

Regional Evidence Base

Part 3

Major Road Network and Large Local Major Scheme Priorities

Western Gateway

Sub-national Transport Body

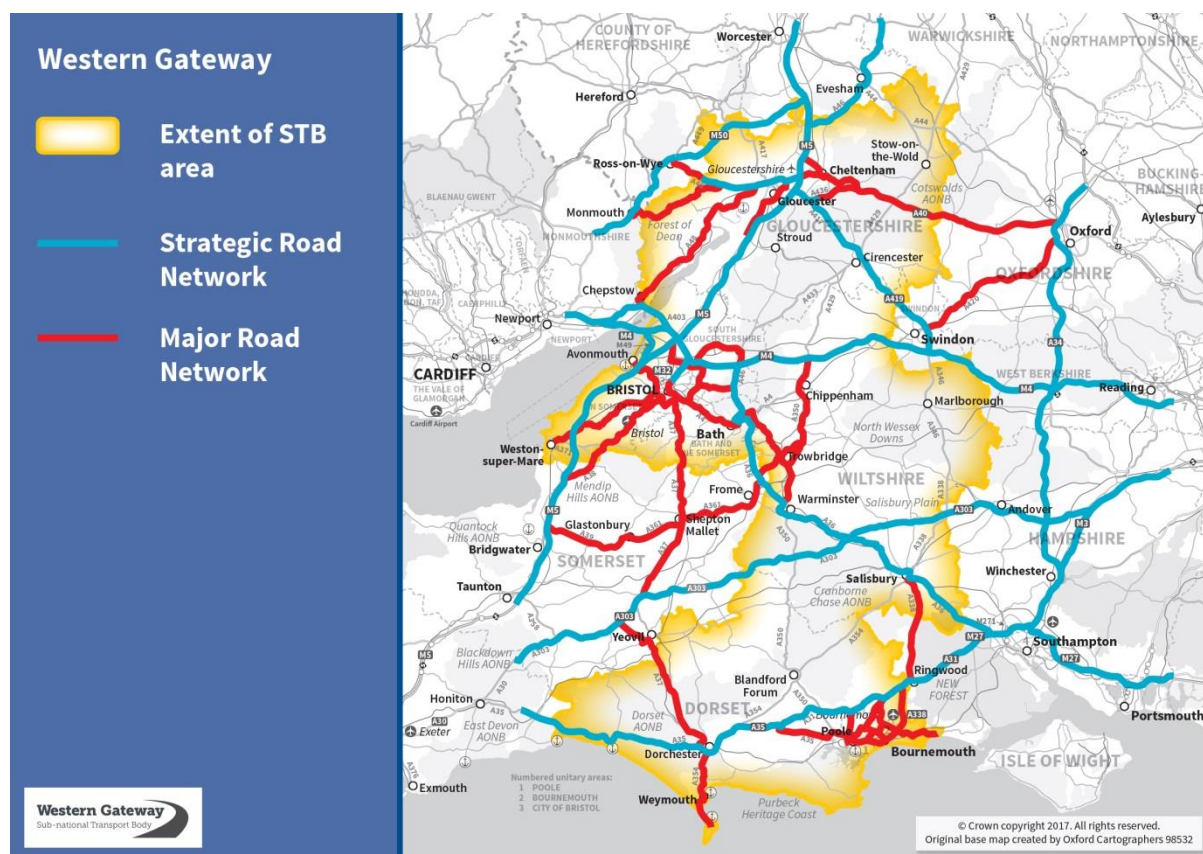


12.0 Major Road Network and Large Local Major Scheme Prioritisation

Introduction

- 12.1 Government is committed to creating a Major Road Network (MRN). The MRN will form a middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the national Strategic Road Network (SRN) managed by Highways England and the rest of the local road network managed by Local Authorities. **Figure 12.1** illustrates the MRN and SRN network within the Western Gateway area.

Figure 12.1 - MRN and SRN network within the Western Gateway area



- 12.2 The National Roads Fund will be a dedicated funding pot for scheme improvements on the MRN, SRN and Large Local Major (LLM) programme from 2020/21. In December 2018 the Department for Transport (DfT) published guidance outlining the process for local authorities to submit bids for both the MRN and LLM funding. The guidance also outlined the role of Sub-national Transport Bodies, to plan and prioritise investments in a way which makes best use of the National Roads Fund.
- 12.3 There are five central objectives for MRN schemes including:
- Reducing congestion
 - Supporting economic growth and re-balancing
 - Support housing delivery

- Supporting all road users including public transport, pedestrians, cyclists and disabled people
- Supporting the Strategic Road Network

12.4 The types of schemes which would be considered for MRN funding include:

- Bypasses
- Missing Links
- Major structural works
- Major junction improvements
- Use of smart technology including Vehicle Activated Signs
- Packages of improvements including: safety, road widening, junction improvements

12.5 MRN schemes should cost in the region of between £20m to £50m. Critically schemes need to be delivered by April 2025. LLM schemes should cost over £50m. Only those LLMs that could start construction within the first five year National Roads Fund period will be prioritised.

Prioritisation Process

- 12.6 The call for schemes commenced from January 2019. A locally developed pro-forma was produced and local authorities were asked to submit schemes they wanted to promote through this funding opportunity. Due to the infancy of the Western Gateway partnership (the first formal Board Meeting took place on the day the MRN Guidance was published), it was considered too premature to engage with MPs and third parties for new schemes. As each local authority had an adopted Local Plan and Local Transport Plan, the process followed in developing those plans would have included a significant degree of consultation with the relevant local stakeholders. It was therefore considered prudent at this stage of the process to only consult with Local Authorities. MPs and stakeholders were to be engaged, but at a later date for views on the schemes prioritised and any schemes to be considered outside the initial five year funding window.
- 12.7 Ahead of the REB being completed officers identified a high-level appraisal process designed to assess compliance of the proposed schemes against the objectives of the MRN guidance. To support this strategic fit assessment a second set of criteria was used to determine scheme deliverability. By assessing both elements each scheme was plotted onto a prioritisation matrix. The outcome of this initial assessment provided the basis of information presented to the Western Gateway Board in March 2019.
- 12.8 Each criteria used within the assessment process provided a score between +3 to -3 depending on the scale of impact. Following a debate by the Board, officers were instructed to review the appraisal criteria initially used to better reflect the priorities of the Gateway area. A dedicated discussion took place with Board members at the end of March 2019 to finalise the appraisal criteria adopted.

12.9 Following this meeting, the initial appraisal process was updated and a weighting system was introduced to better reflect the Western Gateway objectives. **Figure 12.2** outlines the revised Strategic Context section of the appraisal process.

Figure 12.2 - Revised Strategic Context assessment criteria

Objective	Criteria	Weighting	Potential Top Criteria Score	Potential Top Objective Score
Reducing Congestion	Alleviate congestion	2	6	9
	Take account for impacts on air quality, biodiversity, noise, flood risk, water quality, landscape and cultural heritage sites	1	3	
Support Economic Growth & Rebalancing	Industrial Strategy: Supports regional strategic goals to boost economic growth	1	3	9
	Economic Impact: Improve ability to access new or existing employment sites	1	3	
	Trade & Gateways Impact: Improve international connectivity	1	3	
Support Housing Delivery	Support the creation of new housing developments by improving access to future development sites and boosting suitable land capacity	3	9	9
Supporting All Road Users	Delivering benefits for public transport and non-motorised users, including cyclists, pedestrians and disabled people	1	3	3
	Safety Benefits: Ability to reduce the risk of deaths/serious injuries for all users of the MRN			
Supporting the SRN	Improved end to end journey times across both networks	1	3	3
	Improved journey time reliability			
	Improved SRN resilience			

- 12.10 As deliverability was considered critical it was agreed extra weight should be awarded to schemes with an early construction start date. **Figure 12.3** outlines the deliverability criteria used within the deliverability section of the appraisal process.

Figure 12.3 – Deliverability scoring

	Points	
Scheme start date	3	Construction start date before April 2023
	2	Construction start date before April 2025

- 12.11 Applying these changes to the appraisal process and reviewing additional information provided by officers impacted the schemes initially being prioritised.
- 12.12 Following broad agreement from Senior Officers for the updated scheme priorities, contact was made with each of the lead officers promoting the scheme(s) to confirm: that their schemes had been identified as a Sub-national priority; and seek assurance that they wanted to continue to promote the scheme as a regional priority. This included confirmation of the construction start date, their ability to submit the relevant business case by the July 2019 submission date and being able to provide a minimum 15% local match funding contribution.
- 12.13 On the 26th April 2019 an updated prioritised scheme list was agreed by officers and subsequently shared with the Board after the local elections in May 2019 respecting purdah. The prioritised schemes were subsequently ratified by the Board in June 2019 following the completion of the REB and feedback from the Western Gateway Business and Transport Forum.
- 12.14 The issue of MP engagement up until this point was not consistent across the Gateway area. The Local Government reorganisation for Dorset and BCP Councils, along with Local Elections in May and subsequent changes to several local council administrations (including the appointed of new members on the Western Gateway Board) delayed the process of engagement. Each local authority wanted to engage their local MPs individually as the Western Gateway partnership was not considered mature enough to provide this role.
- 12.15 In response to this issue, where MPs have identified schemes they wanted to promote (other than the ones already identified by Local Authorities) these have been added to the list of schemes to be considered through the production of the Strategic Transport Plan for funding post 2025.

Long list of schemes

- 12.16 The outcome of the initial call for schemes identified a long list of schemes including 15 MRN schemes (**Figures 12.4 - 12.6**) and 13 LLM schemes (**Figures 12.7 – 12.9**).

Figure 12.4 – Long list of MRN Scheme Priorities (February 2019)

ID	Promoting constituent authority	Scheme name
A	Bath and North East Somerset Council	Manvers Street - Reconstruction
B	Bournemouth Borough Council (now BCP Council)	A338 Wessex Fields Phase 2
C	Bristol City Council	Saint Philips Causeway Viaduct (Spine Road complex) and associated rail over, road and water bridges
D	Dorset Council, with BCP Council and Dorset LEP	A348 Ringwood Road Corridor Transport Improvements Package
E	Dorset Council	A354/A35(T) Junction Package
F	Gloucestershire County Council	A4019/A4013/A40 corridor
G	Gloucestershire County Council	A38 St Barnabas Corridor
H	North Somerset Council	A38 Bristol Airport access improvement
I	Wiltshire Council	A338 Southern Salisbury Improvements
J	Wiltshire Council	A350 Chippenham Bypass Improvements – Phases 4 & 5
K	Wiltshire Council	M4 J17 Improvement
L	Wiltshire Council	Staverton Diversion
M	South Gloucestershire Council	A432 Widening and Junction Improvements
N	South Gloucestershire Council	A4174 Ring road capacity improvements
O	South Gloucestershire Council	A4174 MOD Roundabout improvements

Figure 12.5 – Spatial distribution of the Long list of MRN Scheme Priorities (February 2019)

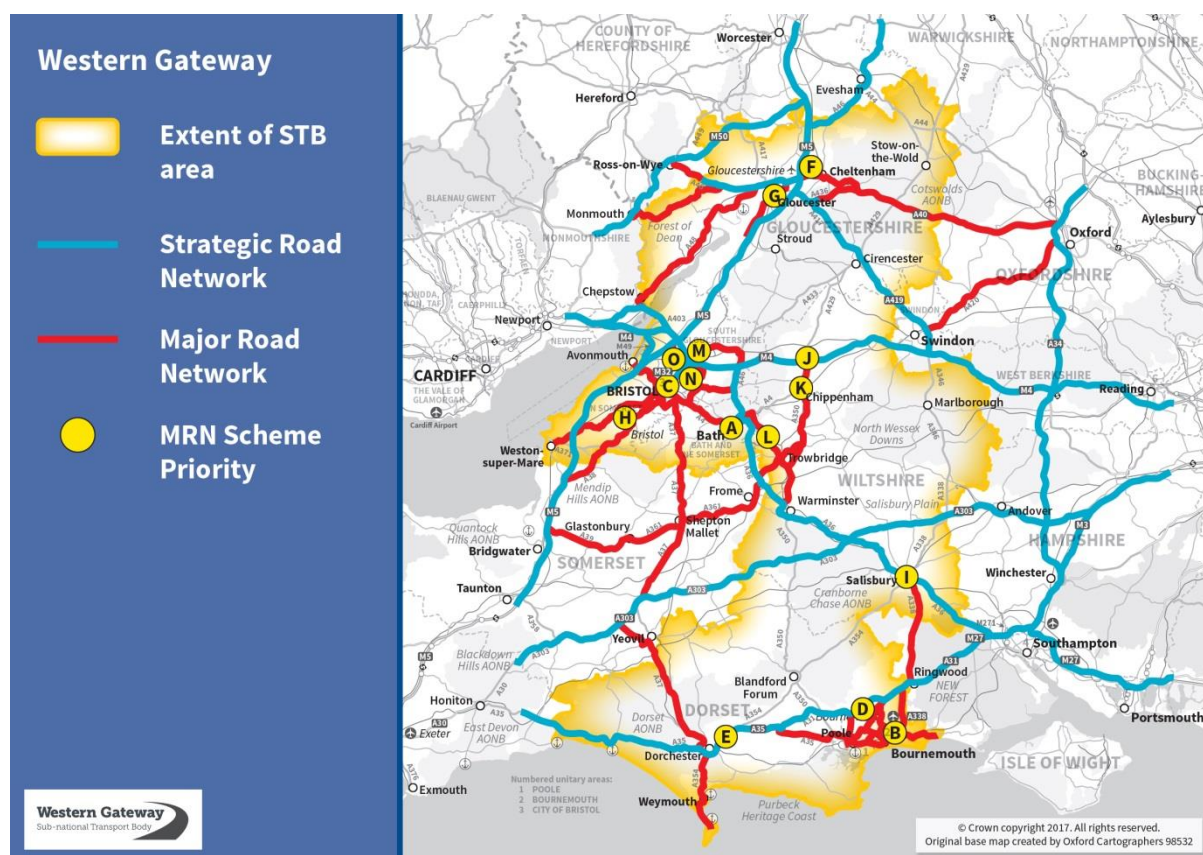


Figure 12.6 - Brief summary for each promoted MRN scheme.

ID	Scheme Name	Scheme summary
A	Manvers Street - Reconstruction	Reconstruction of concrete slabs and resurfacing of the carriageway to provide resilience to the network and maintain economic links and support growth. This road connects both the Bath Bus Station and Railway station
B	A338 Wessex Fields Phase 2	Package of improvements including: safety, road widening, provision of second access to Royal Bournemouth Hospital, junction improvements to enable development of strategic employment site
C	Saint Philips Causeway Viaduct and associated rail over, road and water bridges	Major structural refurbishment and total repainting of the whole complex of this elevated viaduct structure, which consists of 1 km of high speed road dual (50 mph) carriageways, encompassing 3 railway bridges 2 road bridges, one canal bridge and two pedestrian subways. Presentably the complex is subject to a temporary speed reduction to 40 MPH due to structural and safety concerns and condition defects.
D	A348 Ringwood Road Corridor Transport Improvements Package	Package of improvements including safety, key junction improvements, major structural works at Longham Bridge, sustainable transport package and use of smart technology (including VAS).
E	A354/A35(T) Junction Package	Major Junction Improvements/Package of improvements including safety, Use of Smart Technology included VAS. Main arterial route through South Dorset, connecting the SRN with major housing and employment sites in Weymouth and Portland, including Portland Port. This scheme overlaps with the Dorchester Bypass Junction Package including the Stadium Roundabout upgrade and capacity improvements and bus priority measures at A354 Monkton Hill approaching the A35(T)
F	A4019/A4013/A40 corridor	The scheme is in its early development stages. It will build on GCC's Housing Infrastructure Fund (HIF) bid submission for J10 on the M5. The scheme will focus on bus priority improvements on the A4013 and support delivery of the UK Cyber Business Park project on the A40.
G	A38 – St Barnabas Corridor	Package of improvements including: safety and junction improvements.
H	A38 – (Bristol Airport access improvement)	Package of improvements including: safety, road widening, junction improvements. The scheme supports Airport connectivity and housing delivery
I	A338 Southern Salisbury Improvements	The scheme package is an essential component of the Salisbury Transport Strategy (STS) that was adopted as part of the Wiltshire Core Strategy.
J	A350 Chippenham Bypass Improvements – Phases 4 & 5	Dualling the A350 Chippenham Bypass was originally considered and planned for more than 20 years ago. A phased implementation plan was devised and has been delivered. These final stages will complete the dualling and reinforce the strategic importance placed on the A350.
K	M4 J17 Improvement	While the partial signalisation scheme implemented in 2018 has improved journey times and safety through the junction, this was an interim measure only and as a result of background and development growth, journey times are anticipated to worsen in

		the next few years. The scheme will reduce instances of queues occurring on the M4 mainline, minimise delays at the junction and reduce the total amount of collisions and accidents that occur at the junction.
L	Staverton Diversion	The aim of the scheme would be to improve the parallel route (B31015) to the A363 MRN route with the aim of improving journey times on the A363 or designating the B31015 as part of the MRN.
M	A432 Widening and Junction Improvements	Major junction improvement on the A432/A4174 including a package of improvements including widening to reduce congestion and creation of bus lanes.
N	A4174 Ring road capacity improvements	Junction improvements at Wraxall Road, Lyde Green and Kingsfield Roundabouts. The scheme will also facilitate localised traffic growth associated with a potential new motorway junction at M4 Junction 18a
O	A4174 MOD Roundabout improvements	Major Junction improvement, to increase capacity and improve traffic flow and safety for all road users

