

# APPENDIX A

## MRN SCHEMES

- A38 – A374 Marsh Mills Roundabout to Cattedown Roundabout
- A38 – A3064 Weston Mill to Pennycomequick Roundabout
- A39 Camelford Bypass
- A358 Henlade Bypass
- A361 Glastonbury Bypass and Pilton
- A379 Corridor Improvements
- A382 Improvements

## LLM SCHEMES

- A38 Manadon Roundabout
- A39 Walton Ashcott Bypass
- M5 Junction 28

<b>Scheme Name</b>	A38 / A374 Marsh Mills Roundabout to Cattedown Roundabout
<b>Promoting Authority</b>	Plymouth City Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

This part of the MRN, starting at the A38 Marsh Mills junction, is the primary route into the city centre from the east, connecting Plymouth with the rest of the UK via the SRN.

This eastern section of the MRN contributes significantly to the route's unreliable journey times, ranging from 16 to 40 minutes at peak times, and its operational limitations, due to the following factors:

- inadequate capacity at key junctions
- poor carriageway condition
- regular road flooding events
- constraints from rail structures

The Plymouth & South West Joint Local Plan will deliver large numbers of new homes and jobs in the timeframe to 2034 with major investment in the city's road infrastructure recognised as critical to achieving this.

Future proofing the MRN will contribute towards the far south west achieving its economic goals. Failure to secure investment will further reduce the MRN's operational effectiveness and conflict with its new status.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

The scheme will deliver targeted junction improvements including remodelling of existing layouts, replacement of any out-dated traffic signal infrastructure (and new ITS equipment) and provision of enhanced public transport priority, increasing the capacity of the route and reducing overall delays. The improvements will focus on key junctions where either congestion is known to currently occur, or where traffic forecasts have shown will be approaching or over capacity as the city continues to grow, including:

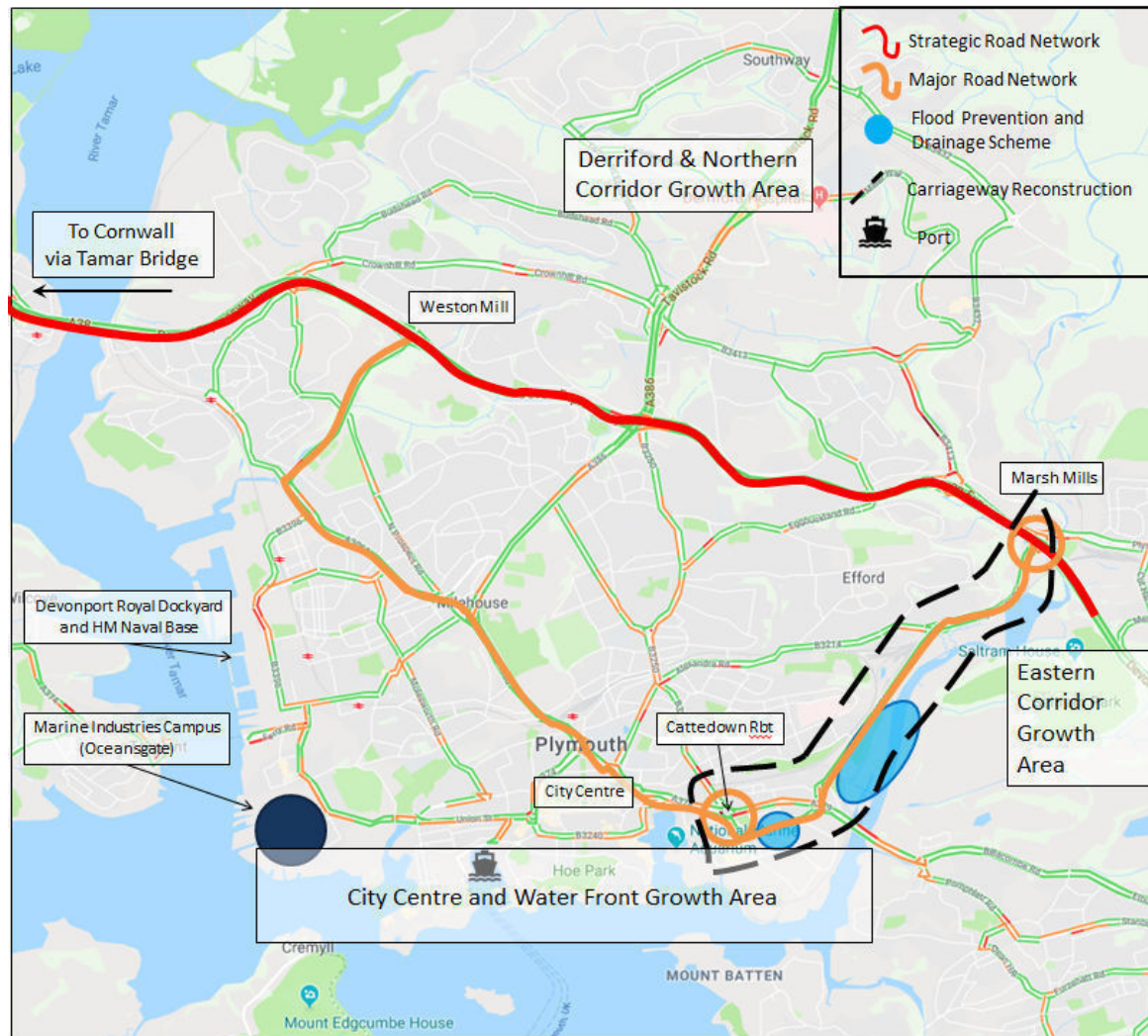
- A38 / A374 Marsh Mills Junction
- A374 / A379 Cattedown Junction

Localised road widening will be undertaken where there is a clear need for this to facilitate traffic flow or remove pinch-points. Opportunities will be maximised to improve facilities for non-motorised users, including provision of off-road cycle facilities.

To complement the junction improvements, extensive highway asset reconstruction will be delivered along the route, co-ordinated with other works to minimise construction delays.

Opportunity will be taken to carry out priority Environment Agency part-funded flood

defence works at Arnolds Point on the A374 and increase the MRN functionality as an Abnormal Load Route through the removal of rail bridges which currently limit its use by high-sided HGVs resulting in diversions on to less suitable traffic routes.



**Figure 1 Plymouth MRN East**

### 1.3 Objectives

Please describe how the scheme will solve this problem and support MRN objectives (250 words max)

Objective	How the scheme will support MRN objectives
<b>Reducing Congestion</b>	<p>Targeted junction capacity upgrades reducing delay and congestion</p> <p>Improved highway asset condition reducing accidents and flooding events supporting smoother travel</p> <p>Removal of height constraint structures enabling MRN use as Abnormal Load Route</p> <p>Improved traffic management at key decision points</p>

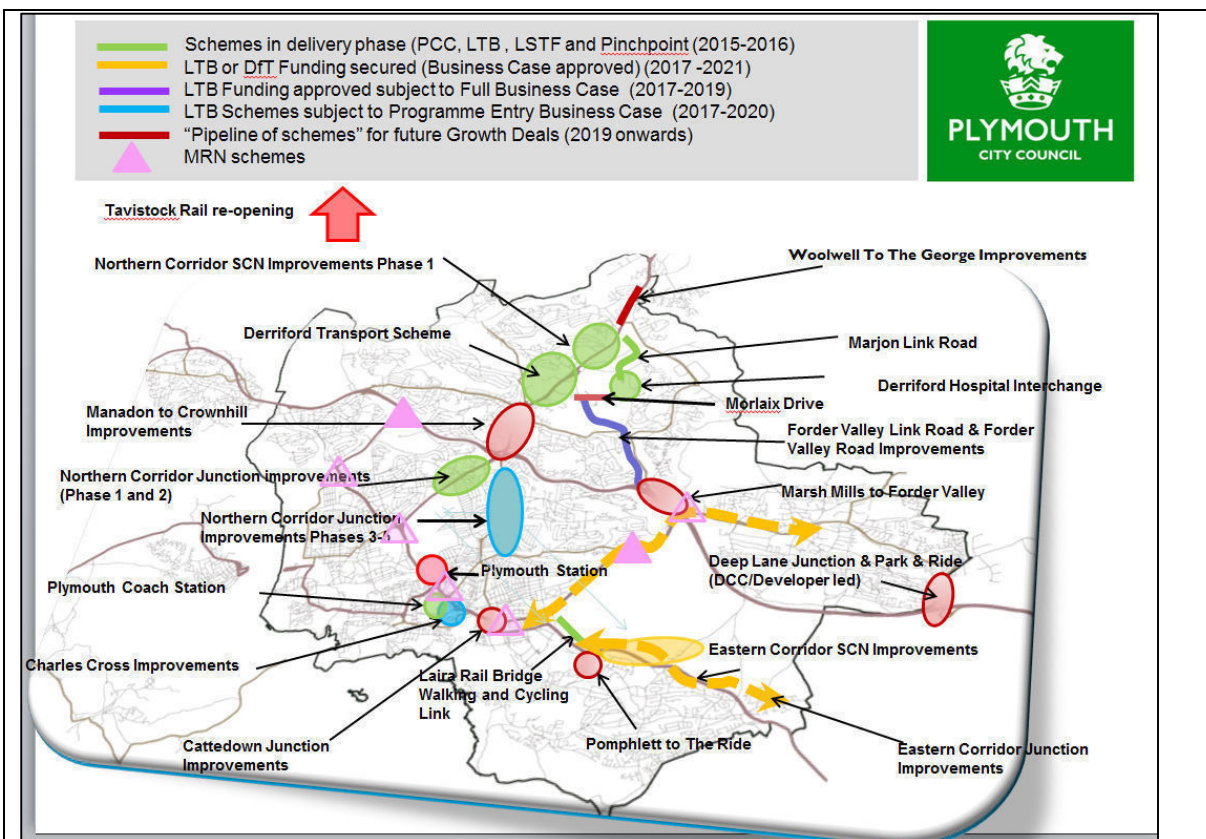
<b>Support Economic Growth &amp; Rebalancing</b>	<p>Supports the HotSW LEP Productivity Strategy which aims to raise productivity growth to 2.2% per annum and real GVA growth of 3% per annum.</p> <p>Plymouth is a regional growth centre within the HOTSW. By 2034 the population of the Plymouth and South West Devon Joint Local Plan (JLP) area is set to increase from 399,914 to 434,900. This scheme is required to deliver this growth (policy PLY 57 of the JLP).</p> <p>Trade &amp; Gateways Impact: improving the MRN will better connect the far south west via Plymouth to international markets through the continental ferry port at Millbay - identified as one of the UK ports that would be called upon to manage the expected significant increase in ferry movements and HGV traffic in the event of a no-deal Brexit.</p>
<b>Support Housing Delivery</b>	The JLP ambition is for 26,700 new homes by 2034, including 5000 at Sherford and 2000 at Plymstock Quarry to the east of the city. The scheme is critical to this growth
<b>Supporting All Road Users</b>	Modal shift through measures for public transport, cyclists and pedestrians, reduction in risk of deaths/serious injuries for all users
<b>Supporting the SRN</b>	The A38 between Marsh Mills and Manadon is within the worst 10% nationally for unreliable journey times and above average for road traffic collisions. The scheme will improve resilience to these incidences.

## 2. Development of scheme so far

### *Narrative of scheme development to date.*

The Plymouth and South West Devon Joint Local Plan (JLP) makes provision for a minimum of 26,700 new homes and the creation of at least 20,000 new jobs in its timeframe to 2034 with strategic transport infrastructure improvements critical to achieving this as identified at Policies SPT 8 and SPT12. This level of housing growth within the Housing Market Area (HMA) for Plymouth would meet all its housing needs as identified in the Objectively Assessed Needs (OAN).

Potential funding sources for the interventions for each of the city's strategic transport corridors to 2025 is shown at Figure 1.



**Figure 2 Strategic transport improvements to support the JLP with potential funding source**

Saturn Modelling, undertaken in partnership with Highways England, has identified the critical transport infrastructure required to meet Plymouth's growth ambition. This includes the Plymouth MRN route and the major junctions of the A38 / A374 Marsh Mills junction and A374 / A379 Cattedown Roundabout.

