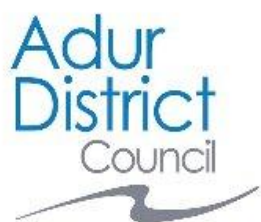


SHOREHAM TOWN CENTRE STUDY REPORT

West Sussex County Council



**SHOREHAM
HARBOUR
REGENERATION**

Shoreham Town Centre

Study Report

Prepared for

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Glossary

| | |
|--------|---|
| ADC | Adur District Council |
| ARCADY | Assessment of Roundabout Capacity and Delay |
| AQMA | Air Quality Management Area |
| BHCC | Brighton & Hove City Council |
| CIF | Community Infrastructure Fund |
| CLC | Community Local Committee |
| DfT | Department for Transport |
| DMRB | Design Manual for Roads and Bridges |
| EU | European Union |
| GIS | Graphical Information System |
| GPS | Global Positioning System |
| HGV | Heavy Goods Vehicle |
| IESE | Improvement and Efficiency South East (Framework) |
| JAAP | Joint Area Action Plan |
| JT | Journey Time |
| LEP | Local Economic Partnership |
| LSTF | Local Sustainable Transport Fund |
| MOVA | Microprocessor Optimised Vehicle Actuation |
| NCN2 | National Cycle Network Route 2 |
| NMU | Non-Motorised User |
| NOx | Nitrogen Oxide |
| NR | Network Rail |
| PIA | Personal Injury Accident |
| PICADY | Priority Intersection Capacity and Delay |
| SCOOT | Split Cycle Offset Optimisation Technique |
| SU | Statutory Undertakers |
| TOC | Train Operating Company |
| VMS | Variable Message Sign |
| WSCC | West Sussex County Council |

1 EXECUTIVE SUMMARY

- 1.1.1 The Adur County Local Committee (CLC) requested a transport study be conducted of Shoreham-by-Sea town centre to review what highway improvements are required to aid existing vehicular circulation and pedestrian accessibility.
- 1.1.2 Parsons Brinckerhoff (PB) was procured by West Sussex County Council (WSCC) under the IESE framework contract to undertake an Options Appraisal study of the town centre.
- 1.1.3 The analysis was also required to develop recommendations to help to mitigate the impact of the proposed Shoreham Harbour Western Harbour Arm development on Shoreham town centre.
- 1.1.4 The congested A259 goes through Shoreham which is a conservation area. The study has however been focused on the Town Centre with the study area comprising the A259 High Street/Brighton Road and A283 Old Shoreham Road corridor between, and including, the Upper Shoreham Road and Eastern Avenue junctions; plus the town centre streets between River Adur, railway line and Eastern Avenue.
- 1.1.5 As part of the study Parsons Brinckerhoff were required to liaise with West Sussex County Council and Adur District Council Members and the Shoreham Harbour Regeneration Transport Sub-Group. This liaison was required to ensure the team develops a full understanding current traffic conditions, and to validate survey findings.
- 1.1.6 The issues experienced across the study area, such as congestion on the A259, poor signage and pedestrian accessibility, alongside the associated evidence, led to the development of a set of potential mitigation proposals. These were then taken forward for consideration as Strategy Proposals.
- 1.1.7 In response to concerns raised throughout the design process the need for a phased approach to strategy delivery was agreed. The report recommends a series of proposals across short, medium and long term timescales. Short term schemes are assumed as being deliverable over the next 2-3 years, medium term schemes over the period from 2016 – 2018 whilst long term scheme delivery is assumed as extending post 2018 with schemes largely assumed as deliverable by 2020.
- 1.1.8 These timescales account for the requirements of consultation, design and where required statutory planning process. The schemes, including Norfolk Bridge roundabout, are assumed as deliverable alongside the requirements and timescales determined as a part of the wider Shoreham Harbour redevelopment.
- 1.1.9 Options in strategy development were analysed against baseline data to assess potential impacts or benefits of the proposed schemes.
- 1.1.10 The complete set of improvements has been estimated to cost in the region of £4.5 million including contingency. However, it is important to note that these are indicative costs at the first stage of a design process, and designs and estimates will need to be refined as the schemes are subject to a more detailed investigation. The delivery of said schemes will also inevitably be dependent upon funding, consultation and approvals.

- 1.1.11 A summary of the recommendations is tabled below. These are the schemes that are considered deliverable as a result of consideration via an options appraisal which factored in a number of variables. Considered alongside engineering design, and consultation inputs from the CLC these schemes constitute the main study recommendations.

| Short Term | Medium Term | Long Term |
|---|--|---|
| S2. Re-alignment of existing bus stops | M1. Improvements to Norfolk Bridge junction | L1a. Revised Norfolk Bridge Roundabout |
| S3. Improve local signing (to car parks) | M8. Reversal of direction to northbound only for West Street | L3 Bus stop consolidation along A259 High Street |
| S4. Reduce street clutter (on High Street) | M14. Walking focused routes - New Road, Tarmount Lane | L10. Shoreham –by-Sea rail station and bus interchange improvements |
| S11. Strengthen parking enforcement across town | M 16b. Toucan crossing on A259 at New Road | L11. Longer term resident parking arrangements |

- 1.1.12 The full package of improvements as a whole will be expected to ease the pressures of growth and development traffic in the study area to 2031.

2 INTRODUCTION AND OBJECTIVES

2.1 About this report

- 2.1.1 Parsons Brinckerhoff (PB) was procured by West Sussex County Council (WSCC) under the IESE framework contract to undertake a study of Shoreham-by-Sea town centre.
- 2.1.2 This follows a request by the Adur County Local Committee (CLC) that a transport study be conducted within the town centre with a view to:
- 'Reviewing junctions and traffic flows considering what highway improvements are required that will aid vehicular circulation and pedestrian accessibility'*
- 2.1.3 The study is required to make recommendations that are consistent with strategic plans and other initiatives being conducted in the wider Shoreham area.
- 2.1.4 These additional considerations include development proposed in the Revised Draft Adur Local Plan 2013¹ including the proposed development at Shoreham Harbour to 2031. The Shoreham Harbour Joint Area Action Plan (JAAP) is currently being developed by the Shoreham Harbour Regeneration Partnership consisting of: Adur District Council (ADC), Brighton & Hove City Council (BHCC) and West Sussex County Council (WSCC).
- 2.1.5 The JAAP will provide detail to the policy in the Adur Local Plan and seeks to guide development and investment proposals as part of the regeneration aspirations throughout Shoreham Harbour to 2031. This includes 1050 new dwellings to the east of the town centre, in a location known as the Western Harbour Arm². A Strategic Transport Study supporting both the Adur Local Plan and the JAAP tested a number of growth scenarios for the District including Shoreham Harbour. The results of this study were considered in developing this strategy for Shoreham Town Centre.
- 2.1.6 To support the JAAP, the Shoreham Harbour Regeneration Transport Sub-Group requested that designs produced as part of this study be prepared for suitable transport measures to mitigate the traffic impact on the town centre of the proposed levels of development.
- 2.1.7 Strategy proposals resulting from this study are intended to recognise and combine the aspirations of the two contributory stakeholders groups described above. It is an aim that the proposals provide a workable and deliverable strategy package for the future development of Shoreham town centre.

2.2 Objectives for this study

- 2.2.1 In summary the objectives of the study are to:
- Improve the town centre for vehicular movement and circulation efficiency, enhance pedestrian accessibility and manage air quality.
 - Mitigate the impact of the proposed development levels from Shoreham Harbour Western Harbour Arm on Shoreham town centre.

¹ For further details, please see the Adur Local Plan web pages: <http://www.adur-worthing.gov.uk/adur-ldf/adur-local-plan/#revised-draft-alp-2013>

² For further details, please see the Shoreham Harbour Regeneration web pages: <http://www.shorehamharbour.com/>

2.2.2 This is to be achieved through an assessment of suitable improvement schemes in Shoreham town centre, including the A259/A283 Norfolk Bridge junction and production of initial designs and costs that meet the community's aspirations.

2.3 Parsons Brinckerhoff's approach to the study

2.3.1 The project team has extensive knowledge of the local area as a result of their involvement in a number of previous projects. As such the team also has a high level understanding of the local area and issues, and access to data and information that has previously been collated.

2.3.2 Our initial approach to the study involved drawing on this data and through desktop review, site visits and additional data collection as follows:

- OS mapping for placement in our GIS database (under WSCC licence)
- Traffic Flow and Accident data (through WSCC), including extracts from modelling from the Adur & Shoreham Harbour Transport Study
- Pedestrian and Cycle (Non-Motorised Users) Counts
- Planning Policy data, (through ADC & WSCC)
- Committed and proposed development and highway improvements, (through ADC & WSCC)
- Air Quality Management Area (AQMA) mapping - part of the town centre, along the A259 High Street/Brighton Road between Victoria Road and Eastern Avenue, has been declared as an AQMA.
- Environmental constraints from publically available data (including environmental designations and our own GIS database)
- Land use data and urban realm context obtained through a detailed site visit to inform a Link and Place analysis.

2.3.3 We have also consulted extensively with relevant bodies to seek additional local area information, and have used this consultation with key stakeholders throughout the study to develop and refine proposals for the strategy.

3 UNDERSTANDING THE CURRENT AND FUTURE SITUATION

3.1 Study Area

- 3.1.1 The study area (Figure 1) is defined as the A259 High Street and Brighton Road and A283 Old Shoreham Road corridor between, and including, the Upper Shoreham Road and Eastern Avenue junctions. The area includes the town centre streets between Eastern Avenue, the railway line and River Adur.

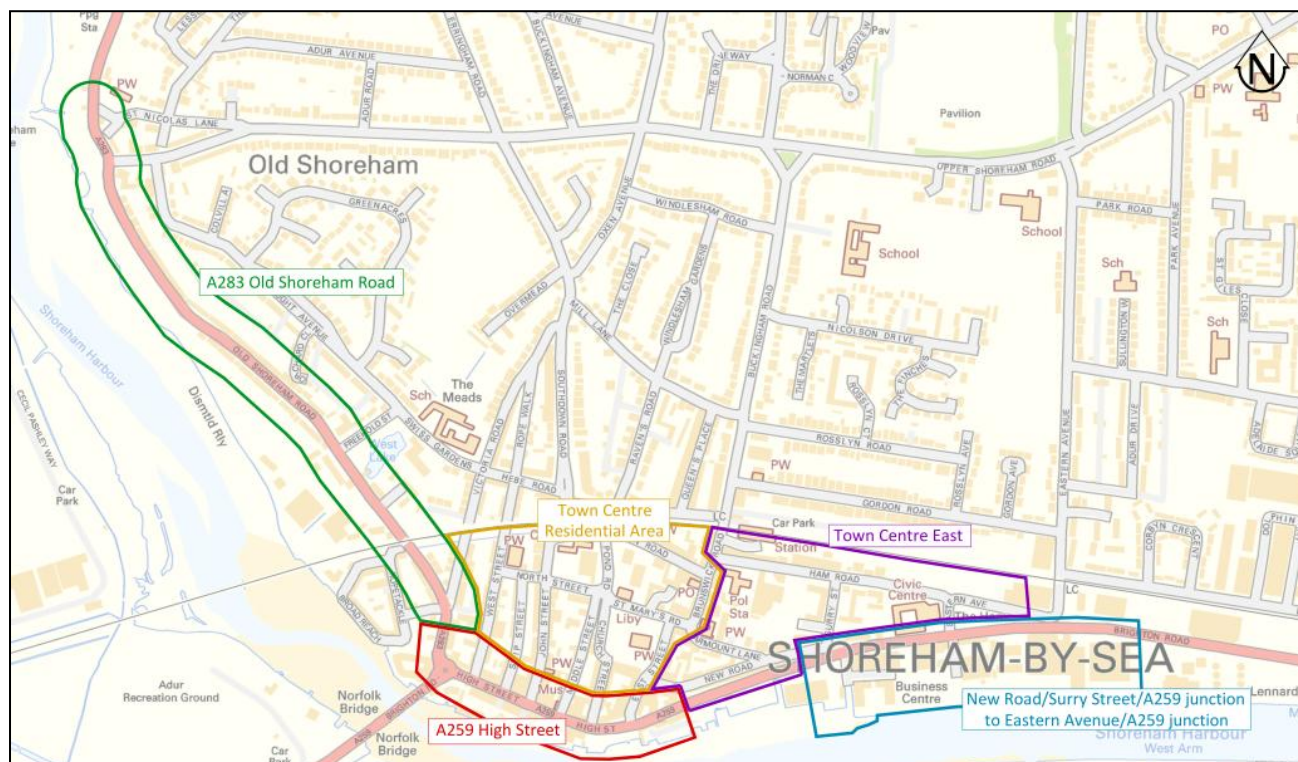


Figure 1 – Town Centre Study Area

- 3.1.2 For the analysis the Study area has been considered in terms of five areas:

- A283 Old Shoreham Road – from north of the Amsterdam Pub down to Ropetackle, north of the Norfolk Bridge Roundabout. A 30mph residential road experiencing speed and on-street parking and HGV issues.
- A259 High Street – Norfolk Bridge Roundabout to East Street. A 30mph road with predominantly retail and leisure frontages experiencing on-street parking and traffic issues, air quality concerns and connectivity issues.
- Town Centre Residential Area – between the railway line and the A259 from West Street through to East Street/Buckingham Road. This predominantly residential area is made up of a combination of one-way and two-way narrow streets of historic nature. The Shoreham Medical Centre and Community Centre, along with a number of significant religious buildings are contained within this area.
- Town Centre East – between the railway line and the A259 from East Street/Buckingham Road through to Eastern Avenue, including the railway

station. This area comprises a mixture of residential, business and retail uses in the area to the south and east of the railway station. This area contains the Co-operative supermarket and Police station.

- New Road/Surry Street/A259 junction and the Eastern Avenue/A259 junction through to the Western Harbour Arm. This area predominantly contains retail and business uses, fronting the A259. This area represents the future entry points to the Western Harbour Arm development from the town.

3.2 Background Information Review

3.2.1 A review of all relevant and available planning and transport documents from Adur District Council, Brighton & Hove City Council and West Sussex County Council was carried out.

