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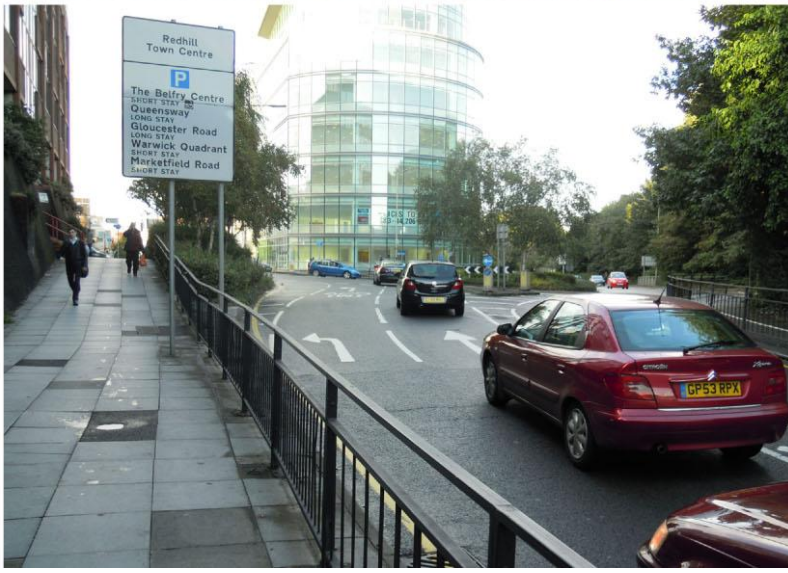
PROJECT CENTRE

Redhill Town Centre

Balanced Network Feasibility (Stage 2) - Final Report

Reigate & Banstead Borough Council/Surrey County Council

November 2012



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Report Reference	Issue	Description	Originator	Checked	Authorised
1000000804-FR	01	Final Report	Peter Blake 21/11/12	Tim Mantle 21/11/12	Ian Hastings 22/11/12
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EXECUTIVE SUMMARY

Background

On 18 June 2012 the Local Committee for Reigate and Banstead agreed that the Balanced Network proposals should form the basis of a future transport plan for Redhill and endorse the principles underlying these proposals. They also agreed that the Surrey County Council and Reigate and Banstead Borough Council partnership proceeds with Stage 2 feasibility design of the scheme.

In September 2012, Project Centre were appointed by Reigate and Banstead Borough Council to undertake the Stage 2 feasibility design of the balanced network proposals.

The main objectives in undertaking the stage 2 feasibility for each highways element of the balanced network plan are:

a) to ensure any implications resulting from the Stage 1 Road Safety Audits are addressed;

b) to undertake concept and detail design development work for the public realm improvements;

c) to develop further the current thinking on walking and cycling networks;

d) to ensure the potential highway implications of key town centre sites which have recently or are currently being assessed as part of the planning process are taken into account.

Proposed Improvements

Following the inception meeting in September 2012 additional modelling was required to ascertain the impact of further potential development vehicle trips. In addition, modifications to the balanced network were required following the road safety audit undertaken by Surrey County Council on the conceptual plans and to Reigate and Banstead Borough Council's request to retain a pedestrian crossing near the access to Memorial Park on Princess Way.

The results of the additional modelling still suggest the modified balanced network proposals would provide benefits in reduced journey times and improvements in the town centre accessibility. Whilst there are improvements to all road users it is anticipated that pedestrians, cyclists and public transport users would benefit the greatest.

The highway proposals include improvements to:

- A23/A25 Lombard Roundabout;
- A23/Sainsbury's Access;
- A23/A25 Station Roundabout;
- A25 Station Road/Noke Drive Junction;
- A25 Redstone Hill/Cavendish Road Junction;
- A23/A25 Belfry Roundabout; and
- A25 Town Centre Section (Cromwell Road to London Road).

The main improvements are:

- Converting the A25 town centre section from one-way working to two-way;
- Providing new traffic signals on A23 by Sainsbury's;
- Providing straight across crossings;
- Providing widened footways for shared use especially along the National Cycle Route (21) in Station Road and Marketfield Way;
- Providing improved pedestrian crossing facilities at three junctions around the A25 town centre section;
- Providing improved pedestrian crossing facilities at the Station Road junction with Noke drive; and
- Providing a small roundabout at the Redstone Hill junction with Cavendish Road.

The proposed public realm improvements for Station roundabout and the Station Road link between the High Street and the roundabout will bring considerable benefits to pedestrians. The proposals complement the existing pedestrianised area, although the northern arm linking High Street to Queensway could be upgraded to the other three arms, and will provide a 'gateway' to the town centre from the bus and rail stations.

Conclusions

The modified balanced network proposals are considered to meet the objectives of the project. Whilst the highway improvements cater for the future vehicle trips likely to be generated by the potential developments around the town centre there are reductions in journey distances and journey times compared with the Do Minimum option. However, whilst the journey times will be reduced significantly on the A23 corridor it is anticipated that there will be an increase in journey times for vehicles using the A25 corridor from the east i.e. Redstone Hill – Station Road. The increased journey times will be caused by the pedestrian

crossings on the Station roundabout approaches and the reduction from three lanes to two lanes.

There are significant improvements for cyclists and pedestrians with widened footways, straight across crossings and the potential public realm treatment of Station roundabout and the Station Road link between the High Street and Station roundabout. The public realm proposals will provide a 'gateway' to the town centre from the rail station and bus station.

Proposals for changes to the public transport network are still to be considered. This could involve changes to existing bus services, bus stop locations and the provision of bus stands/stopover.

Recommendations

Although the proposed modified balanced network highway and public realm improvements are valued at £3.87m (excluding design, administration and supervision costs) they are still considered good value for money. There are considerable benefits to cyclists, pedestrians and public transport users.

Therefore, it is recommended that the highway and public realm improvements will assist in the development and regeneration of Redhill town centre. The highway improvements will cater for any future growth in vehicle trips generated by potential developments. Not only will general traffic benefit especially along the A23 corridor but there will also be benefits for cyclists and pedestrians with wider footways for shared use and the provision of straight across crossings.

The public realm proposals for Station roundabout and the Station Road link between the roundabout and High Street will complement the existing pedestrianised areas and provide a 'gateway' into the town centre from the rail and bus stations.

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1. INTRODUCTION

Background

1.1 In September 2012 Project Centre was appointed by Reigate and Banstead Borough Council to undertake a feasibility (stage 2) design of the balanced network proposals for Redhill town centre.

1.2 The regeneration of Redhill town centre is a key corporate priority for Reigate and Banstead Borough Council (RBBC). Currently Redhill town centre is a transport system under pressure struggling to balance its role as a local transport destination with its strategic location as a through route at the intersection of the A23 and A25 arterial routes.

1.3 The transport and other strategic challenges facing Redhill are significant ones which will only be overcome with a coordinated effort to deliver a clear vision for the town. The 'new' Redhill Town Centre Area Action Plan has a key objective of tackling the transport challenges.

1.4 In April 2012 RBBC Executive Members agreed that a stage 2 feasibility assessment should proceed with detailed design work. In June 2012 Surrey County Council's Local Committee for Reigate and Banstead endorsed the proposed Balanced Network plan.

1.5 The existing road network would suffer severe congestion resulting from the growth in traffic anticipated from the development and regeneration of the town centre. Therefore, if the town centre action plan objectives to change travel habits are to be realised then the proposals included in the Balanced Network need to be implemented. The proposed Balanced Network will:

- spread benefits to a wider range of travel modes;
- improve journey times for general traffic and bus services;
- reduce congestion through the rationalisation of the network and an increase in route choices;
- provide improvements for walking, cycling, public transport and the public realm; and
- take into account the potential increases in traffic levels resulting from the development and regeneration of the town centre.

Design Scope

1.6 The main objectives for undertaking a stage 2 feasibility assessment for each of the highway elements of the balanced network proposals are:

- to ensure any implications resulting from the Stage 1 Road Safety Audits are addressed;
- to undertake concept and detail design development work for the public realm improvements;
- to develop further the current thinking on walking and cycling networks;
- to ensure the potential highway implications of key town centre sites which have recently or are currently being assessed as part of the planning process are taken into account.

