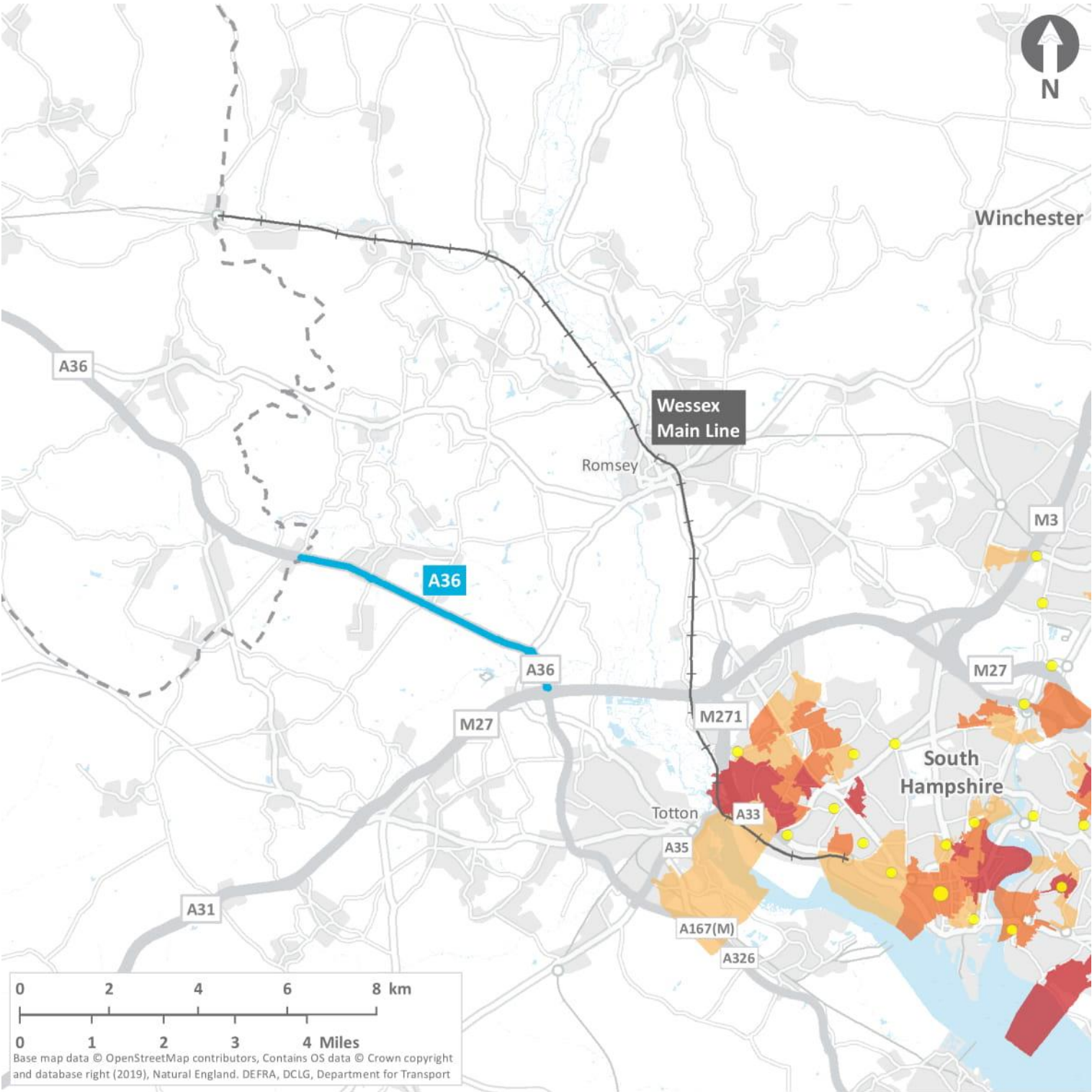
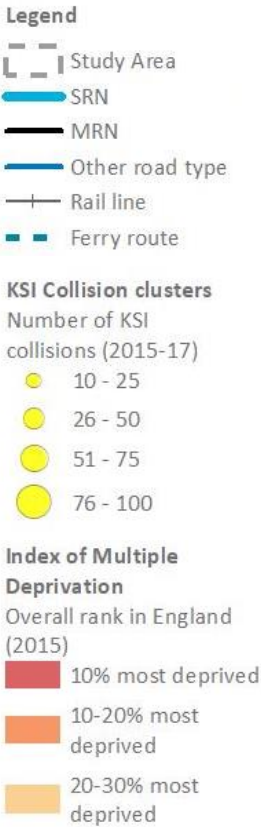
39% of the population on this corridor has at least one National Vocational Qualification at level 4 or above, which is just below average for the South East area.





Safety

There were no clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17. That said, were clusters of these incidents in the adjacent Southampton urban area.

Housing Affordability

House prices are relatively low on this corridor, which, set against average resident earnings, means housing is relatively affordable here.



	Deprived areas (2018, England)	21%	7 th
	Highly educated population (2018, % NVQ Level 4 or above)	39%	15 th
	Average house price (2018, average of corridor's districts)	£271,314	20 th
	Housing affordability ratio (House price / earnings)	9.3	6 th