3.2.2 The documents were reviewed in order to establish an evidenced baseline of existing transport issues across Shoreham, and specifically our study area. The following reports have been considered in more detail in a separate Evidence for Improvements Note (Appendix A) produced as a part of this study. The following documents were investigated as part of this note:

Planning Policy documents

- Revised Draft Adur Local Plan 2013 (covers plan period up to 2031)
- Brighton and Hove Submission City Plan (Part One) 2013
- Shoreham Harbour Interim Planning Guidance 2011
- Shoreham Harbour Joint Area Action Plan (JAAP) – draft (covers plan period up to 2031)
- Shoreham Harbour Western Harbour Arm Development Brief (adopted 2013)

Transport Planning Documents and Studies

- West Sussex Transport Plan 2011-26
- Adur Local Plan & Shoreham Harbour Transport Study 2013 (covers plan period up to 2028)
- Emerging Shoreham Harbour Transport Strategy 2013
- Brighton and Hove City Plan – Combined Strategic Transport Assessment 2013

Non-statutory Planning Documents

- A strategy for Shoreham Renaissance 2006

Other Transport Documents and Studies

- Shoreham-by-Sea Parking Review 2013
- Adur Air Quality Action Plan 2007
- West Sussex County Council Advisory Lorry Routes
- Shoreham Harbour Community Infrastructure Fund (CIF) Project 2010
- West Sussex CC Review of Approved Major Highway Schemes 2013
- Major Scheme Business Case – Coastal Transport System 2009
- National Parks LSTF and Linking Communities Cycle Routes 2012
- Adur Communities List
- Pond Road Development Brief 2010
- Shoreham Harbour Streetscape Guide 2012
- Connect2 Adur Ferry Bridge 2013
- Local planning applications and associated transport assessments
- Journey time, flow data and speed data

3.3 Conclusions and key points

- 3.3.1 The background review represents the significant number of studies that have taken place in and around the Shoreham area over the past few years. The reports document the status of existing transport provision along with bottlenecks and problem locations such as the Norfolk Bridge roundabout both now and into the future.
- 3.3.2 The review has also considered live and approved planning applications and their impact on the local highway network. The transport contributions completed for the approved Parcelforce planning application (on A259 Brighton Road) and Ropetackle North have been included as committed improvements.
- 3.3.3 Other live planning applications, such as that for the Minelco site have not been included as committed improvements at this time.
- 3.3.4 The reports also explain the significant levels of development that is planned to take place within the area, as well as the associated impact of the development on the local transport network. The Shoreham Harbour Regeneration Area represents the majority of planned development in the study area.
- 3.3.5 The Shoreham Harbour Regeneration Area is identified as a broad location for change within the Draft Adur Local Plan. Shoreham Harbour will be the focus of a significant level of development to facilitate regeneration of the Harbour and neighbouring communities. 'Draft Policy 8: Shoreham Harbour Regeneration Area' notes that the Council will facilitate the delivery of between 1200-1600 new dwellings within the Shoreham Harbour Regeneration Area within Adur District (approximately 1050 of these during the plan period to 2031).

3.4 Data provided by WSCC

- 3.4.1 At project inception WSCC provided a background set of data to inform the study.
- 3.4.2 Permanent Traffic Count Data
WSCC provided permanent traffic count data for the two sites within the study area: along the A259 and A283 Old Shoreham Road close to the Norfolk Bridge Roundabout.
- 3.4.3 A review of the traffic count data was undertaken for the period of January 2011 to December 2013. Average annual weekday traffic flows and HGV proportions were determined and are presented in the tables below.

| A259 Shoreham, High Street East Of Middle Street | | | | |
|--|--------------------------|-----------------|--------------------------|-----------------|
| Time | Total Eastbound Vehicles | HGV Eastbound % | Total Westbound Vehicles | HGV Westbound % |
| 8:00-9:00 | 688 | 15% | 513 | 11% |
| 16:00-17:00 | 577 | 12% | 678 | 5% |
| 17:00-18:00 | 579 | 8% | 624 | 4% |

| A283 Shoreham, Old Shoreham Rd N. Of Buckingham St | | | | |
|--|---------------------------|------------------|---------------------------|------------------|
| Time | Total Northbound Vehicles | HGV Northbound % | Total Southbound Vehicles | HGV Southbound % |
| 8:00-9:00 | 575 | 13% | 445 | 13% |
| 17:00-18:00 | 478 | 8% | 588 | 8% |

- 3.4.4 The data demonstrates that along the A259 there is more vehicles travelling east in the morning and west in the evening peak hours. The data demonstrates that along the A283 there are more vehicles travelling north in the morning and south in the evening peak hours.
- 3.4.5 According to DMRB TA 79/99 design standards, the theoretical vehicle capacity of the A259 High Street would be approximately 750-900 vehicles per lane per hour. This suggests that the capacity is higher than the numbers of vehicles the High Street currently accommodates. The congestion experienced along the High Street has therefore been identified as largely the result of Norfolk Bridge Roundabout failing to adequately accommodate the traffic flows. This assertion is demonstrated in the Journey Time Surveys (see Section 3.5 below) which reveal the reduction in vehicle speeds (delay) on the approach to the Norfolk Bridge Roundabout for traffic approaching along both the A259 and A283.
- 3.4.6 It is also suggested that other factors such as the pedestrian crossings, bus stops and on-street parking are also adding to the general delay and congestion experienced along the High Street.
- HGV Data
- 3.4.7 The HGV proportions along the A259 and A283 have been determined and are shown above in Section 3.4.3.
- 3.4.8 The County Council has sought to minimise the noise and emissions consequences of freight as well as reduce rat running through the determination of advisory lorry routes across West Sussex. The advisory lorry route for in the Shoreham area includes the A259 along the coast between Brighton and Worthing but does not include the A283 to A27.
- 3.4.9 The Port Masterplan document (2010) outlines a strategy to deliver a 25% increase in Port growth to 2026. This intention is mirrored in the Ports Access note. The subsequent HGV numbers are unknown, however, it is suggested that numbers of HGVs using the A259 could increase alongside Port growth. This in turn could lead to an impact on air quality within the AQMA, but would need to be assessed as part of any wider Port strategy.
- 3.4.10 The Western Harbour Arm is currently dominated by large industrial uses but also includes office, retail and leisure uses. Overtime it is expected that these industrial uses will be replaced with residential and associated leisure uses as part of the Shoreham Harbour Western Harbour Arm development. The changes in HGV numbers relative to the changes in land use in Western Harbour Arm are unknown, but numbers could potentially reduce over time through the replacement of industrial land uses with residential land uses.

- 3.4.11 There will be the need for HGVs to deliver goods to retail and residential uses. Morrison's Supermarkets PLC stores, as submitted as part of the Minelco site application, estimate that there would be 10 deliveries per day to the supermarket. This volume of HGVs is unlikely to be a noticeable impact on traffic volumes or air quality issues along the A259 across the period of a day.
- 3.4.12 Other WSCC
The WSCC data also included the following other items:
- Accident data (5 years) - see Section 3.4 below
 - Land ownership data – this data shows the land owned by both WSCC and Adur DC across the study area.
 - Highway boundaries – this data shows the extent of WSCC highway responsibilities and management across the study area.
 - WSCC approved major schemes maps – the County Council retains a list of Approved Major Highways Schemes that it has sought to implement. The schemes were developed over time to meet congestion or access needs, reduce casualties or enhance the highway network (see separate Evidence for Improvements Note Appendix A produced as a part of this study).
 - Adur cycle and bus network maps – the bus maps show the Brighton and Hove and Coastliner services whilst the cycle map shows the existing and aspirational cycle routes across the study area. There are some gaps in cycle route provision, notably east-west across the study area and north-south.
 - WSCC also provided us access to their 'Manual Survey Request Log Book' from which flows along the A283 Old Shoreham Road (near the Amsterdam Pub) were used to validate other data in the Data Collection Note (Appendix B).
 - Copies of a number of documents outlined in Section 3.2 above

3.5 Conclusion

- 3.5.1 The above data has been considered and examined accordingly as part of the background information review (Appendix A). The issues and evidence from these documents is summarised in Table 3 in Section 5.

3.6 Safety Desktop Review

- 3.6.1 WSCC provided Parsons Brinckerhoff Personal Injury Accident (PIA) data across the study area for the 5 years period to 31/01/2013. The study area extent covers the study area as shown on **Figure 2** below and provided in more detail in **Appendix C**.



Figure 2- Study Area PIAs

- 3.6.2 Over five years, there were a total of 14 serious and 56 slight accidents in the study area. There were 12 serious and 40 slight accidents along the A259 High Street. No fatalities were reported in the study area.
- 3.6.3 At the Norfolk Bridge junction there were 1 serious and 5 slight accidents. The accident rate at this junction is broadly in line with expected accident rates for a junction of this nature. The serious incident involved a mobility scooter on the pavement, just off the roundabout. Two of the accidents involved cyclists, whose bikes were clipped by cars whilst travelling around the roundabout.
- 3.6.4 There is a small accident cluster of 1 serious and 3 slight accidents at the junction of West Street and A259 High Street. The serious accident involved a vehicle turning right out of West Street which collided with a vehicle travelling along the High Street.
- 3.6.5 There is a small cluster (2 serious and 2 slight accidents) at the bottom of Ship Street and John Street with the High Street. One serious accident involved a pedestrian being hit by a car on the High Street crossing, and the other when a vehicle pulling out of one of the side streets was hit by a vehicle travelling along the A259 High Street.
- 3.6.6 There is a small cluster of 5 slight accidents at the junction of Middle Street and A259 High Street. Two of the accidents involved cyclists, where both involved a stationary vehicle opening a door onto a passing cyclist. One of the accidents involved a pedestrian who failed to look properly when crossing the A259 High Street.

- 3.6.7 There is a small cluster of 4 slight accidents at the junction of East Street and the A259 High Street. East Street was pedestrianised in December 2011. One of the accidents involved a pedestrian who failed to look properly when crossing the A259 High Street, whilst the others involved non-related vehicle incidents.
- 3.6.8 There is a small cluster 2 serious and 3 slight accidents at the bottom of Ship Street and John Street with the High Street. One serious accident involved a pedestrian being hit by a car on the High Street crossing and the other when a vehicle pulling out of one of the side streets was hit by a vehicle travelling along the A259 High Street.
- 3.6.9 There is a small cluster of 1 serious and 4 slight accidents where Eastern Avenue joins the A259. Three of the accidents involved cyclists. On one a vehicle turning out of Eastern Avenue failed to give way to a cyclist travelling east and hit them. On the other a cyclist was struck by a vehicle on Eastern Avenue. The serious accident involved a cyclist being struck by a lorry along the A259.
- 3.6.10 There is one further small accident cluster along Brunswick Road near the train station involving 2 serious and 5 slight accidents. Two of the accidents involved a cyclist, one where a cyclist was hit by a taxi at the level crossing and the other where a cyclist was hit due to a failure to look. One serious incident involved a drunken driver. The other serious incident involved a pedestrian hit by a car whilst crossing the road.

3.7 Conclusions and key points

- 3.7.1 Whilst there have been a number of slight and serious accidents take place across the study area the accident rates are broadly in line with expected accident rates for junctions and roads of this nature. The only consistent theme appears to be the number of cyclist related accidents.
- 3.7.2 The options considered within this report are expected to have a neutral to slight positive benefit on the accident rates within the study area. Any benefit will result primarily from the tidying of existing highway geometries, the provision of more off-road cycle facilities (along Ham Road), general public realm improvements and from improvements to existing junctions.

3.8 Data Collection

3.8.1 A major data collection exercise has also been undertaken as a part of the study. All new data has been collected by PB's in-house data collection team and members of the project team. This supplements the Automatic Traffic Data, discussed in 3.3, and helps to create a fuller picture of current transport conditions and issues in Shoreham town centre.

3.8.2 The data collection was conducted alongside more general site visits from the project team intended to further understand the detailed operation of the key roads and traffic movements within the study area, and to enable the identification of key issues. The three methods of data/ information collection were as follows:

- Journey Time (JT) surveys
- Pedestrian and cycle counts
- General observations, including parking facilities

3.9 Journey Times

3.9.1 Data for each of the methods above was collected in and around the AM peak (0730-0930), the Inter-peak (IP) (1130-1430), and PM peak (1630-1830) periods.

3.9.2 The information was collected under normal traffic conditions with no recorded road traffic accidents on Thursday 6, Thursday 13 June and Tuesday 9 July 2013. It is standard industry practice to undertake traffic surveys on one or two days only to support a traffic assessment or transport study. The surveys were undertaken during June which is considered to be representative or 'neutral' month for data collection by the Department for Transport.

3.9.3 Our in-house bespoke GPS JT data collection system was used to gather the data. GPS data loggers were placed in cars and driven around the study area in order to collect journey times and average speeds along the routes.

3.9.4 Journey time runs were undertaken along the following routes:

- A259 from Kingston Lane to Norfolk Bridge Roundabout (westbound) continuing on to Saltings roundabout (3.25km)
- A259 (eastbound) from Saltings roundabout to Norfolk Bridge Roundabout to A283 Old Shoreham Road/Steyping Road/Upper Shoreham Road roundabout (northbound) (1.75km)
- Old Shoreham Road/Steyping Road/Upper Shoreham Road roundabout to A259/Kingston Lane (South and east bound) (3.8km)
- Circular route – from A259/Kingston Lane to Norfolk Bridge to A283 Old Shoreham Road/Steyping Road/Upper Shoreham Road roundabout to A259/Kingston Lane via Upper Shoreham Road and A270 Old Shoreham Road (clockwise and anticlockwise) (7.2km)

3.9.5 A minimum of 2 return journey runs were completed for the AM, Inter and PM peak periods along various routes across and around the study area. The routes for each journey run are shown graphically in the Data Collection Note, **Appendix B**, along with the data from each run which has been plotted on time/distance graphs.

3.9.6 These cover the main roads across the study area, providing data for all arms of the Norfolk Bridge Roundabout and each way along both the A259 corridor and A283 Old Shoreham Road.

3.9.7 As an example the A259/Kingston Lane to Norfolk Bridge Roundabout (westbound) on to Saltings roundabout run is shown below in Figure 3. The figure shows that the most pronounced speed reductions from queuing tend to occur in the PM peak periods, resulting in traffic slowing / queuing occurring on the approach arms to the junction (impacting on the A259 High Street and the Old Shoreham Road Approach in particular). The traffic generally moves slowly along the High Street from East Street to Norfolk Bridge as well as on all other approaches to the roundabout. This demonstrates that the roundabout causes issues for all its approaches.