Figure 12.7 – Long list of LLM Scheme Priorities

ID	Promoting authority	Scheme name
1	Borough of Poole (now BCP Council)	A31 to Poole Link Road
2	Dorset County Council	A350 Blandford to Shaftesbury Corridor Improvements
3	Dorset County Council	Dorchester Bypass Junction Package
4	Gloucestershire County Council	A40 Over to Longford (Walham Link) Improvement Scheme
5	Gloucestershire County Council	M5 Junction 9 and A46 (Ashchurch)
6	Gloucestershire County Council	M5 Junction 10
7	Gloucestershire County Council	M5 Junction 12
8	Gloucestershire County Council	Chepstow Bypass – Beachley and Sedbury
9	Wiltshire Council	A350 Melksham Bypass
10	Bristol City Council	Western Harbour, Highway realignment
11	South Gloucestershire Council	M5 Junction 14 improvements
12	South Gloucestershire Council	A432 Coalpit Heath and Westerleigh Bypass
13	South Gloucestershire Council	A432 Winterbourne & Frampton Cotterall Bypass

Figure 12.8 – Spatial distribution of the Long list of LLM Scheme Priorities

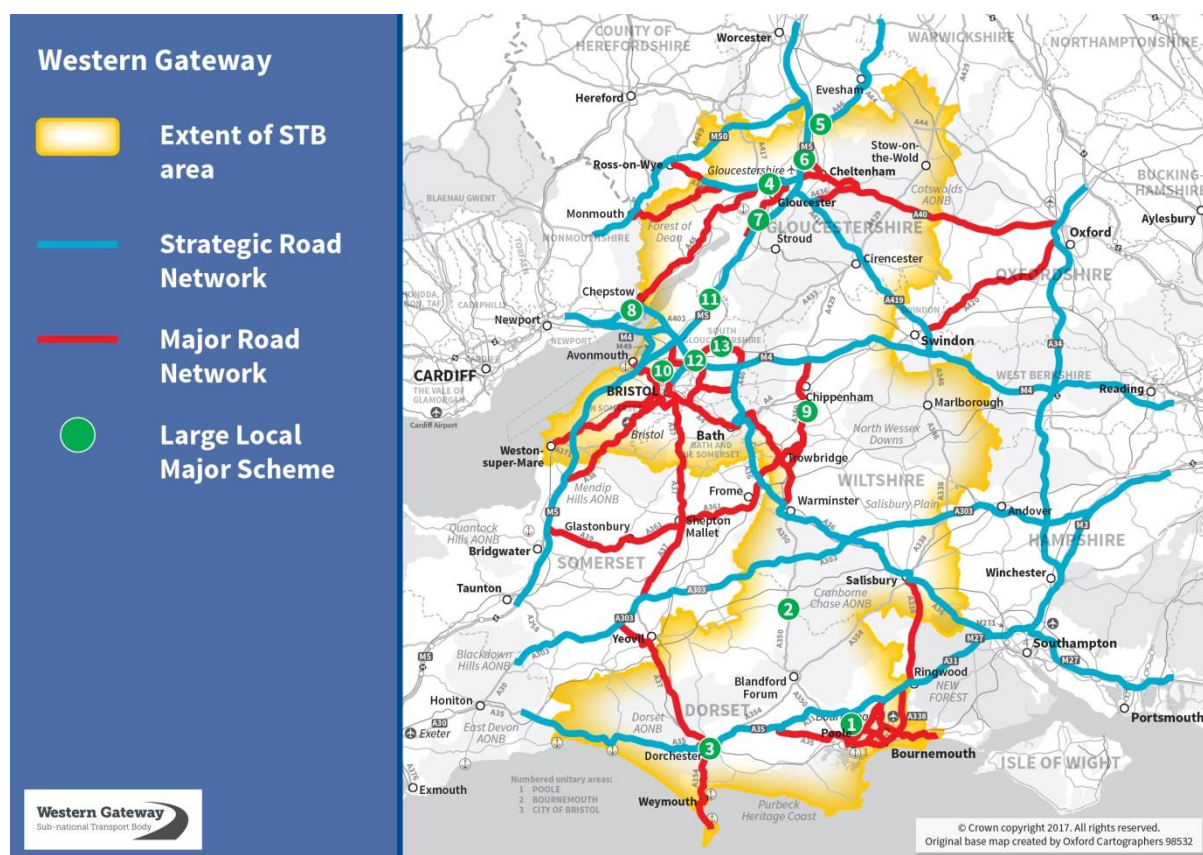


Figure 12.9 - Brief summary for each of the promoted LLM schemes.

ID	Scheme Name	Scheme summary
1	A31 to Poole Link Road	The need for improved links between Poole and the A31 trunk road has been recognised for around 50 years. Congestion issues affect accessibility for residents and employees, and planned growth concentrated around the north of the city region is forecast to increase traffic congestion, with corresponding negative health impacts for residents.
2	A350 Blandford to Shaftesbury Corridor Improvements	Melbury Abbas is a severe pinch point on the most used route between Blandford and Shaftesbury, a critical link in the route between the M4 and the South Coast.
3	Dorchester Bypass Junction Package	Package of improvements including: Junction Improvements at Monkey's Jump, Stadium and Stinsford Roundabouts, a remodelled Max Gate junction, a new access to the North Dorchester development including link road. Bus priority measures and capacity improvements on the A354 MRN approach to Stadium Roundabout from the South to enable a free-flowing network beyond 2026.
4	A40 Over to Longford (Walham Link) Improvement Scheme	Major structural work to provide two lanes in each direction over the Walham Viaduct. A new structure constructed alongside the existing, with associated carriageway construction between Over and Longford junctions.
5	M5 Junction 9 and A46 (Ashchurch)	The scheme proposal is for the significant upgrade to M5 Junction 9 and the realignment of the A46.
6	M5 Junction 10	Package of scheme improvements including: an all-movements M5 Junction 10; a new dual link road and associated junctions linking the new M5 Junction 10 to the west Cheltenham strategic allocation; an expanded Arle Court park and ride site and new site access; and a 'Smart Motorway' upgrade for the stretch of the M5 from J9 to J11a.
7	M5 Junction 12	M5 J12 operates under significant constraint at network peak times resulting in mainline queuing. A major junction improvement is required.
8	Chepstow Bypass – Beachley and Sedbury	This is a cross boundary project on the A48 in Gloucestershire & Monmouthshire. The bypass scheme would remove strategic vehicle movements from Chepstow's urban centre.
9	A350 Melksham Bypass	Bypass scheme to remove a pinchpoint on the corridor reinforcing the strategic importance placed on the A350 to provide north / south connectivity.
10	Western Harbour, Highway realignment	Removal of existing grade separated infrastructure and replacement with at grade system rather than costly maintenance works, to reduce impact of road on surrounding areas, improve walking, cycling and sustainable transport options, free up a significant amount of land for new housing and reduce the long term maintenance cost of the highway network.
11	M5 Junction 14 improvements	Major Junction Improvement- The scheme is identified as required for Transport mitigation for development identified in the Joint Spatial Plan.
12	A432Coalpit Heath and Westerleigh Bypass	Bypass - The scheme is identified as required for Transport mitigation for development identified in the Joint Spatial Plan.

13	A432 Winterbourne & Frampton Cotterall Bypass	Bypass - The scheme is identified as required for Transport mitigation for development identified in the Joint Spatial Plan.
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Outcomes of the scheme prioritisation process

12.7 The Western Gateway was tasked with prioritising MRN and LLM schemes according to the most pressing regional needs. The DfT guidance indicated that up to ten MRN investments priorities should be identified and 2 or 3 LLM priorities. This initial prioritisation process covered the funding period April 2020 to March 2025. Non-prioritised schemes were to be retained and form a future pipeline of schemes for consideration after this initial timeframe.

Major Road Network

12.8 As a Sub-national area we have prioritised 7 MRN schemes with a total funding ask of £179.7 million during the 2020/25 funding window.

12.9 The schemes prioritised will focus on three key policy themes identified through the regional Evidence Base:

- 1 Managing urban vehicle movements within city regions to enable future housing and employment growth
- 2 Improved north / south connectivity within the sub-region improving linkages to the south coast from M4 / M5
- 3 Improved access to Bristol Airport and planned growth hub/corridor

Large Local Majors

12.10 As a Sub-national area we have identified 2 LLM schemes with a total funding ask of £315.8 million during the 2020/25 funding window. The main focus is on transformational schemes intended to form part of a sequenced package of improvements to deliver significant economic growth and improved strategic access.

1. The A350 scheme will resolve a critical pinch-point on a route prioritised by the Western Gateway STB to improve north / south connectivity and complements some of our MRN priorities. This scheme forms part of a package of measures to initially improve access within the northern section of the route. Improvements to the southern section of the route will be prioritised within the next funding round. Improvements to this corridor will fundamentally improve access and enable significant opportunities for growth throughout the Gateway area.
2. The A46 scheme will resolve a critical pinch-point on a route linking the M5 with the M40 and M1. Once completed the corridor will provide an alternative for strategic vehicle movements using the heavily congested Birmingham Box (M40 / M42), as well as improved accessibility to the Trans Midlands Trade Corridor from the Western Gateway area. The route is also identified as a priority corridor by Midlands Connect STB and is essential to the delivery of the recently announced Garden Town at Ashchurch (>10,000 dwellings by 2041).

Future Pipeline of schemes

12.11 **Figures 12.10 and 12.11** briefly summarise why the schemes are not being promoted within this funding round. These schemes along with other ones promoted by local authority members, MPs or stakeholders shall form a pipeline of future schemes.

Figure 12.10 – Pipeline of future MRN Schemes

ID	Scheme	Reason for not promoting scheme at this time
A	Manvers Street - Reconstruction	Highway operation scheme which is not considered a Sub-national priority
C	Saint Philips Causeway Viaduct	Linked more to management of urban traffic within one part of the Sub-national area rather than Sub-national strategic travel movements
D	A348 Ringwood Road Corridor Transport Improvements Package	Scheme narrowly missed out as a Sub-national priority
E	A354/A35(T) Junction Package	Decision to delay promotion of the scheme despite it being prioritised. This decision will enable more time to develop the package, refine costings and work up business cases with key partners including Highways England. Currently Dorset Council does not feel that it would be in a position to submit a suitable quality of Business Case or be sure to secure the required match funding within the required time frame.
F	A4019/A4013/A40 corridor	Scheme not sufficiently developed for consideration at this stage
G	A38 – St Barnabas Corridor	Scheme not sufficiently developed for consideration at this stage It should be noted that this scheme has received support from – • Richard Graham MP
L	Staverton Diversion	Links to MRN not as clear as other schemes – has the potential for a future scheme subject to reclassifying MRN network
M	A432 Widening and Junction Improvements	Scheme narrowly missed out as a Sub-national priority

Figure 12.11 – Pipeline of future LLM Schemes

ID	Scheme	Reason for not promoting scheme at this time
1	A31 to Poole Link Road	Scheme narrowly missed out as a Sub-national priority – scheme is located in an area of environmental sensitivity. Further refinement of the scheme is required. Concerns were also expressed regarding uncertainty of securing the required match funding.
2	A350 Blandford to Shaftesbury Corridor Improvements	Scheme narrowly missed out as a Sub-national priority in this funding round – this scheme will form part of the phase 2 improvements for the A350 north/south connectivity corridor.
3	Dorchester Bypass Junction Package	Decision to delay promotion of the scheme despite it being prioritised. This decision will enable more time to develop the package, refine costings and work up business cases with key

		partners including Highways England. Currently Dorset Council does not feel that it would be in a position to submit a suitable quality of Business Case or be sure to secure the required match funding within the required time frame.
4	A40 Over to Longford (Walham Link) Improvement Scheme	Scheme not sufficiently developed – issues raised over deliverability within the funding window
6	M5 Junction 10	Scheme narrowly missed out as a Sub-national priority. Gloucestershire County Council has submitted a business case for consideration through the HIF process
7	M5 Junction 12	Scheme not sufficiently developed – issues raised over deliverability within the funding window It should be noted that this scheme has received support from – <ul style="list-style-type: none"> • David Drew MP
8	Chepstow Bypass – Beachley and Sedbury	Scheme not sufficiently developed – issues raised over deliverability within the funding window. It should be noted that this scheme has received support from – <ul style="list-style-type: none"> • Mark Harper MP • David Davies MP
10	Western Harbour Highway realignment	Scheme not sufficiently developed – issues raised over deliverability within the funding window
11	M5 Junction 14 improvements	Scheme not sufficiently developed – issues raised over deliverability within the funding window
12	A432 Coalpit Heath and Westerleigh Bypass	Scheme not sufficiently developed – issues raised over deliverability within the funding window
13	A432 Winterbourne & Frampton Cotterall Bypass	Scheme not sufficiently developed – issues raised over deliverability within the funding window

Other schemes promoted by stakeholders

12.11 Figure 12.12 briefly summarises schemes which were not considered within 2020/25 funding window, but were subsequently promoted through stakeholder engagement and shall be considered as part the future pipeline of schemes.

Figure 12.12 – Schemes promoted through stakeholder engagement

Scheme Name	Scheme summary
A350 Westbury Bypass	<p>An A350 Westbury Bypass scheme was pursued by Wiltshire (County) Council during the late 1990s and 2000s. Ultimately, a proposed eastern route was refused planning permission at a Public Inquiry in 2009. However, the following issues remain on the A350 through Westbury:</p> <ul style="list-style-type: none"> ○ Delays, queues and unpredictable journey times as a result of high traffic volumes and Heavy Goods Vehicles (HGVs) on the A350, particularly during the morning and evening peak periods; ○ Poor air quality within the town, including within the designated Air

	<p>Quality Management Area (AQMA) in the town centre;</p> <ul style="list-style-type: none"> ○ The severance created by the A350, which acts as a barrier to pedestrian and cyclist movements owing to its high traffic volumes; and ○ A forecast increase in traffic volumes on the A350 as a result of planned development along the A350 corridor. <p>Given the above, Wiltshire Council would look to consider an A350 Westbury Improvement scheme in consultation with the local community and relevant stakeholders including Highways England.</p>
A354 Western Relief Road (Chickerell to Ferrybridge, providing a bypass for the congested A354 corridor through Rodwell and Wyke Regis)	<p>This scheme is being promoted by Richard Drax MP. It was not promoted by Dorset County Council/Dorset Council for consideration because it is considered low value for money, didn't fully resolve the key problem it is intended to address (connectivity to Portland Port), and is subject to significant environmental constraints.</p> <p>The Western Relief Road is a 4.1km bypass linking A354 Ferry Bridge and the B3157 Granby Way. It provides relief for Wyke Regis, a residential part of Weymouth unsuited to the volume of traffic it carries (over 20,000 AADT) and will provide an improved route to Portland Port. The proposed route is in a highly sensitive setting and is covered by numerous landscape and environmental designations. The latest scheme cost is £81M including land purchase and 44% Optimism Bias.</p> <p>This assumes that a surface route would be given development consent, but advice from Natural England and Dorset Council's own Natural Environment team that such is the sensitivity of the setting the only acceptable mitigation is likely to be a bored tunnel. This would bring the scheme cost to over £500M and significantly reduce the BCR.</p>

13.0 Scheme prioritisation key theme - Managing urban vehicle movements

Introduction

- 13.1 Improving metro connectivity was one of the challenges identified from the outset of producing the Regional Evidence Base. The Western Gateway area covers some of the country's most prosperous, fast-growing conurbations, most noticeably the conurbation centred on Bristol, whilst the south coast urban centres in Poole and Bournemouth are benefitting from their own growth and close proximity to the Solent conurbation.
- 13.2 Network capacity constraints in urban centres have resulted in a number of strategic corridors experiencing congestion, which has had a negative impact on productivity and the local environment. As the economy grows, journey time reliability and choice will be critical in travel decisions. If the Western Gateway is to achieve its full potential with respect to delivering housing and employment sites, connectivity enhancements will help to unlock sites by removing transport constraints.
- 13.3 The two city regions of the West of England and Bournemouth, Christchurch and Poole provide 53% of the Western Gateway Areas existing jobs and both have plans for further economic growth, which if unmitigated is likely to impact travel times and have a negative impact on Sub-national connectivity. The West of England conurbation is also forecast to have the highest levels of population growth in the Gateway area.
- 13.4 Attracting and retaining businesses within the Western Gateway area is essential to ensure sustainable economic growth. Feedback provided through our Transport and Business Forum outlined the need to manage existing road space more effectively. A balance needs to be struck between increasing additional capacity for cars while providing better facilities for walking/cycling/Passenger Transport. This would remove unnecessary local trips from the strategic routes enabling a more efficient and reliable transport network.

Scheme Priorities

- 13.5 Three MRN schemes are being prioritised under this policy heading. Two are located in the West of England urban conurbation and one in the South East Dorset city region. The two schemes in the West of England provide a phased set of junction improvements on the A4174 Bristol Ring Road to improve capacity to enable future growth to be delivered. The scheme in South East Dorset provides the second phase of junction improvements required to enable a strategic employment site to become deliverable.
- 13.6 **Figure 13.1** illustrates the location of these scheme priorities within the wider Western Gateway context and strategic corridors they are included within in. **Figure 13.2** provides a summary of scheme headlines.
- 13.7 The total funding ask for the schemes under this policy is £87 million.