Purpose of Report

1.7 This report covers all the technical work undertaken, including the additional modelling, modifications to the balanced network proposals, and the recommended future strategy.

1.8 The 'Redhill Town Centre Traffic Modelling – Final Report' dated February 2012 provided the detailed background to the earlier modelling and highway elements of the balanced network proposals.

2. DESIGN PHILOSOPHY

Design Scope

2.1 In June 2012, the Local Committee (Reigate & Banstead) agreed the highway improvements of the balanced network should form the basis of a future transport plan for Redhill and that the County Council and Borough Council partnership should proceed with Stage 2 feasibility design of the scheme.

2.2 The main objectives in undertaking the stage 2 feasibility for each highways element of the balanced network plan are:

- to ensure any implications resulting from the Stage 1 Road Safety Audits are addressed;
- to undertake concept and detail design development work for the public realm improvements;
- to develop further the current thinking on walking and cycling networks;
- to ensure the potential highway implications of key town centre sites which have recently or are currently being assessed as part of the planning process are taken into account.

Additional Modelling

2.3 At the inception meeting in September 2012 the road network to be considered for highway improvements was expanded to include the Belfry roundabout. Additional vehicle trips were required to be considered because of further potential developments now needing to be included in the modelling.

2.4 In addition, RBBC requested that a pedestrian crossing be retained on Princess Way near to the Memorial Park access. This would replace the proposed pedestrian crossing integrated in the new traffic signals at Sainsbury's access.

2.5 The results of the additional modelling suggest the modified balanced network still provides savings in journey distances and journey times compared with the Do-Minimum option when taking into account all the potential development vehicle trips.

2.6 It is clear from the modelling that the existing road network around Redhill town centre would not be able to cater for the anticipated generated vehicle trips associated with the potential developments. There would be significant increases in congestion and delays causing journey times through the network to increase. The Do-minimum option replicates what the impact would be on the journey times.

2.7 Therefore, to mitigate the impact of the future generated vehicle trips on the road network highway improvements are considered necessary. A balanced network option was developed which generally reduced journey times compared with the Do-minimum option. However, there would be an increase in journey times for traffic using the A25 along Station Road – Redstone Hill from the east.

2.8 Further modifications have been carried out during the detailed design of the proposals. These modifications have included the provision of straight across crossings on Princess Way and Marketfield Way, and a small roundabout at the Redstone Hill junction with Cavendish Road.

2.9 Tables 2.1 and 2.2 show the effect of the modified balanced network when compared with the Do-minimum in terms of average journey distance and time.

Table 2.1: Full option model journey distance indices

Model	AM peak (07:30-09:30)	PM peak (16:15-18:15)	Saturday (10:30-12:30)
Do- Minimum	1.00	1.00	1.00
Modified Balanced Network	0.96	0.95	0.92

Table 2.2: Full option model journey time indices

Model	AM peak (07:30-09:30)	PM peak (16:15-18:15)	Saturday (10:30-12:30)
Do-Minimum	1.00	1.00	1.00
Modified Balanced Network	0.84	0.76	0.50

2.10 The impact of the modified balanced network on average journey times when compared with the Do-minimum option is shown in Tables 2.3, 2.4 and 2.5. The changes from the Do-minimum option are shown in brackets.

Table 2.3: Modified Balance Network average journey times (weekday 08.00-09.00) (mm.ss)

	A23 north	A23 south	A25 west	A25 east	Belfry CP
A23 north	-	5.39 (-01.47)	3.38 (-04.01)	4.34 (-02.24)	3.33 (-02.45)
A23 south	6.07 (-04.36)	-	4.12 (-04.02)	4.42 (-04.34)	3.45 (-05.14)
A25 west	3.20 (+00.17)	3.50 (-00.58)	-	4.08 (+00.01)	1.25 (-02.45)
A25 east	7.02 (+02.31)	6.10 (+02.49)	6.02 (+02.55)	-	5.38 (+02.55)
Belfry CP					

2.11 Table 2.3 demonstrates that the significant decreases in journey times are from A23 north and A23 south. There would also be savings from A25 west to the A23 south and Belfry car park. However, there would be journey time increases from A25 east.

Table 2.4: Modified Balance Network average journey times (weekday 16.45-17.45) (mm.ss)

	A23 north	A23 south	A25 west	A25 east	Belfry CP
A23 north	-	6.54 (-03.09)	3.33 (-06.13)	5.25 (-03.44)	3.56 (-04.43)
A23 south	7.42 (-02.21)	-	4.20 (-02.15)	4.43 (-02.45)	3.46 (-02.44)
A25 west	4.47 (+00.51)	6.19 (-00.25)	-	6.00 (+00.55)	1.14 (-04.40)
A25 east	6.02 (+00.47)	4.28 (+00.45)	4.19 (+01.17)	-	3.57 (+01.15)
Belfry CP	5.42 (+01.10)	4.43 (-02.33)	2.14 (+01.01)	5.00 (-00.35)	-

2.12 Again, Table 2.4 demonstrates significant decreases in journey times from A23 north and A23 south. The increase in journey times from A25 east are less than those during the morning peak period.

Table 2.5: Modified Balance Network average journey times (Saturday 11.00-12.00) (mm.ss)

	A23 north	A23 south	A25 west	A25 east	Belfry CP
A23 north	-	5.46 (-09.50)	3.58 (-11.25)	4.39 (-09.33)	3.58 (-11.02)
A23 south	7.05 (-11.10)	-	4.28 (-10.47)	4.52 (-10.55)	3.51 (-10.52)
A25 west	4.02 (+00.26)	3.59 (-01.12)	-	4.05 (+00.15)	1.10 (-03.24)
A25 east	6.07 (+00.03)	4.43 (+00.42)	4.47 (+01.12)	-	4.03 (+00.41)

Belfry CP	4.27 (+00.28)	2.39 (-02.54)	1.43 (+00.32)	2.50 (-01.26)	-

2.13 Table 2.5 demonstrates very significant journey time savings from both A23 north and A23 south. There would still be slight increases in journey times from A25 east.

2.14 In summary, the proposed highway improvements of the modified balanced network will generally reduce journey times through the road network compared to the Do-minimum option which includes no growth in background traffic but includes traffic trips generated by developments since 2007 and by potential developments. However, because of the reduction in lanes westbound on Station Road from two to one between Noke Drive and Station roundabout it is anticipated that journey times will increase especially during the morning peak period.

Modified Balanced Network Proposals

2.15 To assist in the detailed design of the highway improvements a topographical survey was undertaken to cover the road network included in the Balanced Network proposals. The proposals contained within the Balanced Network plan have been designed using the resulting topographical survey.

2.16 The proposed highway improvements contained in the modified balanced network are:

A23 / A25 LOMBARD ROUNDABOUT (Drawing No 1000000804-D-010-01)

2.17 The proposed improvements to the existing roundabout layout include:

- Northern arm (A23 London Road) – Modification of island shape, road width (minor widening) and conversion to two lane approach;
- Eastern arm (A23 Princess Way) – Minor realignment to footway and island kerbs to suit new layout on A23;
- Southern arm (London Road) – Conversion to two-way working from exit only, easing of entry radius, construction of island and removal of part of the existing kerb build out;
- Western arm (Gloucester Road) – Removal of existing island and replacement with smaller in new location; and
- Replace the existing staggered pedestrian crossing with a straight across crossing.

A23 / SAINSBURY'S ACCESS (Drawing No 1000000804-D-010-02)

2.18 The proposed improvements, to provide separate accesses for Sainsbury's shoppers and for the car park above are included in the Sainsbury's development proposals. The proposals include:

- Installation of traffic signal-controlled junction with integrated pedestrian facilities across the car park access;
- Access to/from Ladbroke Road would remain unchanged;
- All movements would be permitted at traffic signals (Ladbroke Road not included in signals);
- Sainsbury's car park access would remain left in/left out.