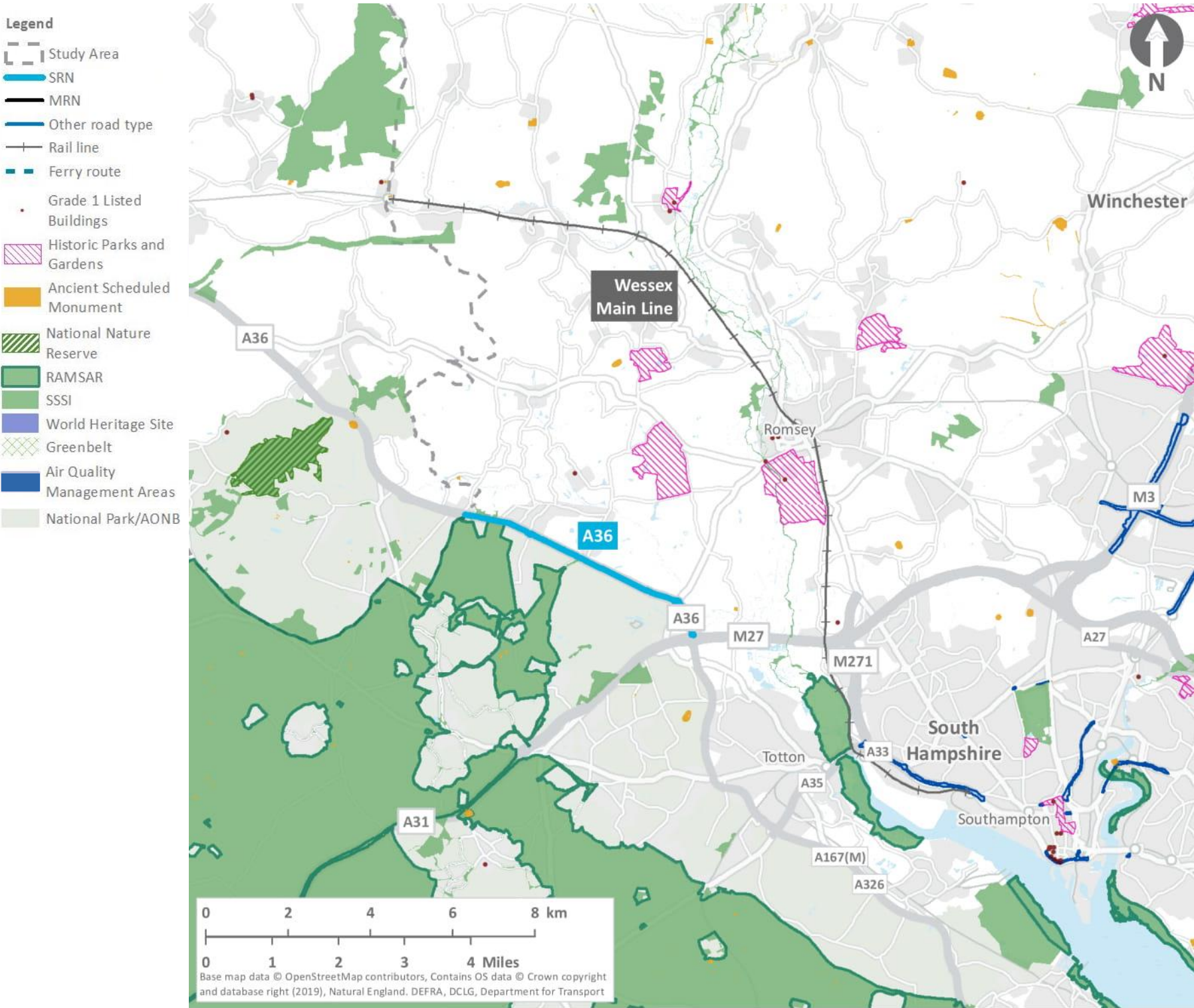
Environmental Context

Protected Areas

This corridor runs immediately adjacent to the New Forest National Park, which limits scope for development to the south of this corridor.

Air Quality

There are no Air Quality Management Areas on this corridor.



Highways

Demand

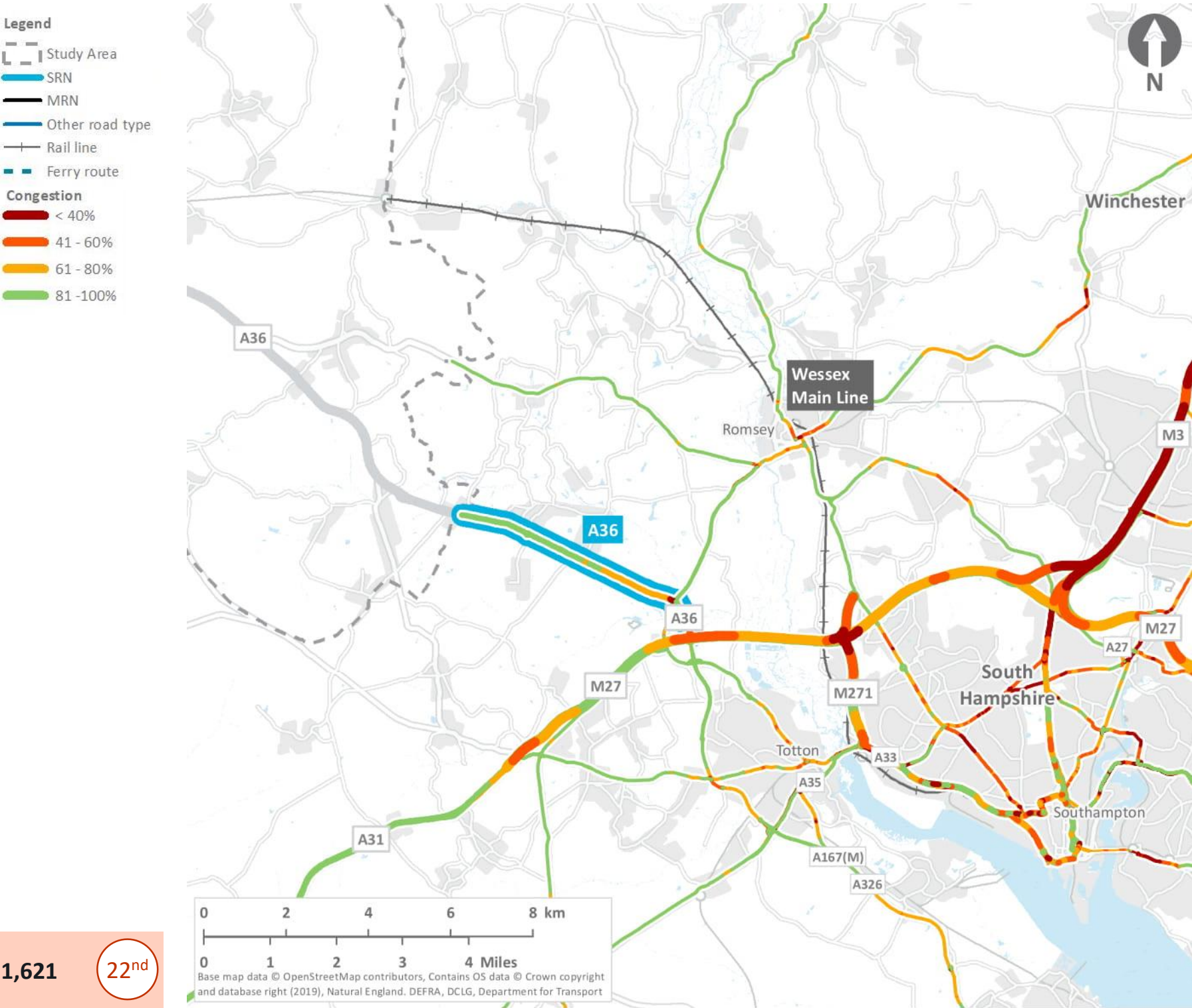
It is estimated that this corridor carries 1,161 vehicles per hour on its busiest section during the AM peak – the lowest level of demand out of the 22 highway strategic corridors.


Issues and Opportunities

There is some congestion along this corridor in the AM peak, particularly where the road intersects with the M27. The proposed expansion of Southampton port to the west has the potential to increase the volume of freight traffic moving along this corridor.

Enhancements

There are currently no plans for any major significant enhancements to the A36 in this area.



 Peak hour highway demand
(Vehicles/hour on busiest section)

1,621

22nd

Railways

Issues and Opportunities

The Wessex Main Line railway mirrors part of this corridor between Southampton and Salisbury, but also veers some way north of the A36 in the New Forest and Test Valley districts.

The Wessex Main Line reportedly experiences high levels of crowding during peak hours (according to respondents to a recent consultation on the Great Western Franchise). This should be alleviated to some extent as additional rolling stock is cascaded from other Great Western Railway routes to this route.