Figure 13.1 – Spatial distribution of MRN scheme priorities managing urban travel

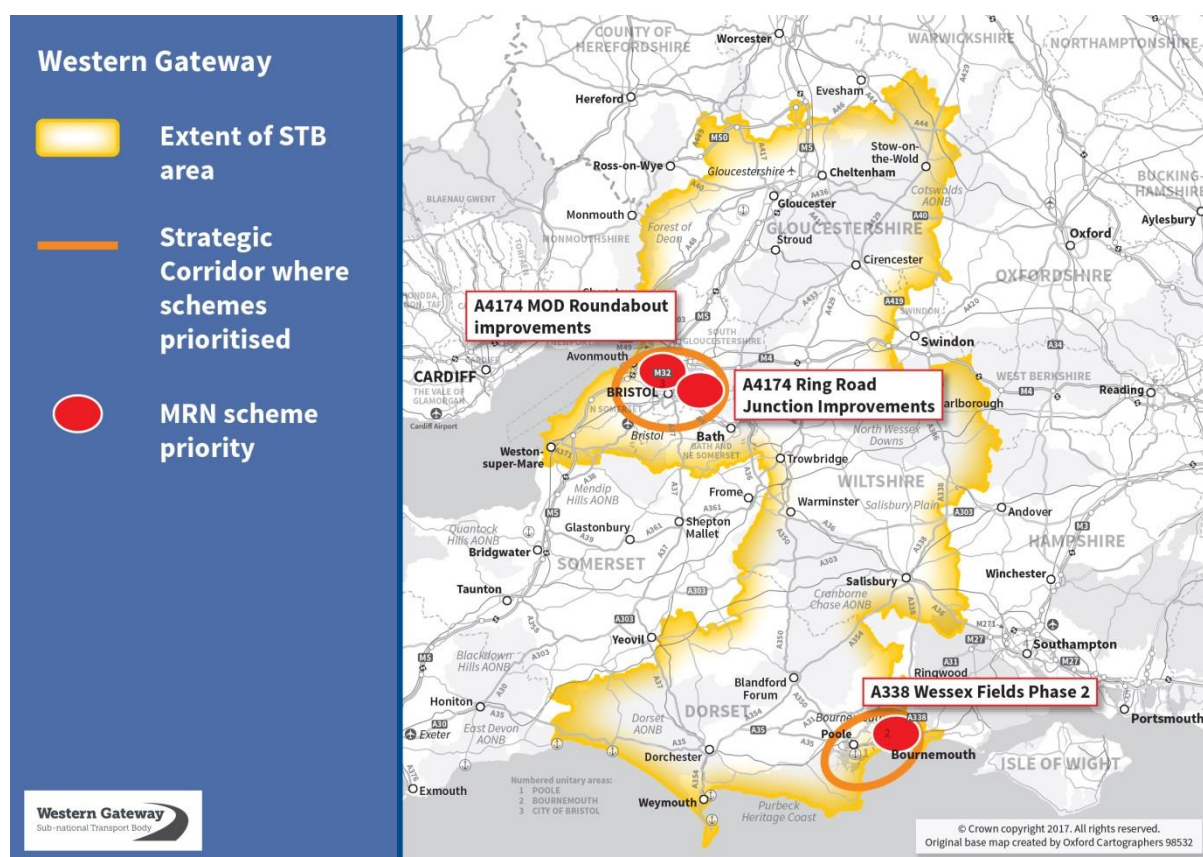


Figure 13.2 – Summary of MRN scheme priorities managing urban travel

Scheme Name	Estimated Scheme Cost	Strategic Corridor	Promoting Authority	Stated scheme start date
MRN - A4174 Ring road capacity improvements	£36m	Corridor I - Bristol Urban	South Gloucestershire Council + WECA	2020/21
MRN - A4174 MOD Roundabout improvements	£30m	Corridor I - Bristol Urban	South Gloucestershire Council + WECA	2023/24
MRN - A338 Wessex Fields Phase 2	£21m	Corridor O - Bournemouth / Poole urban area	BCP Council	2021/22

MRN - A4174 Ring Road Junction Improvements

13.8 The scheme involves improvements to a potential six junctions on the A4174 Ring Road in South Gloucestershire to increase capacity considering all movements including walking and cycling. Scheme options include the upgrade of roundabouts to “throughabout” roundabouts, signalised roundabout to crossroads, and other capacity improvements including increasing the number of circulatory lanes.

13.9 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 13.3**.

Figure 13.3 - Summary of how A4174 Ring Road Junction Improvements contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> The scheme is included within Strategic Corridor I - Key routes that serve the West of England A4174 forms part of the MRN network and records an average daily vehicle flow of between 40,000 to 50,000 vehicles Currently experiences congestion and resilience issues during weekday peak hour
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> Unlock the economic potential in the north east Bristol Fringe. The scheme will support network resilience for major employers located in the Emersons Green, Filton area and North Fringe enterprise areas. The number of new jobs created needs to be confirmed, however following this improvement 50 hectares of employment land will be located between two and three miles to the south of Wraxall Road Roundabout (East Fringe) which is likely to increase demand for travel through the site.
Support Housing Delivery	<ul style="list-style-type: none"> The scheme helps support the housing allocations in the South Gloucestershire Core Strategy and emerging Joint Spatial Plan. <ul style="list-style-type: none"> 2,500 Lyde Green 2,250 (750 at Land at Bath Road Brislington 1500 at North Keynsham) Urban Living in North Fringe (exact numbers to be determined)
Supporting All Road Users	<ul style="list-style-type: none"> Junction improvements will address existing delays to MetroBus services using the Lyde Green roundabout to access the A4174 from the Bristol and Bath Science Park. Improved crossing provision for pedestrians and cyclists will be considered as part of scheme improvements.
Supporting the SRN	<ul style="list-style-type: none"> Scheme will also facilitate localised traffic growth associated with a potential new motorway junction at M4 Junction 18a

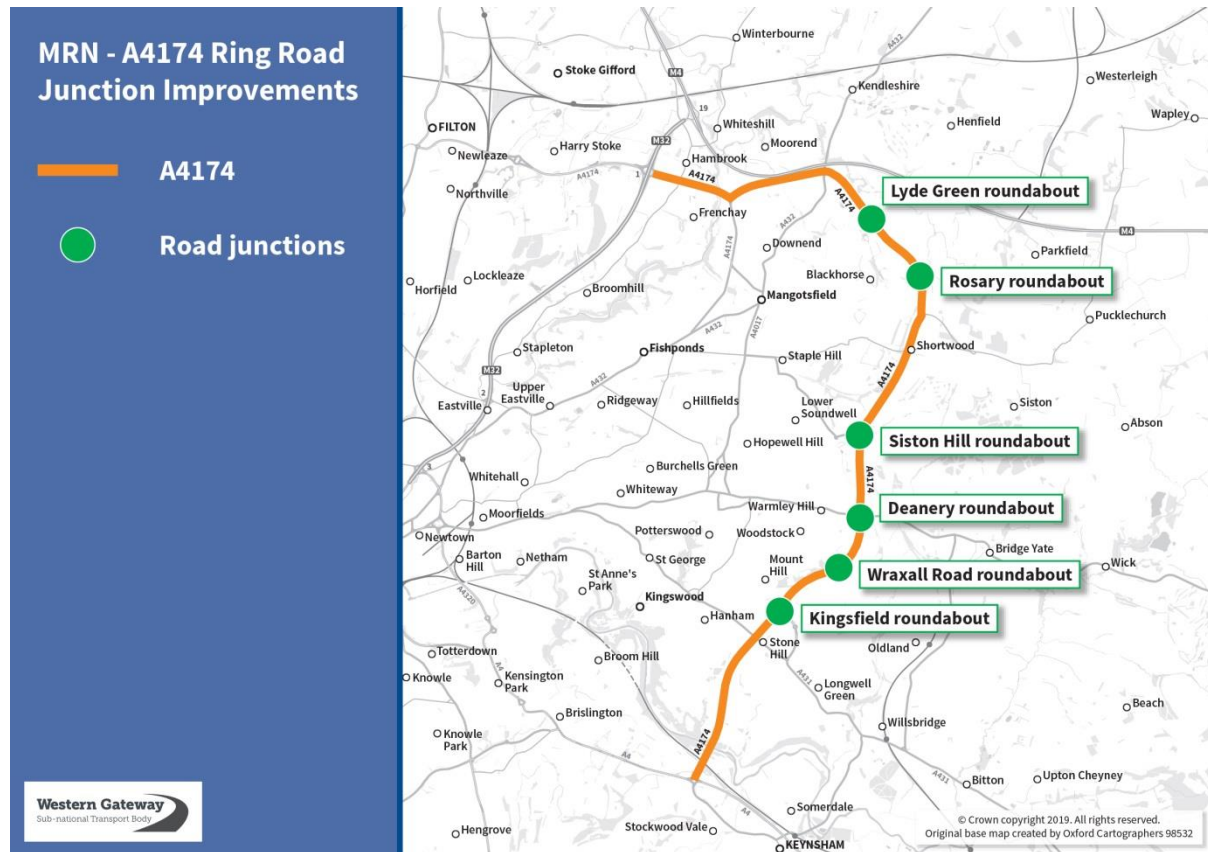
13.10 The A4174 is a key strategic route in the Greater Bristol area, providing a link between the A4 and Bath in the south to the M32 and A38 in the north Bristol Fringe. This section of the route provides access to housing and employment areas including the Bristol and Bath Science Park and Filton Enterprise Areas. This section of the A4174 Ring Road currently experiences congestion and resilience issues during weekday peak hours. These issues are likely to become more severe in future if no action is taken, constraining the economic potential of the north-east Bristol Fringe.

- 13.11 Emerging proposals, including for a new M4 Junction 18a, extension of the ring road to the south of the A4, and additional housing growth in the vicinity, will all contribute to increased traffic flows and resilience issues on the A4174 Ring Road if no action is taken.
- 13.12 The scheme is strongly aligned to the Regional Evidence Base and is identified as one of the top priorities. Ring road improvements are included in the West of England Joint Local Transport Plan 4 as well as the Joint Transport Study, which supports the Joint Spatial Plan.
- 13.13 The objectives of the scheme are to:
1. Relieve congestion on the A4174 corridor between Lyde Green roundabout and Kingsfield roundabout
 2. Unlock the economic potential in the north east Bristol Fringe
 3. Minimise the impact of traffic/infrastructure to the natural environment and, where possible deliver opportunities for environmental enhancement
 4. Protect and enhance access for non-car modes
 5. Improve safety
 6. Improve network resilience and journey time reliability
- 13.14 The scheme cost is expected to be in the region of £36m, providing high value for money (costs and benefits to be confirmed through OBC). The scheme is also expected to have wider economic impacts, supporting economic growth in the region.
- 13.15 The scheme is expected to provide the following social benefits:
- Physical activity and journey quality impacts for people walking and cycling;
 - Accident impacts due to highway layout changes and traffic flow changes; and
 - Accessibility impacts due to a reduction in delay to MetroBus services at Lyde Green roundabout.
- 13.16 The scheme is likely to have the following environmental impacts:
- Air quality impacts within an AQMA (to be confirmed through OBC)
 - Noise impacts, on a limited number of properties due to re-aligned highways
- 13.17 The total cost of the scheme has been estimated to be in the region of £30 million (outturn prices), to be confirmed through the OBC. Approximately 85% of funding is being sought from the National Road Fund.
- 13.18 The core scheme is well understood and unlikely to present any significant procurement challenges. South Gloucestershire Council StreetCare team are likely to be procured to undertake the works.
- 13.19 The junction improvements could be delivered using existing highways powers without the need for planning permission. However the option of a potential new grade separated pedestrian and cycle crossing would likely require planning permission.
- Environmental Impact Assessment screening will be submitted once the OBC is complete
 - Further stakeholder/public consultation will be undertaken once the OBC is complete

- No significant third-party ownership issues have been identified to date. A small section of third party land adjacent to the Lyde Green roundabout would be desirable if it can be negotiated, but alternative design solutions are available if this is not possible.

13.20 **Figure 13.4** provides a strategic scheme plan for the scheme

Figure 13.4 - A4174 Ring Road Junction Improvements strategic scheme plan



MRN - A4174 MoD Roundabout Improvements

13.21 The scheme aims to improve three junctions on the A4174 in South Gloucestershire between Filton Roundabout and M32 Junction 1, and investigation of a smart corridor scheme to help efficiently manage motor traffic flows using the latest technology includes:

- Filton Avenue Junction – A signal-controlled staggered junction between the A4174 and Filton Avenue, providing access primarily to residential areas.
- MOD Roundabout – This is a signal-controlled roundabout providing access from the A4174 to the Great Stoke Way, MOD Abbey Wood and Abbey Wood Shopping Park. This is a key junction within the scheme, with options under consideration including a through about roundabout and a grade-separated roundabout/flyover.
- Coldharbour Lane Junction – This is a signal-controlled T-junction between the A4174 and Coldharbour Lane.
- A “smart corridor” scheme will better optimise traffic signals using the latest technology to improve traffic flows along the ring road.

13.22 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 13.5**.

Figure 13.5 - Summary of how A4174 MoD Roundabout Improvements contributes to MRN objectives

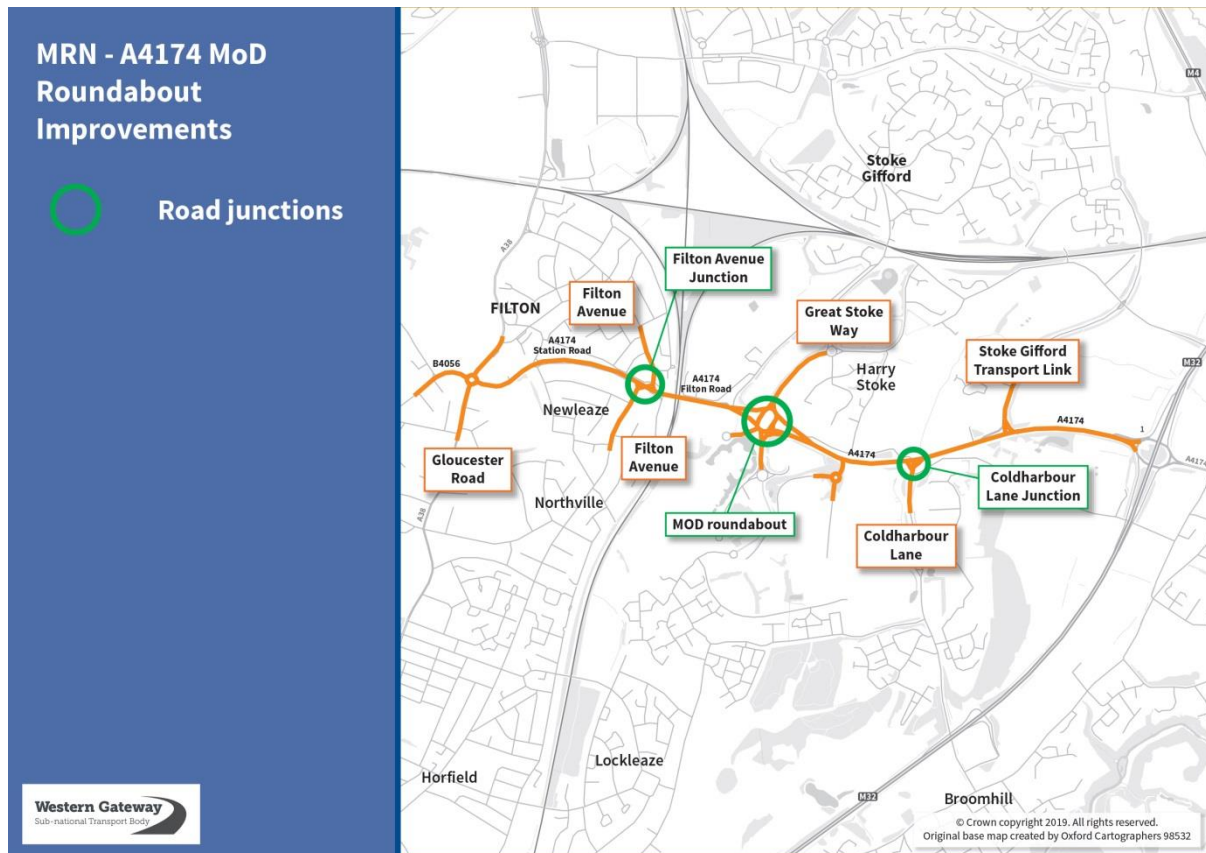
Reducing Congestion	<ul style="list-style-type: none"> • The scheme is included within Strategic Corridor I - Key routes that serve the West of England • A4174 forms part of the MRN network and records an average daily vehicle flow of between 30,000 to 40,000 vehicles • Currently experiences congestion and resilience issues during weekday peak hour
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> • The scheme will support network resilience for major employment areas (40,000 employees) including Filton Enterprise Area and North Fringe. • Existing highway capacity issues are constraining the economic potential of north fringe
Support Housing Delivery	<ul style="list-style-type: none"> • The scheme helps support the housing allocations in the emerging Joint Spatial Plan. • Access to key housing (12,000 committed)
Supporting All Road Users	<ul style="list-style-type: none"> • Junction improvements will address existing delays to passenger transport services using the A4174
Supporting the SRN	<ul style="list-style-type: none"> • Scheme will improve access to M32 Junction 1

13.23 The A4174 is a key strategic route in the Greater Bristol area, providing a link from the north fringe of Bristol to the M32 and M4 and onwards around the rest of the A4174 Bristol Ring Road. This section of the route provides access to key housing and employment areas including the Filton Enterprise Area, MOD Abbey Wood, Bristol Business Park and UWE Frenchay Campus. This section of the A4174 Ring Road currently experiences congestion and resilience issues during weekday peak hours. These issues are likely to become more severe in future if no action is taken, constraining the economic potential of the north fringe.

- 13.24 Emerging proposals, including additional housing growth in the vicinity, will contribute to increased traffic flows and resilience issues if no action is taken.
- 13.25 The scheme is strongly aligned to the Regional Evidence Base and is identified as one of the top priorities.
- 13.26 The objectives of the scheme are to:
1. Relieve congestion on the A4174 corridor between Filton Avenue Junction and Coldharbour Lane Junction
 2. Unlock the economic potential in the north Bristol Fringe
 3. Minimise the impact of traffic/infrastructure to the natural environment and, where possible deliver opportunities for environmental enhancement
 4. Protect and enhance access for non-car modes
 5. Improve safety by reducing congestion related collisions
 6. Improve network resilience and journey time reliability
- 13.27 The scheme cost is expected to be in the region of £20-30m, providing high value for money and a BCR between 2 and 4 (with refined costs and benefits to be confirmed at OBC stage). The scheme is expected to have wider economic impacts, supporting economic growth in the region.
- 13.28 The scheme is expected to provide the following social benefits:
- Physical activity and journey quality impacts for people walking and cycling
 - Accident impacts due to highway layout changes and traffic flow changes
- 13.29 The scheme is expected to provide the following Environmental Impact:
- Potential noise impacts on a limited number of properties
 - Potential townscape impacts of new grade separated roundabout
- 13.30 The total cost of the scheme has been estimated to be in the region of £20-30 million (outturn prices), to be confirmed at OBC stage. Approximately 85% of funding is being sought from the National Road Fund.
- 13.31 For general junction works South Gloucestershire Council's StreetCare team are likely to be procured. Any grade-separated elements will likely be procured separately, with procurement options considered further as the scheme progresses.
- 13.32 The junction improvements could be delivered using existing highways powers without the need for planning permission; however, a new grade-separated roundabout will likely require planning permission.
- Environmental Impact Assessment screening will be submitted in due course
 - Further stakeholder/public consultation will be undertaken in due course
 - No third-party ownership issues have been identified to date.