Policy **PLY57 Strategic infrastructure measures for the Eastern Corridor Growth Area** of the JLP identifies key strategic infrastructure measures that will be provided during the plan period in order to support the delivery of the strategy for the Eastern Corridor Growth Area including:

2. Eastern corridor transport improvements / programmes to support growth and improve access, including the following schemes
  - i. A379, A374, B3416 capacity and bus priority improvements including at Cattedown Roundabout, Pomphlett Roundabout and Stanborough Cross
  - ii. Capacity upgrades to the A38 and its junctions at Deep Lane and Marsh Mills, Forder Valley, Manadon and St Budeaux interchange

Policy **PLY61 Strategic Infrastructure Measures** of the JLP also specifies key strategic infrastructure measures that will be provided during the plan period (in addition to essential infrastructure required within the major growth areas), in order to support the delivery of sustainable growth in Plymouth as follows:

1. Improvements to the A38 trunk road and its main junctions

The South West Peninsula Route Strategy: Evidence Report (*Highways England, April 2014*) identifies the section of the SRN on the A38 between Marsh Mills and Manadon Junction as amongst the worst 10% nationally for unreliable journey times.

The subsequent Route Strategy (*Highways England, March 2017*) states that planned growth at Plymouth could be constrained by highway capacity (on the SRN).



Furthermore, the process of assessing the future performance of key junctions / corridors connecting the local and Strategic Road Network within the JLP area was developed and agreed in partnership with both Highways England and Devon County Council. The latest position statement of the Plymouth and South West Devon Joint Local Plan Transport Strategy Working Group (January 2018) specifically identifies that improvements will be required at Marsh Mills junction. These works to widen the circulatory of inner roundabout to avoid impacts on traffic signal inter-greens are needed in order to accommodate the forecast traffic growth at this location in terms of the performance of the A38 strategic corridor.

More recently, in 2018 Jacobs were commissioned to carry out a feasibility study across the whole Plymouth MRN route. The study examined current flows, speeds and delays and used theoretical capacities to identify parts of the network that have a high V/C ratio and highest delays. It also used traffic forecasts that included future employment and housing allocations to identify parts of the network that would be over capacity in the future and would require improvement. In addition the study looked at collision data to identify safety improvements that are required.

The subsequent report has identified the particular problems and issues along the Plymouth MRN. For the east section of the MRN Cattedown Roundabout and Marsh Mills junction were identified as requiring improvements to facilitate travel to work and relieve congestion.



Marsh Mills 2017 AM



Marsh Mills 2017 PM

**Figure 3 2017 Speeds at Marsh Mills Junction from Jacobs Plymouth MRN Feasibility Study September 2018**

Currently, the design work for the Plymouth MRN – East scheme is at the early feasibility design stage. However, the design for the A374 / A379 Cattedown Roundabout is more advanced as the junction was originally part of the DCLG funded £19m East End Transport Scheme (EETS) that was completed in 2012 and which resulted in major capacity increases to the A374 Gdynia Way. Upgrading Cattedown Roundabout is needed to fully maximise the benefits from this previous investment. An economic assessment was carried out on the Cattedown Roundabout scheme in 2013 resulting in a Benefits to Cost Ratio (BCR) of 4.97 and is therefore in the Very High category.

There is also an approved design for the EA flood defence scheme at Arnolds Point adjacent the A374 and will result in the construction of a 1300m long sea wall providing a 1 in 200 year (0.5% AEP) standard of protection up to the year 2110. The Arnold's Point Phase 2 project is included in the EA FCERM 1 EA FCERM 1 Flood Defence Grant in Aid programme of works as a Pipeline project.

However, if the Plymouth MRN – East scheme is selected for submission of a Strategic Outline Business Case, scheme development can be accelerated, with more detailed design work commensurate with the relevant stage.

### **3. Financial & Economic Case - Value for Money**

Indicative Scheme Cost	£48.3m including 44% OB
Indicative Benefit to Cost Ratio (if available)	'Very High' value for money

*Please outline the assumptions and uncertainties behind these estimations.*

The indicative scheme cost is based on:

- Outturn costs of other recent large scale schemes for the junction remodelling / widening works such as £10m Derriford Transport Scheme.
- Estimated costs of full carriageway / footway reconstruction including safety barrier / signage / street lighting replacement and new signal / ITS equipment are based on existing rates within the Council's Term Maintenance Contract.
- The indicative scheme cost includes 44% Optimism Bias as per DfT Transport Analysis Guidance Unit A1.2 Scheme Costs to reflect the early stage of development the scheme is at.
- 60 year whole life costs

A Benefit to Cost Ratio (BCR) has not been calculated at this stage in the development of the scheme. Based on the economic appraisal of other large capacity enhancement schemes within Plymouth, for which journey time savings during the appraisal period are significant (including Derriford Transport Scheme and Charles Cross Transport Improvement Scheme) the BCR is expected to be in the 'Very High' category.

### **4. Timescales**

Submission of Strategic Outline Business Case (SOBC)	Summer 2020
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	Summer 2021

Full Business Case submitted to DfT	Summer 2022
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	Summer 2023
Scheme open to public	Summer 2024



<b>Scheme Name</b>	A38 / A3064 Weston Mill to Pennycomequick Roundabout
<b>Promoting Authority</b>	Plymouth City Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The west section of Plymouth's MRN, starting at the A38 Weston Mill junction forms a vital route from Cornwall and the west of the city into the heart of Plymouth. Connecting the Strategic Road Network (SRN) to the Dockyard and Naval Base at Devonport, it also crucially links onwards to the City Centre and Waterfront Growth area.

At peak times, congestion frequently occurs both on the slip roads off the A38 at Weston Mill junction, as well as at key junctions along the corridor. The condition of the carriageway on this strategic route is continuing to decline, requiring ongoing maintenance, impacting further on journey reliability. There is a clear and obvious need for a significant financial investment to ensure that extensive planned highway asset reconstruction can be undertaken.

With ambitious planned growth, these problems are set worsen, a situation not in keeping with the route's status as part of the MRN.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

The scheme will deliver a series of targeted junction improvements including remodelling of existing layouts, replacement of any out-dated traffic signal infrastructure (and new ITS equipment) and provision of enhanced public transport priority where appropriate. This will increase the capacity of the route and reduce overall delays. The improvements will focus on key locations where either congestion is known to currently occur, or where traffic forecasts have shown will be approaching or over capacity as the city continues to grow, including the following:

- A38 / A3064 Weston Mill junction with part-widening of St Budeaux by-pass
- A3064 Camels Head junction to B3396 Saltash Road
- A3064 Camel's Head junction to Ferndale Road
- A386 Alma Road / Saltash Road (Pennycomequick Roundabout) with part-widening of Alma Road

Localised road widening will be undertaken where there is a clear need for this to facilitate traffic flow or remove pinch-points. Opportunities will be maximised to improve facilities for non-motorised users, including provision of off-road cycle facilities at locations where on-road cyclists are known to cause additional traffic delays.

To complement the junction improvements, extensive highway asset reconstruction will be delivered along the route, co-ordinated with other works to minimise construction delays.



**Figure 1: Plymouth MRN West**

### 1.3 Objectives

Please describe how the scheme will solve this problem and support MRN objectives (250 words max)

Objective	How the scheme will support MRN objectives
<b>Reducing Congestion</b>	<p>Targeted junction improvements at key locations to increase capacity and reduce overall delays and improve journey reliability</p> <p>Improved highway asset condition reducing accidents</p> <p>Improved traffic management at key decision points</p>
<b>Support Economic Growth &amp; Rebalancing</b>	<p>The Plymouth and South West Devon Joint Local Plan (JLP) supports the HotSW LEP Productivity Strategy 2018 which aims to raise productivity growth to 2.2% per annum and real GVA growth of 3% per annum.</p>

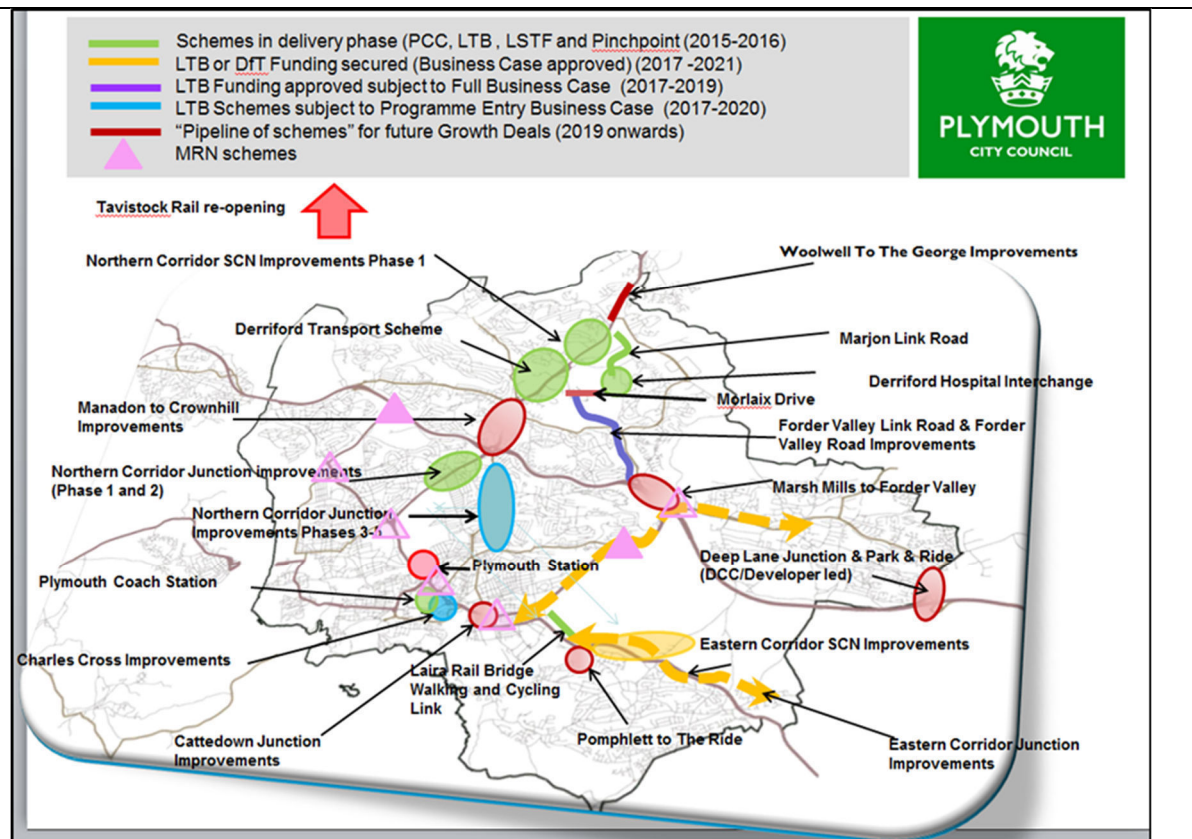
	<p>Plymouth is a regional growth centre within the HOTSW. By 2034 the population of JLP area is set to increase from 399,914 to 434,900. This scheme is required to deliver this growth (policy PLY 61, JLP).</p> <p>Improving access to regionally significant employment sites in the west of the city, most significantly Devonport Dockyard, which includes Oceansgate, a new world-class development hub for marine industries.</p> <p>Improving the MRN will better connect the far south west to the continental ferry port at Millbay - one of the UK ports that would be called upon to manage the expected significant increase in ferry movements and HGV traffic in the event of a no-deal Brexit.</p>
<b>Support Housing Delivery</b>	The scheme is critical to the JLP plan for 26,700 homes by 2034, including over 500 in the West of the city that would be directly served by the scheme.
<b>Supporting All Road Users</b>	Modal shift encouraged through measures for public transport, cyclists, pedestrians and disabled people and reduced risk of deaths/serious injuries for all users of the MRN
<b>Supporting the SRN</b>	Less congestion will result in more reliable journey times on both MRN and SRN and thus contribute to improved SRN resilience.

## 2. Development of scheme so far

### *Narrative of scheme development to date.*

The Plymouth and South West Devon Joint Local Plan (JLP) makes provision for a minimum of 26,700 new homes and the creation of at least 20,000 new jobs in its timeframe to 2034, with strategic transport infrastructure improvements critical to achieving this as identified at Policy SP12. This level of housing growth within the Housing Market Area (HMA) for Plymouth would meet all its housing needs as identified in the Objectively Assessed Needs (OAN).

Potential funding sources for the interventions for each of the city's strategic transport corridors to 2025 is shown at Figure 2.