Enhancements

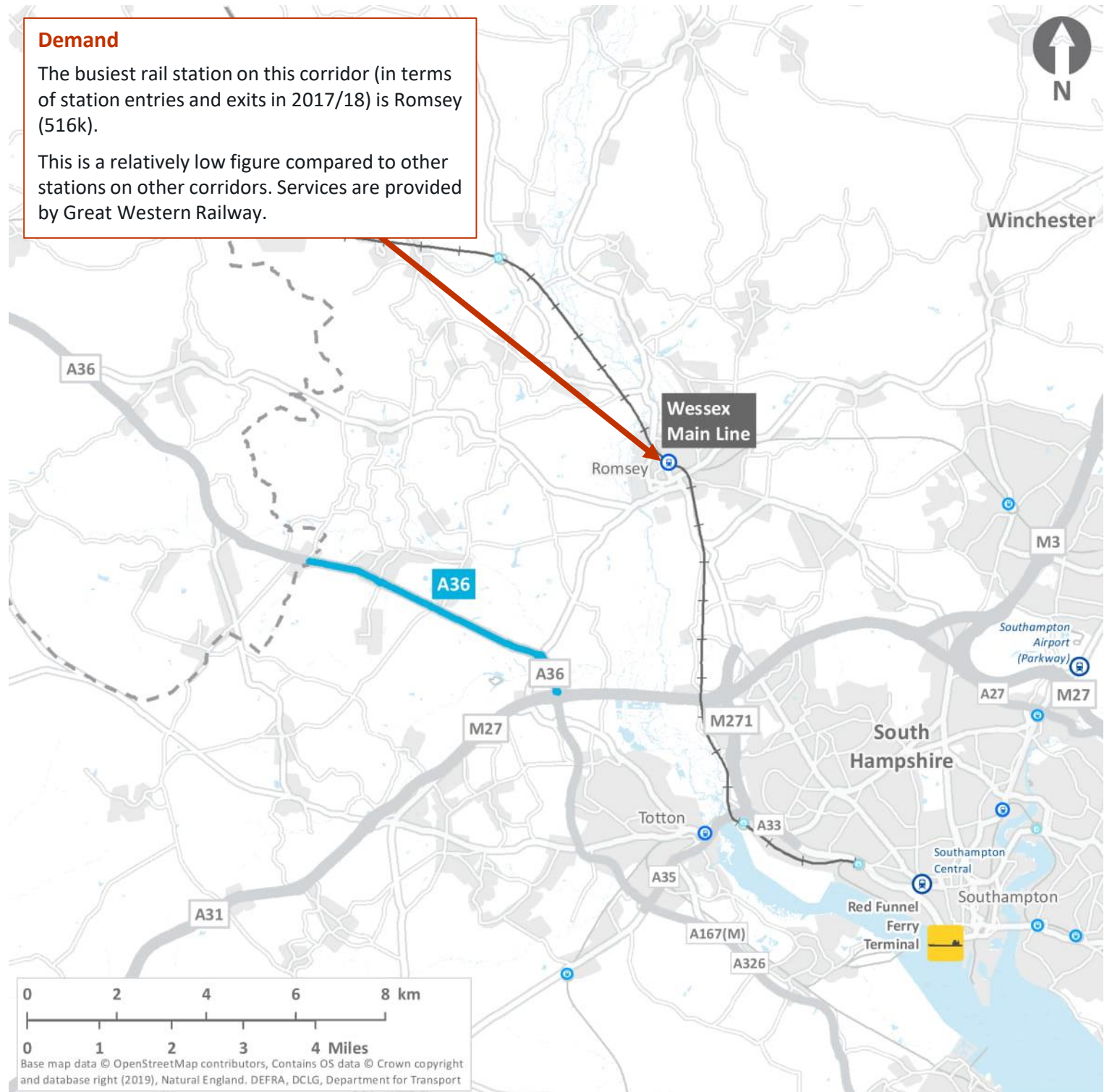
The Great Western Railway are cascading rolling stock from the Thames Valley to this route, which is providing additional capacity benefits.



Demand

The busiest rail station on this corridor (in terms of station entries and exits in 2017/18) is Romsey (516k).

This is a relatively low figure compared to other stations on other corridors. Services are provided by Great Western Railway.



South West Strategic Radial Corridor SW6

A303/West of England Main Line (Andover – Basingstoke)

Description

The A303/West of England Main Line is a relatively short corridor, but performs three important functions. First, it joins two important economic centres in the South East (Andover and Basingstoke). Second, it connects Andover to London and the rest of the South East. Third, it connects the South East with the South West.

Several major improvements are planned for the A303 and A358 to the west of Andover (notably between Amesbury and Taunton). This is likely to divert some cross-regional traffic from the M4 corridor to the A303 corridor. It may also stimulate more development on this corridor.

The key issues affecting this corridor are:

- **Imbalance in development:** Very few jobs are planned for this corridor (based on Test Valley and Basingstoke and Deane data provided to this study), while housing stock on this corridor is predicted to rise. Furthermore, many of the large housing developments planned for this corridor lie at the periphery of Andover and Basingstoke, some distance from shops, services, and public transport hubs. There is a risk that these towns will become less self-contained and drive new residents to seek employment outside this corridor.

The key opportunities to consider for this corridor are:

- **A303 upgrades (to the west):** How can the benefits of improvements to the A303 be leveraged to the benefit Andover and Basingstoke?
- **West of England Line:** Could journey times on this corridor be improved to enable it to provide an alternative, reliable, public transport route to the South West?

Economic Context

Wealth

Median resident earnings along this corridor are £33,401, which is relatively high for the South East.

Priority Industrial Sectors






The priority industrial sectors on this corridor are:

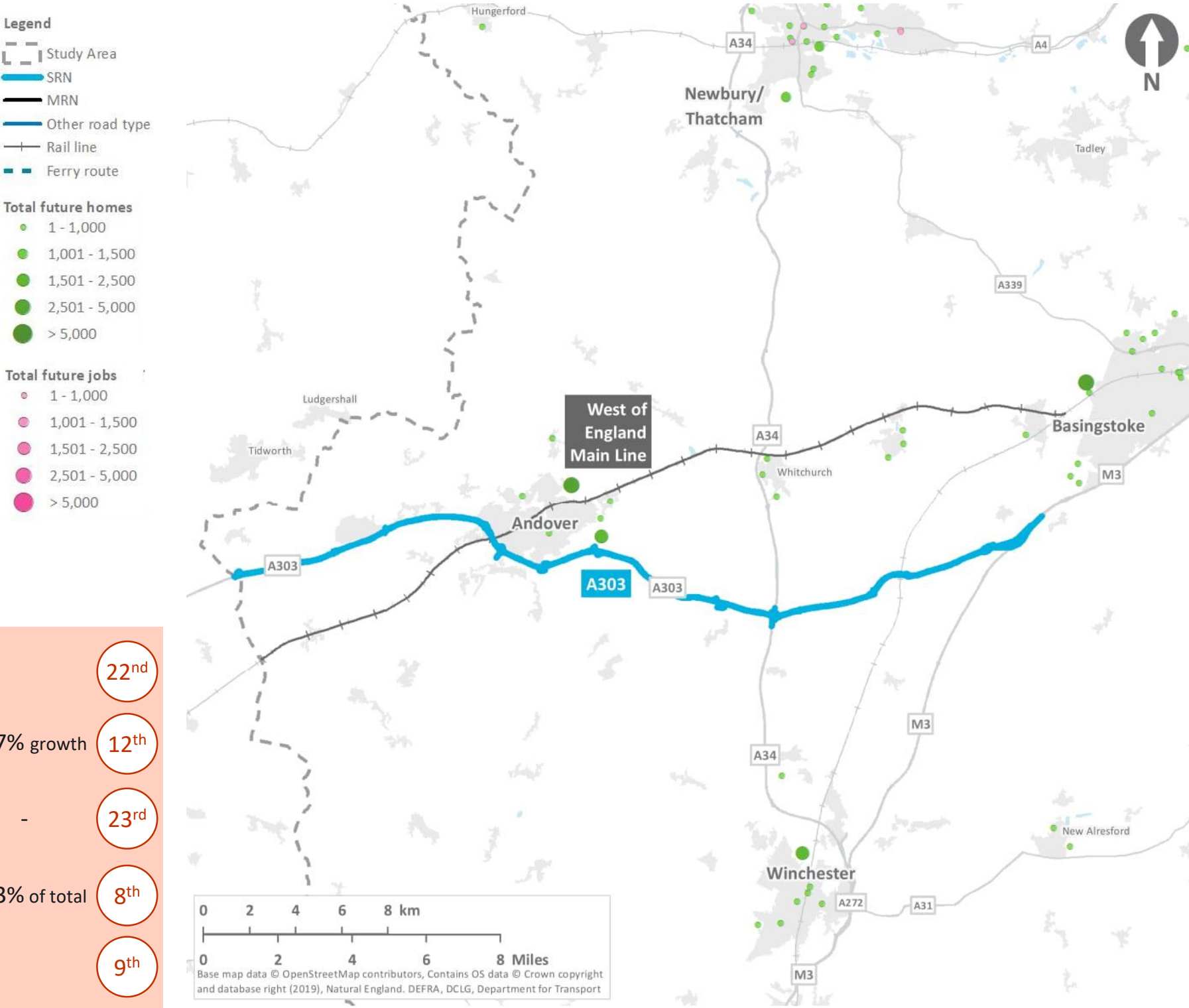
- Advanced manufacturing;
 - Aerospace and defence;
 - Digital and creative;
 - Engineering;
 - ICT and digital media;
 - Low carbon;
- Marine and maritime;
 - Pharmaceuticals;
 - Professional and business services;
 - Transport and logistics businesses; and
 - Visitor economy.