13.33 **Figure 13.6** provides a strategic scheme plan for the scheme.

Figure 13.6 - A4174 MoD Roundabout Improvements strategic scheme plan



MRN - Wessex Fields Phase 2

- 13.34 The scheme comprises a new link directly from the A338 Wessex Way delivered in two phases. Phase 1 is a new left-in, left-out ('off' and 'on') slip road on the southbound carriageway of the A338, with a new spine road that leads into Wessex Fields and hospital areas via full access to Deansleigh Road. This phase opens in June 2019.
- 13.35 Phase 2 will convert the Phase 1 left-in, left-out junction into a full grade-separated junction on the A338 Wessex Way.
- 13.36 The scheme objectives are to:
- Construct a new A338 junction which will provide the additional highway capacity required to help existing businesses to expand enabling the release of the currently undeveloped 'allocated' 6.07ha Riverside Avenue Employment Site;
 - Provide a vital second access to the Royal Bournemouth Hospital; and
 - Reduce delays due to traffic congestion on the A338/Castle Lane East/Riverside corridor.
- 13.37 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 13.7**.

Figure 13.7 - Summary of how Wessex Fields Phase2 contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> • The scheme is included within Strategic Corridor O – key routes that serve the Bournemouth, Christchurch and Poole area • A338 forms part of the MRN network and records an average daily vehicle flow of between 50,000 to 60,000 vehicles • Local network is heavily congested
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> • The Wessex Fields business area, coupled with the businesses located nearby at Chaseside, represents one of the most important employment locations in Dorset. The combined area is home to 10,000 jobs and when combined to Phase 1 will create approx.2,000 new jobs • Key allocated employment site 'Riverside Avenue' currently locked' by existing highway network. Major constraint to economic growth. • This strategically important site cannot come forward unless access improvements to the network are delivered. • The scheme will also improve connectivity and reduces congestion to Bournemouth Airport
Support Housing Delivery	<ul style="list-style-type: none"> • The scheme does not directly support the delivery of new housing sites
Supporting All Road Users	<ul style="list-style-type: none"> • Provides a vital second access to the (expanding) Royal Bournemouth Hospital (Poole A&E closing) • Reduce delays due to traffic congestion on the A338/Castle Lane East/Riverside corridor and improve ambulance journey time reliability • Facilitate increased sustainable travel by delivering better infrastructure for pedestrians and cyclists.
Supporting the SRN	The scheme will have no direct impact on the SRN

- 13.38 The Wessex Fields business area, coupled with the businesses located nearby at Chaseside, represents one of the most important employment locations in Dorset. The combined area

is home to 10,000 jobs and key employers, including JP Morgan, the Royal Bournemouth Hospital (the largest private and public sector employers in Dorset), Ageas and LV as well as the Bournemouth Law Courts, Village Hotel Bournemouth and Littledown.

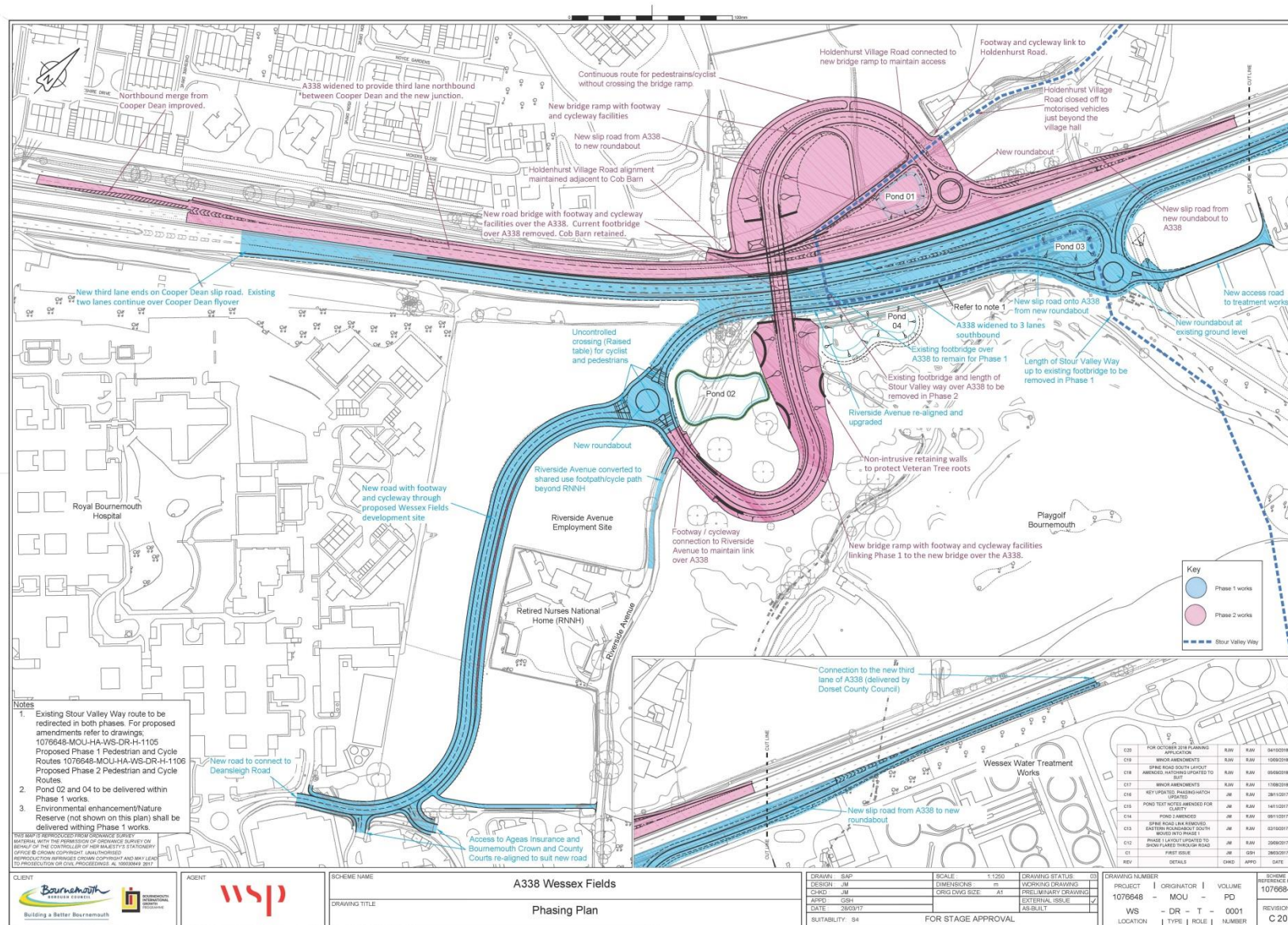
- 13.39 The configuration of the existing highway network means that there is insufficient additional highway capacity to bring forward the important allocated Riverside Avenue Employment Site 6ha without providing an additional access point, inhibiting local economic growth.
- 13.40 Wessex Fields is also served by a single access from Castle Lane East on the north side of the business area and Chaseside by a single access from the south side of the business area. This causes significant traffic congestion during morning and evening peak hours, adversely affecting local businesses, and on occasion these issues can also affect access for ambulances.
- 13.41 The Wessex Fields business area lies in the north-eastern fringe of Bournemouth. Wessex Fields includes the Royal Bournemouth Hospital and a number of businesses including Ageas, LV and The Village, as well as the Bournemouth Law Courts.
- 13.42 Wessex Fields is bounded on the north-west side by the A338 Wessex Way, a two lane dual carriageway road which provides an important strategic link between Bournemouth and the A31 trunk road. The A338 also provides a strategic connection to Bournemouth International Airport, via the B3073. To the south of Wessex Fields is the A3060 Castle Lane East, a county distributor road linking the north-eastern area of Bournemouth to Christchurch to the east and north Bournemouth, Ferndown and Wimborne to the west. Castle Lane East intersects with Wessex Way at a grade-separated junction at the Cooper Dean roundabout.
- 13.43 The scheme has a strong fit with the REB in improving urban travel and unlocking growth.
- 13.44 The objectives of the scheme are to:
- Identify and address transport-related barriers to the effective operation of labour markets which is constraining the potential for business growth, particularly in the West of England and South East Dorset.
 - Establish a whole corridor approach to traffic management on strategic corridors to improve reliability, safety and resilience.
 - Deliver key transport infrastructure that supports sustainable place-shaping by facilitating the delivery of significant land for new homes and employment opportunities.
- 13.45 The Outline Business Case (OBC), October 2018 set out the Value for Money (VfM) of the scheme for Phase 1 only as well as for Phase 1 and Phase 2 combined. Traffic modelling was undertaken for these scenarios compared to a Do Minimum i.e. without scheme. The VfM included within the OBC included:
- Travel time and Vehicles Operating Costs via TUBA
 - Accident benefits via COBALT.

- 13.46 The economic benefits of Phase 1 showed that there are Present Value of Benefits (PVB) of £26.99m with Present Value of Costs (PVC) of £7.31m giving a Benefit to Cost Ratio (BCR) of 3.70. The economic benefits of Phase 1 and Phase 2 showed that there are Present Value of Benefits (PVB) of £102.63m with Present Value of Costs (PVC) of £18.81m giving a Benefit to Cost Ratio (BCR) of 5.70.
- 13.47 The MRN funding application is for Phase 2 only. The scheme costs have been updated for:
- Bridge construction over A338 and access to / from northbound carriageway creating grade-separated junction on A338 Wessex Way essentially comprising both elements with A338 northbound carriageway to Blackwater widened to three lanes.
- 13.48 The total scheme costs are £21,190,813 (at 2019 prices) which includes for construction, risk and inflation. For the assessment of the Benefit to Cost Ratio (BCR) an element of Optimism Bias (15%) has been included bringing the cost to £24,369,435. This has been discounted to 2010, in 2010 prices to produce a Present Value of Costs (PVC) for the assessment of the BCR of £18,806,817 (in market prices).
- 13.49 The Present Value of Benefits (PVB) for Phase 2 is estimated to be £75.64m with the PVC of £18.81m giving a Benefit to Cost Ratio (BCR) of 4.02. This would be an over-estimate of the benefits as Phase 1 is currently being built and therefore should be included within a Do Minimum model assessment however no new transport modelling has been undertaken.
- 13.50 Even assuming that Phase 2 only has 50% of the PVB of £75.84 i.e. £37.92 that would still mean a BCR of approximately 2.02.
- 13.51 The scheme is likely to have a slight beneficial on most social impacts. With a large benefit expected to enhance accessibility.
- 13.52 The scheme is likely to have the following environmental impacts:
- Impact on noise – Neutral to slight adverse.
 - Air quality and greenhouse gases impact – Neutral to slight adverse.
 - Impact on landscape and the natural environment – Neutral.
 - Impact on biodiversity – Neutral.
 - Impact on water environment – Neutral.
 - Impact on townscape and the urban environment – Slight adverse.
- 13.53 The total cost of the scheme has been estimated to be ~£21 million (outturn prices). 85% funding is being sought from the National Road Fund.
- 13.54 The preferred procurement option is to use an existing Term contractor. This approach allows BCP to procure a contractor quickly and simply and provides a good degree of assurance of quality and value for money. In line with the Council's adopted approach, the preference is to procure the works for the Wessex Fields scheme using the NEC4 Conditions of Contract.
- 13.55 The Wessex Fields scheme is a stand-alone scheme, which can be delivered as designed and costed independently, with no other future projects or commissions depending upon it. The

scheme will be designed to accommodate any future, later widening of the A338 between Cooper Dean roundabout and Blackwater junction.

- 13.56 An appropriate governance structure is essential for the successful delivery of the scheme. BCP has therefore established a Project Board aligned with best practice guidance on project management. The Project Board's primary function is decision-making and review. A Project Delivery Team has been established to deal with day to day planning and delivery of the project.
- 13.57 Key stakeholders have been identified and a stakeholder management plan will be adopted, following the practice used in previous projects. There are no major inter-dependencies.
- 13.58 **Figure 13.8** provides a strategic scheme plan for the scheme

Figure 13.8 - Wessex Fields Phase 2 strategic scheme plan



14.0 Scheme prioritisation key theme – Improving north / south connectivity

Introduction

- 14.1 The Western Gateway area is a crossroads of national connectivity. Strategic transport interventions play a fundamental role in driving economic growth. They facilitate the development of housing and employment space; improve connectivity between business and skilled people and improve connectivity between businesses. Improved connectivity will help close current 'productivity gaps' by maintaining and enhancing external transport linkages through a number of strategic corridors.
- 14.2 The Western Gateway area offers a unique set of economic opportunities that if sufficiently exploited, can help achieve the Government's objectives of rebalancing the economy.
- 14.3 The need to improving north / south links between the Midlands and South Coast is a fundamental challenge that the Western Gateway needs to address. The importance of Strategic Connectivity and Network Resilience was highlighted by the Transport and Business Forum especially in relation to the freight challenge and accessing international ports.
- 14.4 A number of highway resilience issues have been identified within the Regional Evidence Base including:
- The impact on the local highway network following any accidents on the M4/M5;
 - The safety issue of mainline queuing on the motorway at several junctions on the M4/M5 during peak travel times;
 - Constrained urban networks within the historic centres of Bath, Cheltenham and Salisbury;
 - Limited capacity on strategically important routes including A350, A36 and A37;
- 14.5 Improving north / south connectivity is vital to improve productivity and increase access to markets located in the midlands and the north.
- 14.6 A function of transport is to support economic growth by enabling key employment sectors to thrive. The role for transport in this context is broadly two fold: ensure there is sufficient capacity in the transport network to enable employees to get to work and to make business trips; and that goods can be transported to facilitate supply chains using good quality reliable strategic networks.
- 14.7 ONS data also shows that not only do certain areas in the Western Gateway lag behind other areas with respect to productivity but that also that the 'productivity gap' has been widening over time.

Scheme Priorities

- 14.8 Five schemes in total have been identified under this policy heading including three MRN schemes and two LLMs. Three of the schemes (2 MRN and 1 LLM) are located on the A350 (Strategic Corridor C) in Wiltshire. This corridor is a centre of growth and the three schemes located in the northern part of the route. A phased approach to improving this corridor has been identified and it is intended that improvements to the central and southern sections will be prioritised through future funding rounds. The other LLM scheme is located on the A46 (Midland) route corridor (Strategic Corridor E). This transformational scheme will enable significant growth delivering the recently announced Garden Town in Ashchurch in Gloucestershire. The A46 has also been recognised by Midlands Connect STB as a priority corridor. The final scheme is a MRN scheme in Salisbury which enables delivery of the Salisbury Transport package. Salisbury acts as a cross roads for three of the Western Gateway's strategic corridors (D, L and M). This scheme includes a number of junction improvements to aid strategic vehicle movements around the city centre.
- 14.9 **Figure 14.1** illustrates the location of these scheme priorities in the wider Western Gateway context and which strategic corridors they align with. **Figure 14.2** provides a summary of scheme headlines.
- 14.10 The total funding ask for these schemes under this policy is £387.5 million.

Figure 14.1 – Spatial distribution of MRN & LLM scheme priorities improving north / south connectivity

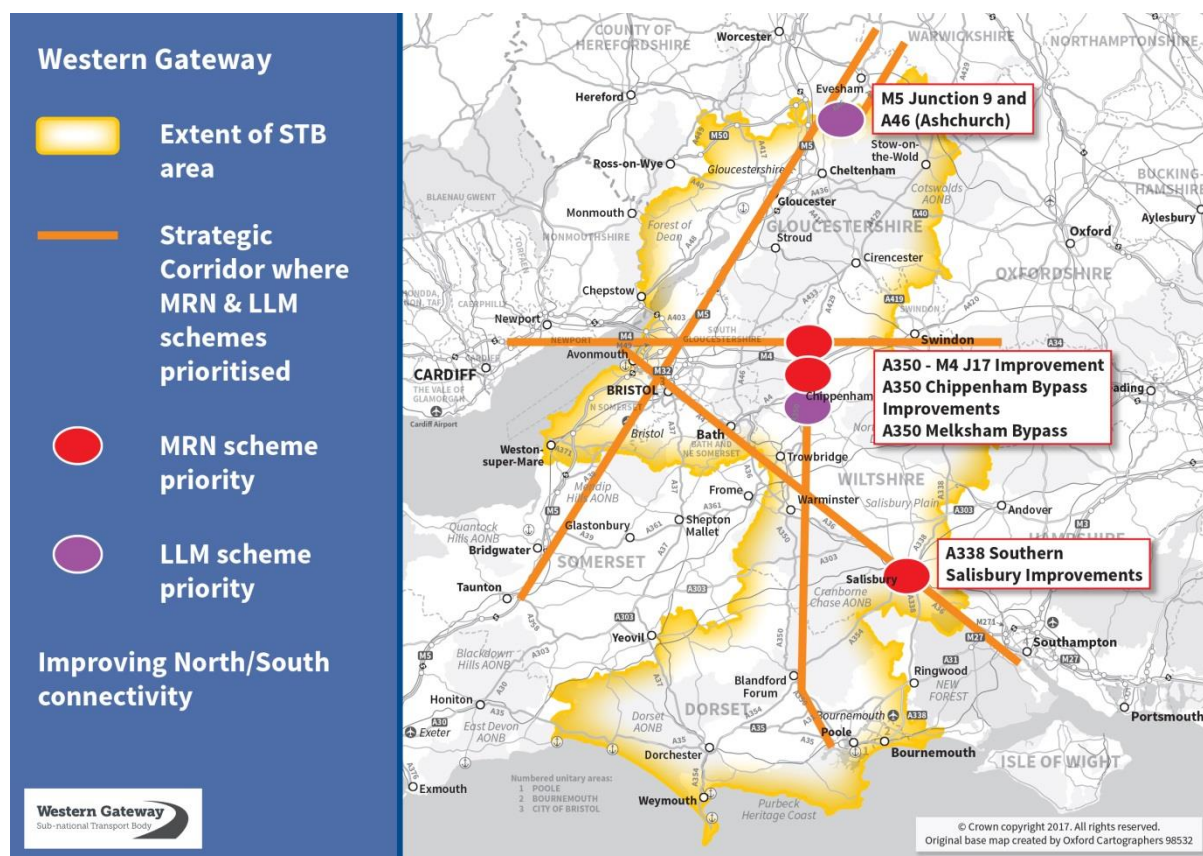


Figure 14.2 – Summary of MRN & LLM scheme priorities improving north / south connectivity

Scheme Name	Estimated Scheme Cost	Strategic Corridor	Promoting Authority	Stated scheme start date
LLM - M5 Junction 9 and A46 (Ashchurch)	£180m	Corridor B - M5 & Corridor E A46 Midlands	Gloucestershire County Council	2023/24
MRN – A350 - M4 J17 Improvement	£25.5m	Corridor C – A350	Wiltshire Council	2022/23
MRN - A350 Chippenham Bypass Improvements – Phases 4 & 5	£28.7m	Corridor C – A350	Wiltshire Council	2020/21
LLM - A350 Melksham Bypass	£135.8m	Corridor C – A350	Wiltshire Council	2023/24
MRN - A338 Southern Salisbury Improvements	£17.5m	Corridor D - A46 / A36 and Corridor M A338/A354	Wiltshire Council	2021/22

LLM - M5 Junction 9 & A46 (Ashchurch)

14.11 The proposal is for the significant upgrade to M5 Junction 9 and the realignment of the A46 (known as the M5 J9/A46 scheme) from the new motorway junction to the Teddington Hands Roundabout.