A23/A25 STATION ROUNDABOUT (Drawing No 1000000804-D-010-03)

2.19 The proposals for the existing roundabout involve reducing the size of the roundabout which will provide more space for pedestrian/cyclist movements around the junction and improved access to and from the station. Improvements include:

- providing a reduced size roundabout, with large gains in areas of public space;
- relocating the existing pedestrian/cycle crossing facilities closer to desire lines and convert crossings to Toucans;
- for the Station Road approach, widening of footway along north side and carriageway reduced from three lanes to two, with improved lighting under bridge;
- repositioning the staggered crossing south of Station Roundabout to cater for possible future development accesses;
- shared use cycle/pedestrian facilities along National Cycle Route (21) from Noke Drive – along northern footway of Station Road – toucan crossing across Station Road – on widened footway at south-east corner of roundabout.

A25 STATION ROAD/NOKE DRIVE JUNCTION (Drawing No 1000000804-D-010-04)

2.20 The proposed improvements to the existing junction layout include:

- modifying the layout and signal phasing to give controlled pedestrian facilities on all arms at the junction of Station Road and Noke Drive;
- widening of the northern footway along Station Road to provide shared use for pedestrians and cyclists.

A25 REDSTONE HILL/CAVENDISH ROAD JUNCTION (Drawing No 1000000804-D-010-05)

2.21 The Road Safety Audit raised concerns about the proposed mini-roundabout for the Redstone Hill junction with Cavendish Road. The junction would also need to provide access to and from the station and car park. Therefore, to address the concerns of the audit a small roundabout is now proposed. However, because of the vertical alignments of Redstone Hill and Cavendish Road access into Cavendish Road needs to be prohibited. This requires local residents to gain access into the area via Hillfield Road.

2.22 Proposed junction improvements to cater for potential developments include:

- Installation of small roundabout;
- Cavendish Road made one-way towards Redstone Hill.

A23/A25 BELFRY ROUNDABOUT(Drawing Nos 1000000804-D-010-06 & 07)

2.23 The road width of Marketfield Way is approximately 12m with two wide lanes, one in each direction containing an advisory cycle lane. It is proposed to reduce the carriageway width to 10m providing a 6m lane northbound and a 4m lane southbound. This allows the eastern footway to be widened to provide shared use for pedestrians and cyclists.

2.24 The proposals for the roundabout include:

- widening the eastern footway between Liquid & Envy residential access to Belfry Roundabout to provide shared use;
- minor modifications to the central islands in each approach.

A25 TOWN CENTRE SECTION (CURRENTLY ONE-WAY NORTHBOUND) (Drawing Nos 1000000804-D-010-08, 09, 10 & 11)

2.25 The existing A25 west of the A23 is one-way northbound. The Balanced Network proposes to convert the existing one-way northbound to two-way working. The section of A25 involved consists of Cromwell Road – St Matthew's Road – Station Road – Queensway – London Road.

2.26 The proposals include:

- changing the current one-way system between the Cromwell Road / High Street junction and the Lombard Roundabout to two-way;
- modifying the layout of the High Street junction with Cromwell Road. Remove existing pelican crossing and provide traffic signals with pedestrian/cyclist facilities (depending on whether Marketfield Road is closed or open);

- replacing the current priority arrangement with traffic signals (to cater for ASDA Development) at the Cromwell Road junction with Huntingdon Road.
- Removing the existing Pelican crossing across Cromwell Road and provide integrated Toucan crossings in the signal layout.
- providing an improved cycle facility at Holland Close. Minor kerb alterations where necessary;
- changing the access arrangements at Belfry Shopping Centre car park to allow for new road layout (subject to agreement with the Belfry Centre);
- modifying the layout of the Station Road junction with St Matthew's Road. Removing the existing triangular island and pelican crossing facilities. Providing traffic signals with integrated pedestrian facilities. Minor kerb alterations where necessary;
- minor road widening to the three corners located between the Station Road / St. Matthew's Road junction and the Lombard Roundabout;
- modifying and relocating the pedestrian crossing signals at northern end of the High Street, adjacent to London Road to take two-way traffic movements;
- converting the existing pelican crossing by Warwick Road to Toucan crossing and modifying the crossing to take two-way traffic movements.

2.27 Whenever possible the highway improvements have been designed using the latest design criteria and guidelines available. Therefore, this has meant that during the detailed design some of the proposals have had to be amended to meet the criteria. This is especially true regarding Station roundabout. The conceptual proposal was to significantly reduce the size of the central island. However, to get the required deflection of traffic on entry to the roundabout has required the size of the central island to be adjusted.

2.28 All the existing and proposed roundabout junctions will have overrun areas around the central islands to allow large vehicles to manoeuvre around the roundabout by making use of this area. At the Lombard Roundabout two lanes are required on all approaches except Gloucester Road which has prevented the design criteria on deflection being met for vehicles going straight on from the inside lane. There are similar issues with the other roundabout designs both existing and proposed. In addition, some of the exit widths from the roundabouts do not conform to the design guidelines.

2.29 The proposed general arrangement drawings for the above balanced network highway improvements are shown on drawing nos. 1000000804-D-010-01 to 11 in Appendix A of this report.

Benefits/Disbenefits of Proposed Highway Improvements

2.30 The Balanced Network proposals will provide the following benefits:

- reduced journey times – the modelling results suggest journey times along the A23 and A25 corridors will generally be reduced;
- improved town centre access – with the existing one-way converted to two-way working access into and from the town centre will be improved by providing additional routes;
- improved walking network – wherever possible pedestrian facilities have been located nearer the desire lines especially at the Station Roundabout;
- improved cycling network – the expansion of shared use facilities will assist in reducing the number of cyclist casualties;
- improved public transport network – the two-way working could possible bring improvements in bus services within the town centre;
- improved town centre public realm – the proposals for Station Roundabout and Station Road (between the roundabout and High Street) will provide a much needed gateway to the town centre.

2.31 For all traffic (vehicles, pedestrians and cyclists) the key findings are:

- The two-way working - creates the primary benefits for journey time savings. Some benefits are also accrued for pedestrians and cyclists through the three signalled junctions, including specific measures for those travel modes. As journey times are improved, it is anticipated that two-way working will help in meeting carbon reduction targets;
- The Station roundabout - substantially improves the pedestrian, cycling and public realm environment, although journey times for general traffic and buses will be negatively impacted upon. The scheme is anticipated to be more expensive than other measures. However, this potentially represents good value for money, considering the pedestrian, cycling and public realm benefits accrued;
- The changes to Lombard Roundabout - benefit general traffic, although there is little improvement for walking and cycling;
- Access for all travel modes - substantially enhanced for the town centre. Substantial journey time savings are gained for general traffic and buses when compared to the 'Do Minimum' situation;

2.32 The proposed highway improvements will benefit bus services by:

- Allowing more convenient route options and stop locations;
- Providing better access to/from bus station for pedestrians and improving links to rail station and central shopping area (High Street);
- Journey time savings; and

- Providing alternative routes around the town centre to provide better accessibility to the town centre.

2.33 Benefits for pedestrians include:

- Upgraded/additional crossing facilities at junctions;
- Relocation of facilities closer to desire lines;
- Increase in large areas of public space adjacent to Station roundabout;
- Footway widening on Station Road with improved lighting;
- Better access to bus station, rail station and car park;
- Network of footways and footpaths enhanced for walk quality, safety, security and way finding, using a combination quiet and busy roads.

2.34 Benefits for cyclists include:

- Expansion of National and Redhill cycle network routes;
- Straight across toucan facilities on the three arms of Station roundabout;
- Toucan crossing facilities at the junction of A25 Cromwell Road / Huntingdon Road;
- Proposed shared cycle/footway on east side of Marketfield Way;
- Possible shared cycle/footway on north side of Station Road between Noke Drive and roundabout;
- Improved cycle route signing;
- Proposed on-street cycle parking to Station Road (west of Station Roundabout) to be considered part of public realm proposals.

2.35 Some of the anticipated benefits to the highway network are dependent on whether or not certain developments are approved and implemented. This is especially so of the potential developments around the Station roundabout. The proposals for these sites could enhance the highway improvements in the vicinity of the Station roundabout and along Princess Way.