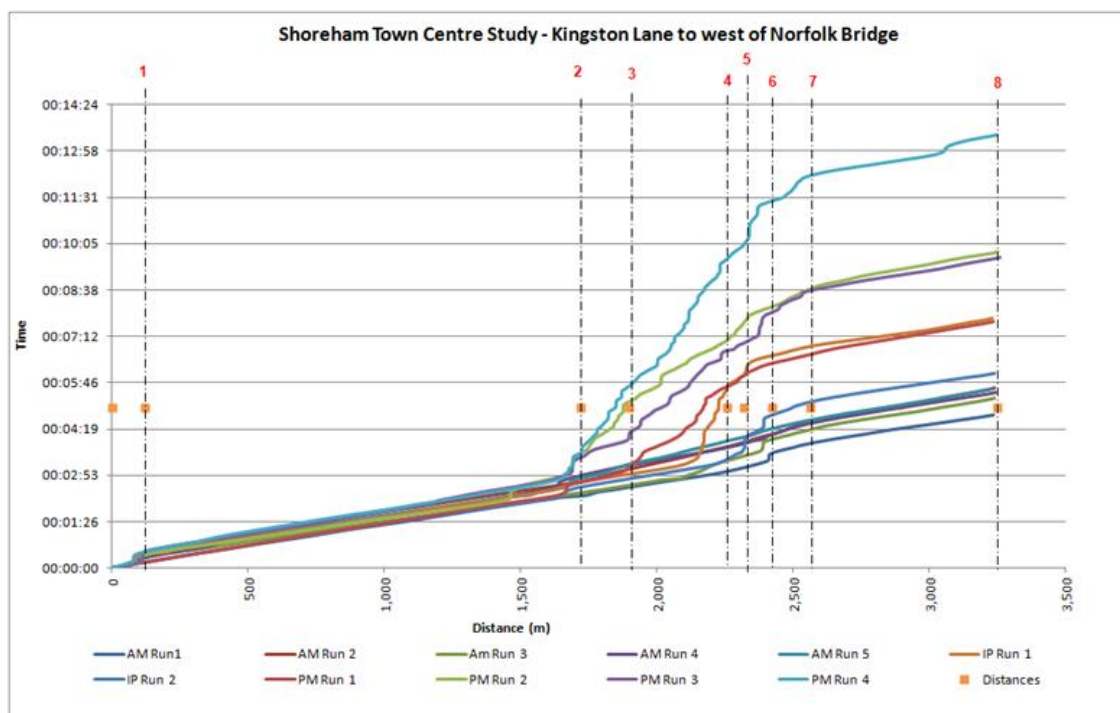


Figure 3- Journey time run - A259/Kingston Lane to Norfolk Bridge Roundabout (westbound) on to Saltings

| Journey Time Diagram – Location Number Key | |
|--|---------------------------|
| No. | Location |
| 1 | Kingston Lane - start |
| 2 | Eastern Avenue |
| 3 | New Road |
| 4 | East Street |
| 5 | Church Street |
| 6 | John Street |
| 7 | Norfolk Bridge Roundabout |
| 8 | Saltings Roundabout - end |

- 3.9.8 The data collection results are supported by the findings of Transport Potential Ltd (TPL) who prepared a Transport Assessment (TA) in support of a mixed-use development comprising of a new Morrison's food store, retail and commercial floor space, community uses and residential apartments on Brighton Road (Shoreham by Sea). Their queue survey results demonstrated significant queuing on the A283 and A259 westbound approaches, which was also demonstrated in the journey time runs.

3.10 Pedestrian and Cycle Surveys

- 3.10.1 Our study team also undertook half hour pedestrian and cyclist counts at three places on the A259 during both the AM peak and inter-peak periods. By taking counts at these times we were able to compare likely 'commuter' associated movements against off-peak times, where retail and leisure associated movements are likely to be more prevalent. The 5-minute pedestrian and cycle count data has been aggregated across the half hour count periods to provide an indication of levels of cyclist activity.

- 3.10.2 The pedestrian and cycle count data is presented in the tables below. The data demonstrates approximately twice as many pedestrian movements occur in the inter-peak period (11:30-12:00) than the early morning period (08:45-09:00). More cyclists were counted during the early morning period (08:45-09:00), suggesting these were commuter cyclists.

Ped and Cycle Counts - A259 Norfolk Bridge Roundabout

| 8:45 – 9:15 | | |
|---------------|-------------|----------|
| Direction | Pedestrians | Cyclists |
| A259 EB | 21 | 10 |
| A259 WB | 16 | 5 |
| 11:30 – 12:00 | | |
| A259 EB | 38 | 4 |
| A259 WB | 15 | 3 |

Ped and Cycle Counts - A259 High Street, between Church Street and Middle Street

| 8:45 – 9:15 | | |
|---------------|-------------|----------|
| Direction | Pedestrians | Cyclists |
| A259 EB | 61 | 11 |
| A259 WB | 56 | 9 |
| 11:30 – 12:00 | | |
| A259 EB | 120 | 4 |
| A259 WB | 110 | 2 |

Ped and Cycle Counts - A259/East Street

| 8:45 – 9:15 | | |
|----------------|-------------|----------|
| Direction | Pedestrians | Cyclists |
| East Street NB | 54 | 3 |
| East Street SB | 56 | 2 |
| 11:30 – 12:00 | | |
| East Street NB | 158 | 2 |
| East Street SB | 108 | 2 |

- 3.10.3 It should be noted that these surveys took place during the closure of the Shoreham footbridge, which may have led to less pedestrian and cycle activity being present than usual.

3.11 General Observations

Parking

- 3.11.1 Our study team observed the parking availability and use across the study area.
- 3.11.2 The queue length data collected for the Ropetackle North Transport Assessment suggests there is significant queuing on the approaches to the Norfolk Bridge Roundabout in the PM peak hour along the A259. Our observations suggest this queuing is in part due to conflicts caused by the current alignment and size of parking spaces along the High Street. This in turn leads to some cars and buses parking badly and not being able to make full use of the available space. The observations suggest evidence for the need to resize and align spaces to make it easier to park within the bays along the A259 High Street.
- 3.11.3 Our observations noted that whilst there is some turnover of parking spaces along the High Street, beyond this within the various side streets off the A259 there is little parking turnover, with a number of spaces being used for all day commuter parking or for largely residential purposes. The parking locations on roads nearest the station are generally very well used for all day commuter parking. Our observations, coupled with feedback from the CLC suggested that increased amount of parking control could be implemented in and around roads close to the station. This would be in order to reduce the amount of all day commuter parking around the station and increase the amount of available shorter stay parking, which could be used by shoppers and visitors to the High Street.
- 3.11.4 Our observations also noted that the signage to and from the car parks is of limited quality, with little signage size and type consistency across the town. For new visitors to the town it is not clear where the town centre car parks are and as such it is suggested that most visitors seek to park along the A259 High Street. It is suggested that this might be leading to vehicles unnecessarily circling around the town looking for a parking space, adding further to the congestion. The observed evidence suggests the need to create an improved parking signage and routing strategy for the town to aid visitors find appropriate parking spaces across the town centre.

3.12 Side Streets

- 3.12.1 It was observed that a significant amount of traffic queues on the side streets during the evening peak hour, as vehicles seek to join the A259 High Street. In particular, queuing is experienced along West Street and Middle Street. It is suggested that the majority of these vehicles are 'rat-runners' trying to avoid the extensive queuing experienced along the A259 on the approach to the Norfolk Bridge Roundabout.
- 3.12.2 The vehicles exiting the side streets onto the A259 experience both poor sideways visibility of on-coming traffic, as well as limited gaps in the traffic to allow entry onto the A259. Frequently vehicles exiting the side streets are required to effectively 'push' themselves into the traffic stream along the High Street. Whilst this manoeuvre allows the vehicles to exit the side streets it does lead to additional delay, disruption and congestion for traffic heading along the A259.
- 3.12.3 The greatest amount of delay and congestion is caused in particular by vehicles exiting from West Street due to a combination a relatively large number of vehicles seeking to exit this side road along with its proximity to the Norfolk Bridge Roundabout. The observed evidence suggests the need to mitigate or minimise the impact of vehicles exiting from the side streets, in particular West Street due to the reasons above.
- 3.12.4 Additionally, as part of the signage strategy referred to above, it is suggested there is evidence to make access and egress to and from town centre car parks much clearer through a combination of both signage and direct routing. The observed evidence suggests the need to clearly sign the most direct and appropriate routes to and from the town centre car parks. It is noted that Middle Street is made up of the 'backs' of residential properties, whilst Ship Street is made up the 'backs' of residential properties on one side of the street and the 'fronts' of residential properties on the other side. These streets would allow for the most direct route from the A259 High Street to and from the town centre car parks, with the minimal disruption to residential properties.

3.13 Buses

- 3.13.1 It has been observed that buses along the A259 High Street do not always use the bus bays fully, with some part of the buses often jutting out into the main A259 carriageway. This contributes to congestion along the High Street as vehicles are required to stop and either wait for the bus to move, or wait to pull out around the bus as and when there are gaps in oncoming traffic. It is suggested this is due to the tight and restricted design layout of the bus bays preventing easy buses from easily entering the bays without restriction. From site observation it was noted that there may be value in a slight widening and reconfiguration of the bus stops to allow buses to fit into the bus stops with greater ease.
- 3.13.2 There is also evidence to suggest there will be benefit from consolidating the bus stops in order to reduce the potential for bays being blocked by other vehicles. Based again on the site observations the removal of the bus stops will likely mean layover will need to happen elsewhere. To accommodate such a change WSCC will need to have agreed an acceptable solution with the bus operators.

3.14 Level Crossings

- 3.14.1 There are two level crossings in Shoreham town centre, at Buckingham Road adjacent to Shoreham-by-Sea station and at Eastern Avenue to the east of the town centre. It was observed that the level crossing barrier is down for a long amount of time every hour. This leads to queuing at Eastern Avenue, either side of the barrier. When the level crossing barrier is down it also generally reduces north-south walking and cycling connectivity along Eastern Avenue. The CLC has suggested options for minimising this disruption through a potential bridge or underpass solution.

3.15 Surry Street and New Road

- 3.15.1 It was observed that it was difficult as a pedestrian to cross New Road and Surry Street at the point it approaches the A259. The road at this point the mouth of the junction is very wide and as such pedestrians begin crossing the junction in safety and part way across be faced with oncoming vehicles turning in to and out of the A259. Additionally the A259 bus stop is also currently sitting within the mouth of the New Road junction. Observations suggest that the junction should altered or amended to be made smaller, with the bus stop placed beyond the junction, in order to facilitate easier crossing in safety.
- 3.15.2 Additionally pedestrians and cyclists from the Western Harbour Arm development, at the most western extent, will require easy crossing across the A259. Crossing improvements are proposed as part of the Parcelforce development.
- 3.15.3 It was noted that New Road is a narrow one way road with parking outside the residential properties, typically parking on the southern side of the road. There are narrow paths on both sides of the roads. It was observed that some pedestrians walk down the centre of the road instead of the paths, due to their narrow nature.
- 3.15.4 Given that this road could be a key route between the town centre and the Western Harbour Arm development observations would suggest the need to alter or amend the road to be more of a defined shared surface. This would provide an enhanced walking and cycling environment along New Road, without the loss of any parking or current levels of access.

3.16 East Street-Brunswick Road

- 3.16.1 East Street and Brunswick Road link the town centre with Shoreham – by Sea station, the southern section of East Street was partially pedestrianised in 2012 with restricted vehicles access. The resultant scheme is in keeping with the high quality urban realm in the northern section of East Street, which edges the of the St. Mary de Haura church grounds, This should provide an enhanced walking and cycling environment along East Street and Brunswick Road, without a significant loss of parking or current levels of access.
- 3.16.2 The route will add to the high quality pedestrian and cycling route provision along the southern section of East Street to provide more of a defined route to and from the Shoreham-by-sea railway station and the Adur Ferry Bridge or the A259 High Street. The route will be well signposted, with signs drawing the eye along the route to and from key land marks such as the station, St. Mary de Haura church and the Adur Ferry Bridge.

3.17 Conclusion and key points

3.17.1 The following bullet points provide a summary of major conclusions drawn from the data collection exercise:

- The surveys were undertaken in weekday traffic conditions that are thought to provide a good example of typical conditions.
- Surveys were in generally lightly trafficked mid-week conditions. From other site visits it is accepted that at other times (i.e. weekends and holiday periods) Shoreham town centre traffic may be considerably busier. The survey results are supported by the findings of Transport Potential Ltd (TPL) who prepared a Transport Assessment (TA) in support of a mixed-use development comprising of a new Morrison's food store.
- From Journey Time Surveys undertaken it is apparent that the A259 / A283 Norfolk Bridge roundabout, even in the lightly trafficked conditions, is the source of much of the queuing on the routes selected. This is also confirmed by the draft Adur Local Plan and Shoreham Harbour Transport Study (2013).
- Speed reductions from queuing occurring in the PM peak hour, resulting in traffic slowing / queuing occurring on the approach arms to the Norfolk Bridge junction. In worse case conditions our journey time data suggested it would take 9 minutes to travel from Eastern Avenue to Norfolk Bridge Roundabout. In quiet conditions this same journey was taking less than 2 minutes. The congestion experienced along the High Street is largely the result of Norfolk Bridge Roundabout failing to adequately accommodate the traffic flows in addition to the general level of activity and movement occurring along the High Street. These findings are in accordance with the Adur Local Plan & Shoreham Harbour Transport Study 2013 which demonstrates the capacity issues at the Norfolk Bridge Roundabout into the future.
- The highest levels of pedestrian activity on the High Street occur during the interpeak period (11.30-12.00). Pedestrian activity is busiest on the northern side of the A259. The temporary lack of access to the Shoreham Footbridge could be reducing pedestrian demand.
- Relatively higher levels of cyclist traffic occur in the AM peak period indicating that there is existing cyclist commuter travel demand. The temporary lack of access to the Shoreham Footbridge could be suppressing cyclist demand.
- Bus stops on the High Street are busy and often experience prolonged periods of driver layover. Issues with inconsiderate/inappropriate parking/loading resulting in buses stopping in the traffic flow.
- Parking on street and in the town generally is heavily utilised and experiences only moderate level of turnover.

3.17.2 The data, alongside the evidence from the background documents, has been used to identify a number of transport related issues within the town centre. The data has been collected from all available existing sources as well as new sources in line with data collection best practice.