14.12 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 14.3**.

Figure 14.3 - Summary of how M5 Junction 9 & A46 (Ashchurch) contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> The route is included within Strategic Corridor B – M5 and E A46 This section of the A46 forms part of the SRN network and records an average daily vehicle flow of between 20,000 to 30,000 vehicles There is severely limited highway capacity at M5 J9, with queuing on the M5 Junction 9 slips causing safety concerns on a daily basis. The A46 is severely congested causing severance for residents, schools and businesses, preventing growth. This active threat prejudices the short, medium and long term delivery of housing in Gloucestershire. Stifling economic growth prohibiting social and economic prosperity The A46 is part of the Strategic Road Network (SRN) that runs from the M5 at Tewkesbury to Grimsby and onto Hull via the A15. The realignment of the road through Ashchurch will improve connectivity along the Trans-Midlands Trade Corridor, an area that accounts for around 9% of English GVA. Key express route alternative to M5/M42. Severe capacity and congestion issues threaten the A46's viability as a strategic route and economic function of SRN.
Support Economic Growth & Rebalancing Support Housing Delivery	<ul style="list-style-type: none"> Garden Town status award – 10,195 homes and 120 hectares of employment land (called Tewkesbury Garden Town) At the point of adoption, the Joint Core Strategy (JCS) had a shortfall of land to provide for new homes of approximately 2,500 in Tewkesbury. This was further exacerbated by a decision to stop the release of a 64-hectare MoD Ashchurch site for housing development, a proposed strategic allocation. The JCS did mention that there was development potential in the wider Ashchurch area and there was a commitment to explore this. This is to be considered as part of an immediate review process (JCS review) The Garden Town would most certainly require substantial improvements (if not a new road) to support its wider development. The Scheme is one of the top priorities for the GFirst LEP and forms part of their key 'Asks' to Government in order to provide improved access to key growth areas and encourage inward investment.
Supporting All Road Users	<ul style="list-style-type: none"> Removes severance/Reconnects communities. Health and well-being and the socio-economic benefits of the local community. A scheme with multi mode benefits as the existing A46 alignment can revert to being part of the Local Highway Network which would then allow for online passenger transport improvements.
Supporting the SRN	<ul style="list-style-type: none"> Highways England and Gloucestershire County Council are working in partnership with a range of stakeholders along the A46 corridor to identify a preferred solution. An A46 Partnership group was formed in 2015 to bring together Councils and LEPs along the A46 corridor from Gloucestershire to Leicestershire all

	with the same aim: to work together to bring forward improvements to the corridor.
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- 14.13 In the early 1990's the Department of Transport consulted on route options to improve M5 Junction 9 and the A46 (then A438) in the vicinity of Ashchurch. A number of improvement schemes to the route or corridor between M6/M69 north of Coventry and the M5 J9 near Tewkesbury had already been carried out. The Ashchurch scheme was one of the remaining schemes necessary to complete the upgrading of the route. Online improvements to the A46 were rejected. More recently (2016/2017) Highways England (HE) has also rejected any on line improvements.
- 14.14 In 2017 GCC submitted the M5 J9/A46 scheme to the Housing Infrastructure Fund (HIF), which was unsuccessful. The M5 J9/A46 scheme formed part of the adopted Joint Core Strategy (JCS) Transport evidence base (adopted December 2017). This evidence base sought to accommodate the predicted traffic volumes arising from the proposed development in the area. The A46 is anticipated to be a key consideration in the forthcoming JCS Review, in the context of the announcement for a Garden Town at Ashchurch, where growth of an additional 10,000 homes and up to 120 hectares of employment land is proposed by 2041.
- 14.15 Furthermore, the scheme is identified in the Midlands Connect A46 Corridor Study Options Assessment Report (OAR) (June 2018). Studies have been commissioned by HE and GCC in relation to the scheme, including a HE PCF Stage 0 study, prepared as part of HE's bid to the Road Investment Strategy 2 (RIS2).
- 14.16 The M5 J9/A46 scheme has been identified as serving the Strategic Corridor B and E by providing highway capacity improvements to unlock employment land in close proximity to M5 J9 and providing a key route to the Midlands (Coventry and Birmingham). The A46 is one of the principal entry points into the Western Gateway from the north. The A46 is part of the Strategic Road Network (SRN) that runs from the M5 at Tewkesbury to Grimsby and onto Hull via the A15. The A46 provides important connections within the Trans Midlands trade corridor that accounts for nearly 9% of English GVA. The area is strong in export led industries that require good transport links and access to international gateways. A Midlands Connect STB report identifies that around half of all jobs and GVA in the corridor are in sectors that are dependent on the SRN for both national and international supply chain and customer connectivity.
- 14.17 Strategically, the existing position and route of the M5 and Junction 9 acts as a barrier to west-east movements. This adds to the perception of Tewkesbury as a 'detached' location with limited accessibility to Ashchurch and other important rural towns to the east, and environmental constraints (River Avon and floodplains) to the west. There is severely limited highway capacity at M5 J9, with queuing on the M5 Junction 9 slips causing safety concerns on a daily basis.
- 14.18 The A46 is severely congested causing severance for residents, schools and businesses, resulting in social exclusion and prohibiting social prosperity as well as preventing growth.

14.19 The objectives of the scheme are to:

- Reduce congestion. Improve flow by providing additional capacity and delivering a dedicated access route for through traffic from A46 to M5.
- Support housing delivery for the Garden Town at Tewkesbury (10,000+ dwellings)
- Support economic growth and re-balancing. The scheme would facilitate commercially accessible employment land and improve connectivity within the Trans-Midlands trade corridor, an area strong in export-led industries that require good transport links and access to international gateways.
- Supporting the Strategic Road Network (SRN). The scheme will improve end to end journey times; improve journey time reliability and resilience on the SRN.
- Improve connectivity between the South West and Midlands, supporting manufacturing, logistics and agricultural sectors.

14.20 There are significant environmental constraints with existing flood zones between Ashchurch and Tewkesbury and extensive flood zone areas along river brooks running east and west of the proposed site e.g. Tirl Brook and Carron Brook. In terms of social impacts, the narrow corridor creates a pinch-point which leads to poor safety, congestion and severance impacts.

14.21 Indicative estimates put the cost of similar scheme proposals at between £200m and £250m. A cost-build up exercise for the construction of a southern motorway junction and a 5km dual carriageway from the new junction to Teddington Hands roundabout has been estimated at £170m - £180m. This includes a new railway overbridge, a 200m viaduct over the flood risk area (as directed by the Environment Agency) and the design and construction of a new roundabout arrangement at Teddington Hands. Costs include land purchase and a reasonable estimate of risk/contingency (at 40% of construction base costs).

14.22 The following strategic risks have been identified which are critical dependencies:

- Land purchase for scheme;
- Planning and Development Consent Order (DCO). Due to the extent of environmental constraints (and likely mitigation requirements), and the need to thoroughly consider detailed route options, the preferred option is to follow the DCO process. It is possible for a wider range of matters to be considered within the scope of a DCO, which allows the application, modification or disapplication of certain, relevant statutory applications where necessary or expedient for the purposes of giving full extent to the order; and
- Surveys required for scheme planning and delivery.

14.23 Despite these risks and the uncertainty regarding the scheme the promoting authority has made a robust defence of the scheme and has confirmed that it will resolve these issues to enable construction to start in 2023/24.

14.24 This new highway link and the de-trunking of the existing A46 will form an essential component of the recently announced Tewkesbury Garden Town by transforming the existing highway dominated environment. The Garden Town will deliver 10,195 homes and 120 hectares of employment and will only be delivered if the existing SRN route can be

diverted. The Local Planning Authority is in the process of reviewing its Local Plan and it is likely that Garden Town will be identified as a new strategic allocation. The new housing can only be delivered if the new infrastructure is provided.

- 14.25 **Figure 14.4** shows an indicative route alignment based upon a Department of Transport route consulted upon in 1993.

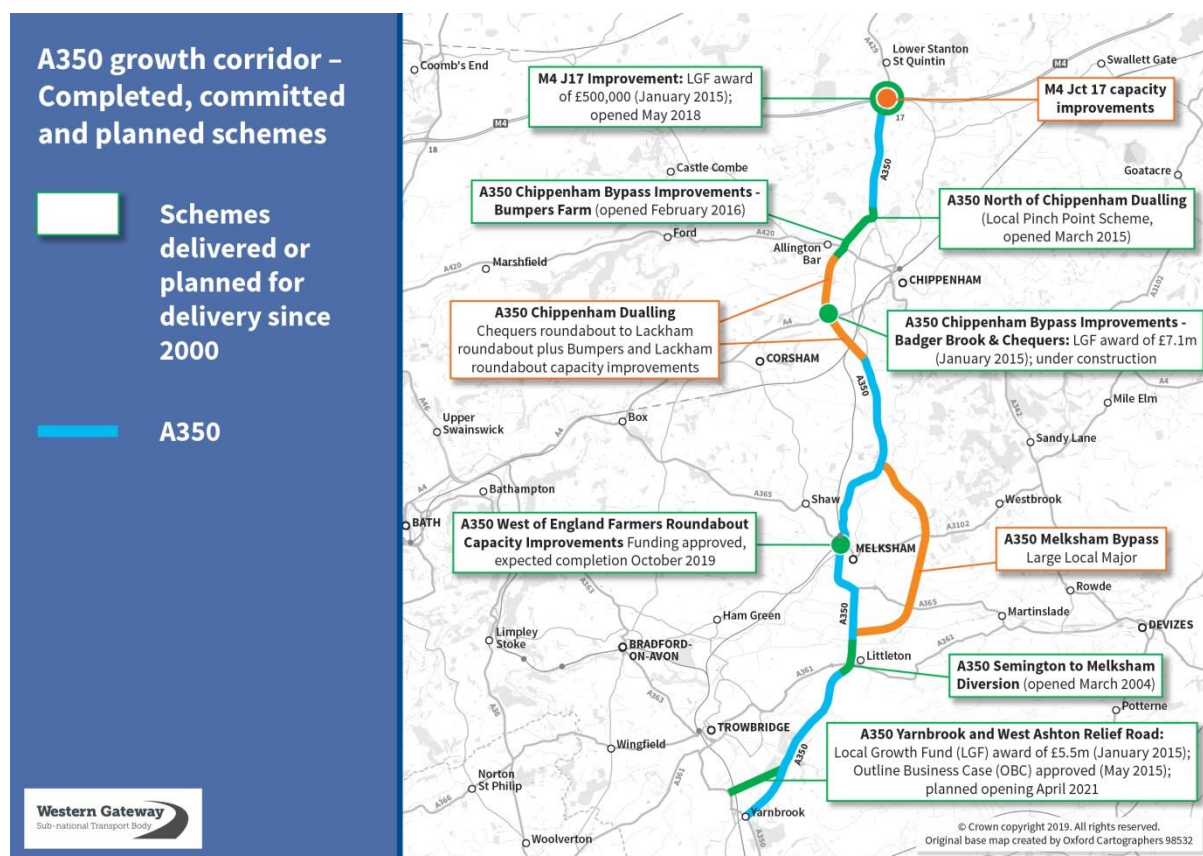
Figure 14.4 – M5 Junction 9 & A46 (Ashchurch) LLM scheme (1993 alignment)



A350 Strategic Growth Corridor

- 14.26 Highways capacity Improvements to the A350 corridor are fundamental to the realisation of the Swindon and Wiltshire LEP's Strategic Economic Plan and the Wiltshire Core Strategy. The local authority has adopted a phased approach to improving access along this strategic important route.
- 14.27 The economic potential for this corridor is significant. The total agglomeration gains (enhanced productivity or GVA per worker) across all employment sectors is £351 million. In terms of housing and employment growth, the corridor is ranked second and first respectively out of the 15 strategic corridors in the Western Gateway area.
- 14.28 **Figure 14.5** illustrates the phased improvements delivered and planned for this corridor.

Figure 14.5 – A350 growth corridor – Completed, committed and planned schemes



MRN - M4 Junction 17 Improvements

14.29 The scheme involves increasing the capacity at M4 Junction 17 to mitigate the impacts of future growth, and comprises the following components:

- Widen approaches to M4 Junction 17, including A350 northbound, A429 southbound and B4122;
- Provide free-flow movements between the A350 northbound and M4 westbound;
- Widening and upgrade of both off and on slip roads;
- Widening the circulatory carriageway; and
- Full signalisation at M4 Junction 17.

14.30 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 14.6**.

Figure 14.6 - Summary of how M4 Junction 17 Improvements contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> The scheme is included within Strategic Corridor A M4 and C – A350 This section of the A350 forms part of the MRN network and records an average daily vehicle flow of between 30,000 to 40,000 vehicles Modelling study in 2012 by Highways Agency established queuing at junction causing safety and congestion impacts to M4. While the partial signalisation scheme implemented in 2018 has improved safety, queuing and delays at the junction, this was an interim measure only. As a result of background and significant development growth, congestion is anticipated to worsen in the next few years.
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> The scheme is expected to support economic growth along the whole of the A350 corridor in Wiltshire. Planned and future housing and employment growth is forecast to highly constrain the road network at M4 Junction 17. Strategic role of the A350 (MRN) is threatened by increasing congestion / delays. Performance of the M4 (SRN) is threatened by mainline queuing due to growth in demand at Junction 17.
Support Housing Delivery	<ul style="list-style-type: none"> The scheme is expected to support housing growth along the whole of the A350 corridor in Wiltshire.
Supporting All Road Users	<ul style="list-style-type: none"> A key aim of the scheme would be to reduce the total amount of collisions and accidents that occur at the junction, particularly those related to queues occurring on the M4 mainline.
Supporting the SRN	<ul style="list-style-type: none"> The scheme will reduce instances of queues occurring on the M4 mainline, minimise delays at the junction and reduce the total amount of collisions and accidents that occur at the junction. The scheme will improve the capacity of the junction to deal with congestion impacts of future development.

14.31 The M4 Junction 17 has recently seen Local Growth Fund investment through the Swindon and Wiltshire Local Enterprise Partnership (SWLEP) to improve the performance of the junction, delivering improved safety and traffic flows. The northern section of the A350 at Chippenham has also seen substantial recent investment, delivering additional capacity to the corridor. Recently completed, planned, and under-construction schemes include:

- M4 Junction 17 partial signalisation (completed Q1 2019).
- A350 Chippenham Phase 1 – Jackson’s Lane to Badger Roundabout (completed Q1 2015).
- A350 Chippenham Phase 2 – Brook Roundabout to Bumpers Roundabout (completed Q1 2016).
- A350 Chippenham Phase 3 – Badger Roundabout to Brook Roundabout / Chequers Roundabout improvements (completed Q1 2019).
- A350 Chippenham Phases 4 and 5 – Bumpers Roundabout and Lackham Roundabout improvements and full dualling (further proposed MRN scheme).

14.32 Improvements to the A350 corridor are fundamental to the realisation of the SWLEP’s Strategic Economic Plan and the Wiltshire Core Strategy where 4,000 new homes are planned for Chippenham and allocated in the Chippenham Site Allocations Plan (CSAP). In

addition, up to 13,535 dwellings in the Chippenham Housing Market Area is being considered as part of the emerging Wiltshire Local Plan 2036, including 5,155 in Chippenham itself. Improvements to the M4 can also support the delivery of the DfT's and Highways England's strategic objectives.

14.33 The scheme will address the following issues:

- Planned and future housing and employment growth is forecast to highly constrain the road network at M4 Junction 17;
- Strategic role of the A350 (MRN) is threatened by increasing congestion, with potential negative connectivity and economic impacts for western Wiltshire; and
- Performance of the M4 (SRN) is threatened by mainline queuing due to growth in demand at Junction 17.

14.34 The objectives of the scheme are to:

- Reduce overall junction delay and improve journey time reliability at M4 Junction 17 by 2036;
- Ensure that M4 Junction 17 has the capacity to accommodate planned growth (Wiltshire Core Strategy and Chippenham Site Allocations Plan) and future growth (emerging Wiltshire Local Plan 2036);
- Support economic growth at M4 Junction 17, assisting the delivery and operation of key strategic employment sites in the A350 Corridor and M4-Swindon SWLEP Growth Zones; and
- Maintain and build on the existing levels of safety at M4 Junction 17, following the successful delivery of recent improvements at Junction 17.