2.36 To assist in improving traffic movements in and around the town centre it is considered essential that a Car Park Signing Strategy is developed and implemented at the same time as the highway improvements. This will provide improved information to drivers as to the car parks available and whether they are 'Full' or 'Spaces'.

2.37 Improvements to directional signing for through traffic and local traffic; to cycle route signing; and to pedestrian information signing will all enhance the movement of vehicles and pedestrians in and around the town centre.

2.38 A review of the existing Traffic Regulation Orders and associated signing will be required. The one-way working order covering the A25 town centre section will need to be revoked. Additional waiting and loading restrictions may be required to prevent traffic being obstructed especially along the A25 town centre section.

3. PUBLIC TRANSPORT

Buses

3.1 There are currently 16 bus services that run to and from Redhill. These routes are predominantly operated by Metrobus, with other operators such as Arriva and Southdown PSV running the remaining routes. These consist of the following:-

- **Route 32** (Arriva) – Redhill Bus Station to Guildford Friary Bus Station;
- **Route 100** (Metrobus) – Redhill Bus Station (inc. Park 25 development) to Crawley Bus Station & Maidenbower;
- **Route 303** (Surrey Connect) – Redhill Bus Station to Oxted County School;
- **Route 315** (Cruisers) – Dormansland to Earlswood (East Surrey Hospital);
- **Route 400** (Metrobus) – Caterham to East Grinstead;
- **Route 405** (Metrobus) – Redhill Bus Station to West Croydon Bus Station;
- **Route 410** (Southdown PSV) – Redhill Bus Station to Hurst Green;
- **Route 420** (Metrobus) – Redhill Bus Station to Sutton Bus Garage;
- **Route 424** (Southdown PSV) – Redhill Bus Station to Copthorne;
- **Routes 430/435** (Metrobus) – Merstham Circular (via Redhill Bus Station);
- **Routes 460** (Metrobus) – Redhill Bus Station to Epsom;
- **Route 603** (Metrobus) – Redhill Bus Station to Oxted School;
- **Route 649** (Turbostyle Coaches) – Horley to St Bedes School (via Redhill);
- **Route 774** (London General) – Woodhatch (via Redhill Bus Station) to Tunbridge Wells;
- **Route 820** (Metrobus) – Sutton Bus Garge to Redhill Bus Station (via St Bedes School);
- **Route 911** (Metrobus) – Merstham to Hookwood Tesco (via Redhill);

3.2 At present, Routes 32, 100, 315, 400, 405, 410, 420, 424, 430/435, 460, 540, 649, 774 and 820 all pass through Redhill Bus Station. Routes 32, 100, 405, 410, 420, 460 and 540 terminate at the Bus Station.

3.3 To the north of the town centre, there are two regular bus services into Redhill operating between the London Boroughs of Sutton and Croydon. These consist of the following:-

- Route 405 (Metrobus), operates between Redhill Bus Station and West Croydon Bus Station and provides a frequent Monday to Saturday service every 15 minutes (Sundays, every 30 minutes).

- Route 420 (Metrobus), operates between Redhill Bus Station and Sutton Bus Garage and provides a Monday to Saturday service every 60 minutes (Sundays, every 2 hours).

3.4 To the west of the town centre, there are three regular bus services into Redhill operating via Reigate Town Centre. These consist of the following:-

- Route 420 (Metrobus), as detailed above.
- Route 430/435 (Metrobus), which is a circular route operating from Merstham, passing through both Redhill Bus Station and Reigate. Route 430 runs in a clockwise direction and Route 435 anti-clockwise and provides a frequent Monday to Saturday service every 30 minutes (Sundays, every 60 minutes).
- Routes 460 (Metrobus), operates the dame route through the area from Redhill Bus Station, but continues onto Epsom, from Reigate. This route provides a Monday to Saturday service every 60 minutes (Sundays, every 1/2 hours).

3.5 Currently, there are two regular bus services into Redhill from the south, providing links to Crawley, Gatwick Airport and East Grinstead. These consist of the following:-

- Route 100 (Metrobus), which forms part of the Metrobus Fastway Network, operating from the Park 25 development (via Redhill Bus Station) and onto Horley, Gatwick Airport, Crawley Bus Station and Maidenbower village centre. This route provides a frequent Monday to Saturday service every 20 minutes (Sundays, every 30 minutes).
- Route 400 (Metrobus), operates from Caterhan (via Redhill Bus Station) and onto Horley, Gatwick Airport, Crawley Bus Station and East Grinstead. This route provides a Monday to Saturday service every 60 minutes (Sundays, every 2 hours).

3.6 To the east of the town centre, there are two regular bus services into Redhill. One is the continuation of Route 400 and the other provides links to Hurst Green. These consist of the following:-

- Route 400 (Metrobus), as detailed above with links to Nutfield, Bletchingley, Godstone and Caterham-on-the-Hill.
- Route 410 (Southdown PSV), operates between Redhill Bus Station and Hurst Green providing a Monday to Saturday service every 30 minutes (Sundays, every 2 hours).

3.7 The only other regular bus service from Redhill Bus Station is Route 32 (Arriva), which provides a service through Reigate (via Earlswood), Dorking and onto Guildford Friary Bus Station. This route provides a Monday to Saturday service every 60 minutes (Sundays, every 2 hours).

3.8 The bus routes can divided into three categories, i) services that operate for approx. 18 hours per day, ii) services that operate for approx. 12 hours per day and iii) special services such as those run during school term times. These consist of the following, for Monday to Friday period:-

- Routes 100, 405 and 430/435, that run a service through Redhill between the hours of 06:00 and 23:45, with the Fastway 100 service commencing as early as 04:15.
- Routes 32, 315, 400, 410, 420, 424 and 460, that generally run a service through Redhill between the hours of 06:00 and 19:30.
- Routes 303, 603, 649, 774, 820 are all operated during school term time.

3.9 In July 2008 the Redhill Bus Station was opened, following the completion of a £650k refurbishment to provide new buildings and improved facilities with an emphasis on safety (better lighting and CCTV), accessibility and improving the environment (new waiting room and passenger information system). The works included a new concourse layout to accommodate the larger turning circles required for higher specifications services such as the Fastway 100. Four separate boarding and alighting areas were created to cater for larger dual door buses and to provide step free access onto low floor buses.

3.10 The bus stop locations and associated routes are detailed on drawing no. 1000000804-C-003-Sk02 which is included in Appendix B.

Passenger Surveys

3.11 In April and August 2008, as part of the Redhill Bus Interchange Study, surveys were undertaken on four separate dates in which passengers were asked to complete questionnaires in order to understand passenger behaviour and attitudes towards bus services in Redhill. The dates were chosen so that there were surveys whilst the temporary stop arrangement was in place and also after the new bus station was opened. The following is a summary analysis of the key results;

- **Convenience** – a single bus station is more convenient for their destination than having a series of bus stops across the town centre.
- **Interchange** – 35% were interchanging between bus services with twice as many people changing between bus services on Saturday.
- **Benefits of a single Bus Station** –passengers find the bus station to be convenient for their journeys in terms of location.
- **Benefits of a Network of Stops** –34% of respondents stated that the proximity to their origin or destination was a benefit although the same % said that there were no benefits to a network of stops.
- **Preference** – 57% chose the bus station as their preference.

- **Purpose of Visit** –Overall, 45% were shopping and only 19% for work.
- **Age** – over half of the bus trips were made by those over the age of 40 and over a third by those over 60. This emphasizes the importance of meeting accessibility guidelines when providing facilities on the network beyond the bus station.
- **Frequency of visits to the Town Centre** – 55% of respondents visited more than 3 times a week, 26% visited once or twice a week, 9% visited between one and three times per month and 8% visited less than once per month.
- **Frequency of Bus usage** – 39% of respondents used the bus at least 5 times a week, 25% used the bus 3 to 4 times per week, 22% used the bus once or twice a week and 14% used the bus less than once a week.
- **Destination** – Unsurprisingly, the main pedestrian destination from the town centre bus stops is the High Street area (pedestrianised sections of High Street and Station Road) and Redhill railway station.