**Figure 2: Strategic transport improvements to support the JLP with potential funding source**

Policy **PLY61 Strategic Infrastructure Measures** of the JLP also specifies key strategic infrastructure measures that will be provided during the plan period (in addition to essential infrastructure required within the major growth areas), in order to support the delivery of sustainable growth in Plymouth as follows:

1. Improvements to the A38 trunk road and its main junctions
2. Western Corridor Park and Ride (within Cornwall).
3. Capacity increases, including bus priority improvements, to the A3064 St. Budeaux Bypass and Wolsley Road, including Camels Head junction
4. Western Corridor Strategic Cycling and Walking network improvements

These improvements are particularly critical for improving access to the Dockyard at Devonport, which includes the HM Naval Base (the largest naval base in Western Europe, the sole nuclear repair and refuelling facility for the Royal Navy and soon to be the home of the new Type 26 frigate). They will also support the 1,200 jobs that will be delivered by the Oceansgate marine development hub, by improving access via Weston Mill junction.

The South West Peninsula Route Strategy: Evidence Report (Highways England, April 2014) identifies the section of the SRN on the A38 between Carkeel Roundabout and Weston Mill junction as being one of the most problematic links in the region in terms of congestion and delay in both directions (it is ranked 4<sup>th</sup> least reliable for journey times). The subsequent Route Strategy (Highways England, March 2017) states that planned growth at Plymouth could be constrained by highway capacity (on the SRN).

Furthermore, the process of assessing the future performance of key junctions / corridors connecting the local and Strategic Road Network within the JLP area was developed and



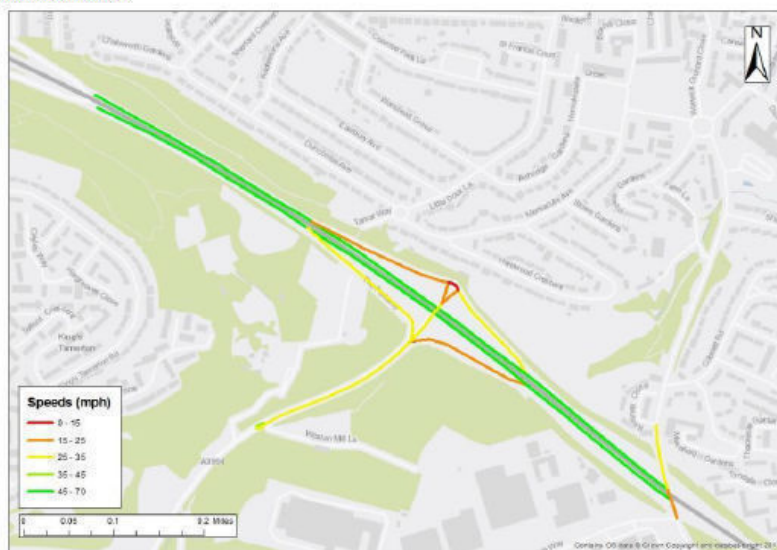
agreed in partnership with both Highways England and Devon County Council. The latest position statement of the Plymouth and South West Devon Joint Local Plan Transport Strategy Working Group (January 2018) specifically identifies that improvements will be required at Weston Mill junction. These works, giving priority to the off-slips from the A38, are needed in order to accommodate the forecast traffic growth at this location in terms of the performance of the A38 strategic corridor.

More recently, in 2018 Jacobs were commissioned to carry out a feasibility study across the whole Plymouth MRN. The study examined current flows, speeds and delays and used theoretical capacities to identify parts of the network that have a high V/C ratio and highest delays. It also used traffic forecasts that included future employment and housing allocations to identify parts of the network that would be over capacity in the future and would require improvement. In addition the study looked at collision data to identify safety improvements that are required.

The subsequent report has identified the particular problems and issues along the Plymouth MRN. For the west section of the MRN, Camels Head junction, Pennycomequick Roundabout, and in particular Weston Mill junction are all identified as requiring improvements to facilitate travel to work and relieve congestion.



Weston Mill 2017 AM



Weston Mill 2017 PM

**Figure 3: 2017 Speeds at Weston Mill Junction from Jacobs Plymouth MRN Feasibility Study (September 2018)**

Currently, design work for the Plymouth MRN (West) is at the early feasibility design stage. If the project is selected for submission of a Strategic Outline Business Case, scheme development can be accelerated, with more detailed design work commensurate with the relevant stage.

### 3. Financial & Economic Case - Value for Money

<b>Indicative Scheme Cost</b>	£43M
<b>Indicative Benefit to Cost Ratio (if available)</b>	'High to Very High' value for money

#### Please outline the assumptions and uncertainties behind these estimations.

The indicative scheme cost is based on:

- Outturn costs of other similar schemes for the junction remodelling / widening works
- Estimated costs of full carriageway / footway reconstruction including safety barrier / signage /street lighting replacement and new signal / ITS equipment are based on existing rates within the Council's Term Maintenance Contract
- The indicative scheme cost includes 44% Optimism Bias as per DfT Transport Analysis Guidance Unit A1.2 Scheme Costs to reflect the early stage of development of the scheme, but does not include inflation.
- 60 year whole life costs

A Benefit to Cost Ratio (BCR) has not been calculated at this stage in the development of the scheme. Based on the economic appraisal of other large capacity enhancement schemes within Plymouth, for which journey time savings during the appraisal period are significant (including Derriford Transport Scheme and Charles Cross Transport Improvement Scheme) the BCR is expected to be within either the Very High or High category.

### 4. Timescales

Submission of Strategic Outline Business Case (SOBC)	Summer 2019
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	Summer 2020
Full Business Case submitted to DfT	Summer 2021
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	Summer 2022
Scheme open to public	Summer 2023



<b>Scheme Name</b>	A39 Camelford Bypass
<b>Promoting Authority</b>	Cornwall Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The A39 Atlantic Highway is the main route from north Cornwall to west Devon serving a wider settlement population of over 100,000 and many popular tourist areas. Currently the A39 through Camelford is constrained by a priority shuttle junction, traffic signals and, increasing traffic volumes, particularly over the summer months when traffic typically increases by 30%.

As a result at peak times significant congestion occurs on this section resulting in delays, community severance and associated environmental impacts. This is exacerbated by relatively high percentage of HGV and agricultural vehicles, plus the A39 is the designated alternative route for traffic in the case of incidents on the A30 dual carriageway trunk road.

Camelford was declared an Air Quality Management Area (AQMA) in January 2017.

Poor connectivity impacts on economy of Camelford and surrounding area, with the current route identified in the Local Plan as a key constraint to growth.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

A39 Camelford Bypass:

A preferred route for the former trunk road was developed by the Highways Agency and was granted Planning permission in 2005.

The 2005 design is a single carriageway with lane widths of 3.65m, a 1m hard strip to either side (9.3m total width) and 2.5m verges, with a design speed of 100kph. It provides a theoretical capacity of 13,000 vehicles per day, sufficient capacity to cope with the current traffic flows on the A39 (including the seasonal uplifts) as well as the predicted increases in traffic flows to 2030.

The route is shown in Figure 1 and comprises a realignment of the B3266 to meet a 4 armed roundabout on the A39 to the west of Valley Truckle. The bypass then is routed to the west and north of Camelford with a number of side road junctions to minor roads until it reaches a further 4 armed roundabout (Sportsmans) that provides access into Camelford and on to the B3266 to Boscastle, Tintagel and Delabole. The bypass continues to the north and east of Camelford with a 60m bridge (Trefew) across the valley of the river Camel and then on to a 3 armed roundabout meeting the A39 at Redgates.

This route alignment and design will need to be reviewed to comply with modern standards and design guidance. In particular this may require consideration of cycling, pedestrian and equestrian provision alongside and across the bypass.

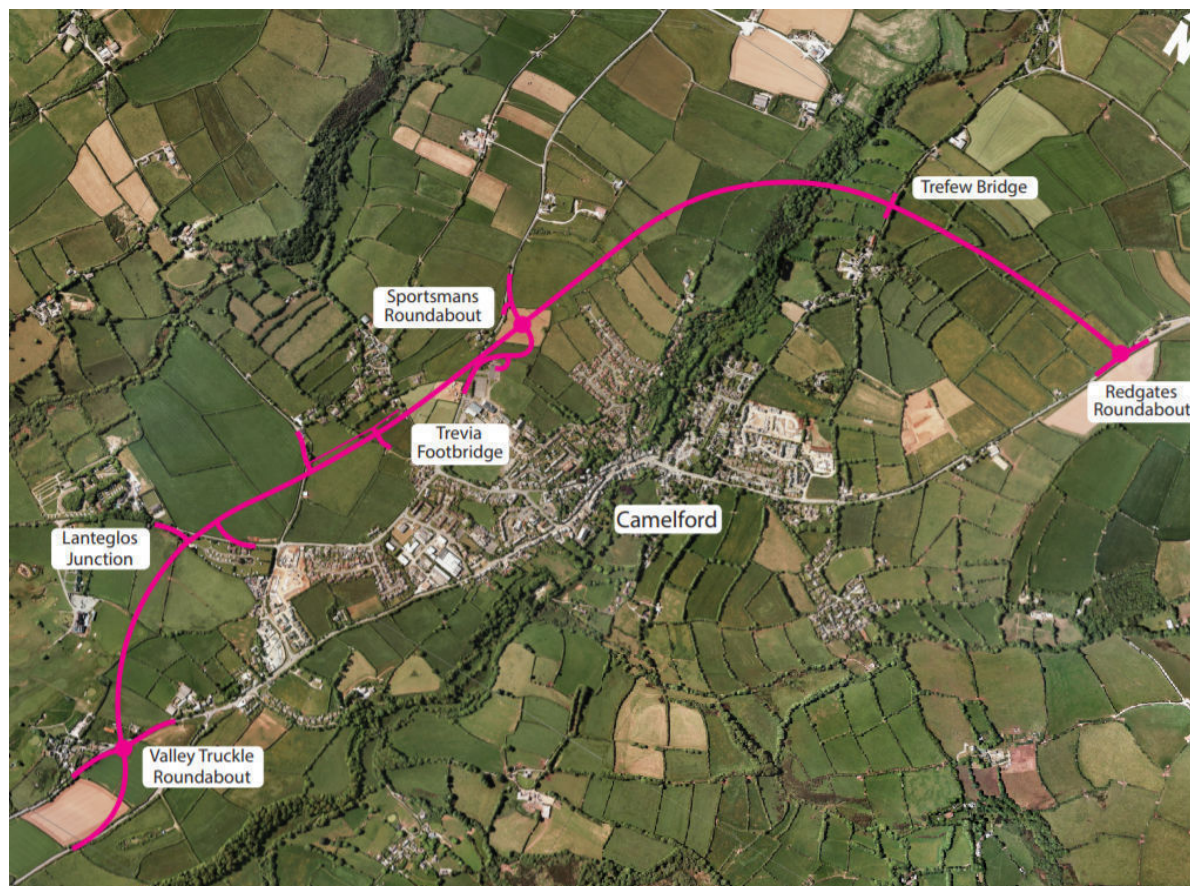


Figure 1 Proposed Bypass Alignment

## 1.2 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

By removing traffic from constrained section of A39 running through Camelford town centre the proposed scheme would:

- Help address air quality levels within the Camelford AQMA;
- Promote the local and regional economy through more housing and employment opportunities;
- Improve journey times and reliability on the A39;
- Reduce the number of slight accidents occurring on the local road network;
- Decrease congestion through Camelford, including queuing particularly in the summer months;
- Provide improved access to tourism attractions along the route; and
- Align with national and local policy objectives for an improved major transport network, and improved air quality measures within an AQMA and on the local road network.

Should the bypass not be progressed, it is unlikely that another long-term intervention will be identified for the A39 through Camelford. As a result, capacity and access issues, congestion, traffic volumes and air quality through the town will all continue to worsen. In

addition, any future economic growth in Camelford and the region (including tourism, housing and employment opportunities) is likely to be stifled due to transport access issues and poor journey time reliability. This potentially could further increase the economic gap between Camelford, Cornwall and the rest of the UK.

## 2. Development of scheme so far

### *Narrative of scheme development to date.*

The work by the Highways Agency and Cornwall Council in the 1990s and early 2000s led to a preferred route option that was approved in planning. This permission has since lapsed following withdrawal of Government funding in 2006 but the route remains protected by Cornwall Council.

The preferred route has been reassessed in an Option Appraisal report (OAR) and undergone a re-costing exercise to inform the Strategic Outline Business Case (SOBC). The Cornwall Countywide traffic model has been utilised alongside manual analysis to ascertain potential traffic reassignment and journey time benefits of the scheme.