14.35 The scheme is expected to provide the following benefits for the A350 corridor (MRN) specifically around Chippenham as well as the M4 (SRN):

- Sustainable economic growth in the A350 Corridor and M4-Swindon SWLEP Growth Zones with positive impact on regional and national economic productivity;
- Facilitate planned (Core Strategy and CSAP) and future (emerging Local Plan) housing and employment growth through increasing capacity of the transport network;
- Preserve the strategic function of the A350 corridor for Wiltshire; and
- Improve connectivity between the MRN and SRN.

14.36 Economic appraisal has established that the monetised economic benefits of the scheme are forecast to outweigh its costs and any negative impacts. . The scheme will deliver High Value for Money for the two Emerging Growth sensitivity tests, with a BCR of 2.1 for 2036 and 2.9 for 2051. TUBA and COBA-LT has been used to provide assessments of impacts of the scheme over a 60-year appraisal period after scheme opening.

14.37 Social impacts of the scheme are currently being assessed. It is anticipated that the scheme is likely to have a Neutral social impact.

14.38 Environmental impacts of the scheme are currently being assessed. The scheme is being developed to avoid an impact on the Site of Special Scientific Interest (SSSI) on the mainline

of the M4 at Junction 17. Mitigation measures are being considered as part of business case development and scheme design.

14.39 The scheme cost, including preparation, design, preliminaries, risk and construction, is estimated to be £25.5 million (outturn costs).

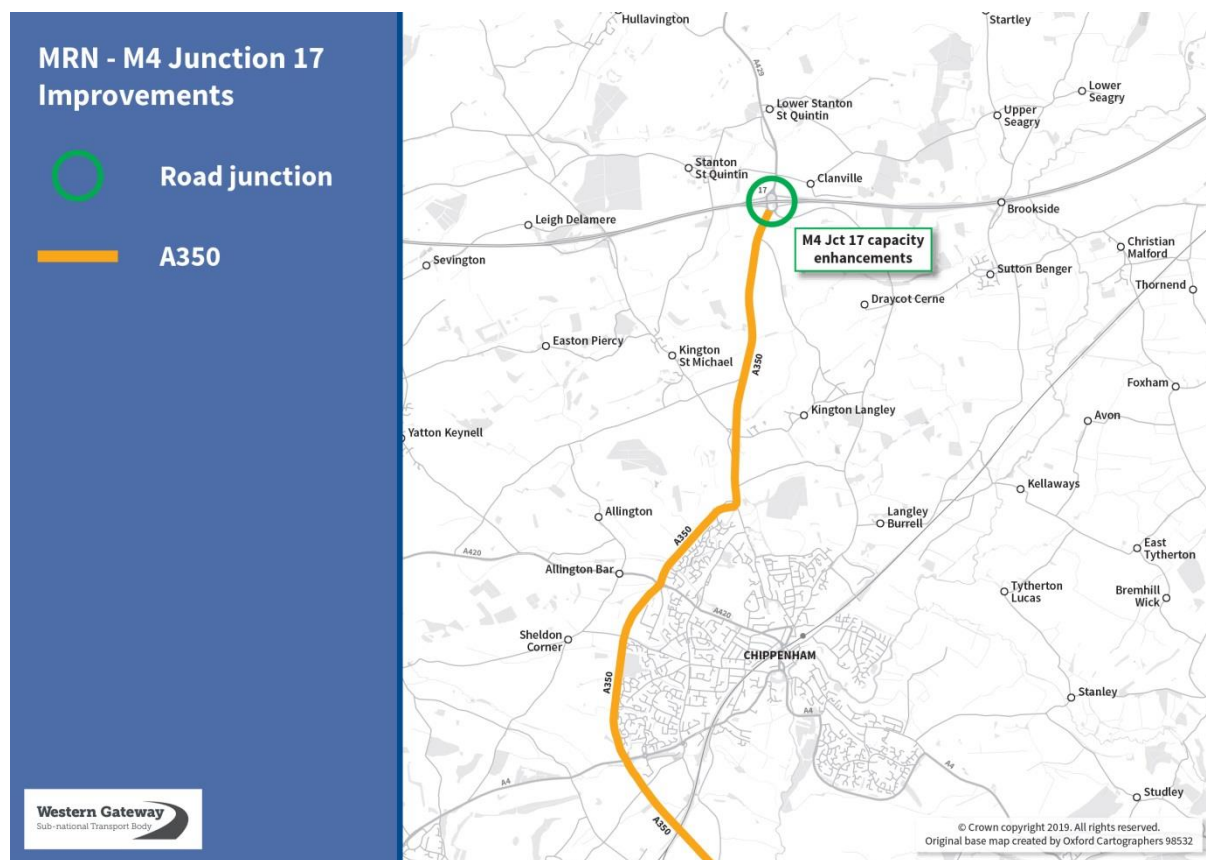
14.40 Three key risks identified in the risk register being developed as part of the SOBC are:

- Land requirements – land purchase is likely to be required to widen and extend the slip roads whilst land rental would be required as an easement to enable works to occur;
- Stats diversions – high level constraints are known; further detailed investigations are being conducted as part of SOBC development and this may impact scheme cost;
- Traffic management – detailed traffic management requirements to be agreed in partnership with Highways England and Wiltshire Council Streetworks.

14.41 Wiltshire Council would be the lead delivery agent for the scheme. Wiltshire Council will work with Highways England to develop and deliver the scheme. There are currently no known specific procurement challenges associated with delivering the scheme.

14.42 **Figure 14.7** provides a strategic scheme plan for the scheme.

Figure 14.7 – M4 Junction 17 Improvements Strategic Plan



MRN - A350 Chippenham Bypass Dualling Phases 4 and 5

14.43 The A350 Chippenham Bypass Dualling Phases 4 and 5 scheme aims to increase the capacity along the A350 and includes the following components:

- **Phase 4 dualling:** widening the A350 to dual 2-lane between Chequers roundabout and Lackham roundabout extending the dualling completed during Phase 3 of the A350 improvement programme;
- **Phase 5 dualling:** widening the A350 to dual 2-lane along full stretch between Cepen Park South roundabout and Bumpers Farm roundabout, connecting the dualling completed during phases 2 and 3 of the A350 improvement programme. If implemented with Phase 4 this would extend the dualling to cover the full stretch of the A350 Chippenham Bypass;
- **Bumpers Farm roundabout capacity enhancements:** increasing the circulatory from 2 lanes to 3; signalling all approach arms; increasing approach arms from A350 (S), A420 (W), A350 (N) and A420 (E) to 3 lanes; and dualling the exits onto the A420 (E) and A420 (W); and
- **Lackham roundabout capacity enhancements:** dualling of all approach arms and dualling exits to the A350 north and south.

14.44 A scheme comprising all four of the components outlined above was identified through the Options Assessment Report to be appraised as the preferred option in the OBC. This is complemented by the appraisal of four reduced options, assuming only some the above components are implemented, to better understand the relative impact of each.

14.45 Accordingly, the five options appraised in the OBC are as follows:

- **Reduced Option A:** Chippenham Bypass dualling Phase 4 with capacity improvements at Lackham roundabout
- **Reduced Option B:** Chippenham Bypass dualling Phase 5
- **Reduced Option C:** Junction Capacity improvements at Bumpers Farm roundabout
- **Reduced Option D:** Chippenham Bypass dualling, Phase 5 with capacity improvements at Bumpers Farm roundabout
- **Preferred Option:** Full Combined Option - Options A, B and C combined

14.46 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 14.8**.

Figure 14.8 - Summary of how A350 Chippenham Bypass Dualling Phases 4 and 5 contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> • The scheme is included within Strategic Corridor C – A350 • This section of the A350 forms part of the MRN network and records an average daily vehicle flow of between 30,000 to 40,000 vehicles • The scheme will seek to address existing and forecast capacity constraints, associated with poor journey time reliability, increasing journey times and high accident rates.
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> • The scheme is expected to support economic growth along the whole of the A350 corridor in Wiltshire. The existing primary employment locations include: <ul style="list-style-type: none"> ○ Chippenham ○ Trowbridge ○ Melksham ○ Warminster

	<ul style="list-style-type: none"> ○ Westbury • The headline figure for 2016-2036 employment growth in the A350 Functional Economic Market Area (FEMA) is 13,770 jobs. • The scheme will enhance north/south links to the south coast ports and airports from the M4 corridor and Midlands.
Support Housing Delivery	<ul style="list-style-type: none"> • 4,000 new homes planned for Chippenham • In addition, up to 13,535 dwellings in the Chippenham Housing Market Area (HMA) is being considered as part of the emerging Wiltshire Local Plan 2036, including an additional 5,155 in Chippenham • The scheme is expected to support housing growth along the whole of the A350 corridor in Wiltshire.
Supporting All Road Users	<ul style="list-style-type: none"> • The accident analysis indicates there would be a slight reduction in 'serious injury' accidents as result of improving the safety of the A350. • The scheme is also expected to lead to noticeable forecast traffic reductions on parallel 'rat running' routes due to traffic reassignment, therefore reducing accident numbers along these routes.
Supporting the SRN	<ul style="list-style-type: none"> • The scheme would improve journey times between the M4 J17 and the A36 and A303.

14.47 The A350 is a key strategic link for both north-south connectivity and business and freight movements from the south coast to the M4. This scheme represents the next phase of the planned A350 Chippenham Bypass improvements undertaken to address existing and forecast capacity constraints, associated with poor journey time reliability, increasing journey times and high accident rates:

- Phase 1: A350 North of Chippenham- construction completed March 2015; funded through the Government's Local Pinch Point Fund with an additional contribution from Wiltshire Council;
- Phase 2: A350 Chippenham Bypass Improvements (Bumpers Farm) - construction completed in February 2016; partly funded by the Local Growth Fund provided to the Swindon and Wiltshire Local Transport Body (SWLTB); and
- Phase 3: A350 Chippenham Bypass Improvements (Chequers)- construction completed January 2019; partly funded through the Local Growth Fund provided to the SWLTB.

14.48 Whilst previous phases of the A350 improvement works have delivered benefits, capacity constraints and the resultant impacts persist which will only be exacerbated by the delivery over 4,000 new homes planned for Chippenham in the Wiltshire Core Strategy and allocated in the Chippenham Site Allocations Plan (CSAP). In addition, up to 13,535 dwellings in the Chippenham Housing Market Area is being considered as part of the emerging Wiltshire Local Plan 2036, including 5,155 in Chippenham itself. This growth will further threaten the strategic role of the A350, in particular its role in supporting new housing and employment delivery and in maintaining north-south connectivity. Given this, improvements to the A350 corridor are fundamental to the realisation of the Swindon and Wiltshire Local Enterprise Partnership's Strategic Economic Plan. Scheme objectives have been identified to address the above issues, as outlined below.

- Improve existing journey time reliability and reduce total delay along the A350 Chippenham Bypass to preserve its key role including as part of the advisory freight route network.
- Reduce the frequency of personal injury accidents along the A350 Chippenham Bypass and parallel routes.
- Increase the capacity of the A350 Chippenham Bypass to support planned (adopted Wiltshire Core Strategy and CSAP) and future growth (emerging Wiltshire Local Plan 2036).
- Improve forecast journey time reliability and total delay along the A350 Chippenham Bypass which may otherwise discourage inward investment on new and existing employment sites in Chippenham and the corridor as a whole.
- Protect the strategic role of the A350 and reduce community impacts, by increasing the road capacity to minimise traffic reassigning onto the local road network.

14.49 The scheme is proposed to provide the following benefits for the A350 strategic corridor:

- Reduced congestion
- Reduced journey times
- Improved journey time reliability

14.50 The Adjusted Benefit-Cost Ratios (BCR) of the Preferred Option is 2.21 with BCRs of the Reduced Options in the range 0.24 (Reduced Option A) to 4.72 (Reduced Option C). It is concluded that the Preferred Option is likely to deliver Medium-High Value for Money.

14.51 Qualitative assessments of both social and environmental impacts are being completed as part of the OBC. Mitigation measures will be considered as part of further business case development and scheme design.

14.52 The scheme outturn cost, including preparation, design, preliminaries, risk and construction, is estimated to be £28.7 million (Preferred Option).

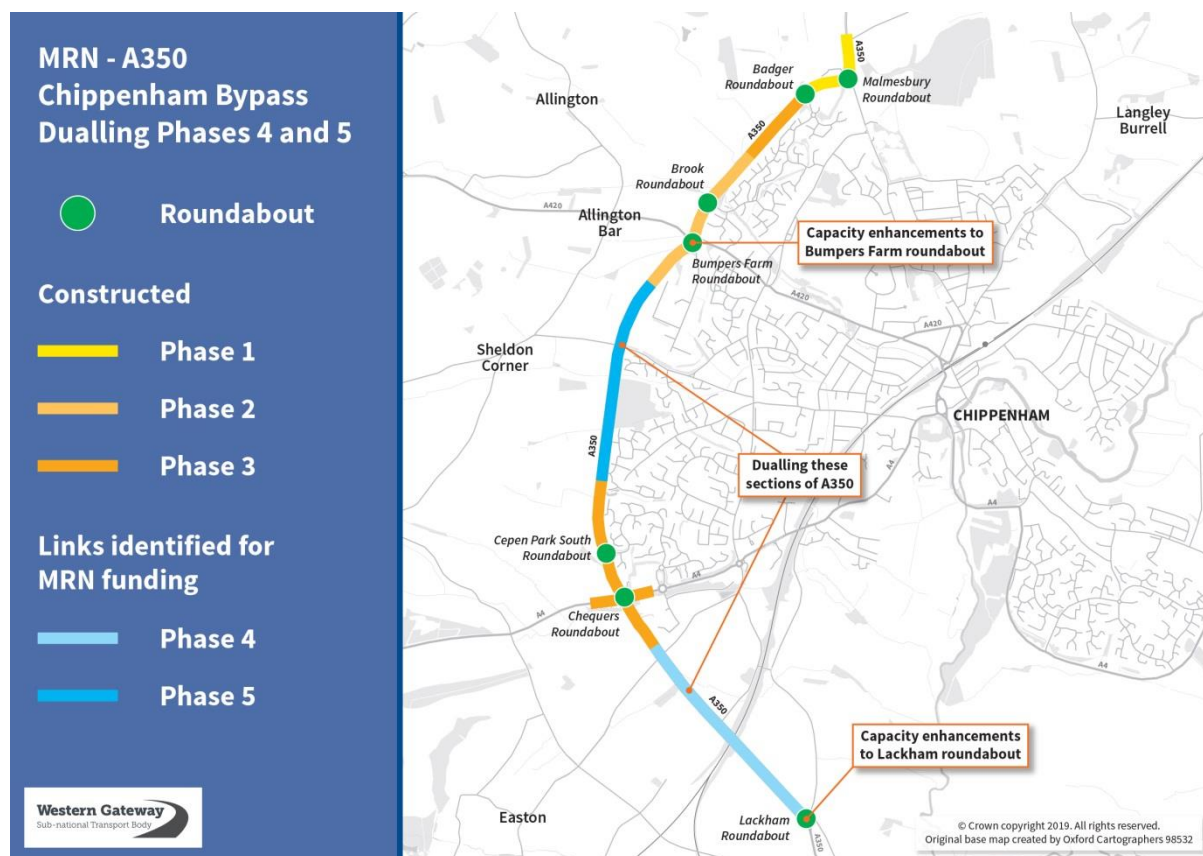
14.53 The overall plan to improve the A350 is included in the adopted Wiltshire Core Strategy (Core Policy 66), which has been subject to an Examination in Public (EiP). A detailed risk register is being developed, based on preliminary scheme designs, to be included in the OBC. Three key risks emerging from the risk assessment include:

- Price & estimation variations - materials costs affected by market forces which could cause a sudden increase in these costs;
- Programme duration - a 6 month increase in programme duration would represent a significant increase in contract price due to the high value of monthly site costs; and
- Design coverage - scheme design is still under development representing a risk of increase in scope of works and therefore a potential increase in construction price.

14.54 There are currently no known specific procurement challenges associated with delivering the scheme. The adopted procurement process is expected to be similar to that of the previous phases of the A350 improvement scheme, listed above, which were all successfully delivered to time, budget and scope.

14.55 **Figure 14.9** provides a strategic scheme plan for the scheme.

Figure 14.9 – A350 Chippenham Bypass Dualling Phases 4 and 5 Strategic Plan



LLM - A350 Melksham Bypass

14.56 The A350 is a primary north-south route connecting the M4 with the Dorset coast and Poole port. In Wiltshire it passes around the principal settlements of Chippenham and Trowbridge via the town of Melksham and neighbouring village of Beanacre, and on to Westbury and Warminster. The proposed scheme is for a new road alignment for the A350 around the eastern side of Melksham, bypassing the village of Beanacre. Route options to the east of the town are being considered.

14.57 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 14.10**.

Figure 14.10 - Summary of how A350 Melksham Bypass contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> • The scheme is included within Strategic Corridor C – A350 • This section of the A350 forms part of the MRN network and records an average daily vehicle flow of between 30,000 to 40,000 vehicles • Five key problems on A350 in Melksham: <ul style="list-style-type: none"> ○ Limitations of the road network around Melksham. ○ Physical constraints in the 'urban' sections of the A350 in northern Melksham and Beanacre village. ○ Insufficient capacity of the A350 through Melksham to cope with current and projected future traffic volumes.
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	<ul style="list-style-type: none"> ○ High accident rates along the A350 through Melksham, with significant clusters around the busiest junctions. ○ Severance impacts on communities in Beanacre and northern Melksham.
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> • The scheme is expected to support economic growth along the whole of the A350 corridor in Wiltshire. • Strategic role of the A350 (MRN) is threatened by increasing congestion / delays.
Support Housing Delivery	<ul style="list-style-type: none"> • The scheme is expected to support housing growth along the whole of the A350 corridor in Wiltshire. • The Wiltshire Core Strategy identifies a housing need of 2,370 (2006-2026) in the Melksham Community area.
Supporting All Road Users	<ul style="list-style-type: none"> • The reduction in traffic on the existing A350 alignment through Melksham and Beanacre will benefit other road users. It will also provide the opportunity to improve facilities for pedestrians and cyclists.
Supporting the SRN	<ul style="list-style-type: none"> • The scheme would improve journey times between the M4 J17 and the A36 and A303. • Overall Travel Time Benefits have been calculated in the SOBC at £143.7m. • The A350 between Warminster and Chippenham forms part of a tactical diversionary route for the A36.