Table 1 – Site Observations (June 2013)

| |
|---|
| Buses |
| Buses not fitting into bays – need extended/widened spaces – causing some blockages |
| Reasonably good patronage of buses |
| Up to three buses arriving at the same stop at the same time |
| It may be better to consolidate the bus stops, which are currently both ends of the High Street |
| Buses waiting in bays for 5+ minutes on occasions |
| Compass buses for footbridge replacement service – special bus stops along Ropetackle not being well used. They are used by an hourly bus service to and from Shoreham Beach. |
| Bus stop within the Surry Street/New Road/A259 junction needs consideration as bus stops are not normally situated within a junction |
| Pedestrians/cyclists |
| Quite low level of pedestrian flow on days surveyed |
| Puffin crossings, with camera, causing traffic congestion each way |
| Pedestrians tend to walk on northern side of the A259 |
| Several cyclists using path rather than road on southern side of A259 |
| Mainly cyclists in peaks, with more pedestrians off-peak. Higher than average proportion of cyclists in peaks. |
| Limited facilities for cyclists – advanced stop lines at Ropetackle, NCN2 through East Street and cycle parking outside the church (St Mary's). Provision well used. |
| Parking |
| Seemed to be low turnover of spaces on A259, despite one hour only wait time. |
| Disabled spaces on side streets, not A259 hindering access to high street by disabled people |
| Counted all car parks within study area – around 80-90% full |
| All side roads were full with on-street parking |
| Empty taxi bays on A259 |
| Ropetackle car park – poor maintenance of surrounding area |
| Street clutter along A259 |
| Adur Ferry Bridge |
| The impact of the closed Adur Ferry Bridge on the study |
| Side Roads |
| Level of traffic using these side roads causes issues on A259 |
| There would be very few alternative routing options if any side roads were to be closed and this would require detailed investigation |
| Side roads are narrow and could only ever be one-way as there is not enough space for vehicles to turn at the ends– turning opportunities for vehicles would be difficult if closed |
| West Street used as a cut through to A259 from the east |

Delivery vehicles reverse from side street into A259, causing congestion

Often requires good will of other drivers to let vehicles out from the side roads

A259 Norfolk Bridge Roundabout

There is often a rolling queue of vehicles travelling from the east during PM – this can be up to Eastern Avenue/A259 and the Surry Street/New Road/A259 junctions on the approach to the Norfolk Bridge Roundabout

High speeds of vehicles exiting the bridge, heading east – potential need to increase deflection/narrow entry point. Preventing gaps on other arms.

Max queue of 40 vehicles in AM peak hour (after 9am) across A259 Brighton Road Bridge arm heading east

Keep clear markings are often ignored

Rail Station

Lack of signage to and from town centre

A259

Heavy flow eastbound in AM peak and westbound return in PM peak

High percentage of HGVs as a total of traffic and in comparison to other roads

Potential widening/narrowing possibilities – depending on peak pedestrian needs

Queuing from Puffin crossings, cars leaving parking bays, pedestrians crossing and some side street movements – when considered all together had a big knock-on effect on the flow of the A259

Surry Street/New Road

Visibility poor when away from stop line – on approach on A259 due to tight angle of approach

Need for improved pedestrian path – to cut off the grass corner from New Road to A259

Large junction is difficult for pedestrians to cross safely – multiple traffic arms

Bus stop situated within the junction

Traffic 'near misses' occurring frequently due to number of arms in close proximity and large size of the junction

Special bus service (for Shoreham Footbridge replacement) used the junction to u-turn

In the PM used by vehicles to escape A259 queues, up New Road or Surry Street

Line markings often ignored by vehicles travelling from A259 to Surry Street so as to cut off corner

Old Shoreham Road

Quieter than A259 outside of school hours

Speeds at or above speed limit on average outside properties to the south of the Old Shoreham Road/Steyning Road/Upper Shoreham Road roundabout

Eastern Avenue

Vehicles not waiting for level crossing – U-turns in McDonald's entrance – 2/3 vehicles turning once barrier down on average

Barrier down for three minutes approximately at a time

Some queuing through this junction for vehicles travelling westbound in the PM peak

4 CONSULTATION, PARTICIPATION AND INFORMATION

4.1 Member and Officer Consultation

4.1.1 As part of the consultation exercise the study team liaised with West Sussex County Council and Adur District Council Members to more fully understand local perceptions on current traffic movements and sensitivities.

4.1.2 This consultation was validated through liaison with the Shoreham Harbour Regeneration Transport Sub-Group (comprising of WSCC, ADC and B&HCC officers) in order to seek any additional local area information to create a study area baseline data set. We also reviewed the Adur Communities Issue List, which is used to assist the CLC in preparing Infrastructure Priorities for funding.

4.1.3 The following key meetings have informed the various stages in analysis

- WSCC project management meetings (18 June, 30 July, 10 September)
- Members Liaison Meetings (18 July, 19 September)
- Shoreham Harbour Transport Sub-Group meetings (27 June, 10 September)

4.1.4 The type and stages of the consultation process is shown on the diagram below (Figure 4). Consultation has taken place with Members and Officers prior to both the initial optioneering and preferred option stages.

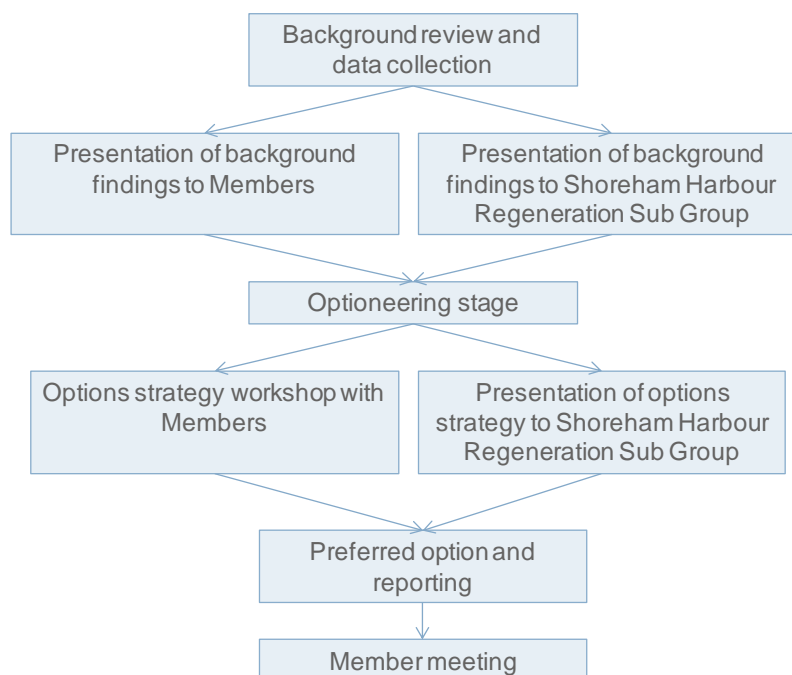


Figure 4 - Consultation Process

- 4.1.5 These meetings, in particular with Members, have helped shape and refine the details of the strategy. As such we have developed, with stakeholders support, a strategy that is both pragmatic in delivery terms (i.e. is affordable and deliverable), reflects the changes that could result from existing planning commitments and applications (the Parcel force site, the Minelco site and Ropetackle North) and that ultimately is geared to enabling the delivery of the Shoreham Harbour Western Harbour Arm development.
- 4.1.6 This process refined options and ruled out any intervention that would not effectively meet the needs of the area.
- 4.1.7 The transport issues raised by the local community, Members and officers have been captured in Table 2 below. These issues relate only to those within the study area.

Table 2 – Members and Communities Issue List

| Description | Reported By |
|--|--|
| Amendment or removal of bus stops | CLC Member |
| Maintain the number of on-street parking bays | CLC Member |
| The need to address commuter parking across the town – particularly around the station | CLC Member |
| Need for a parking/access/gateway strategy alongside a reduction in signage clutter | CLC Member |
| The need to maintain two pedestrian crossings along the A259 | CLC Member |
| Need for enhanced walking and cycling links between the town and the 'Western Harbour Arm' development area | CLC Member |
| General walking and cycling improvements across the town making best use of the Adur Ferry Bridge | CLC Member |
| Amendment of or removal to the taxi rank | CLC Member |
| Need for pedestrian crossing on Old Shoreham Road near the Amsterdam Pub roundabout | CLC Member |
| Air quality – various including VMS air quality signs, MOVA or SCOOT signals, minor engineering works | Community Identified or Historic Record |
| Footpath/cycleway from south of Shoreham Airport alongside River Adur | CLC highlighted for future consideration (2012) and District Council |
| Pedestrian crossing of A259 at Surry Hard/New Road | Through planning application at 79-81 Brighton Road (Parcelforce) |
| Moving bus stop at Surry Hard westbound to location away from junction | Through planning application at 79-81 Brighton Road (Parcelforce) |
| Real time passenger information at bus stops on A259 at Surry Hard/New Road | Through planning application at 79-81 Brighton Road (Parcelforce) |
| To address problems with (dangerous) traffic flows coming up to the Norfolk Bridge roundabout from the pet store | County Member |
| Parking Review (Residential Parking Study) within settlement (area to be determined) | WSCC Parking Team |

5 OPTIONS FOR SOLUTIONS

5.1 Design Phase

- 5.1.1 The strategy development phase of work has drawn on the background data, evidence of need and issues raised through the engagement process, as outlined in Sections 3 and 4.
- 5.1.2 The team's creative thinking and design work was then further informed by site visits, recording land use, public realm condition, transport and modal demands on each street and pedestrian movement and intensity.
- 5.1.3 In taking forward strategy development we undertook a 'Link & Place' analysis of the study area. Link & Place analysis is a dynamic tool used to prepare an initial analysis of the existing streets. The 'place' status for each section of the street is defined based on a number of criteria including land use, pedestrian intensity and townscape.
- 5.1.4 The 'link' status of each street section is defined by the broad transport and movement demands. Links are considered as Main Roads, secondary roads or minor roads with the most significant roads in Shoreham town centre classified as follows:

| Main Roads | Secondary Roads | Minor (Local) Roads |
|------------------------|---------------------------------|---|
| A259 High Street | Ham road and Eastern Avenue | Town Centre Residential - West street, Ship Street, John Street, Middle Street & Church St. |
| A283 Old Shoreham Road | Surry Street | Victoria Road |
| | Western Harbour Road | Tarmount Lane and New Road |
| | East Street and Brunswick Road | |
| | Buckingham Road, Southdown Road | St Mary's Road |

- 5.1.5 These parameters were combined to illustrate the importance of the street in 'place' terms and the importance of ensuring quality design and an uncluttered street environment for successful town centres. Taken together link and place classifications provide a snapshot of overall street usage on a section by section basis and the categorisation criteria form an input into the broader design process.
- 5.1.6 This approach allowed us to refine and develop thinking in relation to the following:
- Street circulation and street hierarchy for different user classes
 - The operation of the town relative to parking demands, residential needs, retail usage and other land uses
 - The areas of the town centre which are more intensively used
 - Coexistence of both 'place' functions and areas of high traffic movement – e.g. A259
 - The use of side roads such as Middle Street and Ship Street, which are mainly 'backs' of properties as potential links into the inner town centre location.

5.1.7 Using agreed design principles from successful street designs elsewhere a series of urban realm and traffic management options for the study area have been developed. These have included all the street functions including pedestrian movement, public space, kerbside loading function, landscaping, traffic movement, pedestrian crossing, public transport function and any other street functions.

5.1.8 The approach follows the design philosophy developed in Manual for Streets 1 and 2 will be followed along with other best practice and real examples such as psychological traffic calming and mixed priority routes.

5.1.9 We have similarly developed a 'Link & Place' analysis of the full strategy proposals. The outputs from this analysis are summarised at **Appendix D**.

5.2 The Design Strategy

5.2.1 The Strategy has been driven by the issues obtained from the background data, data collection results, Member and officer comments as well as site observations.

5.2.2 The design has been broken down into five geographical areas across the study area, see Figure 1 (p11):

- A283 Old Shoreham Road – from north of the Amsterdam Pub down to Ropetackle, north of the Norfolk Bridge Roundabout
- A259 High Street – Norfolk Bridge Roundabout to East Street
- Town Centre Residential Area – between the railway line and the A259 from West Street through to East Street/Buckingham Road
- Town Centre East – between the railway line and the A259 from East Street/Buckingham Road through to Eastern Avenue, including the railway station
- New Road/Surry Street/A259 junction and the Eastern Avenue/A259 junction through to the Western Harbour Arm.

5.2.3 Table 3 below outlines the issues experienced in each area alongside the associated evidence and general mitigation needs. Mitigation measures are explained and explored in more detail through the Strategy Proposals discussed in Section 6.

Table 3 – Issues, Evidence and Need

| Study Area Location | Issue | Document and/or Evidence | Potential Mitigation (Need) |
|---|---|--|--|
| Whole study area | General vehicular congestion | Draft Adur Local Plan, Adur Local Plan & Shoreham Harbour Transport Study and West Sussex Transport Plan. Site observations. | Sustainable transport measures and behavioural change initiatives |
| A283 Old Shoreham Road | Above average vehicle speeds experienced | PB speed survey | To reduce speeds through slight overall narrowing of carriageway |
| | Vehicle queues back from Norfolk Bridge roundabout up Old Shoreham Road to the pet store/Ropetackle | Community Issues regarding queuing from the roundabout up Old Shoreham Road | To mitigate traffic demand and congestion at Norfolk Bridge roundabout through junction improvements |
| A259 – High Street (inc. Norfolk Bridge Roundabout) | Conservation area | Adur Local Plan | All mitigation to be appropriate to conservation area |
| | Poor operation of Norfolk Bridge roundabout now and in the future as a result of new development pressures e.g. Western Harbour Arm generating additional vehicle traffic | Adur and Shoreham Harbour Transport Study Ropetackle TA queue length survey The JAAP | To mitigate traffic demand and congestion through junction improvements and through promotion of sustainable travel measures To accommodate development related traffic through the junction |
| | Accident cluster at Norfolk Bridge roundabout and along High Street | WSCC PIA Data Communities Issue List | To reduce accidents, reduce speeds through junction improvements To reduce conflicting/impeding movements along the High Street through alignment improvements and provision of suitable parking and bus spaces |

| Study Area Location | Issue | Document and/or Evidence | Potential Mitigation (Need) |
|------------------------------|--|---|--|
| | Journey time reliability along corridor now and into the future | Adur & Shoreham Harbour Transport Study Journey time surveys | To reduce factors that cause unreliability along the High Street through alignment improvements |
| | Air Quality Management Area (AQMA) | Adur Air Quality Action Plan | To apply appropriate infrastructure mitigation measures that do not significantly worsen the AQMA themselves |
| | Congestion along the A259 due to circulation for parking | A strategy for Shoreham Renaissance | Parking and routing strategy to minimise unreliability along the High Street and minimise circulation of vehicles |
| | Parking on High Street causing congestion issues | Shoreham by Sea Parking Review | Parking and signage strategy |
| | Need to cater for extensive bus provision | Major Scheme Business Case – Coastal Transport System | To further review existing bus provision facilities |
| | Poor cycle connections within the town | Site observations Meeting with Sustrans | To reinforce links between the station and the Adur Ferry Bridge as well as the station and the Western Harbour Arm development. |
| Town Centre Residential Area | Conservation area requires appropriate design | Adur Local Plan | All mitigation to be appropriate to conservation area. To reduce both signage and street clutter. |
| | Rat running from side streets, particularly West Street but also Middle Street | Site observations and Member and officer meetings | To mitigate rat-running and disruptive turning out of side roads through directional amendments |
| | Disjointed cycle routes | West Sussex Transport Plan National Parks LSTF and Linking Communities funding bid | To join up/complete cycle routes within the study area |

| Study Area Location | Issue | Document and/or Evidence | Potential Mitigation (Need) |
|---------------------|---|---|---|
| | Parking on residential roads and around station - commuter/station/all day parking blocking spaces for others | Mott MacDonald Shoreham by Sea Parking Review | Parking and routing strategy – Developing a long-term approach to parking management to balance the needs of residents, businesses and commuters. |
| Town Centre - East | Poor access to the Station for pedestrians and cyclists | A strategy for Shoreham Renaissance | To consider signage strategy and walking/cycle improvements |
| | New development pressures | Adur Local Plan Western Harbour Arm Development Brief Minelcos's and Parcelforce TAs | To accommodate additional walking and cycling movements to and from the Station To improve the pedestrian / cycling environment on existing streets. |
| A259 East | A259 Brighton Road is an unattractive environment for walking and cycling | Western Harbour Arm Development Brief | To accommodate additional walking and cycling movements on non-A259 routes. To improve attractiveness of A259 |
| | Accident cluster at New Road/A259 junction | WSCC PIA Data | To reduce accidents by improving crossing facilities and size of junction |
| | New development pressures (e.g. Shoreham Harbour) | Adur Local Plan Western Harbour Arm Development Brief and JAAP Minelco's and Parcelforce TAs | To accommodate development related traffic at local junctions. |
| | New development pressures | Adur Local Plan Western Harbour Arm Development Brief and JAAP Minelco's and Parcelforce TAs | To accommodate additional walking and cycling movements Relocation of bus stop at Surry Hard westbound to location away from junction |
| | Access to and from Western Harbour Arm Development Area | A strategy for Shoreham Renaissance | To focus walking/cycling access along Western Harbour Arm via Humphrey's Gap and New Road. |