The SOBC will be finalised during spring 2019 with further work on the traffic modelling and economic case. An Appraisal Specification report (ASR) and Environmental Scoping report has also been commissioned.

A review will also be carried out to compare the 2004 design against modern standards and guidance; this may lead to changes in alignment, side road connections, structures, and the non-motorised user provision.

The route option has been discussed with the Camelford Town Council and received their full support, and is included within the draft Neighbourhood Plan as their key objective for transportation.

Going forward the intention is to undertake further preparatory work in anticipation of progressing the more detailed Outline Business Case (OBC), including traffic surveys and data collection, and public and stakeholder consultation on the proposed scheme planned later in the year.

This will require developing the feasibility design to allow a better determination of the likely construction costs alongside a more robust traffic model that will feed into the economic model justifying the scheme. A further review will be needed of local development and likely business investment that may follow the opening of the bypass.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£39.7m
Indicative Benefit to Cost Ratio (if available)	1 – 1.5 ('Low to Medium' value for money)

### *Please outline the assumptions and uncertainties behind these estimations.*

The Works Cost of £16.6m has been calculated from the cost for the 2004 design. To this is added: risk; contractor overheads and profit; land acquisition and compensation costs; estimated design and supervision cost; plus Client costs, giving a sub total of **£27.6m**.

To comply with DfT guidance an Optimism Bias (44%) is applied to provide the Indicative Scheme Cost of **£39.7m**. This cost is the 2018 base value and no allowance for future inflation has yet been made. As the work for the OBC progresses along with its associated design and surveys, the risks will be better quantified and the optimism bias percentage will reduce.

A more robust transport model would feed into the Economic Case and deliver further evidence to support the viability of the scheme and the value for money. A wider economic study and environmental assessment (particularly in relation to air quality benefits) would also strengthen the case for a bypass.

Using the currently available information the scheme has been assessed as having an **initial indicative BCR of 1.365** ('Low value for money'), however this is likely to improve to a 'Medium' value once wider economic benefits have also been assessed and included.

#### 4. Timescales

Submission of Strategic Outline Business Case (SOBC)	July 2019
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	March 2020
Full Business Case submitted to DfT*	June 2021
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	September 2021
Scheme open to public	Spring 2023
*Assuming Planning, land and statutory process complete with scheme tender price required	

<b>Scheme Name</b>	A358 Henlade Bypass
<b>Promoting Authority</b>	Somerset County Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The A358 forms part of the A303 / A30 / A358 route which provides a strategic link between the south-east and south-west regions. The A358 in this locality suffers from congestion which constrains growth. The village of Henlade suffers from air quality, noise and severance issues caused by the A358; this includes a declared Air Quality Management Area (AQMA).

The village creates a traffic pinch point, before entering the village from either direction the carriageway is reduced from two lanes to one; traffic is generally slow moving through the village due to speed restrictions, junctions and limited lane widths.

A scheme to improve the existing A358 is included within Highways England's Roads Investment Strategy, it seeks to upgrade the entire route from the junction with the A303 to the M5, should this not come forwards SCC would wish to prioritise a scheme to remove this pinch point.

### 1.2 Please describe your scheme? Needs a picture/diagram showing where it is and outline of what it is (200 words)

A diagram has been included in Appendix A.

The scheme is to construct a new road, one lane in each direction plus foot / cycle way, to bypass the village of Henlade. It will be approximately 2km long and connect from a point to the east of Henlade to the new configuration at M5 junction 25. A proposed alignment has previously been adopted; this design will be reviewed before funds are committed.

The scheme will remove up to 95% of the traffic from the village and remove the air quality management area.

The scheme will improve the strategic route across the county making it fit for purpose in this area.

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

The scheme will remove most of the traffic from the affected communities and provide a faster, more reliable route across Somerset.

**Reduce congestion** – the scheme will enable easier, faster and safer journeys by providing a new road that is fit for purpose by removing pinch points.

**Support economic growth and rebalancing** – The scheme will, as part of the wider A303 / A30 improvements package, generate GVA benefits of £39bn across the South West of England and support rebalancing by improving the GVA where it is currently below UK average.

**Support housing delivery** – the Taunton area has more than 10,000 homes planned; the benefits of the scheme are likely to be experienced more widely in surrounding settlements. The improvement will provide the opportunity for growth beyond the current local plan period.

**Support all road users** – the scheme will provide a foot / cycleway which will connect into local routes providing improved access to Street and Glastonbury from the surrounding areas. It will also reduce severance in Ashcott and Walton allowing improved access to local services.

**Support the Strategic Road Network** – the scheme is approximately 7 miles from M5 junction 23 and will improve end to end journey times and reliability for users. The journey quality for long distance trips will be significantly improved once users transition to the local road network.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

A range of options have been considered and an Options Assessment Report has been produced which identified the need for a road-based scheme, in particular a bypass.

The Local Plan for Taunton Deane includes the bypass to Henlade as a policy requirement.

Work has been carried out on the design feasibility of the scheme which includes an understanding of the environmental constraints and geotechnical / drainage / utilities considerations. The cost estimate for the scheme was last updated in 2014; a range of costs has been provided in lieu of a more recent cost estimate.

An improvement to M5 Junction 25 will commence construction in March 2019, this will provide a connection point at the western end of the scheme.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£40 - 45m
Indicative Benefit to Cost Ratio (if available)	Circa 2 ('Medium to High' value for money)



*Please outline the assumptions and uncertainties behind these benefit estimations.*

Highways England have carried out economic assessments for different route options which have BCRs between 1.6 and 2.1. These assessments include the A358 from Southfields Roundabout to Thornfalcon junction, this stretch is currently of a good standard and the level of benefit of improving it will be low. Most of the benefits will be found from improving journey times through Henlade, this is the higher cost end of the improvement but the benefits will be disproportionately greater.

The cost assumptions include 44% optimism bias and 20% contingency / risk allowance in lieu of a QRA which has not been carried out at this stage.

All values have been discounted to 2010.

The SOBC will be based on a traffic model that will enable the impacts of re-routing and traffic growth to be fully understood. It is anticipated that an improvement in this location may cause re-routing from the A361 Taunton Road.


#### **4. Timescales**


Submission of Strategic Outline Business Case (SOBC)	2020
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	2021
Full Business Case submitted to DfT	2023
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	2023
Scheme open to public	2025


Appendix A



Key

Proposed bypass

New link to be created as part of the M5 J25 works

Broad location of connection points of a bypass

<b>Scheme Name</b>	A361 Glastonbury Bypass and Pilton
<b>Promoting Authority</b>	Somerset County Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The A361 passes through the centre of Glastonbury around the historic Abbey, past the Rural Life Museum and the foot of Glastonbury Tor. The road is heavily used by pedestrians accessing Chalice Well and the Tor as these attractions have very limited parking.

The road forms part of the strategic freight route from across the area and carries an increasing proportion of HGVs (6.2% in 2012 to 7.8% in 2018).

The road passes through a residential area causing noise, pollution and severance issues for the residents. The A361 at Chilkwell Street the road is too narrow for HGVs travelling in opposite directions to pass; this pinch point causes congestion and incidents affect journey reliability.

East of Glastonbury on the A361 lies Pilton, renowned for being the home of the Glastonbury Festival, this small village is another pinch point that suffers from the severance, noise and pollution problems caused by the HGVs.

*1.2 Please describe your scheme? Needs a picture/diagram showing where it is and outline of what it is (200 words)*

A diagram has been included in Appendix A.

The scheme is to construct a new road, one lane in each direction plus foot / cycle way, to bypass the pinch point. The exact alignment will be determined through the development of design work and in consultation with local communities and stakeholders. Two options have emerged from the Options Assessment Report, a short option which could remove traffic from Coursing Batch / Chilkwell St / Bere Ln and a long option could also remove traffic from Fisher's Hill, Street Road and A39 between Wirrall Park Rbt and Street Rbt.

In Pilton the scheme options are have not yet been established but a key consideration will be the Glastonbury Festival site which is to the south of the village.

The scheme will improve the strategic route across the county making it fit for purpose in this area.

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

**Reduce congestion** – the scheme will improve journey times and reliability enabling easier, faster and safer journeys by providing a new infrastructure that is designed to carry the type and volume of traffic that is forecast.

**Support economic growth and rebalancing** – the Mendip Local Plan sets out a clear aspiration for growth that will be supported by the improvement of the routes. There is provision for up to 1,050 new jobs in Street, 1,200 in Glastonbury and 1,300 in Shepton Mallet. The improvement will provide the opportunity for growth beyond the current local plan period.

**Support housing delivery** – there are 1300 homes planned in Street, 1,000 in Glastonbury and 1,300 in Shepton Mallet which will be support through the delivery of this scheme. Growth in the Bridgwater area associated with Hinkley Point C construction is forecast to increase the number of commuter trips from Mendip.

**Support all road users** – The removal of traffic from Chilkwell St and Bere Ln will benefit pedestrians and enhance the visitor experience to the local attractions. Improvements in Pilton will increase access to village amenities.

**Support the Strategic Road Network** – The journey quality for long distance trips will be significantly improved once users transition to the local road network.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

In Glastonbury a range of options have been considered and an Options Assessment Report has been produced for Glastonbury which identified the need for a road based scheme, in particular a bypass. The report suggested that two potential bypass options exist, a short and a long option.

The Local Plan for Mendip sets out a clear need for the improvement schemes.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£40m - £70m
Indicative Benefit to Cost Ratio (if available)	>10 ('Very High' value for money)

*Please outline the assumptions and uncertainties behind these benefit estimations.*

A high-level benefits analysis has taken place for the two Glastonbury options. The existing journey times and average vehicle speeds have been extracted from Trafficmaster data. The length of the new link has been determined from the design feasibility work. Whilst the link will have a design speed of 100kph it is assumed that light vehicles will travel at 55kph and heavy vehicles at 50kph on the short option and 70kph /

65kph respectively on the longer option; these values have been used to calculate the approximate journey time along the new link. No change in traffic volume has been included. The value of time saved has been based on Webtag databook values and proportions for work / commuting / other trip types.

The cost assumptions include 44% optimism bias and 20% contingency / risk allowance in lieu of a QRA which has not been carried out at this stage.

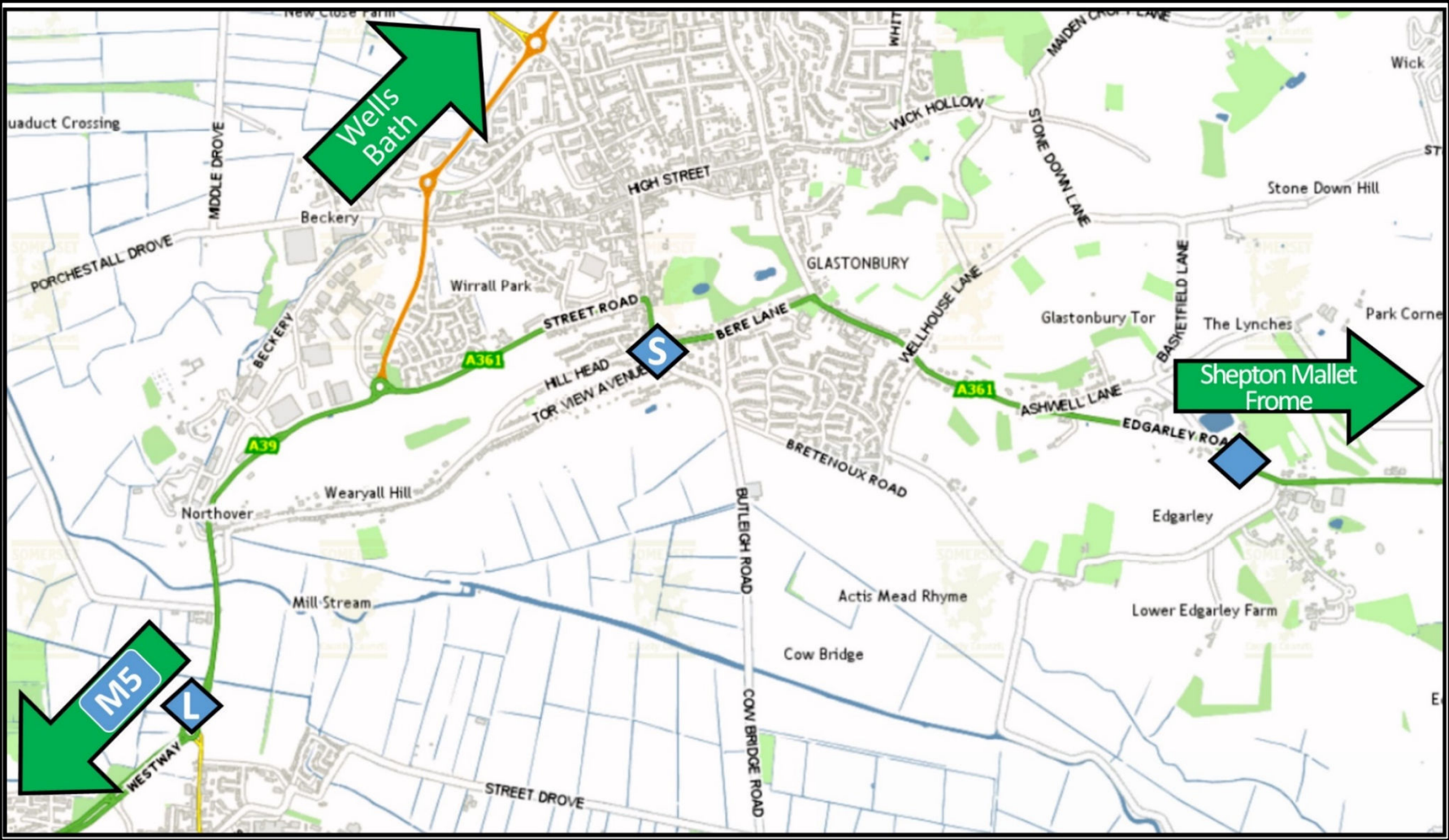
All values have been discounted to 2010.