14.58 The Melksham Bypass scheme was initially considered in an Interim Options Assessment report (IOAR) in 2016 and options were subsequently reviewed in an Options Assessment Report (OAR) in 2017 which resulted in three potential alignments for an eastern bypass of the town. A Strategic Outline Business Case (SOBC) was produced in December 2017 and submitted to the DfT for informal comment.

14.59 Following this, the need for additional information was identified, including more detailed optioneering involving cost estimates and an updated SOBC including updated problems, constraints, objectives, an environmental assessment and route options.

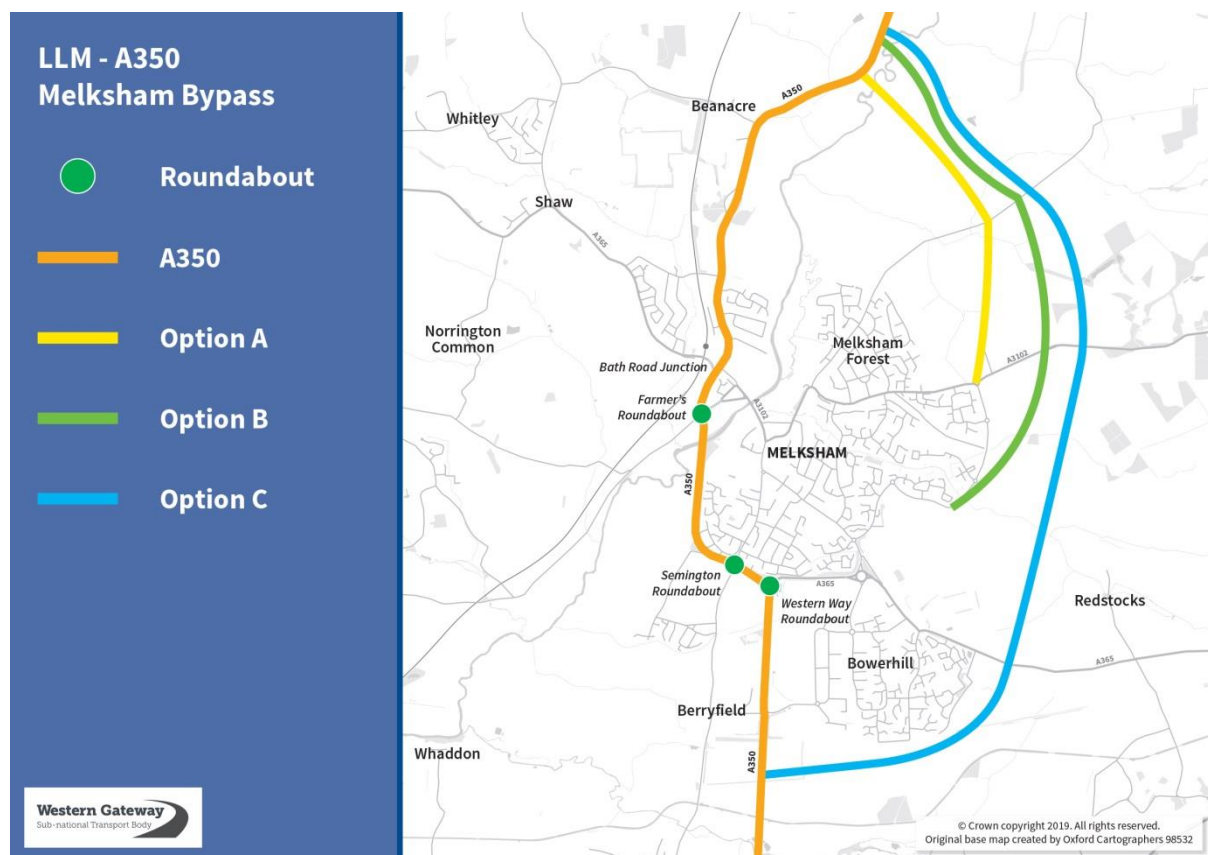
14.60 The scheme is proposed to mitigate the following issues experienced on the A350 at Melksham:

- Limitations of the road network around Melksham – the layout of the road network means the A350 serves multiple functions; journeys to and from the north and south of Melksham have to pass through the town via the A350 including the River Avon crossing or face significant diversions.
- Physical constraints in the ‘urban’ sections of the A350 in northern Melksham and Beanacre village – the A350 passes through residential areas with 30mph limits, is constrained by property frontages on both sides and there are several junctions in northern Melksham used, predominately, by local traffic to access amenities.
- Insufficient capacity of the A350 through Melksham to cope with current and projected future traffic volumes – significant peak period congestion is currently experienced on the Melksham-Beanacre sections, especially around Farmers and Semington Road roundabouts, and between Bath Road and the Leekes store.

- High collision rates along the A350 through Melksham - twelve serious collisions have been recorded between 2012 and 2016, with severity rates generally higher on the A350 compared to other roads in the area.
 - Severance impacts on communities in Beanacre and northern Melksham – high traffic volumes using the route (including significant numbers of HGVs) exposes residents to noise and air pollution, and pedestrian access to local shops in northern Melksham and the town centre is restricted, which discourages walking and cycling along the route.
- 14.61 The Wiltshire Core Strategy identifies a housing need of 2,370 (2006-2026) in the Melksham Community area, 5,090 in the Chippenham CA and 6,975 in the Trowbridge CA. This growth will place additional pressure on the issues identified above and further threaten the strategic role of the A350. The scheme objectives have been identified to mitigate these issues and enable the A350 to support the future development allocated in the Core Strategy and the housing and employment growth to be identified in the emerging Wiltshire Local Plan 2036 (up to 13,535 dwellings in the Chippenham Housing Market Area (including up to 2,045 at Melksham) and up to 5,245 dwellings in the Trowbridge HMA).
- 14.62 The scheme objectives include:
- Reduce journey times and delays on the A350 through Melksham and Beanacre, allowing for future growth in demand.
 - Reduce journey times and delays on the following routes through Melksham:
 - A350 South – A3102
 - A365 West – A365 East
 - A350 South – A365 West.
 - Provide enhanced opportunities for walking and cycling between Melksham town centre and the rail station / Bath Road, and along the existing A350 corridor within Melksham.
 - Reduce personal injury accident rates and severity for the A350 and Melksham as a whole.
 - Reduce the volume of traffic including HGVs passing along the current A350 route in northern Melksham and Beanacre, and avoid negative impacts on other existing or potential residential areas.
- 14.63 The initial BCR of Route 1 (Option A) is 1.21 and Route 2 (Option C) is 1.76. This has been reviewed through the recently developed Wiltshire Strategic Model to forecast updated transport network impacts. The outputs of the model have been monetised using the DfT's TUBA software.
- 14.64 Potential moderate or major adverse environmental impacts have been identified for all three options with respect to landscape, biodiversity and the water environment. However, all have scope to be reduced or mitigated through the planning and design process. Potential beneficial impacts have also been identified with respect to reliability, wider impacts, noise, air quality, journey quality and severance. Overall, the findings of qualitative assessments are not considered to be significant enough to warrant any increase or decrease in the VfM categories.

- 14.65 The scheme cost, including preparation, design, preliminaries, risk and construction, is estimated to be Option A - £51.2 million and Option C - £135.8 million (outturn costs).
- 14.66 A detailed risk register is being developed. Three key risks emerging from the risk assessment include:
- Land ownership – investigations are currently being conducted as part of the SOBC development process.
 - Environment, ecology and archaeology – high level constraints are known; further investigations are currently ongoing as part of the SOBC development process.
 - Services and overhead pylons – high level constraints are known; further investigations are currently being conducted as part of the SOBC development process.
- 14.67 There are currently no known specific procurement challenges associated with delivering the scheme. Decisions regarding the preferred procurement strategy will be made at Outline Business Case stage, once the requirements of the proposed scheme have been defined with greater certainty. Consideration will be given to traditional procurement versus alternative approaches such as design and build, and the relative merits of letting a single contract or a series of contracts, which could be split by route section or work type.
- 14.68 **Figure 14.11** provides a strategic scheme plan for the scheme.

Figure 14.11 – A350 Melksham Bypass Strategic Plan



MRN - A338 Southern Salisbury Improvements (Exeter Street, Harnham and Park Wall junctions)

- 14.69 The scheme involves the redesign of both Exeter Street roundabout and Harnham gyratory, and a review of MOVA timings at Park Wall junction. Exeter Street roundabout will be changed to a signalised T junction with St Nicholas Street connecting to the north. At Harnham gyratory, the A3094 approach arm, the stop line at the western circulatory and the A338 approach arm will be widened to three lanes. The exit to the A338 will also be realigned to reduce the curvature and improve this movement for large and long bodied vehicles.
- 14.70 The land required for the scheme is within the highway boundary and public ownership.
- 14.71 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 14.12**.

Figure 14.12 - Summary of how A338 Southern Salisbury Improvements contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> The route is included within Strategic Corridor D - A46 / A36 and M A338/A354 The scheme is an essential component of the Salisbury Transport Strategy (STS) that was adopted as part of the Wiltshire Core Strategy. Salisbury is a historic city with an air pollution problem caused by traffic and forms the heart of the Swindon and Wiltshire Local Enterprise Partnership's 'Salisbury A303 Growth Zone'.
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> The scheme would indirectly improve access to the following key employment sites in Salisbury: Churchfields Industrial Estate, Old Sarum and High Post/Chemring The headline figure for 2016-2036 employment growth in the Salisbury FEMA is 11,430 jobs.
Support Housing Delivery	<ul style="list-style-type: none"> The planned housing growth in the Wiltshire Core Strategy, specifically 4,170 houses for Salisbury including circa 750 houses at Harnham to 2026, is dependent on the delivery of this scheme.
Supporting All Road Users	<ul style="list-style-type: none"> Both Harnham Gyratory and Exeter Street roundabout are classed as accident cluster sites. The proposed junction improvements will help to address the current safety record.
Supporting the SRN	<ul style="list-style-type: none"> The scheme would improve journey times between the A338 and A36 by reducing the risk of traffic blocking back to College Roundabout on the A36. The A338 from College Roundabout to Harnham Gyratory forms part of a tactical diversionary route for the A36.

- 14.72 The Wiltshire Core Strategy plans for a total of 6,060 new homes and 29ha of employment for the Salisbury and Wilton urban area to 2026. The scheme junctions were identified in the Salisbury Transport Strategy (2012 and 2018) as being a constraint on current traffic in Salisbury, which will be exacerbated by future housing and employment developments (up to 5,290 dwellings in the Salisbury Housing Market Area is being considered as part of the emerging Wiltshire Local Plan 2036). Salisbury is also an historic city with an air pollution

problem caused by traffic and forms the heart of the Swindon and Wiltshire Local Enterprise Partnership's 'Salisbury A303 Growth Zone'.

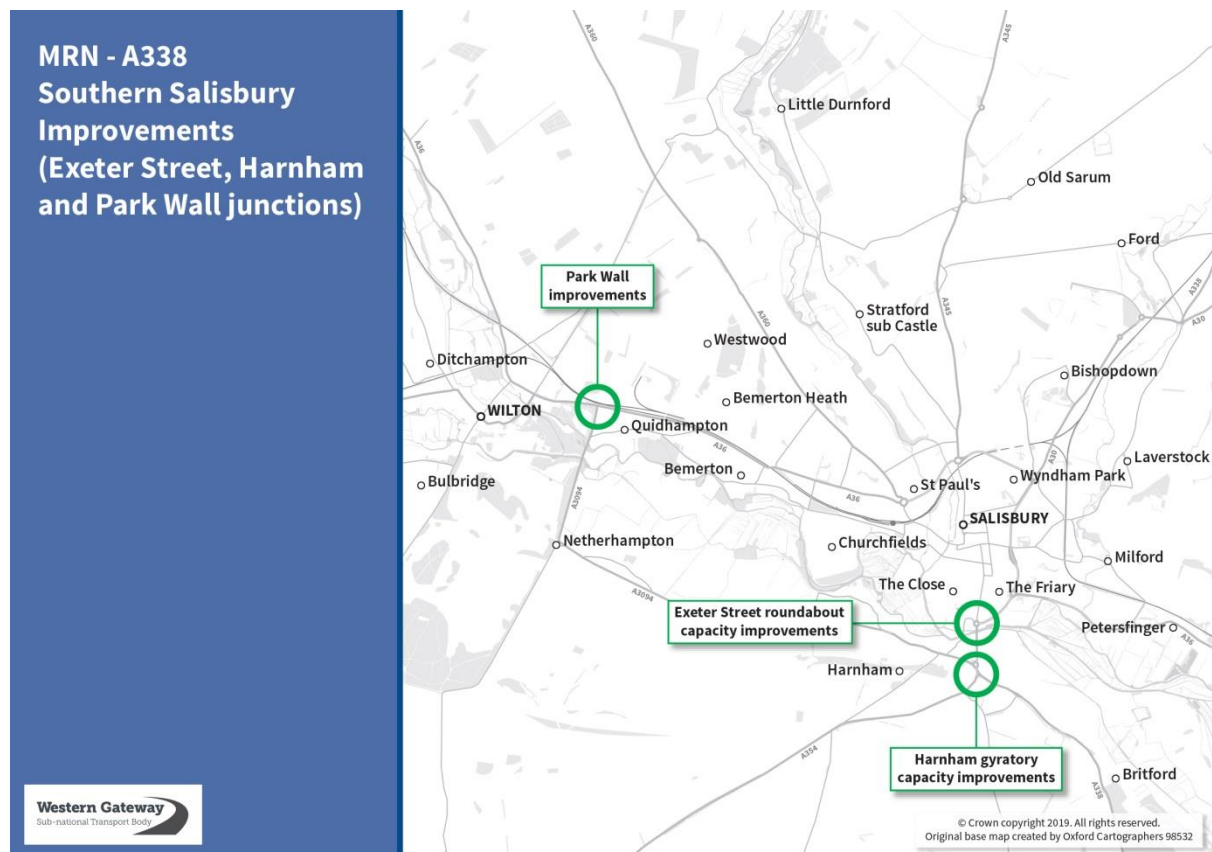
- 14.73 Feasibility studies for Exeter Street and Harnham gyratory were conducted in 2016 and 2017, identifying initial options and through sifting leading to a preferred design, with preferred option testing being conducted in 2018.
- 14.74 The scheme will address the following issues:
- Existing and forecast traffic experience delays at the scheme junctions, making journeys using the A338/A3094 more difficult, impacting on transport costs and resulting in negative agglomeration impacts;
 - The strategic role of the A338 and A3094 will be threatened by increased congestion and delays within Salisbury;
 - Active and sustainable travel modes are discouraged in favour of car travel with potential impacts on health; and
 - Congestion related shunts occur frequently at the scheme junctions.
- 14.75 The objectives of the scheme are to:
- Ensure that the transport network in Salisbury has the capacity to accommodate future growth;
 - Reduce personal injury accidents at the scheme junctions;
 - Protect the strategic role of the MRN and SRN; and
 - Reduce delay for all transport users at the scheme junctions.
- 14.76 The Economic Case has been prepared in a manner which is proportionate to the scale of the scheme and appropriate for an SOBC stage. The Salisbury Transport Model has been used to forecast transport network impacts and outputs of the model were monetised using the DfT's TUBA and COBALT. The monetised economic benefits of the scheme are forecast to outweigh its costs and any negative impacts. The BCR is 2.46 giving a High Value for Money assessment.
- 14.77 The scheme is likely to have a Neutral social impact.
- 14.78 The environmental impact of the scheme is currently being assessed and mitigation measures will be considered as part of further business case development and scheme design.
- 14.79 scheme cost, including preparation, design, preliminaries, risk and construction, is estimated to be £17.5 million (outturn cost).
- 14.80 There is no risk in terms of land ownership, as the scheme will be delivered within the highway boundary and publicly owned land. The overall plan to improve the scheme junctions is included in the Salisbury Transport Strategy refresh 2018 (scheme references H01, H02 and H09).
- 14.81 A detailed risk register is being developed, based on scheme designs, to be included in the SOBC. Three key risks emerging from the risk assessment include:

- Stakeholder engagement – construction will result in significant disruption to local businesses, schools and residents, and the Exeter Street junction is located within and near to many environmentally sensitive areas. Engagement with local stakeholders will be a key consideration to successful delivery of the scheme.
- Buildability – due to the site constraints and the need to maintain access for local and through traffic, the buildability of the proposed designs requires further consideration.
- Scheme design – the designs for these schemes are currently being refined; as such there may be changes to the scheme designs as further work is conducted.

14.82 There are currently no known specific procurement challenges associated with delivering the scheme. Wiltshire Council will be the lead delivery agent, working in partnership with Highways England.

14.83 **Figure 14.13** provides a strategic scheme plan for the scheme.