13% of jobs on this corridor are in priority sectors, which is above average for the South East area.

Development

Relatively large residential developments are expected on the outskirts of Andover and Basingstoke. Very little employment growth is anticipated in this corridor (according to data provided by the local planning authorities in this area). This suggests the residential developments in these areas could result in higher levels of outward commuting for these towns. It should be noted that some housing data may be underreported as not all local plans have been adopted by all planning authorities on this corridor.

	Population (2018)	300,898		22 nd
	Planned homes (2018 to 2035)	21,830	↑ 17% growth	12 th
	Planned Jobs (2018 to 2035)	No data	-	23 rd
	Priority Sector Jobs (2017)	18,485	13% of total	8 th
	Median earnings (2018)	£33,401		9 th



Social Context

Deprivation

There are no significant pockets of deprivation on or near to this strategic corridor.

Education

38% of the population on this corridor has at least one National Vocational Qualification at level 4 or above, which is below average for the South East area.





Safety

There was one cluster of incidents resulting in people being Killed or Seriously Injured during the period 2015-17 where the A34 intersects with the A303. There was also a cluster in Andover Town Centre (to the north of the A303 highway).

Housing Affordability

Although high prices are relatively high on this corridor, earnings are also high, meaning housing is relatively affordable for residents who live on this corridor.



	Deprived areas (2018, England)	4%	21 st
	Highly educated population (2018, % NVQ Level 4 or above)	38%	17 th
	Average house price (2018, average of corridor's districts)	£302,893	14 th
	Housing affordability ratio (House price / earnings)	9.1	5 th

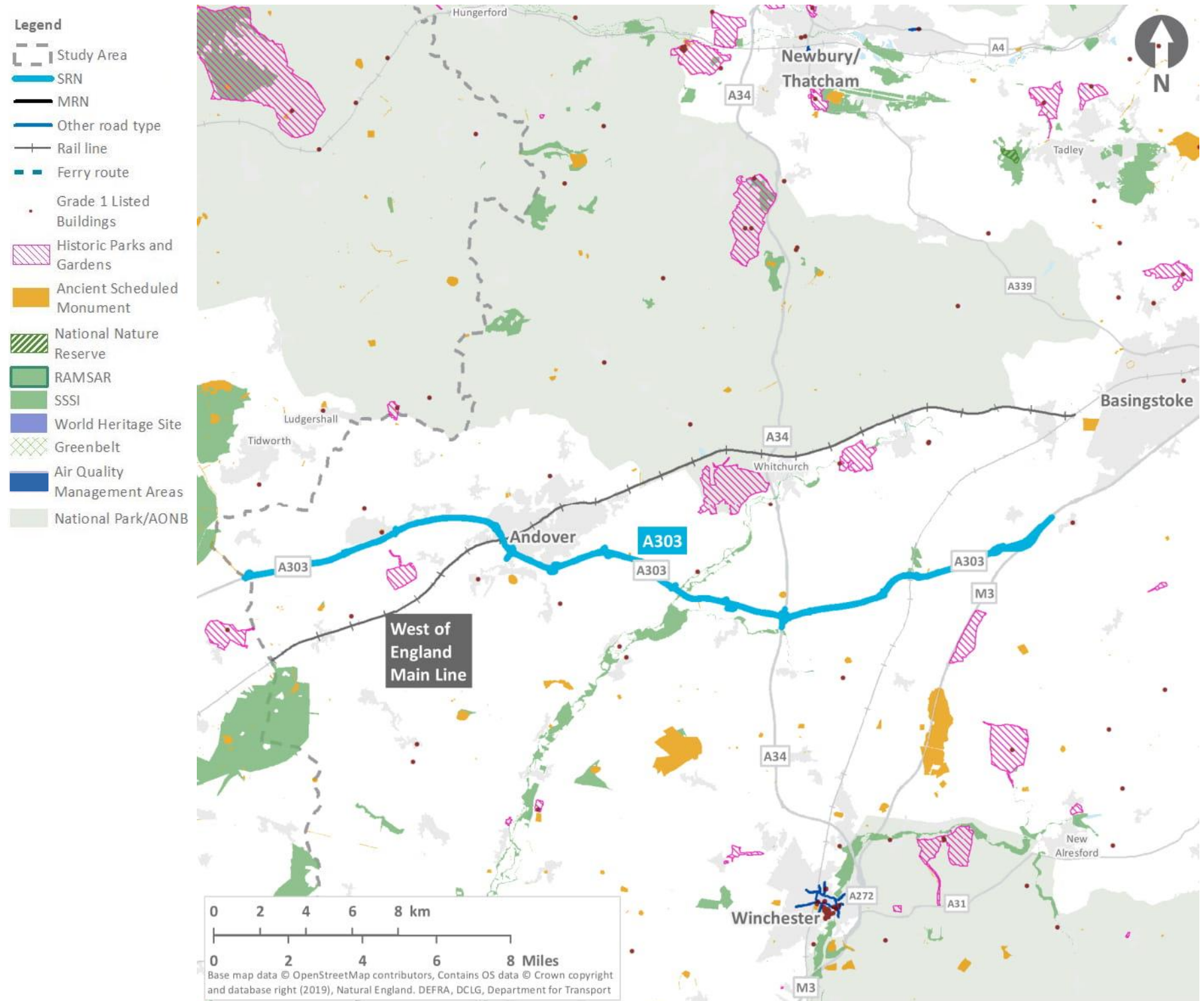
Environmental Context

Protected Areas

This corridor passes close to the North Wessex Downs and several historic parks and gardens near Whitchurch (the popular historical period drama television series, *Downton Abbey*, is filmed nearby). The corridor also passes close to several protected woodlands (just over the border in Wiltshire).

Air Quality

There are no Air Quality Management Areas on this corridor.



Highways

Demand

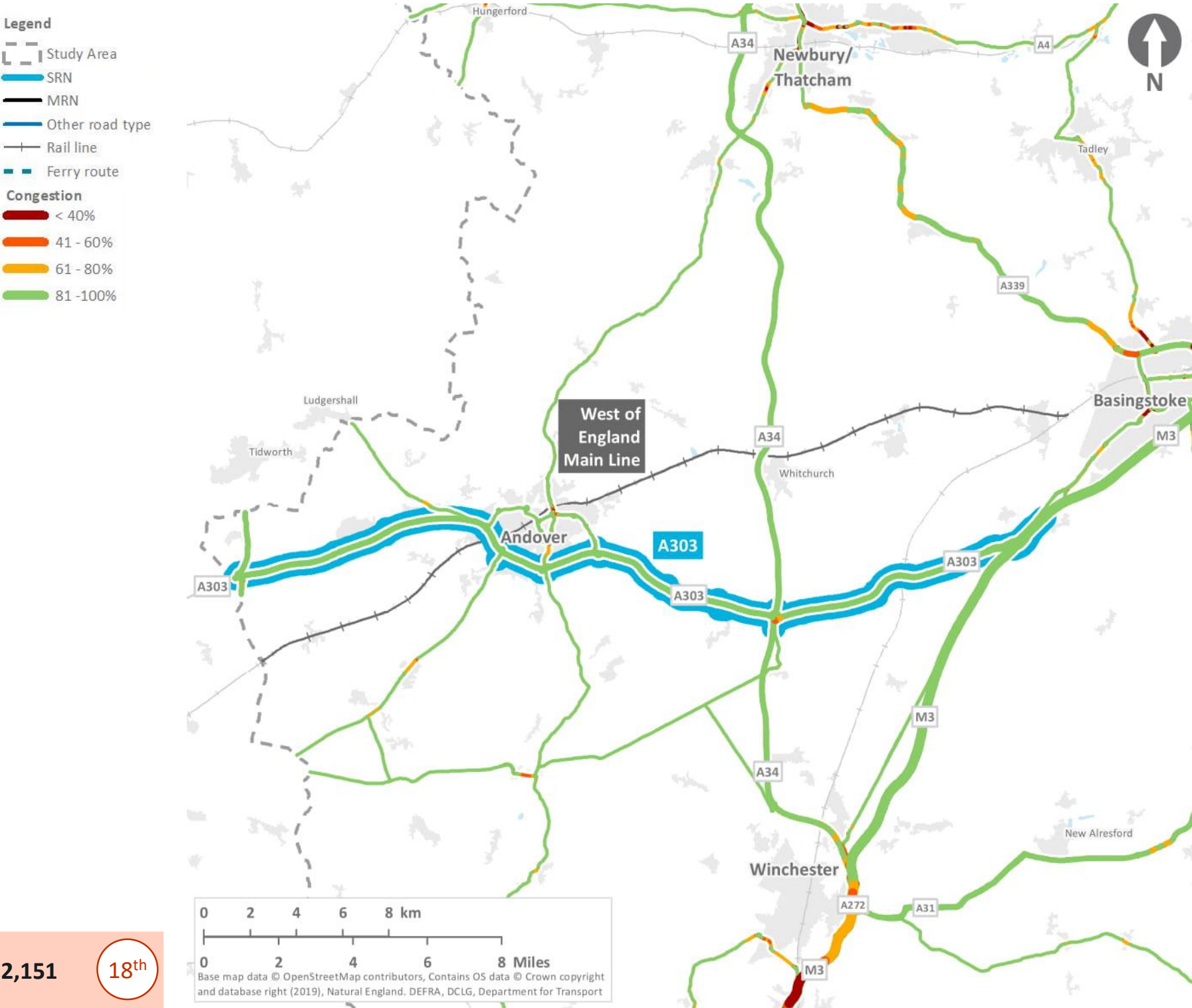
It is estimated that this corridor carries 2,151 vehicles per hour on its busiest section during the AM peak.