The SOBC will be based on a traffic model that will enable the impacts of re-routing and traffic growth to be fully understood. It is anticipated that an improvement in this location may cause re-routing from the A361 Taunton Road.

#### **4. Timescales**

Submission of Strategic Outline Business Case (SOBC)	2021
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	2022
Full Business Case submitted to DfT	2023
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	2023
Scheme open to public	2025

Appendix A



Key

◆ Broad location of connection points of a bypass options (S – Short, L – Long)



<b>Scheme Name</b>	A379 Corridor Improvements
<b>Promoting Authority</b>	Devon County Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The A379 is a key arterial corridor in Exeter, providing resilience to the Strategic Road Network through its function as a diversionary route for the M5. It carries 33,000 two-way daily vehicles and links two of Exeter's major strategic housing and employment allocations: 2,500 dwellings and 5 hectares of employment at South West Exeter and 3,500 dwellings and 8 hectares of employment at Newcourt.

The A379 has several structures crossing the River Exe. These structures are approaching the end of their serviceable life and require renewal within 10 years. Without access to significant external funding, these structural renewals will not be possible under current funding sources. Failure of the structures will cause significant disruption to the large volumes of daily users of this route, impacting the overall accessibility of Exeter.

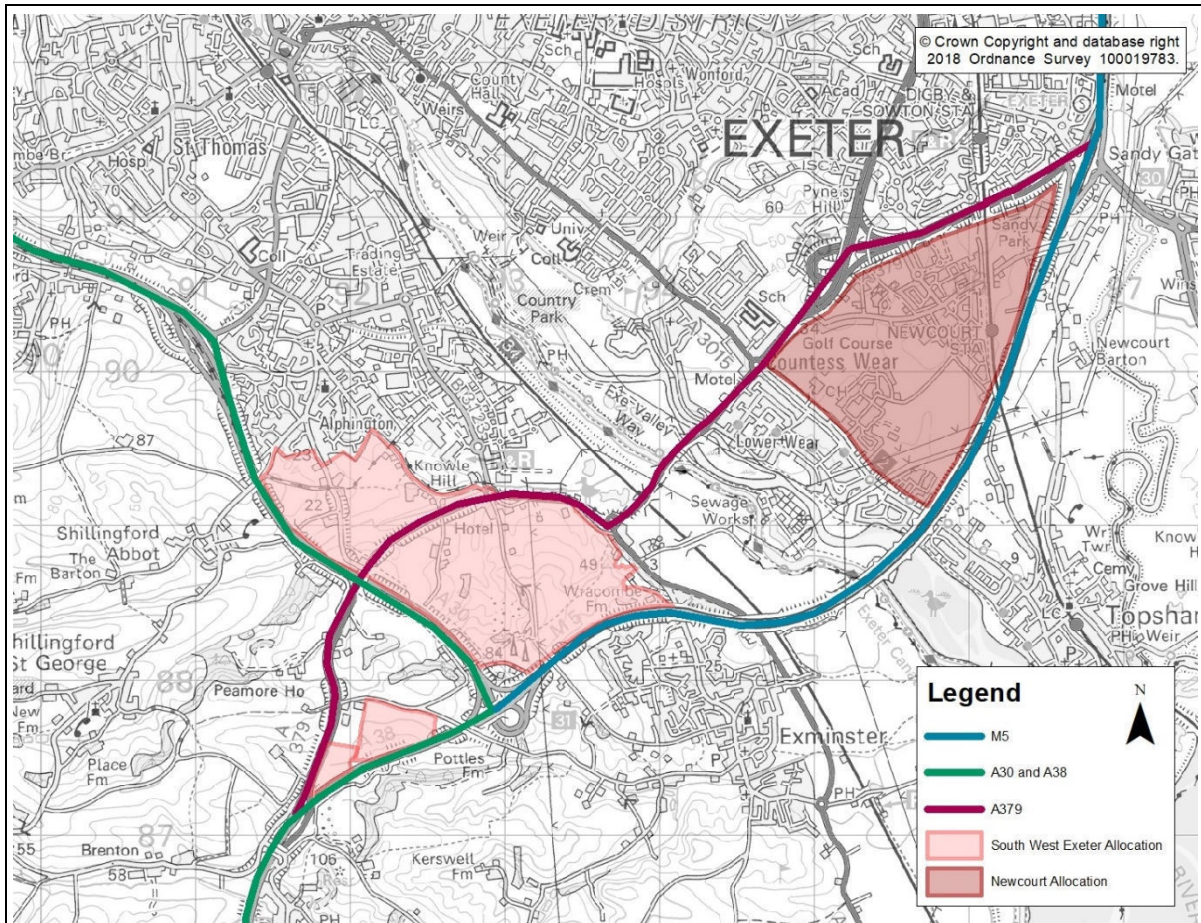
Despite the importance of the A379 corridor to the Strategic Road Network, it is not currently able to accommodate abnormal loads should the M5 close.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

The scheme would include the replacement of ageing structures on the A379, namely the bascule and swing bridges and the upgrade of the existing route to enable usage by abnormal loads.

Between 2020 and 2024, Devon County Council will be using Housing Infrastructure Funds (HIF) to deliver new development access junctions, carriageway widening and a new pedestrian/cycle bridge on the A379 to unlock 2,500 homes at South West Exeter. By securing MRN funding it would enable works to be undertaken in parallel with the HIF works, minimising the overall traffic disruption on this corridor in future years. The provision of temporary bridges could also be explored to keep traffic flowing whilst replacements works take place.



### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

The replacement of structures reaching the end of their serviceable life will prevent the likelihood of their failing and the resultant significant disruption on the A379 and potentially M5. The scheme therefore will contribute towards the future **reduction of congestion**, under the assumption that there is a high risk of structural failure and closure of the route.

Additional resilience will also be provided to the M5, as the diversionary route will be able to accommodate abnormal loads in the instance that the motorway is closed, which occurs on a regular occurrence. As such, this scheme will **support the SRN** by providing it with improved resilience.

The scheme will **support housing deliver and support economic growth**. The A379 is a key growth corridor, with strategic allocations totalling 6,000 dwellings and 13 hectares of employment. The HIF funding secured recently will help unlock this development. Ensuring the rest of the corridor is future-proofed, as demand along the corridor is expected to increase, will be an important element to improving the access to the development.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

The scheme is in an early stage of inception. Optioneering and scheme design need to be progressed.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£25m
Indicative Benefit to Cost Ratio (if available)	n/a
<i>Please outline the assumptions and uncertainties behind these estimations.</i>	
Design work and optioneering must be undertaken to further refine this indicative cost estimate.	

## 4. Timescales

Submission of Strategic Outline Business Case (SOBC)	Summer 2019
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	2019/2020
Full Business Case submitted to DfT	2021/2022
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	2022/2023
Scheme open to public	2024/2025

<b>Scheme Name</b>	A382 Improvements
<b>Promoting Authority</b>	Devon County Council
<b>MRN / LLM?</b>	MRN

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The A382 is a key link providing access to Newton Abbot from the A38 on the Strategic Road Network (SRN), Heathfield Industrial Estate and local market towns. The scheme will support 6,000 dwellings in Newton Abbot, Kingsteignton and Kingskerswell, known as the 'Heart of Teignbridge' in the adopted Teignbridge Local Plan, including 2,500 houses and associated employment on the A382 corridor. The A382 is of a low standard with poor alignment, no verges and carriageway widths as narrow as 6 metres in places.

The poor standard of road means the A382 experiences a high number of collisions.

The A382 currently has no footway or cycle facilities.

High traffic flows and the poor alignment of the road results in the route being close to capacity and meaning it delivers a poor level of service. A new modern alignment would make it fit for purpose and a catalyst to the future development aspirations of Newton Abbot.

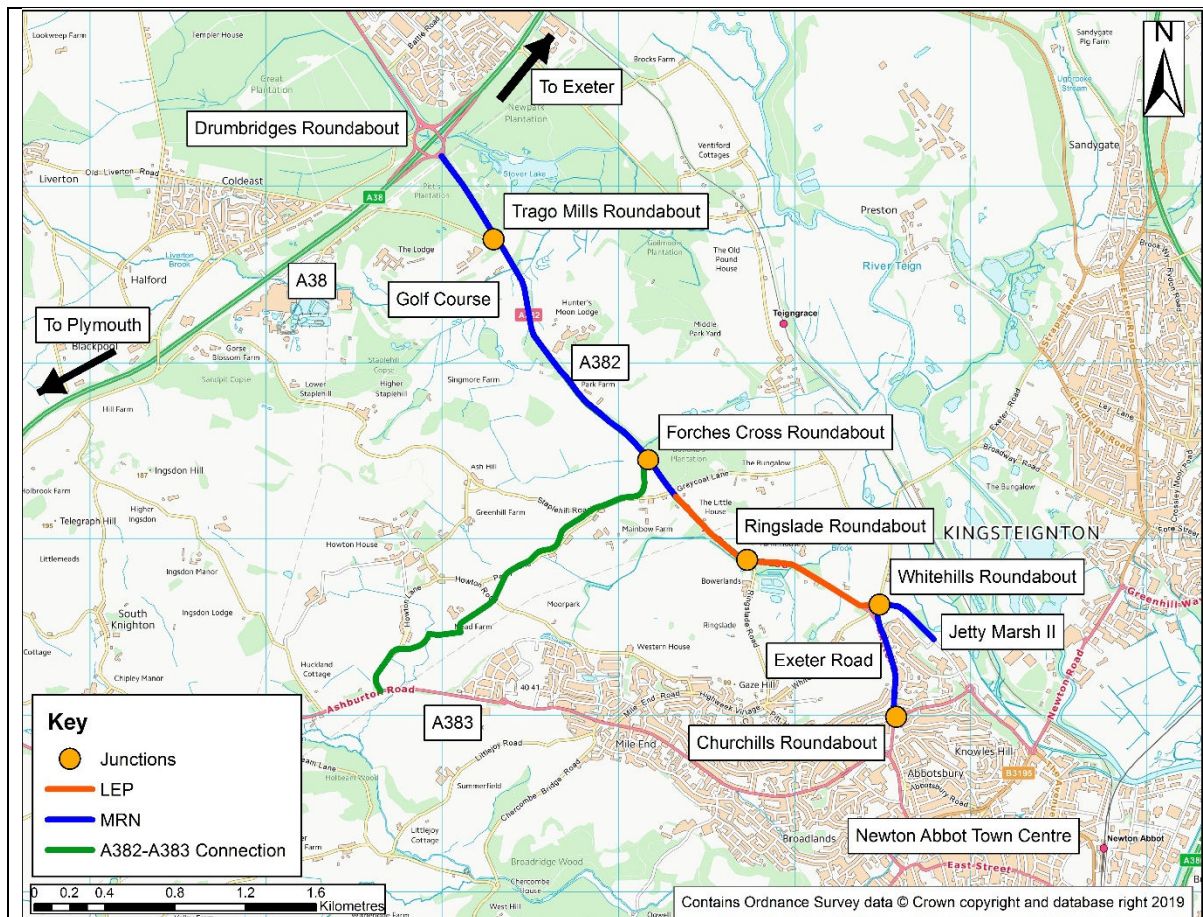
### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

The A382 scheme includes:

- realignment and widening of the A382 to 10 metres between Forches Cross and Trago Mills roundabout;
- widening to 2-lane dual carriageway between Trago Mills roundabout and Drumbridges roundabout;
- improvements to Whitehill Cross upgrading the priority junction to a roundabout;
- improvements to Forches Cross upgrading the priority junction to include a roundabout located further north and 3 arm priority junction;
- improvements to Trago Mills roundabout;
- construction of Jetty Marsh II connection between Whitehill Cross and West Golds Way;
- a new shared pedestrian and cycle path along the A382 from Drumbridges to Forches Cross and from Whitehill Cross along the Jetty Marsh II connection (to tie in with LEP scheme).
- upgrading of existing footway on Exeter Road to 3.5 metre shared pedestrian and cycle path;
- widening of Exeter Road pinch point to 6 metres between Whitehill Cross and Churchills roundabout;
- Golf Course mitigation works





In addition, the section of the A382 between Forches Cross and Whitehill Cross will be widened to 10 metres and Ringslade Road priority junction will be upgraded to a roundabout. This section of the A382 Improvements has secured LEP funding, and although not part of this MRN proposal, will support the overall aim to provide a continuous high-quality route between the A38 and Newton Abbot.