Figure 14.13 – A338 Southern Salisbury Improvements Strategic Plan



15.0 Scheme prioritisation key theme – Improving international connectivity

Introduction

- 15.1 Bristol Airport is the largest airport in the South West and one of the top 10 largest UK airports. The airport has planning consent to handle up to 10m passengers a year. This is likely to be reached in the early 2020s. Future growth is further supported by the designation of a strategic employment zone.
- 15.2 Connectivity is a major issue for the Bristol Airport. It has no direct access onto the motorway network and is served by the single-carriageway A38. There is also no direct rail access. This lack of access impacts negatively on the reputation of the airport.
- 15.3 The need for improved access to Bristol Airport was highlighted by the Business and Transport Forum. There was broad acceptance that despite a climate emergency being declared by many local authorities, the group would be surprised if this halts growth in aviation. It was considered a priority to maximise sustainable access to airports as currently most trips are made by car. Other access issues included:
- The need to improve airport connectivity especially for non-car access;
 - Poor connectivity to Bristol Airport is constraining growth and makes it difficult to attract and retain staff;
 - Lack of connections to the Airport from the South West Peninsula prohibits access international markets; and
 - Lack of motorway and rail connections to Bristol Airport can make it difficult to access. Due to the close proximity of larger airports and the relative ease of access there is a lot of passenger leakage from the Gateway area to Birmingham and the South East airports

Scheme Priority

- 15.4 One MRN scheme has been identified under this policy heading. The scheme includes a number of junction improvements along the A38 between Bristol and M5 J22. These improvements will improve access to the airport as well enabling a number of strategic development sites to be delivered.
- 15.5 Due to the regional significance of the airport this improvement scheme is being promoted by both the Western Gateway STB and the Peninsula Transport STB.
- 15.6 **Figure 15.1** illustrates the location of this scheme priority within the wider Western Gateway context and strategic corridor it is included within. **Figure 15.2** provides a summary of scheme headlines.
- 15.7 The total funding ask for the scheme under this policy is £21 million.

Figure 15.1 - Spatial distribution of MRN scheme priority improving international connectivity

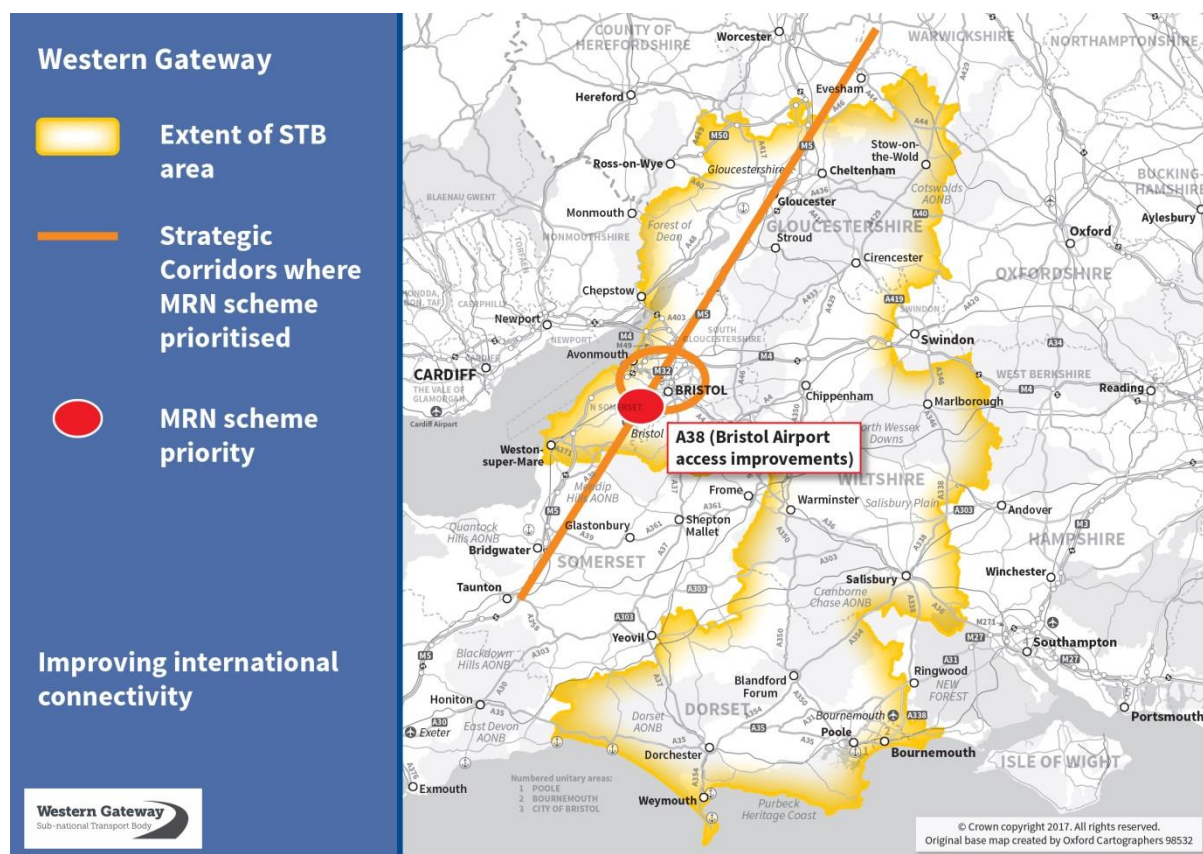


Figure 15.2 – Summary of MRN scheme priority improving international connectivity

Scheme Name	Estimated Scheme Cost	Strategic Corridors	Promoting Authority	Stated scheme start date
MRN A38 (Bristol Airport access improvements)	£21m	Corridor B – M5 and Corridor H - A38/A370 - Corridor I - Bristol Urban	North Somerset Council + Peninsula Transport STB	2022/23

MRN A38 (Bristol Airport access improvements)

- 15.8 The A38 provides an important economic link between Bristol, Somerset and the communities south of Bristol. It is a key route to Bristol airport and forms part of the designated Strategic Road Network alternative route so forms an essential resilience function for the South West.
- 15.9 The A38 is of varying standards with individual locations benefiting from targeted highway improvements over many years without the benefit of a review of the whole corridor. The route is generally single carriageway with only short sections of two lanes in one direction and a single lane in the other.

15.10 A summary of how the scheme contributes to the MRN objectives is provided in **Figure 15.3**.

Figure 15.3 - Summary of how A38 (Bristol Airport access improvements) contributes to MRN objectives

Reducing Congestion	<ul style="list-style-type: none"> The scheme is included within Strategic Corridor H - A38/A370 and I - Key routes that serve the West of England This section of the A38 forms part of the MRN network and records an average daily vehicle flow of between 10,000 to 20,000 vehicles Connectivity to Bristol Airport would be improved with greater network resilience, more reliable journey times and the opportunity to improve public transport to and from Bristol Airport. The scheme will improve journey times and average speeds to preserve primary route function of A38 and reduce traffic diverting onto less appropriate routes.
Support Economic Growth & Rebalancing	<ul style="list-style-type: none"> 1000 new jobs directly located at Bristol Airport with journey time/reliability improvements for the existing 4,000 employees. Economic forecasting has shown that 16,000 regional jobs supported in addition to the existing 15,000 regional jobs resulting from Bristol Airport.
Support Housing Delivery	<ul style="list-style-type: none"> The scheme will enable the following strategic developments to be delivered <ul style="list-style-type: none"> 2,800 at Mendip Spring Garden Village 1,900 at Banwell Garden Village
Supporting All Road Users	<ul style="list-style-type: none"> The scheme will improve alignment, signage & visibility to reduce collisions and improve resilience Create additional running lanes to provide more reliable access for general traffic and for buses serving the airport
Supporting the SRN	<ul style="list-style-type: none"> The scheme will improve access from M5 J22 and reduce the risk of congestion impacts

15.11 The Joint Spatial Plan and the Bristol South West Economic Link study have identified a series of interventions as part of a longer-term vision to provide improved transport connections to the area. The programme of improvements, of which this package forms an early part, also includes highway links around the villages of Banwell, Sandford, Churchill and Langford, improved connectivity to the M5 and an offline transport corridor between Bristol and the airport.

15.12 Due to the strategic cross boundary nature of the A38 proposal this scheme is being promoted by both the Western Gateway and Peninsula Sub-National Transport Boards.

15.13 The package of measures for the A38 MRN is aimed at removing pinch points; providing additional capacity both close to Bristol Airport and along the A38 from south Bristol, through North Somerset, to the M5 at junction 22 in Somerset; and, to ensure the route is resilient to planned housing and economic growth. The package contains the following elements:

- Widening of the A38 around the airport
- Improvements to the junction with Downside Road
- Localised improvements to the A38

- A38 Edithmead roundabout improvements

15.14 The objectives of the scheme are to:

- Improve journey times and average speeds to preserve the primary route function of the A38 and reduce traffic diverting onto less appropriate routes through sensitive villages or narrow lanes providing local air quality and environmental benefits.
- Improve alignment, signage and visibility at concealed entrances to reduce number of collisions and improve resilience of this primary route which also serves as a formally designated diversion route for the SRN
- Reduce disruption to through traffic as a result of traffic accessing the airport.
- Improve the functioning of the primary route corridor in the vicinity of the airport by creating additional running lanes to provide more reliable access for general traffic and public transport including those serving the airport.
- Improve business confidence in the current and future function of this corridor to provide an effective international gateway to underpin and drive sustainable growth
- Improve public transport infrastructure to facilitate current services and facilitate future service improvements to support growth
- Provide opportunities for environmental and biodiversity enhancements.

15.15 The cost of the scheme is estimated at £21 million, which will generate a Benefit Cost Ratio in the region of 3. The benefits of the scheme include: reduced travel time & vehicle operating costs; improved road safety; enhanced resilience and reliability; journey quality and; indirect tax revenues. Much of the scheme uses land owned by North Somerset Council or Bristol Airport, with negotiations ongoing to secure any remaining land.

15.16 The scheme will have a beneficial social impact. Improvements at Downside Road reduce congestion and provide improvements to walking and cycling connections. Resilience and safety improvements, ensuring the route remains reliable even as the traffic flows grow, will also release economic and social benefits.

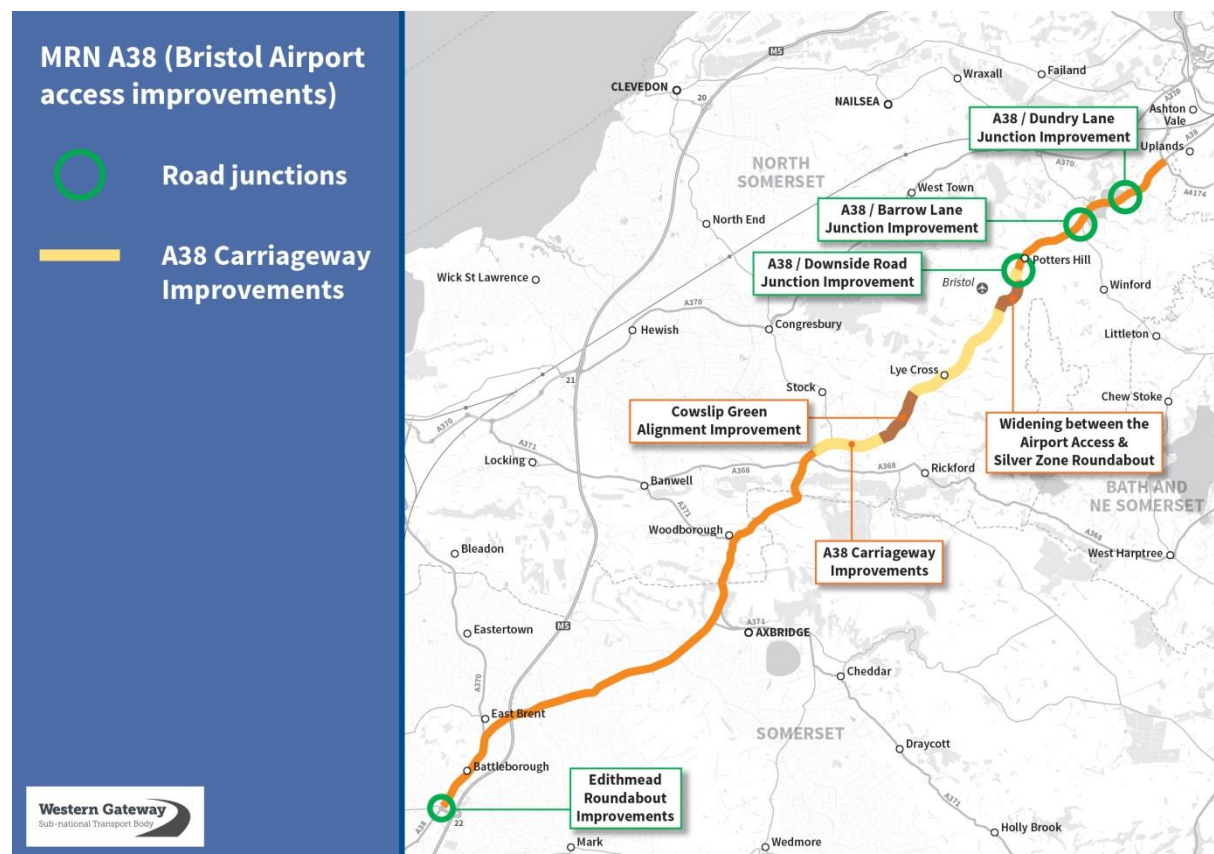
15.17 The scheme is likely to have the following environmental impacts:

- Slightly adverse noise and air quality impacts due to increase in traffic flows on A38
- No impact to the landscape as most of improvements are online within existing highway
- Minimal biodiversity impacts during construction providing appropriate construction mitigation measures are in place with opportunities to enhance biodiversity.

15.18 The total cost of the scheme is still under review, however early output estimates an outturn cost of just under £21 million, of which 85% is being sought from the National Road Fund. Much of the scheme uses land owned by North Somerset Council or Bristol Airport, with negotiations ongoing to secure any remaining land.

15.19 **Figure 15.4** provides a strategic scheme plan for the scheme.

Figure 15.4 – A38 (Bristol Airport access improvements) Strategic Plan



16.0 MRN and LLM Scheme Priorities

Introduction

- 16.1 The Western Gateway has prioritised 7 MRN schemes and 2 LLM schemes for consideration for funding through the first round of the new National Road Fund (2020-2025). The schemes have been prioritised on the basis of greatest regional need and crucially deliverability.
- 16.2 The schemes have been approved by the Western Gateway Board and have received widespread support from stakeholders attending the Business and Transport Forum.
- 16.3 The prioritised schemes support three key policy themes identified through the Regional Evidence Base.
- Managing urban vehicle movements within city regions to enable future housing and employment growth;
 - Improved north / south connectivity within the sub-region improving linkages to the south coast from M4 / M5; and
 - Improved access to Bristol Airport and planned growth hub/corridor

Timescales

- 16.4 **Figure 16.1** documents the Western Gateway schemes under the three policy themes in sequenced in order of the proposed construction start date. This approach represents the outcome of the REB and underlines the need for a sequenced approach to maximising the benefits of delivering strategic highway improvements to sections of the strategic corridors.
- 16.5 **Figure 16.2** documents the proposed timetable for submitting the appropriate business cases to the Department for Transport for consideration. Subsequent to the July 2019 submissions, this proposed timetable is dependent on the DfT providing timely funding approvals.
- 16.6 **Figure 16.3** outlines the stages of delivery for each scheme.

Figure 16.1 – Western Gateway MRN and LLM Scheme Priorities

	Sub-national policy priorities		
Construction start dates	Improving urban travel	Improving north/south connectivity	Improving international connectivity
2020/21	MRN - A4174 Ring road capacity improvements	MRN - A350 Chippenham Bypass Improvements – Phases 4 & 5	
2021/22	MRN - A338 Wessex Fields Phase 2	MRN - A338 Southern Salisbury Improvements	
2022/23		MRN - A350 - M4 J17 Improvement	MRN - A38 – (Bristol Airport access improvements)
2023/24	MRN - A4174 MOD Roundabout improvements	LLM - A350 Melksham Bypass LLM - M5 Junction 9 and A46 (Ashchurch)	
2024/25			

Figure 16.2 – Western Gateway scheme priorities business case submission timetable

Scheme Name	Estimated Outturn Cost	Strategic Corridor	Promoting Authority	Stated scheme start date	Business Case timescales		
					Pre-SOBC	SOBC	OBC
MRN - A350 Chippenham Bypass Improvements – Phases 4 & 5	£28.7m	Corridor C – A350	Wiltshire Council	2020/21			July'19
MRN - A4174 Ring road capacity improvements	£36m	Corridor I - Bristol Urban	South Gloucestershire Council + WECA	2020/21			July'19
MRN - A338 Wessex Fields Phase 2	£21m	Corridor O - Bournemouth / Poole urban area	BCP Council	2021/22			July'19
MRN - A338 Southern Salisbury Improvements	£17.5m	Corridor D - A46 / A36	Wiltshire Council	2021/22		July 2019	Dec'19
MRN A38 (Bristol Airport access improvements)	£21m	Corridor B - M5 & Corridor H - A38/A370	North Somerset Council	2022/23		July'19	Dec'19
MRN – A350 - M4 J17 Improvement	£25.5m	Corridor C – A350	Wiltshire Council	2022/23		July'19	Dec'21
LLM - A350 Melksham Bypass	£135.8m	Corridor C – A350	Wiltshire Council	2023/24		July'19	Dec'21
MRN - A4174 MOD Roundabout Improvements	£30m	Corridor I - Bristol Urban	South Gloucestershire Council + WECA	2023/24	July'19	Dec'20	Dec'21
LLM - M5 Junction 9 and A46 (Ashchurch)	£180m	Corridor B - M5 & Corridor E A46 Midlands	Gloucestershire County Council	2023/24	July'19	Dec'19	Dec'21

Figure 16.3 – Western Gateway scheme priorities delivery timetable

	Pre SOBC				SOBC				OBC				FBC / Tender				Construction							
Scheme Priorities	2019/20				2020/21				2021/22				2022/23				2023/24				2024/25			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
MRN – A350 Chippenham Bypass Improvements																								
MRN – A4174 Ring road capacity improvements																								
MRN – A338 Wessex Fields Phase 2																								
MRN – A338 Southern Salisbury Improvements																								
MRN – A38 (Bristol Airport access improvements)																								
MRN – A350 - M4 J17 Improvement																								
LLM – A350 Melksham Bypass																								
MRN – A4174 MOD Roundabout Improvements																								
LLM – M5 Junction 9 and A46 (Ashchurch)																								