Issues and Opportunities

This corridor has relatively few issues with congestion. Journey times on the A303 during morning peak hours are comparable to journey times during the quietest periods of the day.

Enhancements

Highways England is promoting a major scheme to dual the **A303 at Stonehenge in Wiltshire** (through a new tunnel), which will aid movements from the South East to the South West. This scheme will also be supported by improvements to the A303 west of Stonehenge, which together aim to provide a complete expressway between Basingstoke and Taunton.



 Peak hour highway demand
(Vehicles/hour on busiest section)

2,151

18th

Railways

Issues and Opportunities

The West of England Main Line faces similar challenges to the South Western Main Line, which merges with this corridor at Basingstoke. Unusually for the South East region, this railway is not electrified. Indeed, this railway carries the only regular diesel-powered train service that serves London Waterloo. This service also runs some distance beyond the South East area as far as Exeter. The key depot serving this route is based outside the South East area in Salisbury, Wiltshire.

Most of the radial passenger rail services on this corridor terminate at London Waterloo. Many of the crowding issues described for the M3/M27/M271/A33/A326/South Western Main Line also apply here.

Enhancements

The current South Western Railway franchisee is planning to improve journey times on the **West of England Main Line**, although the principal beneficiaries of this improvement will be towns and cities to the west of Andover.

This corridor will also benefit from planned capacity improvements on the **South Western Main Line** further in towards London (as described for the SW1 and SW2 corridors).

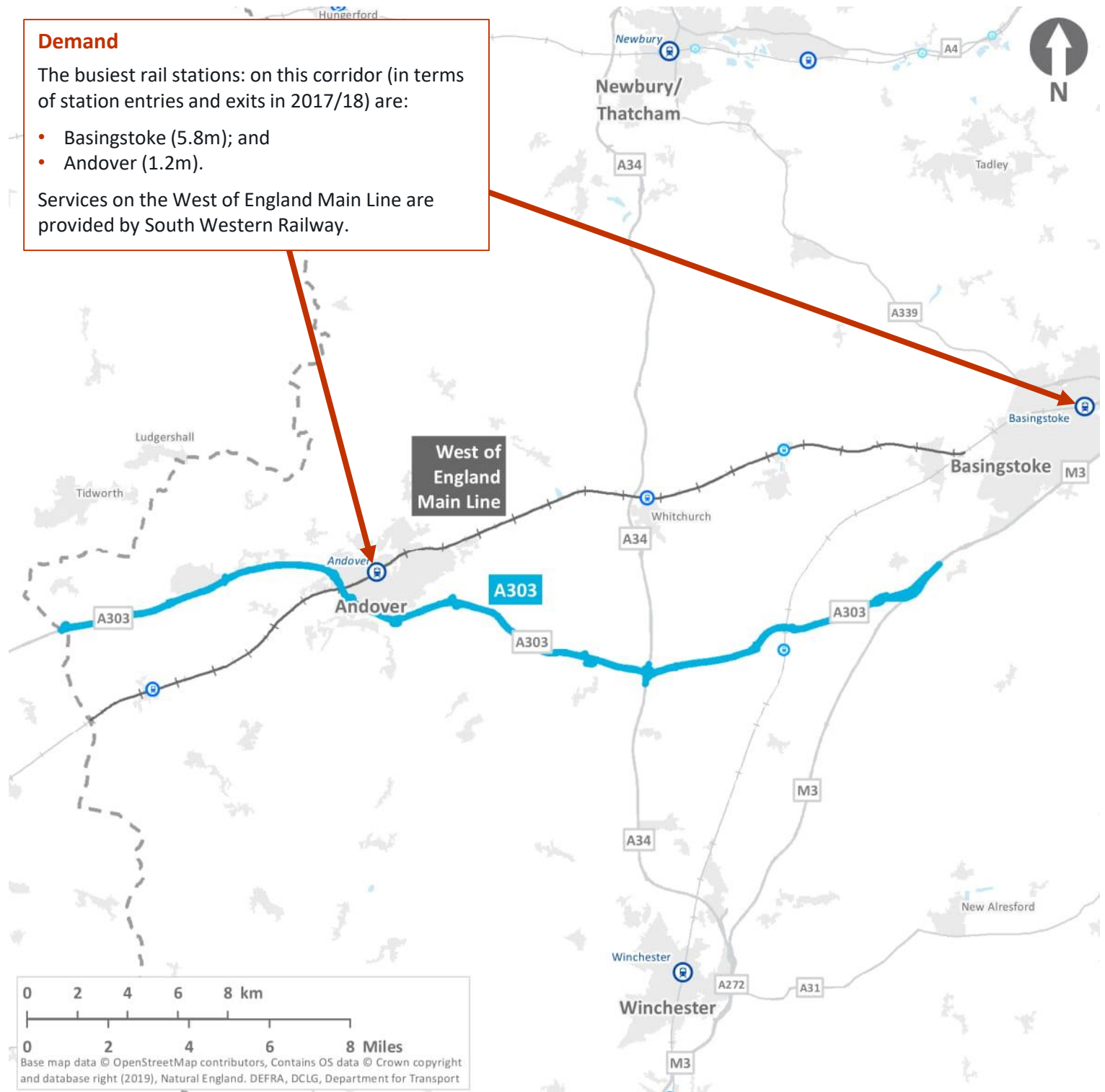


Demand

The busiest rail stations: on this corridor (in terms of station entries and exits in 2017/18) are:

- Basingstoke (5.8m); and
- Andover (1.2m).

Services on the West of England Main Line are provided by South Western Railway.



South West Strategic Radial Corridor SW7

M4/Great Western Main Line/Reading – Taunton Line (Newbury – Slough)

Description

The M4/Great Western Main Line Corridor connects the key population centres and economic hubs in Berkshire to London. It also directly serves Heathrow Airport – the busiest airport in Europe – and provides important east-west connectivity between London, the Thames Valley, South West England and Wales.

This corridor is home to a large number of global businesses, which benefit from fast and easy access to Heathrow Airport. Several major economic hubs on this corridor (e.g. Slough) are net-importers of labour, which is relatively rare in the South East.