3.12 The location of the existing bus stops located around the town centre (Stops F, H, J, K and L) will need to be reviewed, especially if the one-way system in London Road, Queensway, Station Road, St. Matthews Road and Cromwell Road is converted to two-way working.

3.13 A further review will required at bus stop sites to ascertain whether they are to current standards in terms of bus stop accessibility, in terms of both passengers ability to board and alight buses and in terms of buses being able to successfully access the bus stop. At present, all of the aforementioned bus stops rely on the existing waiting and loading controls with no clear markings to indicate the presence of a bus stop. Furthermore, none of the stops adhere to a 'standard' layout of street furniture at the bus stops with little or no regard to passenger accessibility.

3.14 There are currently three bus stands/stopover points operating in the town centre. Two are located on Marketfield Way, one northbound, the other southbound whilst the third is adjacent to the bus stop in London Road just south of the Lombard Roundabout.

3.15 There is currently no bus priority infrastructure within the study area.

Trains

3.16 In July 2012 a public exhibition was held in the Belfry Shopping Centre to publicise plans to redevelop significant parts of Redhill station and to regenerate the wider station area. The station will offer a new ticket office, a larger concourse area,

and additional ticket machines and will also provide step free access from a new pedestrian only public square at the front of the station to the platforms.

3.17 The station improvements are being funded by the redevelopment of the station car park areas, which will deliver a new food store, plus smaller retail units and approximately 150 new homes. Additional station car parking will be provided in a new multi-storey car park on the eastern side of the station off Redstone Hill, along with improved cycle provision.

3.18 Redhill station is at the junction of the Brighton Main Line, which runs north to London and south to Gatwick Airport and Brighton, with the ex-SER North Downs Line running west to Guildford and Reading, and the Redhill to Tonbridge Line to the east.

3.19 Southern operate most train services, others being provided by First Great Western and First Capital Connect.

3.20 The results of the passenger surveys suggest that the majority of people who use the bus are regular users. However, a significant number of passengers were not regular users. This highlights the importance of providing adequate information about interchange facilities and information about places/events in the town centre.

3.21 The surveys also illustrated that there is a desire for people to change between bus services in Redhill and the importance of the bus interchange/station being close to the shopping areas.

4. CYCLING

4.1 There are currently 11 recognised cycle routes connecting Redhill Town Centre to various nearby areas and these consist of the following:-

- NCN 21 (The Downs & Weald Cycle Route)
- Reigate to Redhill Community Cycle Route

4.2 The following details have been collated from the Travel Smart in Redhill & Reigate document:

- Route 1 – Merstham to Redhill Town Centre (via A23 corridor);
- Route 1A – Frenches Road to Route 1;
- Route 2 – Merstham to Redhill Town Centre via NCN 21;
- Route 2A – Water Colour development to Route 2;
- Route 3 – Park 25 development to Redhill Town Centre;
- Route 3A – Redhill Train Station to the Town Centre;
- Route 4 – Whitebushes to Redhill Town Centre (via A23);
- Route 5 – Redhill Town Centre area;
- Route 6 – Reigate Town Centre to Redhill Town Centre (via A25).

4.3 Unfortunately, the existing highway infrastructure that serves cyclists throughout the Redhill area is somewhat fragmented with poor connectivity between key locations and destinations. With the exception of National Cycle Network Route 21, the only clearly signed cycle route is Route 6.

4.4 The list below is detailed analysis of each of the aforementioned routes:-

- NCN 21– This route initially enters the town utilising part of the Right of Way network in the area by passing along Footpath no.104, onto a short length of Cavendish Road which connects to Noke Drive via Footpath no.102. From this point the route is entirely on-carriageway, passing along Station Road and Marketfield Way (advisory cycle lanes in both directions) until the Belfry roundabout where cyclists are directed onto the footway. The route continues southwards, on the footway, along Brighton Road and is a combination of shared and segregated use. Hereafter, the route continues along Brook Road (segregated). Generally, the route is well signed and marked, with only minor requirements for improvements.
- Reigate to Redhill Community Cycle Route – There is currently a dedicated local cycle route that connects the two towns that commences at the junction of the A25 and A242 Croydon Road, in Reigate. The route follows Croydon Road northwards and then tracks eastwards along Doods Road,

Doods Way, Madeira Walk and enters the town utilising part of the Right of Way network by passing along Footpath no.69 and through the grounds of Donyngs Recreation Centre. The final section of the route is along advisory cycle lanes in Linkfield Lane connecting into the Station Road roundabout junction. This route is well signed and marked throughout.

- Route 1 – This route is designated as connecting Merstham to Redhill Town Centre via the A23 corridor. Currently there are no cycle facilities along the route, with the exception of a short length of segregated footway at the junction of the A23 and the A242 outside East Surrey College. Several cycle direction signs are mounted in London Road, at the Ladbroke roundabout junction, that are intended to direct cyclists along Gloucester Road and North Street to Linkfield Lane.
- Route 1A – Frenches Road is to the north-east of the town centre and runs from its junction with Battlebridge Lane southwards to the A23 London Road. This proposed route currently has no cycle facilities.
- Route 2 – This route is designated as connecting Merstham to Redhill Town Centre via NCN 21. It's assumed that the proposed route would run southwards from Merstham along School Hill and Nutfield Road, via Cormongers Lane to connect with NCN 21. At present there are no cycle facilities along the route.
- Route 2A – The Water Colour development is located to the east of the Holmthorpe Industrial Estate and west of Nutfield Road. This route is designated as connecting to Route 2. Therefore, it's assumed that cycle network facilities would be provided through the Water Colour development to Nutfield Road. With the exception of a short length of shared use footway along Trowers Way (west of the development), there are currently no cycle facilities in the area.
- Route 3 – The Park 25 development is located north-east of Redhill Town Centre and is accessed using St Anne's Drive, via Noke Drive. At present there is some highway infrastructure for cyclists in the form of a segregated footway that runs along the eastern side of St Anne's Drive North and connects to another short section of segregated footway which runs into Wiggle Lane. Furthermore, there is additional cyclist provision in the form of a segregated off-highway route adjacent to St Anne's Drive. The remaining route is unsigned, but would continue along St Anne's Drive to the junction of Noke Drive and the NCN 21 route.
- Route 3A – At present there is no designated or signed route for cyclists that connects Redhill Train Station to the Town Centre. Any provision for cyclists would include the conversion of the existing signal controlled pedestrian crossing in Princess Way to a Toucan crossing.
- Route 4 – Whitebushes is a small town south of Redhill Town Centre. This route connects the two areas via the A23 Horley Road/Brighton Road. At present there are advisory cycle lanes in both directions along Horley Road between

the junction of the A2044 and Prince Albert Square. There is a Toucan crossing on Brighton Road at the junction of St. Johns Road (closed to vehicles) with very short lengths of footway signed for shared use either side of the road. An additional Toucan crossing is located in Brighton Road, immediately north of Brook Road, which links into the NCN 21 Route. The final link into the town centre is a shared use footway facility on the western side of Brighton Road, north of Grovehill Road.

- Route 5 – This route runs through Redhill Town Centre, partially on the footway, signed and marked as shared use. This is a continuation of Route 4 and passes up the west side of High Street to the junction of Cromwell Road and Marketfield Road. There's a short section for cyclists along Marketfield Road that provides a link to NCN 21. In order to continue on Route 5 cyclists are requested to dismount, cross the road on the pedestrian crossing, continue along the northern footway, dismount and cross again on another pedestrian crossing. The route continues eastward along Holland Close and Fairfax Avenue to Station Road. There are off-carriageway facilities at the junction of Linkfield Corner and Station Road where cyclists have the use of a Toucan Crossing in Station Road to continue towards Linkfield Lane and the Donyngs Recreation Centre (see other local cycle route links below).
- Route 6 – This route is designated as connecting Reigate Town Centre to Redhill Town Centre via the A25 corridor. It's assumed that the route runs eastwards from Reigate along Reigate Road, Hatchlands Road, through Linkfield Corner and into Redhill Town Centre along Station Road. At present there are advisory cycle lanes in both directions along Reigate Road between the junction of Eversfield Road and Doran Drive. There is a Toucan crossing on Reigate Road at the junction of Church Walk with very short lengths of footway signed for shared use either side of the road. However, at several junctions there are 'gaps' in the cycle lanes with the added problem of virtually no parking controls along the route, which means that cyclists are unable to use the lanes where parking occurs.
- Other local cycle route links and facilities – At present there are virtually no facilities in place to assist the passage of cyclists travelling east of the town centre along Redstone Hill and Nutfield Road (A25), with the exception of a poorly signed and lined segregated section that runs eastward along the northern footway from the junction of Oakwood Close and an undefined footway link to Redstone Park.