A separate Business Case has been submitted to the LEP for the A382-A383 Connection, as part of the Houghton Barton Package, which will unlock housing and employment development at Houghton Barton and relieve congestion on the surrounding road network.

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

Increased width and a new alignment will provide additional capacity and improve journey times, resilience and reliability on the A382.

The improvements support the strategy in the Teignbridge Local Plan to boost economic growth which states that “the widening of the A382 between Newton Abbot and Drumbridges is considered necessary to improve the capacity of the existing lanes to ensure that the road can accommodate the future growth”.

The improved road standard and alignment of the A382 will improve safety.

Reduced congestion and improved journey times will improve the reliability of bus services using the A382, benefitting public transport users. The new shared used path will benefit

pedestrians and cyclists, enabling sustainable travel from new residential areas to Newton Abbot town centre and improving safety for non-motorised users.

The junction upgrades at Forches Cross and Whitehill Cross will support the delivery of 2,500 dwellings and 9.8ha of employment on the A382 Corridor as part of Newton Abbot's western urban extension.

In economic terms the scheme will contribute to facilitating development and travel along the A382, which will have a beneficial impact upon the local economy by enabling employment and housing development in the area to proceed with mitigated impact.

The A382 links the SRN (A38) to Newton Abbot. The scheme together with the recent improvement to the Drumbridges Roundabout supports the SRN by improving journey times for trips using the A38 heading towards Newton Abbot. This will improve access to key locations such as Exeter.

## **2. Development of scheme so far**

*Narrative of scheme development to date.*

A Business Case was approved in December 2015 by the LEP to secure funding for Phase 1 of the A382 scheme between Forches Cross and Whitehill Cross.

The Golf Course mitigation works were granted planning permission in September 2016.

The A382 Corridor Scheme was granted planning permission in June 2017.

Compulsory Purchase Orders (CPO) were issued for Phase 1 in June 2018. Land negotiations are progressing on the rest of the scheme. CPO could commence when funding is available.

A planning application is due to be submitted in 2019 for the Jetty Marsh II connection.

Cabinet has approved the improvements to Exeter Road.

The design is well advanced, and subject to funding and land, is ready for tender and construction.

## **3. Financial & Economic Case - Value for Money**

Indicative Scheme Cost	£33.5m
Indicative Benefit to Cost Ratio (if available)	3

*Please outline the assumptions and uncertainties behind these estimations.*

The base year Houghton Barton Package traffic model, base year 2016, has been developed using SATURN (version 11.4.07H) and has been used to assess the impact of the A382 MRN scheme.

The forecast travel demand for 2023 (opening year) and 2038 (design year, 15 years after) was determined using housing and employment development data provided by Teignbridge District Council in combination with TEMPRO-based growth (v7.2). Growth has been constrained to TEMPro.

The Do Minimum model includes the Phase 1 A382 improvements between Whitehill Cross and Forches Cross.



The Do Something models include the full set of A382 Improvements including widening junction upgrades.

The SATURN models were used to calculate travel economic efficiency benefits and vehicle operating costs using TUBA (v1.9.11) for a 60-year appraisal period. A newer version of TUBA has recently been released which will be used for the Outline Business Case submission.

In addition, a COBALT assessment has been undertaken to calculate the accident savings as a result of the scheme.

The process has been subject to scrutiny and is deemed to be fit for purpose.

#### **4. Timescales**

Submission of Strategic Outline Business Case (SOBC)	N/A
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	July 2019
Full Business Case submitted to DfT	December 2020
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	2020 (mitigation works)
Scheme open to public	2024

<b>Scheme Name</b>	A38 Manadon Interchange Improvement Scheme
<b>Promoting Authority</b>	Plymouth City Council
<b>MRN / LLM?</b>	LLM

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

Manadon Interchange is a three level grade separated junction with a large signalised roundabout. The largest junction on the A38, it provides the main link between northern and central Plymouth. It already experiences congestion in the peak periods with traffic queuing back onto the A38, increasing road safety risk and causing traffic flow breakdown resulting in unreliable journeys along the SRN. The scale of the interventions required to resolve these issues and build capacity for planned growth means that funding opportunities to date have been limited.

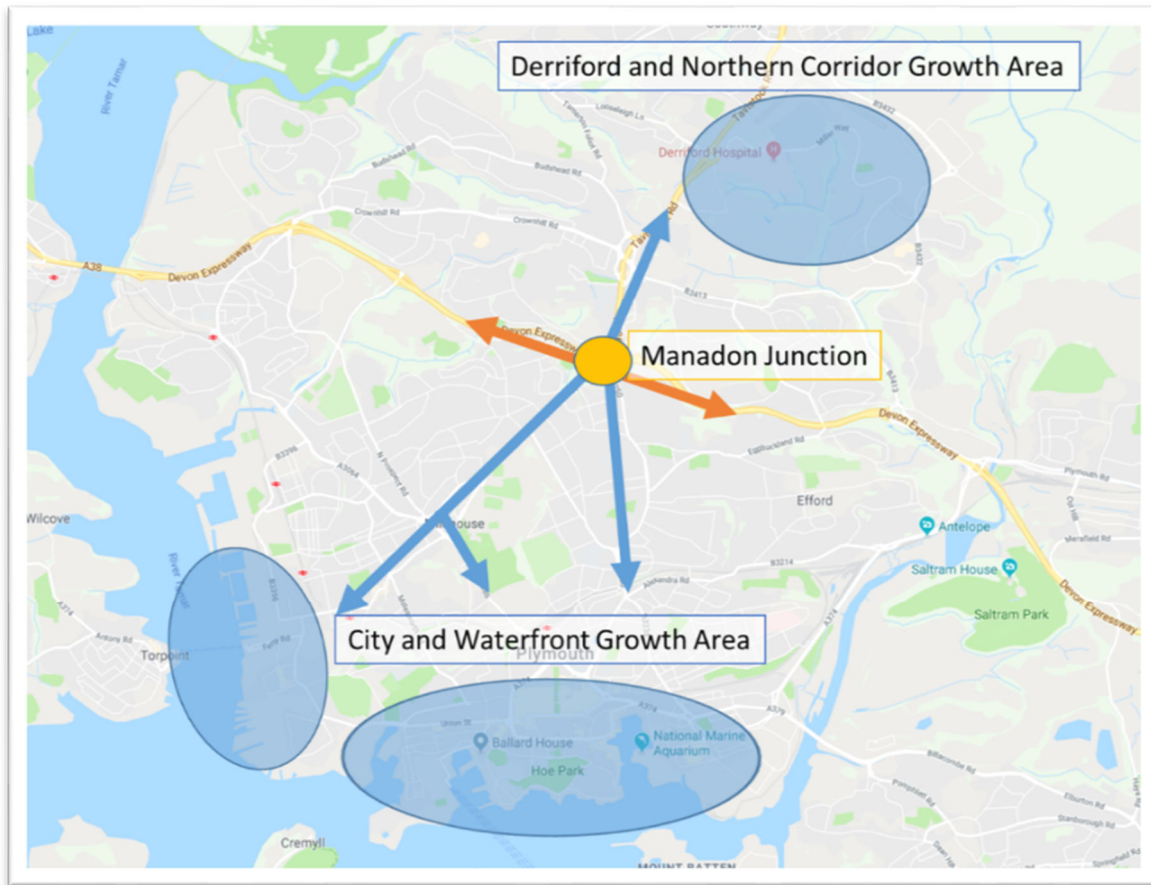
The Manadon Interchange improvements form a key piece of infrastructure identified to support the ambitious growth of the city and are an integral part of the package of interventions including, the DfT supported Forder Valley Link Road, the LEP supported Derriford Transport Scheme and Derriford Hospital Bus interchange Scheme. All of these interventions are designed to address existing issues and plan for future growth.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is*

Manadon is the point where the A38 SRN meets the busy A386 Tavistock Road, providing the main access route to regional employment and medical centres including Plymouth Science Park, Plymouth International Medical and Technology Park, Derriford Hospital and Marjons University. Due to its location in the geographical heart of the city, the junction is a major constraint upon future growth across the city. During consultation for the Plymouth and South West Devon Joint Local Plan (JLP), Highways England advised of the urgent need for improvements at Manadon. Failure to deliver these could prevent further development in the Derriford and Northern Corridor Growth Area ((over 4000 new homes planned) and also the City Centre and Waterfront Growth Area (with a projected increase of 82,445m<sup>2</sup> of employment space) - see Figure 1 below.

**Figure 1: A38 Manadon Interchange – Geographical Context**



The scheme will incorporate changes to the existing junction layout alongside localised widening to increase capacity at this major junction, in order to improve journey times and reliability, reduce congestion and improve safety. To complement the capacity improvements, highway asset reconstruction will also be delivered as appropriate, co-ordinated with other works to minimise construction delays.

The improvements that have been specifically identified to address the current problems, as well as accommodate forecast growth, include:

1. Additional eastbound off-slip lane from the A38.
2. Additional northbound lane on the A386 from Manadon to Boniface Lane.
3. Two lanes northbound on the A386 flyover and northbound exit from Manadon.
4. Additional lane on A386 southbound slip to Manadon.
5. A38 westbound off-slip at Manadon widened to three lanes.
6. A38 (section of) widened to three lanes between Manadon and Forder Valley eastbound and westbound.
7. Widened and signalised southbound exit slip onto Outland Rd

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

The scheme will aim to reduce congestion and improve flows, having a positive effect on the SRN and LRN combined.

**Scheme Objectives:**

- **Reduce Congestion**
  - Reduce queuing on slip roads approaching Manadon.
  - Improve traffic flow at neighbouring junctions to better manage the network at Manadon and the SRN.
  - Increase the overall junction capacity to accommodate planned growth.
  - Improve journey times and the reliability for all modes including buses.
- **Support Economic Growth and Rebalancing**
  - Will help to deliver employment in the technology and science parks in the north of the city as part of the Derriford and Northern Corridor Growth Area, with a projected increase of 100,180m<sup>2</sup> of employment space created by 2034.
  - Will help to deliver high quality employment in the City Centre and Waterfront Growth Area with a projected increase of 82,445m<sup>2</sup> of employment space created by 2034.
  - Will improve connectivity between the growth areas and the SRN.
- **Support Housing Delivery**
  - Will help to deliver 4,171 homes in the Derriford and Northern Corridor Growth Area by 2034.
  - Will help to deliver 3,802 homes in the City and Waterfront Growth Area by 2034.
- **Support all Road Users**
  - Will provide a more direct, safer and more user friendly route for pedestrians
  - Will link in to existing cycle routes
- **Support the Strategic Road Network**
  - Will facilitate egress from the A38 SRN thereby improving its resilience for through traffic and improving safety.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

The Plymouth and South West Devon Joint Local Plan (JLP) makes provision for a minimum of 26,700 new homes and the creation of at least 20,000 new jobs in its timeframe to 2034. This level of housing growth within the Housing Market Area (HMA) for Plymouth would allow the city to meet all its housing needs as identified in the Objectively Assessed Needs (OAN). The strategic transport infrastructure improvements critical to achieving this growth and supporting the SRN are identified in Policy SPT8 of the JLP and specifically state the need for improvements at Manadon Junction.