Heathrow Airport is developing a major scheme to build a third runway for the airport, which risks generating additional demand on the major highways that serve the airport.

Significant investment is currently being delivered in this corridor through projects such as Crossrail, Great Western Railway Modernisation Programme, and the M4 Smart Motorway. Network Rail is also developing plans for a new western rail link to Heathrow Airport, which would enable direct services between Heathrow, Reading and Slough.

The key issues affecting this corridor are:

- **Significant variations in wealth across the corridor:** . There is significant wealth disparity along the corridor, with several pockets of deprivation. For example, resident earnings in Slough are £31,388 whereas they are £40,373 in Wokingham.
- **Congestion on the M4:** The M4 suffers from significant congestion on this corridor, particularly between Reading and the M25. Heathrow's planned expansion could add additional pressure to the highway network.

The key opportunities to consider for this corridor are:

- **Electrification of the Great Western Main Line:** Should the electrification of this railway be extended to include the Thames Valley branch lines (including Basingstoke – Reading) and/or Oxford?
- **Crossrail:** How will the benefits of this new cross-London service (the “Elizabeth Line”) change travel patterns on this corridor?

Economic Context

Wealth

Median resident earnings along this corridor are £35,506 which is among the highest for the strategic corridors in the South East area. However, there is significant variation in wealth along this (long and diverse) corridor. For example, resident earnings in Slough are £31,388 whereas they are £40,373 in Wokingham.

Priority Industrial Sectors

The priority industrial sectors on this corridor are:

- Corporate (Headquarter operations, etc.);
- Foreign-owned businesses; and
- Technology/IT-based employment.

13% of jobs on this corridor are in priority sectors, which is above average for the South East area.

Development

Significant housing developments are planned in the Newbury/Thatcham, Reading and Maidenhead areas. Employment development along this corridor is expected to be concentrated in Reading and Maidenhead.



	Population (2018)	789,727		11 th
	Planned homes (2018 to 2035)	56,377	↑ 17% growth	9 th
	Planned Jobs (2018 to 2035)	20,694	↑ 5% growth	21 st
	Priority Sector Jobs (2017)	58,950	13% of total	7 th
	Median earnings (2018)	£38,506		4 th

Social Context

Deprivation

This corridor is slightly below the South East average in terms of the number of deprived areas, however, there are significant clusters of deprivation in Reading (particularly in the south of the town) and Slough.

Education

Half of the population on this corridor have at least one National Vocational Qualification at level 4 or above, making it the most highly educated corridor in the South East area.

Safety





There were several clusters of incidents resulting in people being Killed or Seriously Injured on this corridor during the period 2015-17, notably at the eastern end of the M4 near Slough. There are also several clusters within urban areas served by this corridor (but relatively few on the M4 motorway).

It should be noted that some of the road safety data for this area is understood to be underreported, so the actual position may be more serious than presented on this map.

Housing Affordability

House prices are particular high on this corridor, and while earnings are also high, housing on this corridor is not particularly affordable for the residents who live in this area.



	Deprived areas (2018, England)	12%	13 th
	Highly educated population (2018, % NVQ Level 4 or above)	50%	1 st
	Average house price (2018, average of corridor's districts)	£370,510	3 rd
	Housing affordability ratio (House price / earnings)	10.4	17 th

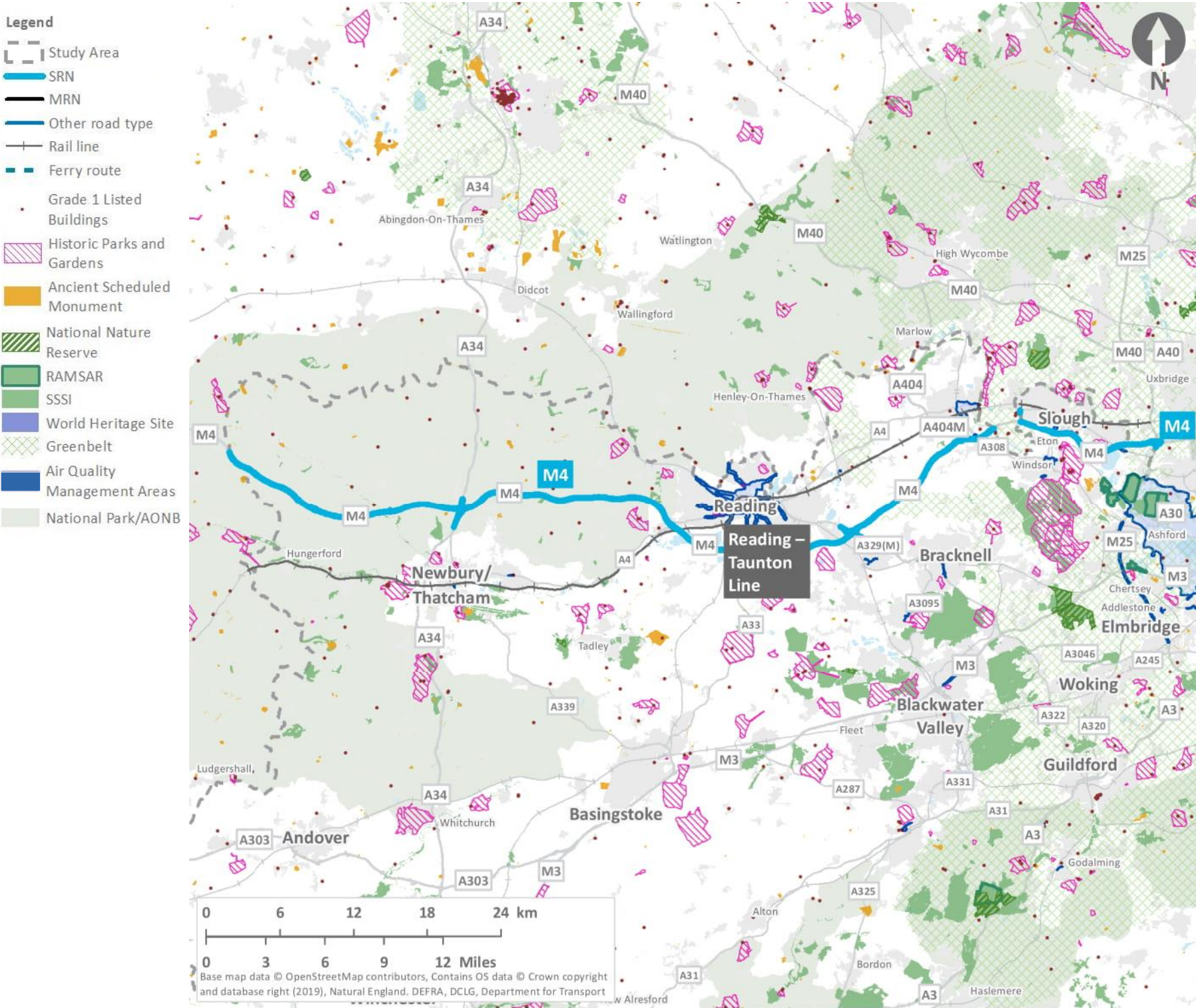
Environmental Context

Protected Areas

The western end of this corridor passes through the North Wessex Downs Area of Outstanding Natural Beauty, while at its eastern end this corridor enters the London Green Belt.

Air Quality

There are several Air Quality Management Areas on this corridor in Reading, Maidenhead, and Windsor.



Highways

Demand

It is estimated that this corridor carries 6,177 vehicles per hour on its busiest section during the AM peak.

Issues and Opportunities

There is significant congestion on this corridor, notably in two areas. The first is between Junction 4b (Thorney/M25) and Junction 6 (Tuns Lane/Slough/Windsor) and the second is between Junction 10 (Winnersh/Wokingham) and Junction 12 (Theale/Reading East). In both of these locations the AM peak speed is less than 40% of the free flow night-time speed.