4.5 The existing cycle routes are detailed on drawing no. 1000000804-C-003-SK03 which can be found in Appendix C.

Cycle Survey Counts

4.6 A cycle survey has been undertaken and the key data collated for movements between 7am and 7pm is detailed below;

- Station Road – 148 cyclists heading east out of town and 138 heading west into the town;
- London Road – 93 cyclists heading north out of town and 110 heading south into the town;
- Brighton Road – 190 cyclists heading south out of town and 191 heading south into the town;
- Station Road – 86 cyclists heading west out of town and 103 heading east into the town.

4.7 Listed below are the locations with dedicated on-street cycle stands/parking;

- 10no. at Redhill Bus Station;
- 10no. at Redhill Train Station (not including cycle security within grounds of train station);
- 3no. in High Street pedestrianised section north of Cromwell Road;
- 8no. (partially sheltered) in High Street pedestrianised section south of Queensway.

5. WALKING

5.1 Redhill Town Centre is currently pedestrianised with the following areas closed to vehicles; the northern section of High Street, the southern section of London Road and a short length of Station Road. There are number of signal controlled pedestrian crossings located around the perimeter of the pedestrianised area to assist pedestrians wishing to cross the existing A25 one-way road system to the west and the A23 to the east. The locations of the existing pedestrian crossing facilities are shown on drawing no. 1000000804-C-003-SK05 which can be found in Appendix D.

5.2 It's generally recognised and accepted that the A23 severs the rail station from both the bus station and the pedestrianised sections of the town.

5.3 At all the existing pedestrian crossings there are dropped kerbs with tactile paving, audible signals, and tactile cones on the 'Wait' box. However, site observations suggest these crossings could be improved. For example, it has been observed that at most of these locations there are no markings informing pedestrians to Look Left or Right at the crossings.

5.4 A guard rail (GRAF) assessment has not been undertaken. However, it has been observed that there is extensive usage of pedestrian safety guard rail at all of the pedestrian crossings within the study area, especially along the dual carriageway sections of the network. The only exception to this is at the crossing in Queensway, where there is no guard rail.

5.5 During the latest 65 month period of available accident data, ending 31 May 2012, there have been a total of 18 personal injury accidents involving pedestrians that occurred at various locations within the area being reviewed (36.7%). This is a significant percentage of the total which is further highlighted by the fact that 5 occurred during the hours of darkness. Therefore, there is clearly a serious issue that requires further consideration, particularly in respect of the amount of pedestrians that are involved in these recorded incidents. Additional investigation may also be a required to establish the effectiveness of the existing street lighting at these particular sites.

Pedestrian Questionnaire

5.6 In April 2008, at various locations around the town centre, pedestrians were asked several questions about where they had started their journey, what mode of transport they had used and what was the purpose of their visit to the town centre. This was undertaken on a Saturday and on a Tuesday. They were questioned at various bus stops, the train station and at town centre car parks. The following is a summary analysis of the key results;

- Where did you start your journey from? – Of 1403 respondents, 14% of respondents had come from Reigate on a Saturday and 19% on the Tuesday. The results showed that on both days, only about a third of Town Centre visitors are from Redhill, with a significant attraction from surrounding areas.
- Where are you walking to/from?
- Bus Stops (148 respondents) – Unsurprisingly, the High Street area is the main pedestrian destination from the Town Centre bus stops (30% of respondents). Other results suggest a lot of pedestrian movement between bus tops and areas beyond the town centre.
- Redhill Rail Station (73 respondents) – The vast majority of respondents questioned at the railway station were walking from the surrounds of the station (the station car park or people being picked-up/dropped-off in the forecourt), this accounted for 73% of respondents. There was very little movement (7% of respondents) between the rail station and the High Street, including the bus station, which again indicates the low levels of bus/rail interchange.
- Clarendon Road (long stay) car park (29 respondents) – The main destination from this location is the High Street (over 50%) and the Clarendon Road/London Road quadrant.
- Gloucester Road car park (77 respondents) – The main destination from this location is the High Street, the Clarendon Road/London Road quadrant and the rail station. The proportion of trips to/from the station is high and indicates that commuters are using spaces in the car park.
- Marketfield Road car park (48 respondents) – The main destination from this location is again the High Street. However, as with the Clarendon Road car park results the number of respondents at this site was low and it's therefore difficult to draw a robust conclusion from these figures.
- Sainsburys car park (89 respondents) – Results show that visitors to this location don't venture beyond the High Street and very few beyond the store itself.
- What mode of transport did you use to travel to the Town Centre? – The following results from this aspect of the survey do not give an accurate modal split as there was only one interviewer at the rail station, compared to eight at the bus stops and five at car parks (total 1418 respondents). However, they are useful to make other conclusions, particularly when considered with the results from other questions. There was a notable increase in car drivers (30%) at the weekend, but almost no change in bus passengers. This clearly indicates that town centre visits at the weekend are more likely related to shopping and therefore shorter car park stays. It should be noted that overall 63% arrived by car compared to 26% by bus and only 6% had walked. Any parking strategy for Redhill would therefore need to reflect this demand for parking or that people are encouraged to travel by alternative sustainable travel modes.

Interestingly, only 3% of respondents at the rail station arrived by train, indicating that a higher number of people were commuting out of Redhill.

- What is the main purpose of your trip to the Town Centre? – At the weekend, results show that 66% of visitors come to shop, with only 7% for work. The weekday figure for work rises to 24% with a corresponding drop in the percentage of shoppers. More notable is the fact that at the weekend more people were travelling through the Town Centre than working. The level of people travelling through was similar on weekdays and Saturday, which suggests significant levels of people commuting out of Redhill to work and also travelling out of Redhill to shop.
- What is your expected length of stay in the Town Centre? – The most notable figure, from a total of 1304 respondents, is that 79% of visitors stay for two hours or less, with only 7% staying over four hours. However, on weekdays 25% of visitors stayed for at least four hours. These figures again support previous conclusions that there would be a higher turnover of cars at the weekend.
- During the past 6 months, how often have you visited the Town Centre? – From a total of 1399 respondents, 37% visited the town centre more than three times a week, with 38% visiting one to 2 times per week. However, 25% visited less than once a week and may not be familiar with the outer fringes of the main pedestrianised area. This serves to emphasise the importance of providing a clear network of pedestrian routes within the Town Centre.
- As a pedestrian, how easy is it to move around the Town Centre? – Encouragingly, 83% of respondents found it easy or very easy to walk around the Town Centre and only 3% found it difficult. Overall, walking around Redhill Town Centre is not perceived to be a problem.
- What would make you walk more often around the Town Centre? – Results indicate that there is little that could be done to increase the desirability to walk more often. The only significant factor that stands out is the response for a reduction in traffic (25% of respondents). This clearly points towards the idea that lessening the impact of traffic on pedestrian routes is key to opening up the Town Centre.
- Age - From a total of 1430 respondents, results show that 58% were aged 40 and over and 22% were aged 60 and over. These figures highlight the importance of ensuring that the Town Centre is fully accessible to those that may have difficulties with walking. Analysing age against transport mode shows that over half of the bus trips are made by those aged over 40 and over a third by those aged over 60, thus emphasizing the importance of providing passenger facilities that meet current accessibility guidelines. Analysing age against trip purpose shows that 20% of under 40's come to the Town Centre to work, but this figure drops to 10% for the over 40's. Conversely, 61% of over 40's come to shop compared to 41% of under 40's.