Policy **PLY57 Strategic infrastructure measures for the Eastern Corridor Growth Area** of the JLP identifies key strategic infrastructure measures that will be provided during the plan period in order to support the delivery of growth for the Eastern Corridor Growth Area. This policy specifically includes improvements at Manadon as critical for growth.

The A38 through Plymouth carries very large volumes of traffic throughout the day; AADT flows on the section between Forder Valley Interchange and Manadon exceed 70,000

vehicles per day (2-way). The *South West Peninsula Route Strategy Evidence Report (Highways England, April 2014)* identifies this link as:

- The 4th busiest section of the Strategic Road Network in the South West Peninsula and the least reliable section in terms of journey times;
- A location that has the potential to restrict economic growth due to restricted capacity.

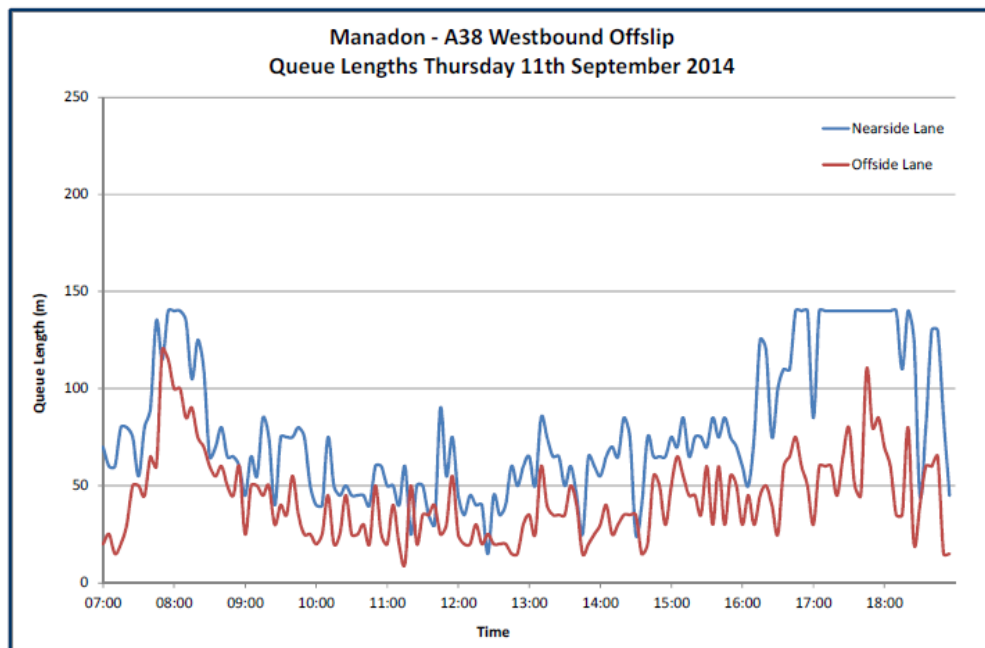
There is therefore clear evidence of the current poor performance of this section of the A38 which, without intervention, would be exacerbated with further traffic growth.

The A386 between Manadon Roundabout and Derriford Roundabout also experiences very high traffic flows, congestion and delays during peak traffic periods and also accommodates large traffic flows in the inter-peak periods. Current traffic flows on the A386 exceed 60,000 vehicles per day (AADT).

Manadon Roundabout itself carries a total volume of around 5,000 vehicles in the AM and PM peak hours (excluding mainline A38 traffic). This level of traffic is sustained across a three hour peak in the morning and evening (7am to 10am and 4pm to 7pm). The peak hourly volumes occur during the hours 8-9am and 5-6pm. The A386 southbound approach and A38 westbound off-slip typically carry by far the highest volume during the peak hours, at around 1,300-1,500 vehicles each.

The high traffic flows on the A386 Tavistock Road affect the operation of Manadon Roundabout, as traffic frequently blocks back from the northbound merge on the A386 to the north of Manadon Roundabout back through the junction itself. This results in reduced operation of the junction, as traffic cannot exit the roundabout onto the A386. As a result, severe queues occur on the A38 off-slips in both an eastbound and westbound direction, which regularly block back onto the A38 mainline. The queue lengths at Manadon are illustrated in Figure 2 below:

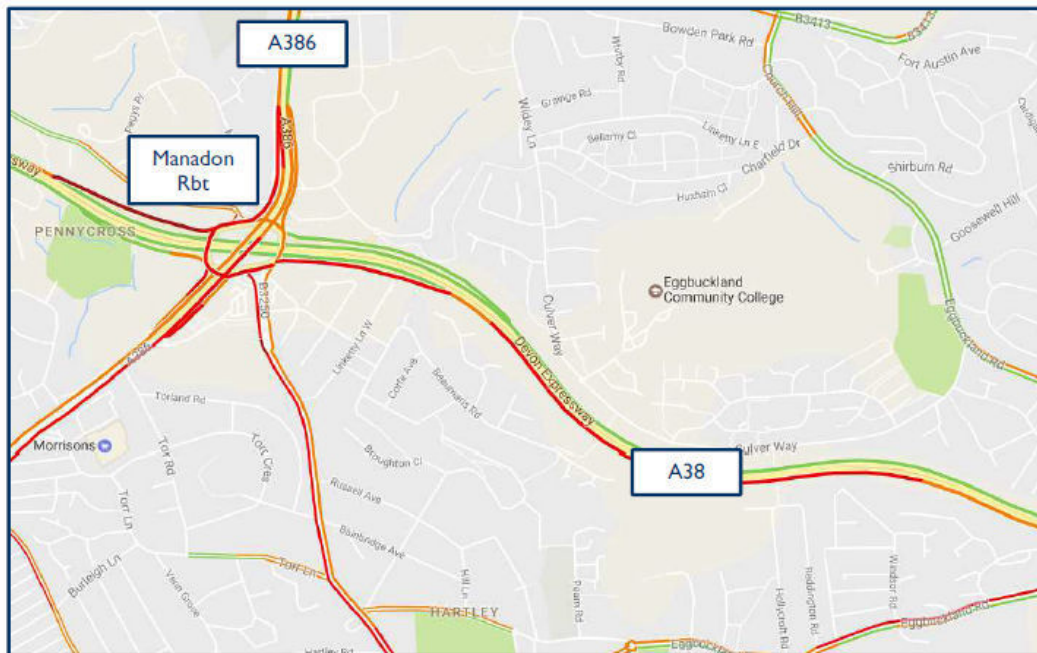
**Figure 2: Queue lengths at Manadon A38 Westbound offslip**



Further evidence of the current poor performance of the A38 through Plymouth and Manadon Roundabout is illustrated in Figures 3 and 4 below. These plots show traffic conditions on a typical Tuesday at 8:45am. The plots show severe queuing on the A38 off-

slips at Manadon Roundabout, with westbound queues extending onto the A38 mainline resulting in low speeds and congestion back beyond Forder Valley Interchange.

**Figure 3: Existing congestion on the A386 / A38 at Manadon Interchange**



Currently, design work the Manadon Improvements Scheme is at the early feasibility design stage. If the project is selected for submission of a Strategic Outline Business Case, scheme development can be accelerated, with more detailed design work commensurate with the relevant stage.

### 3. Financial & Economic Case - Value for Money

<b>Indicative Scheme Cost</b>	£107m
<b>Indicative Benefit to Cost Ratio (if available)</b>	'Very High' value for money

*Please outline the assumptions and uncertainties behind these estimations.*

The indicative scheme cost is based on:

- Outturn costs of other recent large scale schemes for the junction remodelling / widening works such as Derriford Transport Scheme.
- The indicative scheme cost includes 44% Optimism Bias as per DfT Transport Analysis Guidance Unit A1.2 Scheme Costs to reflect the early stage of development of the scheme.

A Benefit to Cost Ratio (BCR) has not been calculated at this stage in the development of the scheme. Based on the economic appraisal of other large capacity enhancement schemes within Plymouth, for which journey time savings during the appraisal period are significant (including Derriford Transport Scheme and Charles Cross Transport Improvement Scheme) the BCR is expected to be in the Very High category.



<b>4. Timescales</b>	
Submission of Strategic Outline Business Case (SOBC)	Summer 2019
Submission of Outline Business Case (OBC) ( <i>for subsequent milestones assume 3 months from OBC to programme entry decision</i> )	Summer 2021
Full Business Case submitted to DfT	Winter 2023
Start of Construction ( <i>assume 3 months from FBC to funding commitment</i> )	Winter 2024
Scheme open to public	Winter 2026

<b>Scheme Name</b>	Walton Ashcott Bypass
<b>Promoting Authority</b>	Somerset County Council
<b>MRN / LLM?</b>	LLM

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

The villages of Walton and Ashcott lie on the A39 that connects Mendip district to the M5 and is the strategic freight route across the area.

Vehicle speeds along the route are limited due to the number of pinch points resulting from its narrow winding nature. The route carries 13309 (AADT) vehicles with a considerable proportion of HGVS (7.3%).

The villages suffer from considerable noise, severance and pollution associated with HGV traffic. The Ashcott Neighbourhood Plan highlights the difficulties faced by pedestrians and the road safety concerns. A relatively high number of collisions have taken place along the route in the last 5 years.

The junction of the A361 to Taunton lies between the two villages; exiting the junction from the Taunton direction is challenging due to visibility and A39 traffic speed. The junction is a collision cluster site with journey reliability is affected by the collisions.

### 1.2 Please describe your scheme? Needs a picture/diagram showing where it is and outline of what it is (200 words)

A diagram has been included in Appendix A.

The scheme is to construct a new road, one lane in each direction plus foot / cycle way, to bypass the villages of Walton and Ashcott. It will be approximately 6.5km long and connect from a point to the east of Ashcott to a point west of Walton, potentially on the edge of the Street urban area. The exact alignment will be determined through the development of design work and in consultation with local communities and stakeholders.

The scheme will be design to a design speed of 100kph and the number of junctions and crossings will be minimised to improve the journey time and reliability.

The scheme will remove approximately 95% of the traffic from the villages.

The scheme will be designed in a way that is sensitive to Shapwick Heath National Nature Reserve to the North of the villages.

The scheme will improve the strategic route across the county making it fit for purpose in this area.

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

The scheme will remove most of the traffic from the affected communities and provide a faster, more reliable route across Somerset.

**Reduce congestion** – the scheme will enable easier, faster and safer journeys by providing a new road that is fit for purpose by removing pinch points.

**Support economic growth and rebalancing** – the Mendip Local Plan sets out a clear aspiration for growth that will be supported by the improvement of this road link. There is provision for up to 1,050 new jobs in Street, 1,200 in Glastonbury and 1,300 in Shepton Mallet. The improvement will provide the opportunity for growth beyond the current local plan period.

**Support housing delivery** – there are 1300 homes planned in Street, 1,000 in Glastonbury and 1,300 in Shepton Mallet which will be support through the delivery of this scheme. Growth in the Bridgwater area associated with Hinkley Point C construction is forecast to increase the number of commuter trips from Mendip.

**Support all road users** – the scheme will provide a foot / cycleway which will connect into local routes providing improved access to Street and Glastonbury from the surrounding areas. It will also reduce severance in Ashcott and Walton allowing improved access to local services.

**Support the Strategic Road Network** – the scheme is approximately 7 miles from M5 junction 23 and will improve end to end journey times and reliability for users. The journey quality for long distance trips will be significantly improved once users transition to the local road network.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

A range of options have been considered and an Options Assessment Report has been produced which identified the need for a road based scheme, in particular a bypass.. The Local Plan for Mendip and the emerging Local Plan for Sedgemoor have both safeguarded land for construction of the route.

Work has been carried out on the design feasibility of the scheme which includes an understanding of the environmental constraints and geotechnical / drainage / utilities considerations. A high-level risk assessment and cost estimate have been produced.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£90m
Indicative Benefit to Cost Ratio (if available)	>10 ('Very High' value for money)

*Please outline the assumptions and uncertainties behind these benefit estimations.*

A high-level benefits analysis has taken place. The existing journey times and average vehicle speeds have been extracted from Trafficmaster data. The length of the new link

has been determined from the design feasibility work. Whilst the link will have a design speed of 100kph it is assumed that light vehicles will travel at 70kph and heavy vehicles at 65kph, these values have been used to calculate the approximate journey time along the new link. No change in traffic volume has been included. The value of time saved has been based on Webtag databook values and proportions for work / commuting / other trip types.