6 STRATEGY PROPOSALS**6.1 Strategy Proposal Philosophy**

- 6.1.1 In response to concerns raised throughout the design process (Section 4) the need for a phased approach to strategy delivery was agreed. This reflects:
- Sensitivities noted by the CLC around the immediate impact of proposals in order to ensure that the strategy proposals do not negatively impact on viability of the town centre
 - The need to evolve the strategy over time to reflect the increased need for capacity improvements and changes in design in response to current development commitments and committed development proposals
- 6.1.2 Building on the requirements of the study brief and additional inputs, and advice from stakeholder liaison, we have developed a phased approach to the delivery of the strategy over the short, medium and long term.
- 6.1.3 The strategy proposed advocates a set of short (1-2 years), medium (2-5 years) and longer term (> 5year) proposals. The measures set out within the three timescales have been developed on the basis of need and realism around the expectations of future funding provision.
- 6.1.4 In general the short term measures are those that could be provided most immediately, with the least funding requirements to mitigate against some of the existing problems occurring across the study area.
- 6.1.5 The medium and longer term schemes require additional funding and further design and approvals work and may need to respond to the needs of additional new development.
- 6.1.6 The stepped approach adopted reflects a number of the objectives identified for the study but most notably has been driven by the need for:
- a pragmatic and graduated set of improvements that enables stepped changes in capacity enhancement in response to increasing traffic activity
 - progressively tighter access and parking controls that seek to provide high levels of access to the town centre in the short term, but which in the longer term respond to increased levels of parking and local access activity
 - a recognition of a changed environment that ultimately will seek to better cater for the needs of Non-Motorised Users (NMUs) and an improved and more accessible town centre
- 6.1.7 With reference to the urban realm principles as outlined in Appendix D the approach similarly recognises the importance of
- reducing the unnecessary circulation of traffic movements around the town centre
 - enhancing the connectivity of the town centre with Western Harbour Arm development proposals
 - maintaining the efficient use of the A259 in order to meet development pressure and support the economic needs of the town and sub-region
 - enhancing the local environment and accessibility for local residents

6.1.8 It is suggested that these timeframes are indicative only and will depend on a number of factors including funding availability and detailed design approvals.

6.2 Strategy Proposal Overview

6.2.1 Table 5, on the following page, outlines the overarching strategy proposals across the study area across the short, medium and long term. The proposals are the result of a rigorous approach to the development of schemes, and their subsequent assessment relative to the study principles and objectives and design constraints.

6.2.2 In adopting this approach the strategy development considered various proposals tabled by stakeholders as part of the wider study consultation. These are tabulated and documented below. Some were removed for reasons detailed below in table 4 whilst the others were taken forward as outlined in table 5.

Table 4 – Strategy development considerations and rejected proposals

| Proposal Locations | Reasons for rejection of proposal |
|--|--|
| A259 / High St Scheme | |
| Cycle lanes on A259 – Westbound | <ul style="list-style-type: none"> • Insufficient space to safely accommodate design • Safety concerns due to parking and bus activity |
| Central Reservation on High Street | <ul style="list-style-type: none"> • Insufficient space to accommodate design • Reduced accessibility and local turn movements • Impact to parking provision |
| Additional signalised crossings for pedestrians | <ul style="list-style-type: none"> • Interruption of traffic flow • Undetermined need due to existing provision • Removal of parking spaces to accommodate additional crossings |
| Elements of the Coastal Transport system (CTS) e.g. bus lanes | <ul style="list-style-type: none"> • Unacceptable capacity reduction for general traffic • Negative impact on local parking |
| Parking space removal | <ul style="list-style-type: none"> • Unacceptable reduction in accessibility to businesses |
| Norfolk Bridge Signalised junction | <ul style="list-style-type: none"> • High Cost • Unnecessary traffic disruption • Insufficient capacity longer term |
| Old Shoreham Road | |
| Defined parking spaces for residents | <ul style="list-style-type: none"> • Insufficient space (and alternative to create space too costly verse benefits) |
| Localised planter treatments to improve look and smooth traffic flow | <ul style="list-style-type: none"> • Insufficient space |
| Other | |
| Surry Street Roundabout | <ul style="list-style-type: none"> • High Cost • Insufficient space • Interruption to traffic flow for limited value |
| Resident Parking controls area (including Buckingham Rd) | <ul style="list-style-type: none"> • Needs to be applied as a part of a wider package |

Table 5 – Town Centre Strategy Proposal Overview

| Location | Short Term | Medium Term | Long Term |
|------------------------------|--|---|---|
| A259 – High Street | <p>S1. Review and refinement of existing short stay parking provision</p> <p>S2. Proposed realignment / design of existing High street bus stops</p> <p>S3. Improve signing particularly to and from car parks</p> <p>S4. Reduce street clutter</p> <p>S5. Review taxi parking</p> <p>S6. Strengthen parking enforcement (especially in short term bays)</p> | <p>M1. Re-model approaches to Norfolk Bridge approaches and improve vehicle deflection (to reduce speed)</p> <p>M2. Remodel Ship Street and Middle Street junctions with High Street</p> <p>M3. Pavement strategy based on street hierarchy</p> <p>M4. Public realm improvements to High Street</p> <p>M5. Gateway treatment of Ship Street (entry) and Middle Street (exit) from town centre streets</p> | <p>L1a. Norfolk Bridge Option A – Enlarge roundabout to provide sufficient capacity</p> <p>L1b. Norfolk Bridge Option B – Replace roundabout with traffic signals, linked with signalised crossings on High Street</p> <p>L2a. Middle Street Option A – New traffic signal junction (replacing John St. crossing)</p> <p>L2b. Middle Street Option B – One-way northbound only</p> <p>L3. Consolidate four bus stops on the High Street to two.</p> <p>L4. Longer term parking arrangements implemented</p> <p>L5. Urban Realm and environmental enhancement to West Street, John Street and Church Street.</p> |
| A283 Old Shoreham Road | <p>S7. Gateway feature north of Amsterdam PH roundabout to enforce 30mph speed limit entry point</p> <p>S8. Links with Downs Link cycle routes</p> | <p>M6. Widen pedestrian footway</p> <p>M7. Formalise parking provision</p> | <p>L6a. Norfolk Bridge Option A – Enlarge roundabout to provide sufficient capacity</p> <p>L6b. Norfolk Bridge Option B – Replace roundabout with traffic signals</p> |
| Town Centre Residential Area | <p>S9. Signing strategy for off-street car parks</p> <p>S10. Complete 20mph speed limit across all town centre streets</p> | <p>M8. Amend one-way system (either all northbound or all southbound)</p> <p>M9. Review existing parking controls on side streets</p> <p>M10. Review parking restrictions</p> <p>M11. Remodel Ships Street and Middle Street junctions with High Street</p> | <p>L7. Improved surface treatments for streets – reflecting their traffic priorities</p> <p>L8. Implementation of a residents parking scheme</p> |
| Shoreham Town Centre (east) | <p>S11. Review and strengthen parking enforcement</p> <p>S12. Signing strategy for off-street car parks and other destinations</p> | <p>M12. Review parking restrictions and introduce stronger parking controls</p> <p>M13. Extended East Street style urban realm treatment towards Station and</p> | <p>L9. Implementation of a residents parking scheme</p> <p>L10. Shoreham-by-Sea Bus, Rail, Cycle interchange</p> |

| | | | |
|-----------|---|---|---|
| | <p>S13. Complete 20mph speed limit across remainder of town centre streets</p> <p>S14. Pedestrian route improvements at junctions with footway build outs and/or raised tables</p> | <p>Church Street (St. Mary's Road) to allow traffic movements</p> <p>M14. Create New Road/Tarmount Lane as walking/cycle friendly route</p> | |
| A259 East | <p>S15. Signing strategy for off-street car parks and other destinations</p> <p>S16. New pedestrian crossing facilities close to New Road junction</p> <p>S17. Bus stop improvements along A259</p> | <p>M15a. New Road Junction Option A Narrow junction with build outs</p> <p>M15b. New Road Junction Option B Close Surry Street at New Road</p> <p>M16b. Introduce toucan crossing by Parcellforce or other new developments</p> | <p>L11. Implementation of a residents parking scheme</p> <p>L12. Public Realm improvements connecting Western Harbour Arm developments with town centre – continuing New Road route</p> |

6.3 Short, medium and long term strategies

6.3.1 The above overarching strategy proposal is broken down into the three short, medium and long term sections below. These tables explore each measure in more detail providing a description on each along with the desired outcome and the benefits and consequences. Where alternative major initiatives / schemes were considered in detail these have been evaluated more fully and documented further in section 7. A preferred approach has then be identified.

6.3.2 The drawings for the short, medium and long term strategies can be found in **Appendix F**. It also indicates where schemes could be combined or are mutually supportive of each other.

Short Term Strategy

6.3.3 The table below explores the measures proposed to be delivered within a short term timeframe.

Table 6 – Short Term Strategy

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|------------------|--|---|---|--|---|
| A259-High Street | S1 and S5. Review and refinement of existing short stay parking provision (including review of taxi parking) | Retention of all parking spaces. Minor widening/ amendments to parking bay widths in line with guidance standards. Amendment to taxi rank. Potentially to allow for day-time parking and evening taxi rank. | A measure intended to smooth the flow of traffic along the High Street and to enable more efficient parking turnover and space utilisation. Increase in day time parking space. | <u>Pros:</u> Parking is retained. Parking facilities improved. Traffic flow smoothing <u>Cons:</u> Some loss of footpath to accommodate parking bay alterations | Minor works - widening/ amendments to existing parking bays. Will require some loss of pavement that will require further assessment before proceeding. |
| A259-High Street | S2. Re-alignment of existing bus stop design and introduction of real time bus information systems | There are currently four bus stops along the A259 High Street with two on the northern side and two on the southern side of the A259. The proposal is to improve the design of the bus stops to improve their operation and overall bus access. | Improved bus stop design on the High Street to enable better bus access and operation and a reduced impact of bus movements along the High Street. High quality and larger waiting shelter and Real Time Information | <u>Pros:</u> Better access for buses to stops. Reduced impact of bus movements on high street traffic | Minor works - amendments to existing bays and surface dressing only. Nil detriment impact to number of overall parking spaces. |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|---|---|--|--|---|--|
| A259-High Street, Town Centre Residential Area, Shoreham Town Centre (east) and A259 East | S3, S9, S12 and S15 Appropriate signing particularly to and from car parks from all directions, wayfinding, civic finger posts unique to Shoreham. | Improved signing to and from public car parks from all directions and improve legibility and permeability | To reduce cars circulating the high street to find a parking space. To reduce pressure on High Street and side road parking. | <u>Pros:</u> Potentially less vehicles circulating for parking spaces in and around the town. Potentially improved use of public car parks <u>Cons:</u> Could lead to more vehicles travelling up the side roads to public car parks. Need to consider street clutter implications. | Minor works - amendments to existing signage or provision of new signage only. |
| A259-High Street | S4. Street clutter audit along the A259 High Street | Throughout the town, but particularly along High Street, audit to identify and then remove unnecessary street clutter (e.g. traffic signs, litter bins, street lighting). | In particular this is to focus on rationalisation of street furniture and street clutter to create an improved town centre environment for all users | <u>Pros:</u> Improved town centre environment in line with streetscape guidance <u>Cons:</u> Cost of removing items relative to benefits of the measures | Minor works - reductions to existing street furniture only along A259 High Street. |
| A259-High Street and Shoreham Town Centre (east) | S6. and S11. Strengthen parking enforcement (especially in short term bays) | To strengthen and have consistent parking enforcement to manage turnover efficiently. There are differing views as to the degree of parking enforcement currently taking place along the High Street. | Rationalisation of parking to best suit the needs of local retail outlets and to ensure efficient turnover of spaces to maximise town centre accessibility | <u>Pros:</u> Increase turnover of spaces to maximise accessibility, potential decrease in congestion. <u>Cons:</u> Additional enforcement costs (if applicable) | Potential modification to existing parking enforcement system |
| A283 Old Shoreham | S7. Gateway feature north of Amsterdam PH roundabout | Provision of a gateway feature on A283 north of the | Reduced speed along Old | <u>Pros:</u> | Minor works – implementation of |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|---|---|--|--|---|---|
| Road | to enforce 30mph speed limit entry point | Amsterdam Pub roundabout to enhance existing 30 mph speed limit entry point. Slight narrowing of carriageway to reduce speed perception. | Shoreham Road. Gateway feature to help change the feel and look of entry to the town. | Anticipated speed reductions along A283 <u>Cons:</u> Gateway feature will need to be provided to the north of the Amsterdam Pub Roundabout (as south already within a 30mph zone) which could dilute speed messaging. | gateway feature |
| A283 Old Shoreham Road | S8. Links with Downs Link cycle routes | Provision of crossing point to allow for easier access to Downs Link in vicinity of Amsterdam Pub roundabout | Access to Downs Link is improved with safer crossing point | <u>Pros:</u> Easier and safer access to the Downslink <u>Cons:</u> Exact location to be determined at detailed design stage. May not be in ideal place due to visibility requirements. | Location of crossing to be determined following further to safety and visibility considerations. Likely to be to the north of the Amsterdam pub roundabout due to crossing visibility to the south. Scheme may be less valuable if nearby location cannot be found. |
| Town Centre Residential Area and Town Centre East | S10. and S13. Complete 20mph speed limit across all town centre streets | Complete 20mph across all town centre streets | Extension of 20mph to all town centre streets including Brunswick Road and Tarmount Lane | <u>Pros:</u> Strengthening of 20mph provision, slowing traffic and improving environment for residents, pedestrians and cyclists. <u>Cons:</u> Need to apply for traffic | Minor works – to existing signs. Traffic regulation orders to be acquired. |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|--------------------------------|---|---|--|---|--|
| | | | | order. | |
| Town Centre East and A259 East | S14. and S16. Pedestrian route improvements at junctions with footway build outs and/or raised tables | Improvements at side road junctions with footway build outs and / or raised tables (where footways cross the road) or coloured surfacing at various locations around the town centre. | To allow for easier crossing provision at junctions and to slow vehicle speeds on approaches to the junctions. | <u>Pros:</u> Should allow for pedestrians to cross the junctions more easily and safely <u>Cons:</u> Cost of implementing items relative to benefits of the measures | Minor works – build outs and kerb alignments |
| A259 East | S17. Bus stop improvements | Amend east and west bus stop location outside of New Road junction. | To allow for easier crossing provision of this junction and simplified/safer access by bus | <u>Pros:</u> Safer access to the bus stop by buses. Less junction confusion <u>Cons:</u> Potential configuration/loss of parking bays | To be delivered as part of the Parcellforce planning permission. |