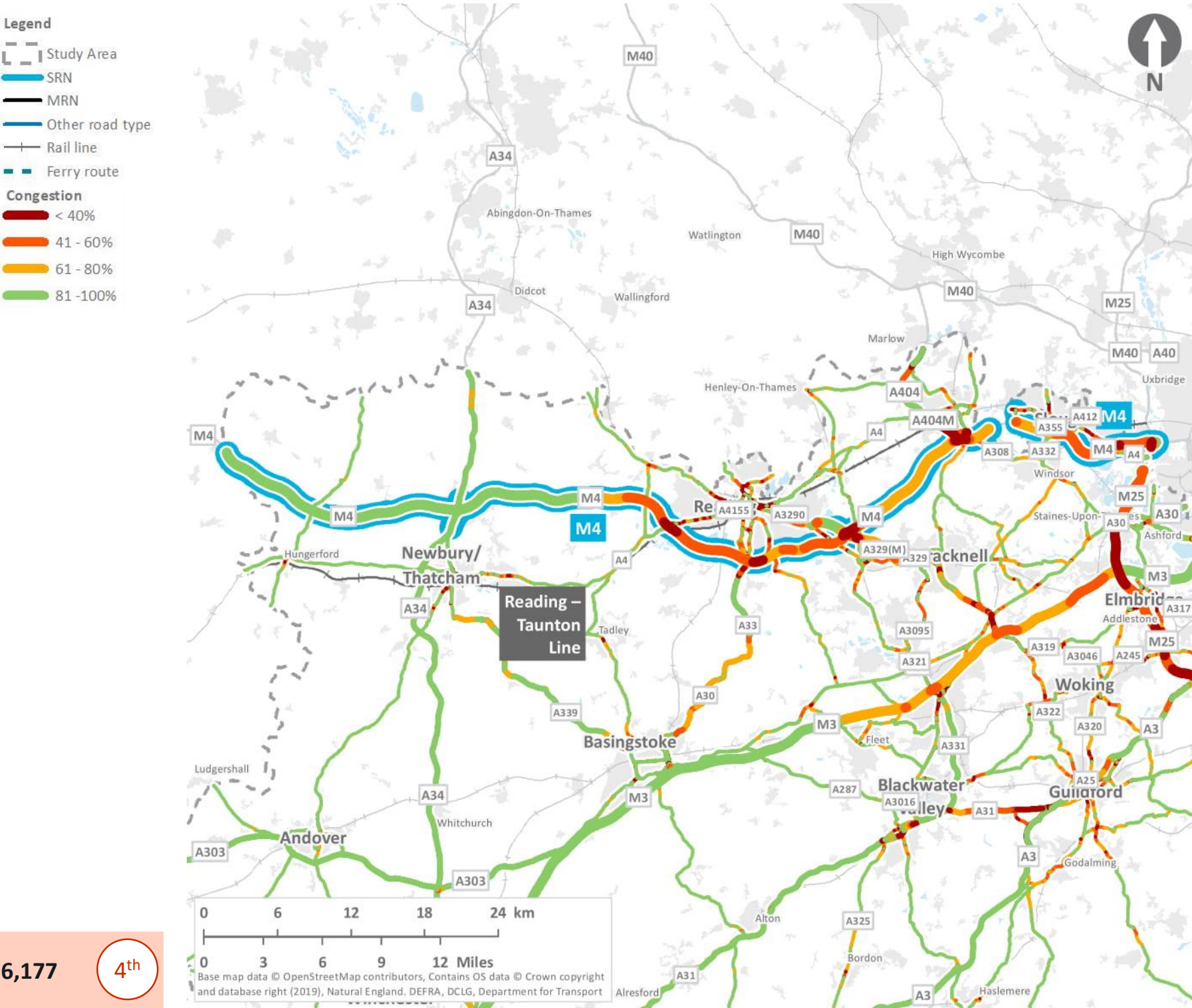
The Highways England **London to Wales Route Strategy** highlights several serious road safety and air quality concerns on the M4, particularly between Reading and the M25.

Enhancements

Highways England is in the process of upgrading the **M4 to a Smart Motorway between Junction 4b and Junction 12**. This should help to ease congestion along this section of the road (although not necessarily at junctions), particularly in the Slough and Reading areas, where traffic problems are most acute.

Reading Borough Council is developing proposals for a **new Thames river crossing** to the East of Reading. This has been identified as a priority Large Local Major scheme by Transport for the South East.

The Royal Borough of Windsor and Maidenhead and Thames Valley Berkshire Local Enterprise Partnership are developing plans to improve several junctions around **Maidenhead town centre**, including at the A308(M)/A308/A330/The Bingham's roundabout, which is a major junction on this corridor.



Peak hour highway demand
(Vehicles/hour on busiest section)

6,177

4th

Railways

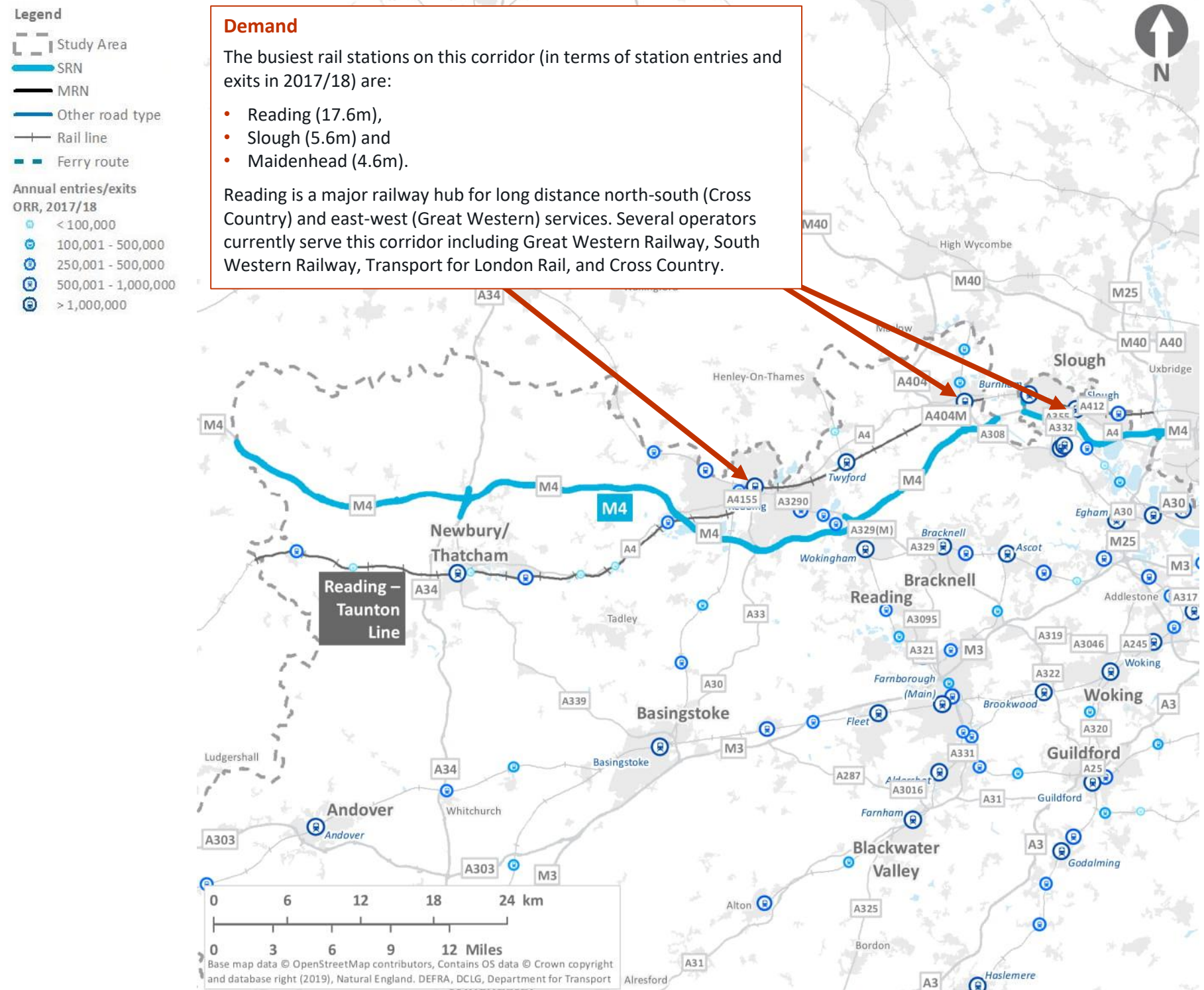
Issues and Opportunities

The Great Western Main Line is one of the busiest railway corridors in the South East area. This corridor has seen significant improvements in recent years. Looking further ahead, this corridor is expecting to benefit from a new railway between Slough and Heathrow Airport (Western Rail Access to Heathrow). Some of the branch lines serving Henley-on-Thames, Marlow/Bourne End, and Windsor are currently unelectrified, which presents some operational challenges now that most commuter rail services on this corridor have been converted to electric trains.