Pedestrian Counts

5.7 Tuesday counts: It's evident from these figures that there is a very high pedestrian flow from London Road to the High Street, although not in the opposite direction. From the centre of the High Street, there are significantly more pedestrians heading northbound than in any other direction. Other figures suggest that a lot of people walk towards Sainsburys and the Harlequin from the south as there isn't much pedestrian traffic at the top of the High Street.

5.8 Saturday counts: It's noticeable from these figures that there are much fewer pedestrians crossing Princess Way going to/from the rail station, which reinforces the idea that the train is used primarily for commuting. There are again high flows between High Street and London Road, probably due to the proximity of the car parks.

5.9 Other analysis: The weekday results show that there is a marked difference in peak flows to/from the rail station and peak flows elsewhere. Peak flows to/from the rail station are from 08:00 to 09:00 and then after 15:00. Peak flows at other locations in the Town Centre are around midday.

5.10 The pedestrian counts and their relevant locations are detailed on drawing nos. 1000000804-C-003-SK06 and SK07 which can be found in Appendix D.

6. ALL TRAFFIC

6.1 Redhill town centre is located at the intersection of the A23 (the old London to Brighton road) and of the A25 (a cross-country route linking Guildford to Maidstone).

6.2 The 60's and 70's saw a major redevelopment of the town centre with the pedestrianisation of the inner town centre and the creation of the inner ring road (the majority of which is one way (the A25) using existing width restricted local roads). The eastern side of the ring road (the A23) was newly constructed dual carriageways. The ring road enveloped the majority of the retail, office based buildings and a mixture of single level and multi storey car parking. Pedestrian crossing points (signalised) are provided at all the main walking routes across the ring road. All major junctions on the eastern side of the ring road are of roundabout design.

6.3 The town centre ceased to be a major crossroads for general passing traffic with the completion of the M23 and the M25, to the east and the north of the town respectively. However, the town centre and the inner one way system is the subject of serious congestion in the morning and evening peak hours.

6.4 Southbound traffic on the A23 has to use Princess Way – Marketfield Way towards Brighton Road. Northbound traffic uses the same route in reverse. Access to the town centre from the north requires traffic to turn right at the Belfry Roundabout to gain access to the Marketfield Way car park, the Belfry shopping car park and the Clarendon Road car park as well as continuing on to the A25 towards Reigate.

6.5 Traffic to and from Redstone Hill (A25) either turn left or right at Station Roundabout for use of the A23 and vice versa. Traffic wanting to continue to use the A25 turn left onto Marketfield Way before turning right at the Belfry Roundabout. Traffic from Reigate on the A25 continues to the Lombard Roundabout before turning right onto A23. The section of A25 along High Street – Cromwell Road – St Matthew's Road – Station Road – Queensway – London Road is currently one-way northbound.

6.6 Therefore, to realise the future potential development and regeneration of the town centre improvements to the existing road network are considered necessary to cater for the existing traffic flows and the potential traffic movements resulting from the developments.

6.7 Whilst there has been no growth in traffic levels over the last 5 years any growth in vehicle trips due to the development and regeneration of the town centre will lead to greater traffic congestion. The increased level of delay to traffic will be

most acutely felt during Saturday. It is apparent that the predicted levels of congestion would need to be tackled as a matter of priority.

7. PUBLIC REALM

Current situation

7.1 The majority of the Public Realm proposals encompass Station roundabout and Station Road Pedestrian Zone. The "Pedestrian zone" is the length of Station Road between Station roundabout and the fully pedestrian part of Redhill town centre.

7.2 Currently this area is dominated by vehicular movement. Traffic flows are high but the situation is exuberated by wide carriageway widths and a generally rundown public realm. This chapter identifies the public realm issues and how existing opportunities can be utilised to improve the area.

7.3 There are several elements of the streetscape that are having a detrimental impact on the public realm these are as follows:

Mixture of low quality materials

7.4 Most of the footways on the Station roundabout spurs are asphalt with the only exception, the pedestrian zone on Station Road which is red block paving laid in a herringbone bond. The asphalt does not add anything to the area and although the red block paving has dated, looks tired and arguably does not co-ordinate with recent works completed within the town centre.

Narrow footways with guard railing

7.5 On all arms of the roundabout the footways are narrow for the footfall received and along much of the parameter there is guard railing. Therefore in the peak periods the footways are very congested.

Inappropriate cycle rack location

7.6 Existing cycling parking provision is a key part of the public realm. However there are some cycle racks that have been placed in the footway opposite the rail station. This is a great location for cyclist but the stands are obstructing pedestrian movement at a key destination.

Desire line movement

7.7 There is no direct route between the station and the town centre because of the roundabout and on Marketfield Way and Princess Way the crossings are set quite far down the arms of the roundabout taking pedestrians away from the desire line.

Accessibility

7.8 The pedestrian zone is segregated by a carriageway with kerb upstands. This is unnecessary for an area which should only be used by vehicle for loading (albeit there does seem to be so illegal parking). A flush surface would provide a much more accessible space.

Shrub and tree planting

7.9 The pedestrian zone is lacking in planting and this makes the space look harsh. The roundabout and its arms are generously planted with shrubs and trees but in places are over grown and littered and so needs maintenance.

Lighting

7.10 The lighting is typical highway specification where form follows function and so the lamp columns add very little architecturally to the area.

Vision

7.11 Immediately north of the roundabout is the town centre bus station and immediately east of the roundabout is Redhill Railway Station. This combined with the pedestrian zone west of the roundabout makes this area a key gateway to Redhill town centre for those arriving by public transport. However, although the 'gateway' is there technically it is not reflected in the existing public realm. Improvements to the public realm in this area could make a significant difference into linking these three key nodes together and to Redhill town centre. For public realm improvements to be successful we need to create a strong gateway by:

- Significantly improving the standard of the public realm;
- Reclaiming carriageway space for pedestrians;
- Linking new proposals with recent alterations to the public realm within the town centre;
- Exploring the opportunity for pedestrian only and public open space options in the pedestrian zone;
- To define the extent of works to focus proposals.

Proposal options

7.12 Three conceptual options have been put forward: all the options include the engineering revisions to the roundabout but vary in architectural style; how the space is used; and the limit of architectural proposals. Most of the proposals are interchangeable between options. It is important not to feel limited by the proposals but inspired.

Option 1

7.13 This option provides a strong level of integration with the southern arm of the current town centre, replicating its form. This is a lower cost solution with major public realm works not spreading across the roundabout to the station entrance (with the exception of standard ASP and tree planting). This is a 'pedestrian-only' option with potential access for service vehicles, if required. Whilst still making significant improvements to the streetscape west of the roundabout, this option lacks some of the gateway impact for people entering the town from the bus and rail stations. This option is shown on drawing no. 1000000804-C-003-SK11 in Appendix E.

Option 2

7.14 This option provides a strong level of integration with the western arm of the current town centre, partially replicating its form. This option still provides vehicular access, if required, acting as a public open space design with kerb delineation. By spreading the design to the station entrance this option provides a greater sense of place acting as a strong gateway scheme. The introduction of up-lit public art within the roundabout will accentuate the gateway impact but it is important that this does not obstruct the view of the town centre from the station. This option is shown on drawing no. 1000000804-C-003-SK12 in Appendix E.

Option 3

7.15 This option provides a strong level of integration with the central square / nodal junction within the current town centre, replicating its form. This is the highest cost solution with major public realm works spreading across the whole of the site. Included within the design is granite paving within the carriageway of the roundabout and a water feature within the centre of the roundabout. To the west of the roundabout the scheme will allow vehicular access, if required, through public open space usage. This option would provide the strongest gateway. This option is shown on drawing no. 1000000804-C-003-SK13 in Appendix E.

Street Furniture and Materials

7.16 On all the options the street furniture will be same as what has been recently used in the town centre including the Hestia Double Column lighting. The paving will by the same silver grey granite and navy blue paviours specified in the town centre recently as well. This will help ensure coordination with the other newly completed schemes.

7.17 If the public realm proposals are to be implemented then three arms of the town centre pedestrianised area will be similar in design. It is therefore, strongly

suggested that the fourth arm, the section of London Road between Station Road and Queensway, is considered for similar treatment in the near future.