6.4 Medium Term Strategy

6.4.1 The table below explores the measures proposed to be delivered within a medium term 2-5 year timeframe.

Table 7 – Medium Term Strategy

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|--|--|---|--|---|--|
| A259- High Street | M1. Alter the approaches to Norfolk Bridge roundabout and introduce a yellow box. | Improved angles on the circulating carriageway and approaches at the Norfolk Bridge Junction roundabout by amending the central island with an over-run space so HGVs can turn. Introducing a yellow box | To reduce vehicle speeds on the approach to and on the roundabout so traffic can enter the roundabout. | <u>Pros:</u> Speed reduction and more gaps in traffic increasing capacity overall. Improvement can be done within existing highway boundary. <u>Cons:</u> Does not deliver sufficient capacity improvements to cater for long term development needs. | Works to be provided within existing roundabout boundary |
| A259- High Street and Town Centre Residential Area | M2, M5, M8 and M11 Remodel Ships Street and Middle Street junctions with High Street. Amend one-way system and add gateway treatments. | Amended Ship St. and Middle St. junctions with High Street, surfacing and street scene alterations with gateway features. Amending the direction of West Street. Keep the lower section of Church Street as two way. These streets have been selected as they feature the 'backs' of properties more than the other side streets, therefore less disruptive. | To reduce pressure on vehicles turning out of the side streets onto the high street. To focus side street traffic on streets with less residential frontage. | <u>Pros:</u> Focuses traffic on streets with less residential frontage. <u>Cons:</u> Difficulty in banning right turns continues due to lack of space for median strip/other physical measures. Reduces vehicular options within town centre. | Works to junctions, surfaces and street scene with associated signage. |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|---|--|--|--|---|---|
| A259- High Street, Old Shoreham Road, Town Centre Residential Area and Town Centre East | M3. and M4. Pavement strategy based on the street hierarchy to improve the public realm in High Street | Footway surfacing improvements across the town centre based on the street hierarchy (e.g. High Street, Brunswick Road and New Road) | Improved urban realm in line with Shoreham Harbour Streetscape Guidance and Shoreham Harbour Conservation Area Character appraisal and Movement plan | <u>Pros:</u> Improved urban realm and encourages more walking <u>Cons:</u> Justification of funding for urban realm improvements can be difficult. | Pavement and public realm works only. |
| A283 Old Shoreham Road | M6. and M7. Widen pedestrian footway and formalise parking provision | To create improved pedestrian access along Old Shoreham Road. Creation of new parking bays to formalise existing provision. | Formalisation and improvement of existing half on road/half on pavement parking situation. More clearly defined route for pedestrians. | <u>Pros:</u> Could lead to reduced speeds if carriageway size reduced. Improvement to existing situation. <u>Cons:</u> Slight loss of carriageway space. Justification of funding. | Widen pedestrian footway and move across centre line. |
| Town Centre Residential Area and Shoreham Town Centre (East) | M9. M10. and M12. Review current parking restrictions and introduce stronger parking controls (if necessary) to encourage appropriate levels of parking turnover across the town | Further tightening of parking policy to control long stay parking in the station vicinity, and to introduce effective parking measures and controls and enforcement throughout the town centre | Approach to parking that manages long stay parking arrangements | <u>Pros:</u> Increased short stay parking provision for residents, retailers and shoppers <u>Cons:</u> Reduces/removes parking currently available for residents and commuters | Potential modification to existing parking enforcement system |
| Shoreham | M13. Extended East Street | Extension of East Street 'type' | Improved urban realm to | <u>Pros:</u> | Footway |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|-----------------------------|---|--|---|---|---|
| Town Centre (East) | style treatment to East Street (north), St Mary's Road and Brunswick Road | treatment up to Shoreham-by-Sea Station that still allows for some vehicle movements (such as for access), and for pedestrians and cyclists to use the roads | create enhanced focus of retail units between the station, new footbridge and the High Street. Enhanced permeability. | Enhanced urban realm provision, permeability and focus on retail units <u>Cons:</u> Need to ensure parking provision is retained through changes. Perception of street being less permeable by vehicles. | improvements, surface treatments and public realm works. |
| Shoreham Town Centre (East) | M14. Focus New Road and Tarmount Lane as walking/cycle friendly route | Surface treatments and footway alterations along New Road and Tarmount Lane to create improved walking/cycling shared space environment | Improved urban realm to create enhanced focus between the station and East Street and the Western Harbour Arm. Enhanced permeability. | <u>Pros:</u> Enhanced urban realm provision, permeability and focus on Western Harbour Arm <u>Cons:</u> Need to ensure parking provision is retained through changes. Perception of street being less permeable to vehicles. | Footway improvements, surface treatments and public realm works. |
| A259 East | M15a. New Road Junction Option A Narrow junction with build outs | Improved New Road junction with A259 to narrow size of the junction to aid pedestrians to cross | To prevent rat-running (through the town centre) and reduce the number of vehicles using the route. | <u>Pros:</u> Promotes walking Junction is easier to cross and less confusion for vehicles. <u>Cons:</u> Need to ensure parking provision is retained through changes. | Build out widening into junction. Junction is able to accommodate this but will have impact on current parking locations. |
| A259 East | M15b. New Road Junction | Closure of Surry Street at the | To prevent rat-running | <u>Pros:</u> | Local consultation to |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|-----------|---|---|---|---|---|
| | Option B Close Surry Street at New Road | New road end. Residential access only to Surry Street. Reallocation of traffic and bus routes via Eastern Avenue signalised junction. | (through the town centre) and reduce the number of vehicles using the route. | Less rat-running through the New Road and Surry Road junctions <u>Cons:</u> Diverted traffic and longer routing options via Eastern Avenue | be undertaken to consider scheme further. Traffic regulation orders to be acquired. |
| A259 East | M16. Toucan crossing by Parcellforce site | New crossing facility on A259 at Parcellforce site and Western Harbour Arm to New Road | Enhanced crossing facility across A259 connecting cycle routes to the refocused New Road corridor | <u>Pros:</u> Enhanced access to Parcellforce and Western Harbour Arm development in general <u>Cons:</u> Need to ensure visibility along A259 is maintained. More delay to A259 | To be delivered as part of the Parcellforce planning permission. |

6.5 Long Term Strategy

6.5.1 The table below explores the measures proposed to be delivered within a long term timeframe.

Table 8 – Long Term Strategy

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|--|---|---|---|----------------------|----------------|
| A259 – High Street A283 – Old Shoreham Road | L1a and L6b. Norfolk Bridge Option A | Enlarge roundabout to provide sufficient capacity for future traffic demands | To improve the capacity of the roundabout so that it can accommodate both general background and new development related traffic increases. | See Section 7 below. | |
| A259 – High Street | L1b and L6b. Norfolk Bridge Option B | In order to cater for increased traffic demands requires signalisation improvements | To improve the capacity of the junction through amendment to a signalised junction so that it can accommodate both general background and new development related traffic increases. | See Section 7 below. | |
| A259 – High Street | L2a. Middle Street Option A – New traffic signal junction (replacing John St. crossing) | To manage traffic egress and improve pedestrian accessibility over Middle St and High Street. Can link signals on Middle Street with Norfolk Bridge Junction if also signalised | Should West Street access be turned northbound and Middle Street becomes the only southbound side road access onto the A259 there may be a need to provide a signalised junction at this point. | See Section 7 below. | |
| A259 – High Street | L2b. Middle Street Option B – One-way northbound only | To maintain or amend all the side streets – West Street to Middle to be northbound only. Church Street to remain north and southbound. | To reduce the number of vehicle interactions and accident potential and assist with journey time reliability along the A259. | See Section 7 below. | |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|---|---|--|--|---|--|
| A259 – High Street | L3. Consolidation of Bus stops | Conversion of the four bus stops along the A259 High street to two larger and improved stops outside the Co-op (between Middle Street and Church Street) | Improved bus stop design to enable better bus access and operations and a reduced impact of bus movements along the High street. Larger and high quality waiting facilities to be provided. | <u>Pros:</u> Improved viability of public transport system. Better access for buses to stops and reduced impact of buses on high street Improved facilities for bus users. <u>Cons:</u> Loss of access to bus stop from one end of High Street (western end) and slight loss of pavement. Need for sensitive design /construction due to impact on Coronation Green conservation area | Amendments to existing bays and surface dressing. Sensitive design required because of impact on Coronation Green. Limited impacts likely on parking spaces overall. |
| A259 – High Street, Town Centre Residential Area, Shoreham Town Centre (East) and A259 East | L4., L8., L9., and L11. Develop and implementation of a suitable parking scheme | Implementation of a parking regime as a part of the wider Shoreham Harbour JAAP | To ensure parking demand is managed and improve the turnover of available parking spaces | <u>Pros:</u> Better management of existing residential parking spaces. Could allow for easier residential parking. <u>Cons:</u> Depth and scale of the scheme may not be palatable to all residents. | Further investigations required to confirm coverage, type of restrictions and area |
| A259 – High Street, Town Centre Residential | L5. and L7. Urban realm and environmental enhancements to town centre streets (e.g. ship Street, Middle Street, | Full implementation of various treatments to surfaces and pathways to streets reflecting their respective traffic priorities | Enable better circulation of traffic for all users around and through the town and to underline the sense of place | <u>Pros:</u> Enhanced urban realm provision and | Some footway improvements, surface treatments and public realm |

| Location | Initiative | Description | Desired Outcome | Pros and Cons | Deliverability |
|---|--|--|--|--|---|
| Area, A259 East | Tarmount Lane) | | and viability of the town centre as a whole | permeability. <u>Cons:</u> Justification of funding for urban realm improvements can be difficult. | works Justification of funding for urban realm required. |
| Shoreham Town Centre (East) and A259 East | L10. Shoreham-by-Sea Bus, Rail and Cycle Interchange and L12. Public Realm improvements to link Western Harbour Arm to Town Centre | Interchange between bus and rail at Shoreham-by-Sea station (southside) with forecourt public realm works, pedestrian route wayfinding, cycle parking and access. One way bus/cycle road from Ham Road (opposite Civic Centre) alongside railway to main station entrance for the stops. | Modal interchange at the station, provides buses with greater integration more linked public transport trips and enhanced wayfinding and gateway to the town centre. | <u>Pros:</u> Integrated interchange. Partly on National Rail owned land (partially vacant currently) Public realm gateway to Shoreham (town and harbour) Avoids Ham Road and issues with potential one way alterations and Surry Street closure. <u>Cons:</u> Interaction of the level crossing with any improvements will need to be carefully managed There may be land ownership and tenancy issues (Network Rail) Intrusion for properties on the rear of Ham Road Costly (£0.5m+) | Land ownership details and route option to be confirmed. Impact on Ham Road footway to be considered in more detail. |

7 OPTION TESTING AND APPRAISAL

7.1 Introduction

- 7.1.1 This section of the report is looking further at the (three) main initiatives that required further investigation in developing the preferred strategy.

7.2 Analytical Approach

- 7.2.1 Recognising the need to consider future year traffic impacts and the effects of related future development detailed modelling of key design proposal has also been undertaken. We have used outputs from the Adur Local Plan & Shoreham Harbour Transport Study to assess proposals against the baseline to inform the selection of preferred options.

- 7.2.2 In particular two areas required further review – Norfolk Bridge junction and the operation of the town centre streets particularly Middle Street.

L1a. and L1b. Norfolk Bridge Roundabout – Further review of positive and negatives of potential alternative approaches

- 7.2.3 In order to cater for increased traffic demands for both predicted background increases in traffic along with strategic development proposals we propose two options for the junction;

- L1a – Alteration and expansion of the roundabout (with the aim being to accommodate anticipated future year development flows)
- L1b – Replacement of roundabout with three-armed traffic signalled junction (with the aim to accommodate anticipated future year development flows)

- 7.2.4 Peak hour junction modelling of the Norfolk Bridge junction has been undertaken using ARCADY and LINSIG junction modelling software to test both options. The reporting of this analysis is provided at **Appendix G**. This work has primarily been used to define the long term treatments for the Norfolk Bridge Junction and the overall results are summarised in the Table 9 below:

Table 9 – Options for the Norfolk Bridge Junction

| | Pros | Cons |
|----------------------------------|--|--|
| Option L1a - Enlarged Roundabout | Increased vehicle capacity of junction – predicted to accommodate 2028 traffic flows | Would have a larger overall footprint than an signalised junction and existing roundabout |
| | A degree of improved pedestrian and cyclist facilities to allow for better crossing of the junction | Requires land take from non WSCC parties and reduce access to the pub and impact on the car park area |
| | Maintain or improve journey reliability over a do-nothing scenario | There would continue to be limited pedestrian and cyclist crossing facilities although design could be amended to improve on current provision |
| Option L1b – Signalised Junction | Increased vehicle capacity – but unable to accommodate full 2028 flows (requires 200 less flows to work) | Unable to accommodate background growth plus Western Harbour Arm development 2028 flows |
| | Would provide dedicated crossings for pedestrian and cyclists | Potential off peak delay experienced with signals in place |
| | Potential for advanced cycle stop lines and bus priority technology to be provided | Ongoing maintenance and associated costs of providing signals |
| | Maintain or improve journey reliability over a do-nothing scenario | Visual intrusion of signals affects public realm |
| | Does not require additional non - WSCC land | No U-turn facility |

7.2.5 On the basis of the above, given that the signalised scheme is not able to accommodate the predicted future year traffic flows, it is suggested that the improved roundabout scheme, rather than a signalised scheme, should be taken forward as the preferred option.