Most of the radial passenger rail services on this corridor terminate at London Paddington and call at Reading. According to a Department for Transport survey held in Autumn 2018, London Paddington station recorded the highest level of passengers standing on arrival at this station during the AM peak at 20.3%. The same survey also found that 3.2% of passengers arriving in Reading during the AM peak were forced to stand – an increase compared to the previous year’s survey. However, this level of crowding should start to ease on this route as new rolling stock and a higher frequency timetable come into operation over the next year.

Enhancements

The **Great Western Railway**, Reading – Taunton Line, and South Wales Main Line have benefitted from significant investment in recent years, which has delivered electrification of the route as far as Newbury, Chippenham and Cardiff. This has enabled the introduction of bi-mode intercity and electric commuter rolling stock on this corridor, which will soon deliver faster journeys between London and the West of England. Additionally, **Crossrail (“Elizabeth Line”)** services are being extended as far as Reading, which will provide direct services between Reading and key stations in Central London (e.g. Bond Street, Liverpool Street, and Canary Wharf). Looking further ahead, Network Rail is promoting a **Western Rail Access to Heathrow** scheme, which will connect Heathrow Terminal 5 with Slough (enabling journeys between Heathrow, Reading, and other Thames Valley towns).



South West Strategic Radial Corridors

International Gateways

International Gateways

There are several key international gateways in this part of the South East, including the busiest international airport in the UK (and Europe) and one of the largest ports in the South East.

Issues and Opportunities

Heathrow Airport – the second busiest international airport in the world – is set to grow significantly as a third runway is developed to the north west of the current site. The promoters of this scheme are required to ensure a high proportion of journeys to/from the airport are undertaken by public transport, which will require investment in public transport options and demand management measures.

Portsmouth International Port attracts large volumes of traffic (including freight) via the M275, which runs through the Portsmouth urban area and has an impact on local air quality and traffic.

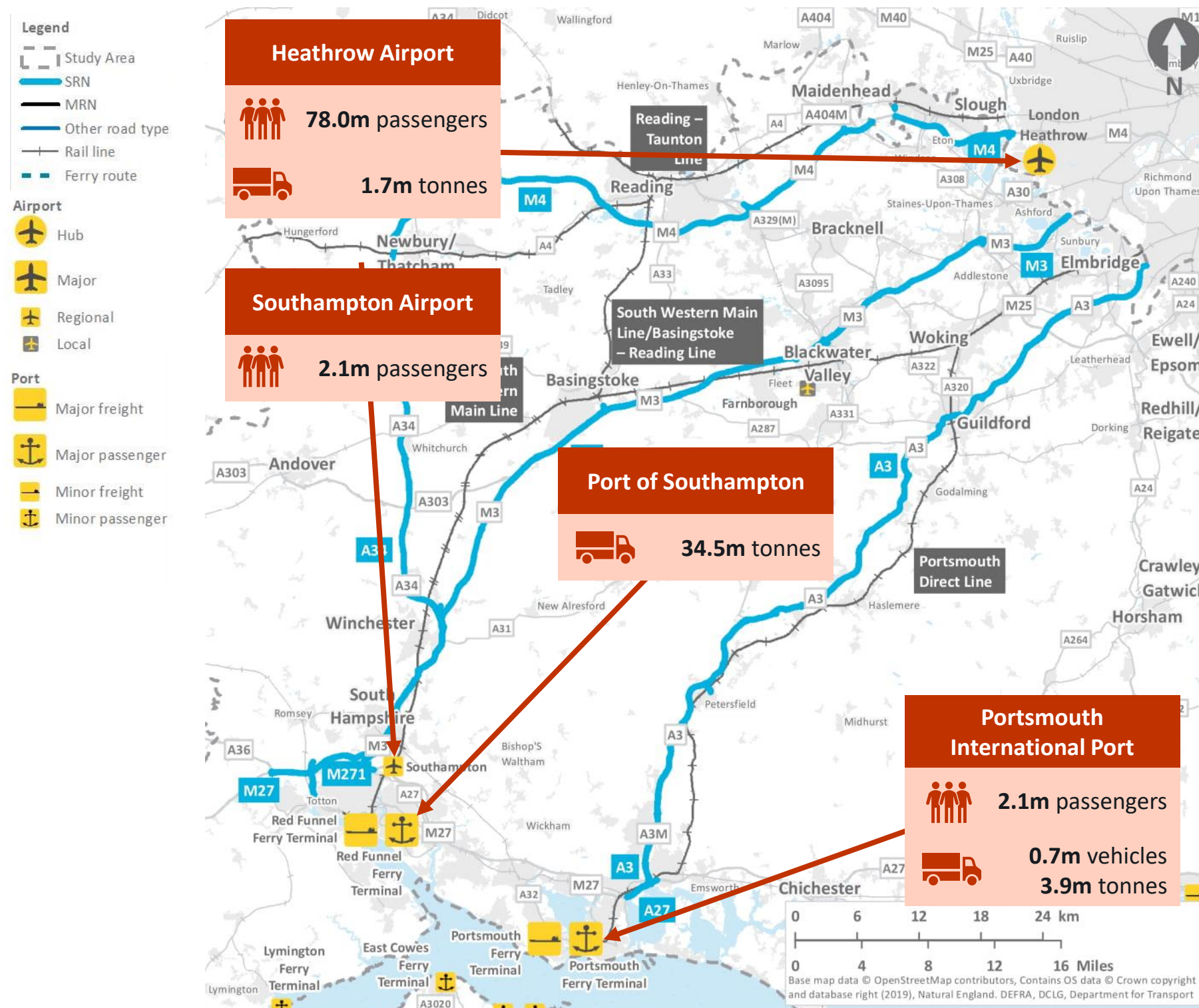
The **Port of Southampton** has published a Master Plan that sets out an ambition to expand the port by developing a site to the south of the River Test. This area is currently served by a freight railway spur and the A326 road, which need investment to support this growth. There are also concerns about air quality due to freight traffic accessing Southampton Port.

Enhancements

Heathrow Airport's growth will be supported by investment in the **M4 Smart Motorway** and the commencement of **Elizabeth Line** services when **Crossrail** is completed. It will also be supported by the **Western Rail Access to Heathrow** scheme if this scheme is approved by the Department for Transport.

The **Port of Southampton's** expansion will likely strengthen the case for several improvements in the Southampton area, including the **A326**, **M27** and **M3 (Smart Motorways)**, and **M3 Junction 9 (A34)** as well as improvements to the local **freight railway network**.

Looking further ahead, the **Southern Rail Access to Heathrow Airport** scheme could be utilised to provide direct services between Southampton and Heathrow.



Steer

28-32 Upper Ground

London SE1 9PD

+44 20 7910 5000

www.steergroup.com

marketing@steergroup.com

steer