The cost assumptions include 44% optimism bias and 20% contingency / risk allowance in lieu of a QRA which has not been carried out at this stage.

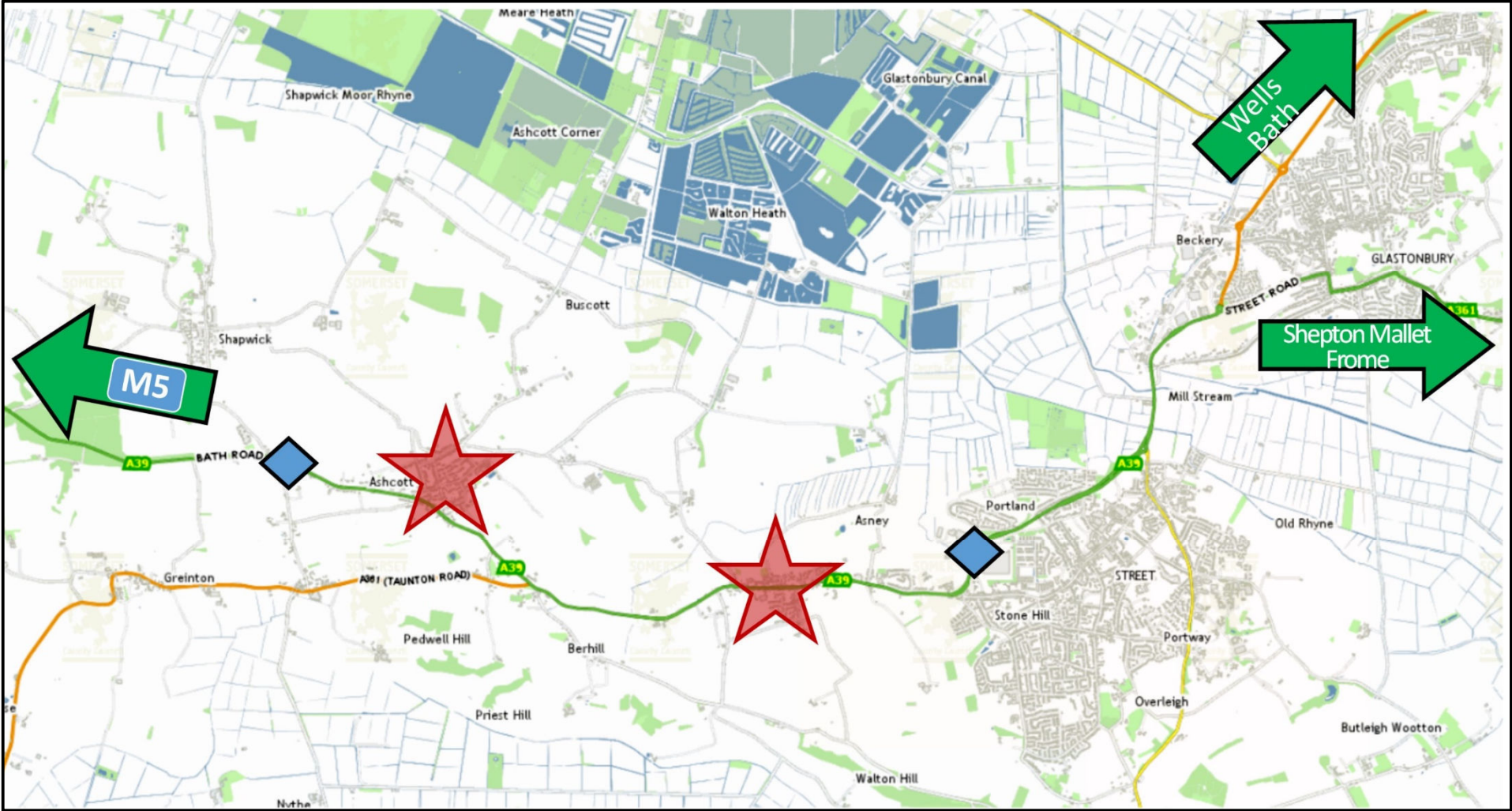
All values have been discounted to 2010.

The SOBC will be based on a traffic model that will enable the impacts of re-routing and traffic growth to be fully understood. It is anticipated that an improvement in this location may cause re-routing from the A361 Taunton Road.

#### **4. Timescales**

Submission of Strategic Outline Business Case (SOBC)	2020
Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	2021
Full Business Case submitted to DfT	2023
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	2023
Scheme open to public	2025

Appendix A



Key

★ The villages of Ashcott (to the east) and Walton (to the west)

◆ Broad location of connection points of a bypass to the villages

<b>Scheme Name</b>	M5 Junction 28 Improvements
<b>Promoting Authority</b>	Devon County Council
<b>MRN / LLM?</b>	LLM

## 1. Introduction

### 1.1 Problem Description

*Please describe the problems the scheme is designed to solve. (150 words max)*

M5 Junction 28 is a simple dumbbell junction with a 6-arm roundabout on the western side and a recently signalised junction to the east. The limited capacity causes congestion in the morning peak out of Cullompton. Surveys carried out at the junction show that queuing can extend up to 500m along Station Road in the morning.

Queuing in the evening also occurs as the commuting traffic tries to get back home. The queue occasionally extends back onto the mainline motorway which is a serious safety concern.

Cullompton is a prime location for development, on the M5, close to a mainline railway station and few environmental constraints.

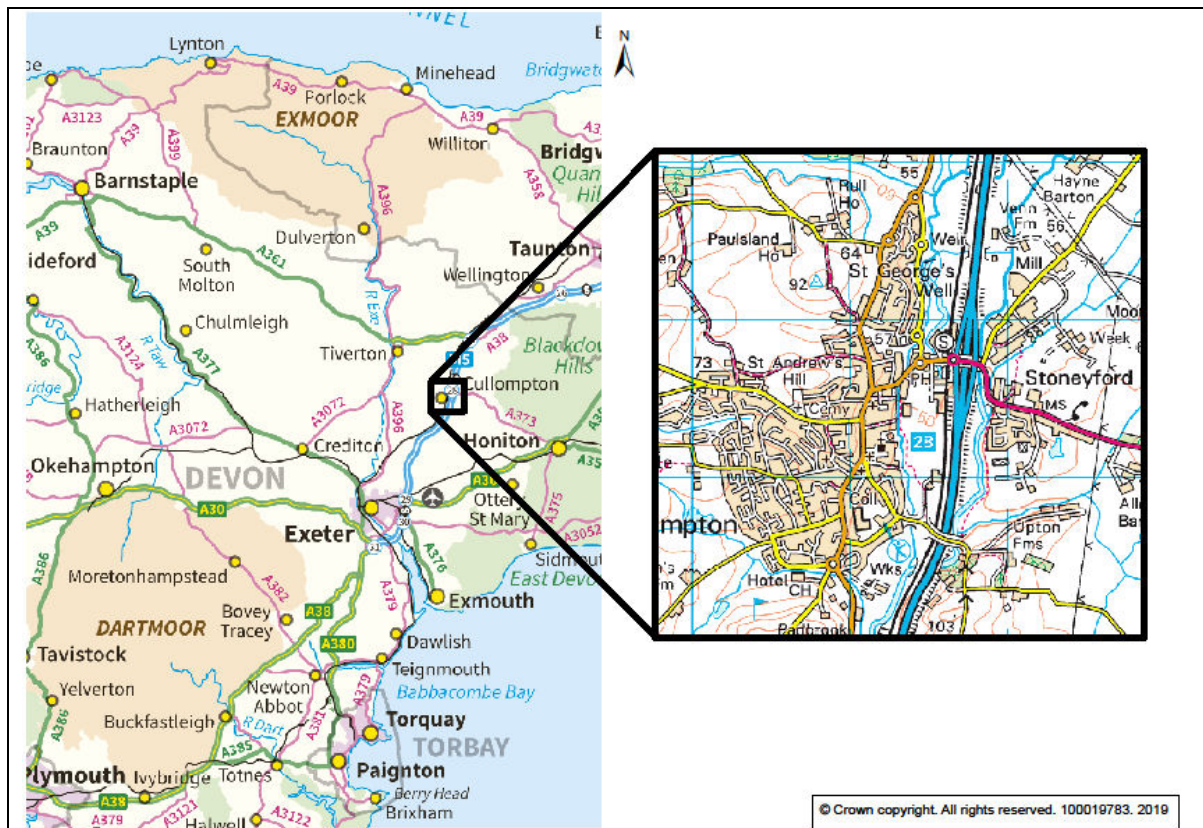
The scheme to improve M5 Junction 28 will provide a significant improvement to the motorway junction and approach roads. This will accommodate the 3,100 dwellings in the Local Plan and the future development of the Culm Garden Village planned to accommodate 5,000 dwellings.

### 1.2 Scheme Description

*Please describe your scheme, including a picture/diagram showing where it is and outline of what it is (200 words)*

A strategic motorway intervention is required in the vicinity of Cullompton to unlock all the development being proposed in the town. Options are currently being investigated as to the nature of the scheme which could be an improvement to the existing junction, a new bridge with south-facing slip roads or a completely new junction which would result in closing the existing Junction 28. The study area is shown in the figure below.





Improving access and egress to the M5 is vital to reduce the current congestion and air quality issues. Improving access over the motorway between the existing settlement to the west and proposed Garden Village to the east of the M5.

### 1.3 Objectives

*Please describe how the scheme will solve this problem and support MRN objectives (250 words max)*

The proposed scheme will help reach the MRN Objectives.

**Reduce congestion** – There is currently congestion at J28 of the M5 and this will be made much worse with the proposed developments within the town and surrounding area.

**Support housing delivery** – Mid Devon are currently in the process of having their Local Plan reviewed by an Inspector. They are proposing 1350 dwellings at NW Cullompton and 1750 dwellings at the new Garden Village to the east of the town up to 2033, with a further 850 proposed beyond. The Garden Village has Government support to deliver 5,000 dwellings in total.

**Support economic growth and rebalancing** – In addition to the houses, the Local Plan proposes 10,000 sqm of employment floorspace at NW Cullompton and 20,000 sqm at the Garden Village. Given the strategic connectivity to the M5, this could be a potential site for national and international businesses to set up, bringing economic growth to the South West.

**Support all road users** – The strategic intervention will provide links across the motorway linking the existing settlement to the west to the new development to the east. This will have to accommodate pedestrians and cyclists as well as vehicles so will improve connectivity for all road users across the M5.

**Support the Strategic Road Network** – there is existing congestion at the motorway junction which has an impact on traffic accessing and egressing the SRN. Queuing on the northbound off-slip can extend back onto the mainline which is a severe safety issue and has impacts on the running of the mainline.

## 2. Development of scheme so far

*Narrative of scheme development to date.*

The need for a strategic intervention has been identified in Mid Devon's Local Plan which is currently being reviewed by an Inspector. Options for the scheme have been investigated but more detailed design and surveys are required to narrow down a preferred option. Devon County Council are working closely with Mid Devon and Highways England to develop the best solution to unlock the proposed development while minimising the impact on the local environment.

Traffic surveys have been carried out and a traffic model is available to enable a Strategic Outline Business Case. Further surveys will be undertaken to enable an Outline Business Case.

Topographic surveys have been carried out and are currently being extended.

A consultation exercise is underway to develop a masterplan for the Culm Garden Village with funding from the Ministry of Homes, Communities and Local Government, <https://culmgardenvillage.co.uk/>

There is a need to further develop a scheme to ensure the M5 Junction 28 is not an impediment to the future growth aspiration of the area.

## 3. Financial & Economic Case - Value for Money

Indicative Scheme Cost	£80m - £120m
Indicative Benefit to Cost Ratio (if available)	3 – 4 ('High' value for money)
<i>Please outline the assumptions and uncertainties behind these estimations.</i>	
Traffic modelling on the scheme has started but needs to be refined during the option selection stage. Once this is complete, a full economic assessment on the scheme will be carried out.	

## 4. Timescales

Submission of Strategic Outline Business Case (SOBC)	March 2021
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Submission of Outline Business Case (OBC) <i>(for subsequent milestones assume 3 months from OBC to programme entry decision)</i>	March 2022
Full Business Case submitted to DfT	December 2024
Start of Construction <i>(assume 3 months from FBC to funding commitment)</i>	March 2025
Scheme open to public	2027