L2a. and L2b. Middle Street Options – Further review of positive and negatives of potential alternative approaches

7.2.6 During our site visits it was clear that traffic entering and exiting the side roads (West Street, Ship Street, John Street, Middle Street and Church Street) was causing additional congestion issues along the A259 High Street, particularly at peak times. This is a view supported by Members and officers.

7.2.7 Due to the size of the side street roads it would not be possible to close the roads to prevent access – as adequate turning facilities are unlikely to be accommodated within the narrow lanes. Subsequently options for amending the existing northbound/southbound one-way system have been considered and two options, L2a and L2b have been proposed.

7.2.8 Option L2a would be to retain one of the side roads southbound, in this case Middle Street, with all others travelling northbound (Church Road would remain two-way at southern end for access).

- 7.2.9 To accommodate all southbound traffic it is proposed that a new signalised junction is placed at the Middle Street/A259 junction. As part of Option L2a there would be a requirement to make all of the side streets one-way creating a one-way system, also incorporating Tarmount Lane and Brunswick Road as part of an overall strategy.
- 7.2.10 It is proposed that West Street should turn northbound in order to prevent the large degree of rat-running that is taking place in the evening peak hour. Therefore, it is proposed that Middle Street remains as the southbound link. This would help to physically move right turn vehicles away from Norfolk Bridge junction, as Middle Street is further away from the junction, easing congestion here. Additionally Middle Street is formed predominantly of the 'backs' of residential properties and therefore the impact on residents will be minimal. Detailed analysis would be required to consider the impact of the changes on the wider bus network, level crossing and access to all streets. Church Street would remain both north and southbound due to existing access requirements.
- 7.2.11 Peak hour junction modelling of the Middle Street/A259 junction has been undertaken using PICADY junction modelling software. The reporting of this analysis is provided at **Appendix G**. The junction modelling work demonstrates that if the same number of vehicles were to use Middle Street as currently travelling down both West Street and Middle Street a signalised junction improvement would be required. A signalised junction would easily accommodate this level of traffic but it would lead to additional delay for the mainline A259 flow of traffic negatively impacting on journey time reliability and increasing congestion
- 7.2.12 Option L2b (unsignalised) would be to amend all the side streets, except Church Street (for the same reason), to be northbound only in order to reduce the number of vehicle interactions along the A259 and assist with journey time reliability. Again as part of Option L2b there would be a need to incorporate other roads such as Ham Road, Tarmount Lane and Brunswick Road as part of an overall strategy.

7.2.13 The positives and negatives of this approach are considered further in Table 10 below:

Table 10 – Options for the Middle Street junction

| | Pros | Cons |
|--|--|--|
| Option L2a – Middle Street Signalised scheme | Would provide dedicated crossings for pedestrian and cyclists | Potential off peak delay experienced with signals in place – both to vehicles and pedestrians/cyclists |
| | Could put off drivers from rat-running | Potential A259 delay experienced – which could be more than experienced currently from those turning right from A259 |
| | Potential for bus priority technology to be provided | Ongoing maintenance and associated costs of providing signals |
| | Allows the use of the town centre streets to be redefined | Visual intrusion of signals affects public realm |
| | Mitigates the impact of the changes in the direction of the side streets direction | High Cost |
| | | Impact/amendment to location of A259 on-street car parking |
| Option L2b – Northbound only scheme | | No signals at Norfolk Bridge junction would undermine need for signals at Middle Street – see Option L1b |
| | No visual intrusion from signals | Drivers may continue to right turn across the A259, despite continued banning of right turns |
| | No cost/reduced cost implications relative to L2a | No additional pedestrian and cyclist crossing facilities |
| | Maintain or improve journey reliability over a do-nothing scenario | Traffic level increases |

7.2.14 On the basis of the above assessment, and given that the Norfolk Bridge (L1b) signalised scheme is not recommended to be taken forward, it is suggested that at Middle Street the northbound only (L2B) option should be taken forward.

7.3 Safety Audit

- 7.3.1 A Road Safety Audit (Stage 1) has been carried out on the options strategy contained within Tables 5-7. The audit has been carried out by an independent team at Parsons Brinckerhoff accredited by the CIHT's Society of Road Safety Auditors.
- 7.3.2 The audit comprises a desktop review of the design and one site visit by the audit team. Our designers have provided a response to the Road Safety Audit accordingly.
- 7.3.3 The Road Safety Audit, including Designers Response is contained in **Appendix I**. The audit has not identified any major issues that cannot be resolved at the Preliminary Design Stage when greater certainty will be available on layout and design requirements.

7.4 Options Appraisal and Sifting Process

7.4.1 The strategic options have been analysed against the baseline (Do-Nothing) data set to assess potential impacts or disruption of the proposed schemes, **Appendix H**.

7.4.2 The options have been evaluated against the following headings, designed to be consistent with the DfT's Green Book of Appraisal and Evaluation and with Transport Business Case (Early Appraisal Sifting Tool) requirements:

- Strategic:
Fit with policy
- Economic:
Connectivity, Reliability, Wider Delivery, Environment (including AQMA)
- Managerial
Implementation, Feasibility
- Financial
Affordability, Revenue
- Commercial
Flexibility, Income

7.4.3 The strategy options over time have been compared, side by side, with a variant option for the treatment of the Norfolk Bridge Junction and associated treatments being considered as an alternative long term solution

7.4.4 In some instances in the strategy there are two alternative options for some of the measures proposed.

7.4.5 Table 13 below summarises the Preferred Strategy – highlighting where a potential decision between options may be required and identifying PB's preferred design option.

Table 13 – Preferred Options

| Options | | Preferred Option |
|---|---|------------------|
| M15a. New Road Junction Option A Narrow junction with build outs | M15b. New Road Junction Option B Close Surry Street at New Road | M15a. |
| L1a. Norfolk Bridge Option A – Enlarge roundabout to provide sufficient capacity | L1b. Norfolk Bridge Option B – Replace roundabout with traffic signals, linked with signalised crossings on High Street | L1a. |
| L2a. Middle Street Option A – New traffic signal junction (replacing John St. crossing) | L2b. Middle Street Option B – One-way northbound only | L2b. |

- 7.4.6 The options have then be evaluated further using the Option Appraisals **Appendix H** Table to draw out those schemes that perform best in meeting the study objectives, and which are economically and financially viable. The Appraisal Table considers the cost range of each option item and along with the other criteria has been used to help inform the choice of the strategy measures. The Appraisal Table is then used to select the improvements that best fit selected business case criteria. In terms of the scores the higher the score, the more potentially beneficial the improvement relative to the current set of selected criteria.
- 7.4.7 Some of the recommended improvements could be delivered in isolation whereas others would be best introduced alongside others. The improvement schemes provided for each of the five geographical areas across the study area, across each of the short, medium and long term scenarios, are designed to be complementary with each other.

8 INDICATIVE COSTS

- 8.1.1 Cost estimates (see Table 11) have been prepared using approximate quantities with rates derived from either the 2013 Spons price book with appropriate enhancement for overhead and profit or from analogous historic rates which have been indexed forward to current rates.
- 8.1.2 The base date for the estimates is Q1 2013 and no allowance has been included for inflation beyond that date. Allowance has been made for preliminaries and traffic management where appropriate, for works to statutory undertakers and service provider's apparatus that is affected by the works, land and compensation, and design and supervision. No allowance is included for VAT or clients costs.
- 8.1.3 Cost estimates have been prepared for all option items should they be taken forward at a later date. Where there is a choice of improvement (e.g. L1a or L1b) the most expensive improvement has been selected to determine the overall price.

Table 11 – Summary of Strategy Option Costs

| | Short Term | Cost | Medium Term | Cost | Long Term | Cost |
|--------------------------|--|-----------------|--|---|---|--------------------|
| A259 – High Street | S1. Review and refinement of existing short stay parking provision | £44,100.00 | M1. Re-model approaches to Norfolk Bridge approaches and improve deflection | Included in L1. | L1a. Norfolk Bridge Option A – Enlarge roundabout to provide sufficient capacity | £151,269.00 |
| | S2. Bus stop remodelling | Included in S1. | M2. Remodel Ships Street and Middle Street junctions with High Street | £22,686.00 | L1b. Norfolk Bridge Option B – Replace roundabout with traffic signals, linked with signalised crossings on High Street | £148,225.00 |
| | S3. Improve signing to and from car parks from all directions | £12,379.00 | M3. Pavement strategy based on street hierarchy | £180 per M ² - assumed £36,000 | L2a. Middle Street Option A – New traffic signal junction (replacing John St. crossing) | £122,973.00 |
| | S4. Reduce street clutter | £2,500.00 | M4. Public realm improvements to High Street | Included in M3. | L2b. Middle Street Option B – One-way northbound only | Included in M9. |
| | S5. Review taxi parking | Included in S1. | M5. Gateway treatment of Ship Street (entry) and Middle Street (exit) from town centre streets | Included in M2. | L3. Consolidate Bus stop Design | £3,000 per canopy. |
| | S6. Strengthen parking enforcement (especially in short term bays) | Unknown | | | L4. Longer term parking arrangements | Unknown |
| | | | | | L5. Urban Realm and environmental enhancement to West Street, John | Assumed £15,000 |

| | Short Term | Cost | Medium Term | Cost | Long Term | Cost |
|------------------------------|---|------------------|---|------------------|---|--|
| | | | | | Street and Church Street. | |
| A283 Old Shoreham Road | S7. Gateway feature north of Amsterdam PH roundabout to enforce 30mph speed limit entry point | £7,123.00 | M6. Widen pedestrian footway | £187,340.00 | L6a. Norfolk Bridge Option A – Enlarge roundabout to provide sufficient capacity | As L1a |
| | S8. Links with Downs Link cycle routes | £50,000.00 | M7. Formalise parking provision | £2,627.00 | L6b. Norfolk Bridge Option B – Replace roundabout with traffic signals | As L1b |
| Town Centre Residential Area | S9. Signing strategy for off-street car parks | Included in S3. | M8. Amend one-way system (either all northbound or all southbound) | £5,725.00 | L7. Improved surface treatments for streets – reflecting their traffic priorities | Cost £125 per m ² - assumed £25,000 |
| | S10. Complete 20mph speed limit across all town centre streets | £6,630.00 | M9. Introduce stronger parking controls | Unknown | L8. Implementation of a residents parking scheme | Unknown |
| | | | M10. Review parking restrictions | Unknown | | |
| | | | M11. Remodel Ships Street and Middle Street junctions with High Street | Included in M2. | | |
| Shoreham Town Centre (east) | S11. Review and strengthen parking enforcement | Unknown | M12. Review parking restrictions and introduce stronger parking controls | Unknown | L9. Implementation of a residents parking scheme | Unknown |
| | S12. Signing strategy for off-street car parks and other destinations | Included in S3. | M13. Extended East Street style urban realm treatment towards Station and Church Street (St. Mary's Road) with some traffic movements | £280,466.00 | L10. Shoreham-by-Sea Bus, Rail, Cycle interchange | £500,000.00 |
| | S13. Complete 20mph speed limit across all town centre streets | Included in S10. | M14 and M15. Create New Road/Tarmount Lane as walking/cycle friendly route | Included in M13. | | |

| | Short Term | Cost | Medium Term | Cost | Long Term | Cost |
|-----------|--|--|--|------------|---|-------------|
| | S14. Pedestrian route improvements at junctions with footway build outs and/or raised tables | £12,379 (Tarmount Road only). Brunswick Road costs included in M14 | | | | |
| A259 East | S15. Signing strategy for off-street car parks and other destinations | Included in S3. | M15. New Road Junction Option A Narrow junction with build outs | £7,900.00 | L11. Implementation of a residents parking scheme | Unknown |
| | S16. New pedestrian crossing facilities close to New Road junction | £45,000 | M16. New Road Junction Option B Close Surry Street at New Road | £3,185.00 | L12. Public Realm improvements connecting Western Harbour Arm developments with town centre – continuing New Road route | £101,450.00 |
| | S17. Bus stop improvements | £27,500 | M17. Introduce toucan crossing by Parcellforce or other new developments | £50,000.00 | | |

| | |
|---|-------------------|
| A. Strategy Cost | £1,722,232 |
| B. Add for unmeasured items +10% | £172,223 |
| C. Land and compensation (approximate estimated cost) | £50,000 |
| D. Services +15% | £331,125 |
| E. Preliminaries +7.5% | £165,563 |
| F. Traffic Management +15% | £331,125 |
| G. Design and Supervision +15% | £331,125 |
| H. Total (A+B+C+D+E+F+G) | £3,103,393 |
| I. Contingency and Risk (45%) (H x 45%) | £1,396,527 |
| Overall Total (H+I) | £4,499,920 |

- 8.1.4 A sum has been included in respect of optimism bias/risk; this has been calculated at 45% of the total cost and is based on advice contained in the Highways Agency Annex 1 estimate forms for schemes at this stage of development.
- 8.1.5 In terms of definition, the preliminaries are in respect of the main contractor's site set up including offices, messes, welfare facilities, site staff not employed in the actual construction of the works i.e. engineers, quantity surveyors etc. and any other items including transport, Local Authority charges etc. which are required to construct the scheme, but are not priced against individual works items. This item also included the supervisor's accommodation and site transport.

9 NON MOTORISED USERS

- 9.1.1 A key consideration defined in the study objectives is the need to consider existing and potential future traffic flows (across all modes) whilst also considering what highway improvements are required to 'aid vehicular circulation and pedestrian accessibility'. These need to take account of the impacts of the improvements on Non-Motorised Users, in this case cyclists and pedestrians.
- 9.1.2 The strategy has been developed with these considerations in mind, with a particular emphasis on improving town centre access and through movement travel, for pedestrians and cyclists. Alongside attempts to improve the general accessibility to an integrated transport hub of Shoreham station.
- 9.1.3 Specific initiatives that have been included for pedestrians and cyclists, are each considered below. Appendix D 'Link and Place Initiatives' outlines the underlying pedestrian initiatives that underpin the overall strategy.

9.2 Cycling

- 9.2.1 Recognising the need for improved east – west movement for cyclists and reinforcing the strategic cycle networks which operate through the town, the strategy seeks to better link the route from the Western Harbour Arm to East Street, via New Road, and across to the Downs Link and Ropetackle side of the town making an attractive and safe environment that reduces the domination of the car.
- 9.2.2 This is proposed to be achieved through improving cycling accessibility along New Road and providing improved signing and routeing through the town centre, as an alternative to the A259. The approach intrinsically accepts that there is limited available space to enhance facilities for cyclists along the High Street, when maintaining on-street parking and bus lay-by provision, however it does also encourage an improved north – south axis with shared used facilities proposed from the Shoreham-by-Sea railway station, along Brunswick Road and East Street, down to the Adur Ferry Bridge.
- 9.2.3 To the north of the town, along A283 Old Shoreham Road, improved links to the Downs Link are proposed by means of a dedicated crossing facility on the A283.
- 9.2.4 Improved signage is also proposed to enable better circulation and re-inforce road hierarchy around the town centre to discourage vehicles from using the quieter streets. This should encourage and allow for walkers and cyclists to use the quieter streets more comfortably. Throughout the town public realm improvements are also proposed to provide better and well located cycle parking and storage facilities.
- 9.2.5 Through improvements to Norfolk Bridge junction, such as the addition of the yellow box cross hatching and the slight narrowing of the circulatory carriageway, thus reducing speeds, it is expected that crossing of Norfolk Bridge roundabout by bicycles will be made easier.

9.3 Pedestrians

- 9.3.1 Pedestrian links to and from the Western Harbour Arm are proposed through changes to New Road making it less car dominant, with the aim of creating a more continuous link of pedestrian routes in and around the town. These are reinforced by a better definition of road hierarchy supported by improving the streetscape and signage.

- 9.3.2 A particularly strong axis to and from the station via Brunswick Road, East Street and onto the Adur Ferry Bridge and the High Street has also been created to make it more focused on non-motorised users and more of a pedestrian friendly environment. This axis builds on the work carried out along East Street and extends it northwards up to Brunswick Road.
- 9.3.3 These routes will be important in both underpinning the safe movement and circulation of pedestrians through the town and in seeking to establish the transport hub function of the railway station and the commercial viability of key parts of the town.
- 9.3.4 Further improvements for pedestrian movement along the High Street, and to a lesser extent the A283, are proposed. These include reducing level of street clutter and enhancing the public realm improvements through better signage, street furniture and signposting intended to create a coherent space and enable better access for all, including the mobility impaired.
- 9.3.5 In all cases suitable tactile features and contrasting tones for blind or partially sighted people will be required to enable them to navigate the space. These features will need to be considered at detailed design stage.
- 9.4 Conclusion**
- 9.4.1 Overall both pedestrian environment and cyclist movements in and around the town centre will be strengthened as part of the proposals. A well developed signage strategy and the public realm improvements (including Gateway treatments on the entry points to the town) will make accessing the town centre retail and transport facilities easier.

10 AIR QUALITY

- 10.1.1 Since December 1997 each local authority in the UK has been carrying out a review and assessment of air quality in their area. This involves measuring air pollution and to predict how it will change in the next few years. The aim of the review is to make sure that the national air quality objectives will be achieved throughout the UK by the relevant deadlines. If a local authority finds any places where the objectives are not likely to be achieved, it must declare an Air Quality Management Area.
- 10.1.2 In December 2005, the A259 High Street between Victoria Road and Eastern Avenue was designated as an AQMA. Adur District Council carries out passive monitoring within the District. Shoreham High Street showed a predicted exceedance of the 40µgm3 AQO annual level for NO₂, with a level of 42µgm3 recorded in 2005.
- 10.1.3 The cause of the air quality exceedance of nitrogen oxide (NO_x) in the AQMA has been attributed to road traffic and that the buildings in the High Street are relatively tall or close to the road forming a 'street canyon'. This captures emissions within the High Street and does not allow them to disperse easily.
- 10.1.4 There are several retailers, community facilities, residential properties, and listed buildings immediately adjacent to the A259 that are currently subject to reduced air quality, due to the traffic on the A259.
- 10.1.5 It is recognised that there could be an increase in traffic numbers to 2028 and beyond due to background traffic growth and development traffic increases such as those from the Western Harbour Arm. However the proposals outlined in the report are not expected to increase traffic numbers directly, or therefore worsen AQMA impacts.
- 10.1.6 In terms of the strategy options it is suggested that the following proposed measures have the potential to slightly improve AQMA levels experienced along the A259:
- New signage and gateway features
 - Speed limit changes
 - Refinement of existing short stay parking arrangements
 - Longer term parking arrangements
 - Pedestrian and cycle enhancements
- 10.1.7 The above measures would maximise the existing highway network capacity, smooth traffic flow and reduce vehicular circulation across the town. The measures are comparable with and compatible to those put forward in ADC's air quality action plan document designed to help mitigate AQMA issues.
- 10.1.8 Similarly it is suggested that the following proposed measures have the potential to slightly worsen the AQMA levels experienced along the A259:
- Introduction of toucan crossing adjacent to Parcelforce site
- 10.1.9 The worsening would be due to additional static vehicle wait times at these crossing points and subsequent braking and accelerating in and around the crossing point.

- 10.1.10 The remainder of the proposed measures are expected to have a neutral impact to AQMA levels. It is suggested that the positive AQMA impacts from some of the measures outweighs the slight negative impacts from other measures. Further assessment of the potential for impacts on air quality, would be required at the design stage.

11 PROJECT FUNDING AND DELIVERY STRATEGY

- 11.1.1 PB has identified sources of funding and appraised the likely deliverability via each method. It should be noted that each improvement item could be funded either individually or as part of a wider package
- 11.1.2 The technical note concludes that there is a range of possible funding sources and funding mechanisms. Key conclusions of the note are:
- The Shoreham Town Centre Strategy will have several different types of positive impact on the local and regional economy and it is important to distinguish between 'wider economic benefits' that cannot readily be converted into a revenue stream and those (such as TIF or local business rate retention) that can give rise to actual cash flows capable of paying back a certain amount (if not all) of the initial capital.
 - The preferred funding mechanism must be capable of realistic implementation
 - Developer and other private sector contributions should be maximised before any public sector contributions for gap funding are offered.
- 11.1.3 An outline delivery programme is provided in **Appendix J**. A technical note on project funding is included in **Appendix K**.
- 11.1.4 The Coast to Capital Strategic Economic Plan references commitments for the Shoreham Harbour Partnership to support development within Shoreham Harbour. Additionally the Coastal West Sussex Development & Infrastructure Group has created a spatial strategy consider the strategic sites across Coastal West Sussex (CWS) and the related infrastructure improvement that could offer the best possible environment to deliver economic growth. Across the CWS region there are a significant number of schemes identified to develop and improve the transport and other infrastructure, which includes realignment of road links to and from Shoreham Harbour Western Harbour Arm development.

12 KEY RISKS AND ISSUES

- 12.1.1 Table 12 compiles a list of key risks and issues identified in relation to the Preferred Options schemes set out in **Section 10**. Whilst there will be a number of specific risks for each of the schemes this table considers broader, overarching risks that are considered to be at an appropriate level for the current initial design stage.

Table 12 – Key Risks or Issues

| Item | Risk/Opportunity | Impact | Current Owner | Action/Status/Mitigation/Management |
|------------------------------|---|---|---------------|---|
| 1.0 Strategic | | | | |
| 1.1 | Schemes delayed due to appointment of contractor without contractors assurance case | Delay | Client | Ensure early engagement |
| 1.2 | Schemes delayed and cost increase due to change in procurement strategy | Delay | Client | Firm up strategy early |
| 1.3 | Schemes fail to obtain Funding Allocation or sufficient Developer Contributions | Delay | Client | Investigate alternative funding options |
| 1.4 | Failure to pass Major Scheme Bid (where relevant). | Delay | Client | Ensure MSB is comprehensive |
| 1.5 | Delay to obtaining approval through the statutory process, e.g. landowner objection | Cost and Delay | Client | Ensure Communications Plan and adequate public consultation is carried out. |
| 1.6 | Statutory changes e.g. aggregate tax, EU legislation changes, UK Government tax changes | Cost and Delay | Client | Ensure contingency allowance |
| 1.7 | Change in UK design standards. DMRB, etc | Cost and Delay | Client | Ensure contingency allowance |
| 1.8 | Change in UK/ EU Legislation | Cost and Delay | Client | Ensure contingency allowance |
| 1.9 | Health & Safety - Changes in regulations | Cost and Delay | Client | Ensure contingency allowance and monitor planned changes |
| 1.10 | Political - Change of Government/ Sec of State | Cost and Delay | Client | Monitor potential changes |
| 1.11 | Political - Change in Government strategy, policy and targets | Cost and Delay | Client | Monitor potential changes |
| 1.12 | Political – Changes in Local Authority/ Parish strategy, policy and targets | Cost and Delay | Client | Monitor potential changes |
| 2.0 Statutory Process | | | | |
| 2.1 | Objector opposition and disruption | Delay to programme and forced Public Inquiry. | Client | Ensure Communications Plan and adequate public consultation is carried out. |
| 2.2 | Cost increase due to change in Schemes arising from Inquiry(s). | Cost and Delay | Client | Ensure risks possible risk are identified and included in Cost Estimate. |

| | | | | |
|--------------------------|--|----------------|------------|---|
| 2.3 | Scheme delay and cost increase due to statutory process | Delay | Client | Ensure risks possible risk are identified and included in Cost Estimate. |
| 2.4 | Scheme delayed and cost increase due to High Court Challenge(s) | Cost and Delay | Client | Ensure Communications Plan and adequate public consultation is carried out. |
| 3.0 Environmental | | | | |
| 3.1 | Insufficient surveys and assessments for environmental issues | Cost and Delay | Client | Ensure early planning to identify critical issues and surveys. |
| 3.2 | Unforeseen protected species identified | Cost and Delay | Client | Ensure early planning to identify critical issues. |
| 3.3 | Environmental Statement challenge | Cost and Delay | Client | Ensure sufficient time in programme to deal with delay. |
| 3.4 | Delay allowance for environmental measures most likely to disrupt the construction programme post start of works | Cost and Delay | Client | Early Contractor Involvement and consultation |
| 3.6 | Unexpected archaeological find. | Cost and Delay | Client | Ensure sufficient site archaeology work is carried out to reduce risk. |
| 4.0 Construction | | | | |
| 4.1 | Cost increase due to C3 estimates too low | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.2 | Cost increase due to unidentified utilities found requiring diversion | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.3 | Scheme delayed (during construction) due to insufficient time to place SU orders and poor planning by SUs | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.4 | Delays resulting from consultation with NR and TOC | Cost & delay | Contractor | Ensure adequate planning and consultation with NR |
| 4.5 | Construction Cost increase (unforeseen ground conditions etc.) | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.6 | Cost increase should contractor or major subcontractor go into receivership | Cost & delay | Contractor | Ensure contractor procurement process is adequate. |

| | | | | |
|-------------------------------|--|--------------|------------|---|
| 4.7 | Construction Cost increase (unforeseen ground conditions etc.) | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.8 | Scope creep (Design and Construction) | Cost & delay | Contractor | Ensure adequate scheme planning and contingency allowance |
| 4.9 | Unforeseen contaminated land | Cost & delay | Contractor | Ensure sufficient investigation is included. |
| 5.0 Operation and Maintenance | | | | |
| 5.1 | None identified at CONCEPT Stage | | | |
| 6.0 Decommissioning | | | | |
| 6.1 | None identified at CONCEPT Stage | | | |

13 CONCLUSIONS

13.1 General Overview

- 13.1.1 PB was procured by WSCC to undertake a study of Shoreham-by-Sea town centre.
- 13.1.2 As part of this exercise we consulted with West Sussex County Council and Adur District Council Members and the Shoreham Harbour Regeneration Transport Sub-Group. This input was used to help create study area baseline data set.
- 13.1.3 Additionally a review of all relevant and available planning and transport documents from Adur District Council, Brighton & Hove City Council and West Sussex County Council was carried out, as it was recognised that a significant level of development is planned to take place within the Shoreham Harbour Regeneration Area to 2031.
- 13.1.4 Evidence from the data collation and consultation was then used to help support the development of a set of potential mitigation measures.
- 13.1.5 In response to concerns raised throughout the design process the need for a phased approach to strategy delivery was agreed. The mitigation measures were considered further with PB developing a set strategy proposals for the short, medium and longer term.
- 13.1.6 Strategy options were then analysed relative to a baseline data set in order to assess potential impacts or benefits of the proposed schemes. Additionally costs for each option were assessed.

13.2 Recommendations

- 13.2.1 A Strategy Appraisal Table, (**Appendix H**), has been used to assess the effectiveness of proposals in delivering against key assessment criteria.
- 13.2.2 The measures achieving the highest scores relative to the criteria across each timeframe are as outline in Table 14. These were considered alongside engineering design considerations and inputs from the CLC. The resultant outputs constitute the main study recommendations.

Table 14 – Recommendations

| Short Term | Medium Term | Long Term |
|---|--|--|
| S2. Re-alignment of existing bus stops | M1. Improvements to Norfolk Bridge junction | L1a. Revised Norfolk Bridge Roundabout |
| S3. Improve local signing (to car parks) | M8. Reversal of direction to northbound only for West Street | L3 Bus stop consolidation along A259 High Street |
| S4. Reduce street clutter (on High Street) | M14. Walking focused routes - New Road, Tarmount Lane | L10. Shoreham-by-sea rail station and bus interchange improvements |
| S11. Strengthen parking enforcement across town | M16. Toucan crossing on A259 at New Road | L11. Longer term resident parking arrangements |

13.2.3 The recommendations are considered to be the most beneficial proposals relative to the identified study objectives in as much as they provide the 'best fit' in addressing the original problems and issues identified – (resolving the A259/A283 congestion issues, the integration of the Western Harbour Arm development as well as the need to enhance pedestrian accessibility).

13.2.4 Other elements of the detailed strategy as outline in table 5, 6, and 7 are also still seen as valid for delivery alongside these headline measures.

13.3 Next Steps

13.3.1 This report provides the basis for a programme of improvements for Shoreham Town Centre.

13.3.2 The measures could be delivered in a variety of ways, including through the Integrated Works Programme or Developer Obligations, however it is suggested that further more detailed assessment and refinement of each of the options will be required as a part of delivering individual schemes relative to aspirations at the time of delivery and the available funding streams.

13.3.3 The options and recommendations contained within the study are assumed as potentially informing later strategies and documents such as the Shoreham Harbour Transport Strategy and the Adur Local Plan.

13.3.4 As noted in the WSCC CLC report, schemes may also be taken through the local infrastructure planning process. Some or all of the Shoreham options might also form an input into Local Enterprise Partnership's Strategic Economic Plan recommendations.