8. COLLISIONS/ROAD SAFETY IMPROVEMENTS

8.1 This report has described the development, testing and evaluation of transport options designed to address the strategic challenges facing Redhill, and to facilitate the regeneration of the town centre.

8.2 The study was underpinned by an S-Paramics micro-simulation traffic model covering Redhill. This provided future year forecasts of traffic conditions within the town centre and surrounding road network.

8.3 During the latest 65 month period of available accident data ending 31st May 2012, provided by Surrey County Council Safety Engineering Team, there were 56 personal injury accidents (PIA) recorded within the study area, however, 7 PIA's which occurred at the Belfry Roundabout had incomplete information (accident type and causation not provided), hence these accidents were omitted in this analysis. A total of 49 PIA's were being reviewed, this gives the study area an average of 9 PIA's per annum. Drawing no. 1000000804-C-003-SK01 in Appendix F shows the accident analysis for specific sites.

8.4 In order to assess any accident problems at the site, comparisons where possible have been made to local area for 2010 as documented in 'Reported Road Casualties in Surrey 2010 – Performance Against the 1020 Targets' produced by Drive Smart.

Accident Ratios

Severity

Within these 49 PIA's, 95 casualties were recorded. As no severity details of the casualties in each accident were provided, it is assumed that each accident has only 1 casualty who was fatally or seriously injured, and the remaining casualties in the same accident was slightly injured. Of the 95 casualties, 1 involved a fatality, 6 resulted in serious injury and 88 resulted in slight injury. This gives a severity ratio of 1.05%, 6.32% and 92.63% respectively, which the fatal and slight casualty injuries are above the Surrey County Council's level of 0.6% and 89.71% respectively.

Hours of Darkness

During the study period, 17 PIA's were recorded as having taken place during the hours of darkness giving a 'dark' ratio of 34.7%. It is not possible to compare with Surrey County Council's average level as this information is not available at the time of the analysis.

Non-Dry Road Surface

During the study period a total of 17 PIA's was recorded as having taken place on a 'non-dry' road surface giving a non-dry ratio of 34.7%. It is not possible to compare with Surrey County Council's average level as this information is not available at the time of the analysis.

Vulnerable Road Users

During the study period, there were a total of 30 (31.6%) vulnerable casualties. Of the 95 casualties recorded, 8 (8.4%) involved cyclists, 4 (4.2%) involved powered two wheelers and 18 (18.9%) involved pedestrians. The table below provides comparisons with the number of vulnerable casualties in Surrey in 2010 and demonstrates that a higher percentage which involved pedestrians has occurred.

Table 8.4 Vulnerable road user accident comparisons

Mode	No. Of Casualties Recorded	No. of Casualties Recorded in Surrey in 2010
Pedal cycle	8 (8.4%)	457 (8.5%)
Powered two wheeler	4 (4.2%)	440 (8.2%)
Pedestrian	18 (18.9%)	402 (7.5%)

Analysis by Time

8.5 By Year : The table below shows a breakdown of the PIAs by year / date.

Table 8.5 Accidents by Year

12 Months to	No. Of PIA's Recorded
December 2007	9 (18.4%)
December 2008	12 (24.5%)
December 2009	7 (14.3%)
December 2010	11 (22.5%)
December 2011	8 (16.3%)

plus 5 months to 31.05.12	2 (4.1%)

8.6 By Month : The distribution of PIAs by month is shown in the table below. It can be seen that the accidents are spread throughout the year with no real trends when comparing the types of vulnerable accidents against each month.

Table 8.6 Accidents by Month

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Acc	7	5	3	4	5	5	5	2	4	4	4	1

8.7 By Day : The distribution of PIAs by day of the week is shown in the table below. It can be seen that the accidents are spread throughout the week with no real trends when comparing the types of vulnerable accidents against each day.

Table 8.7 Accidents by Day

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Acc	6	10	7	6	9	5	4

8.8 By Hour : The table below shows the distribution of PIAs by hour during the study period. It can be seen that 7 (14.3%) of the accidents occurred during the morning traffic peak of 08.00 and 10.00 hours, that 7 (14.6%) of the accidents occurred during the hours of 15.00 and 16.00 and that 8 (16.3%) of the accidents occurred during the evening traffic peak of 16.00 and 18.00.

Table 8.8 Accidents by Hour

Hr	00:0	01:0	02:0	03:0	04:0	05:0	06:0	07:0	08:0	09:0	10:0	11:00
Acc	7	5	3	4	5	5	5	2	4	4	4	1
Hr	12:0	13:0	14:0	15:0	16:0	17:0	18:0	19:0	20:0	21:0	22:0	23:00
Ac	4	3	1	7	4	2	2	3	2	3	1	0

Accident Types and Locations

8.9 The following table shows the types of PIAs during the study period and the predominant forms of collision type. It is evident from the table that the most common cause of collision occurrence involved pedestrians.

Table 8.9 Recorded Accident Types

Accident Type	No. Of PIA's Recorded
Shunt	12 (24.5%)
Crossing road (pedestrian)	14 (28.6%)
Loss of control	7 (14.3%)
Other (poor driving)	12 (24.5%)

8.10 Below is a simple analysis detailing noticeable trends at the two main roundabout junctions within the study area.

Station Roundabout

8.11 Of the 22 PIA's recorded at this site the following issues will need to be considered; 6 (27.3%) occurred during the hours of darkness and 7 (31.8%) on a wet road surface. A particularly high number of 9 (40.9%) involved pedestrians. This is reflected in the fact that 8 (31.8%) were crossing road accident types with 6 (27.3%) loss of control and 5 (22.7%) were shunts.

Lombard Roundabout

8.12 Of the 14 PIA's recorded at this site the following issues will need to be considered; an especially high number of 8 (57.1%) occurred during the hours of darkness and 6 (42.9%) on a wet road surface. 3 (21.4%) involved cyclists on the roundabout being struck by cars failing to give-way and/or see the cyclist. 3 (21.4%) involved pedestrians. 5 (35.7%) were shunt accident types.

9. STATUTORY UNDERTAKERS'/UTILITIES ISSUES

9.1 The statutory undertakers' have been contacted through use of the C2 request to provide information on plant and equipment existing within the road network around the town centre.

9.2 The companies contacted are:

- UK Power – Electric
- SGN – Gas
- Openreach – BT
- Sutton & East Surrey Water
- Veolia Water
- Thames Water
- Virgin Media
- Affinity Water

9.3 The majority responded by forwarding plans of their plant and equipment. Both Affinity Water and Veolia Water have confirmed they do not have any plant or equipment in the road network around the town centre.

9.4 The next stage is to forward detailed drawings of the proposals requesting through use of the C3 to ascertain cost estimates for any plant and equipment diversions considered necessary to enable the proposals to be implemented.

10. COSTS

10.1 A notional estimated cost for the balanced network proposals was included in the 'Redhill Town Centre Traffic Modelling – Final Report' issued in February 2012. The estimated cost of £2,285,000 included costs for feasibility, detailed design, construction and contingencies (such as an element of statutory undertakers' plant and equipment). The estimated cost did not include the proposed public realm works. The scheme design, on which the estimated cost was based, was prepared using Ordnance Survey plans.

10.2 In addition the costs were broad estimates and depended on factors such as timescale; choice of materials/equipment; impact on statutory undertakers' plant and equipment; and scope of works. Therefore, a deviation of +/- 50% should be allowed.

10.3 Included in the feasibility (stage 2) design was the provision of more detailed costs. Modifications to the balanced network proposals have been included in the overall scheme and general arrangement drawings prepared using the topographical survey output.

10.4 The outline construction cost estimate for the modified balanced network consists of the following :

Location	Cost
A23/A25 Lombard Roundabout	£235,118
A23/Sainsbury's Access	£199,000
A23/A25 Station Roundabout	£488,019
A25 Station Road/Noke Drive Jct	£47,500
A25 Redstone Hill/Cavendish Rd Jct	£96,850
A23/A25 Belfry Roundabout	£75,500
A25 Town Centre Section	£497,141
TOTAL	£1,639,128

10.5 A notional scheme-wide cost, made up of signing; road markings; preliminaries of 5%; and site clearance of 2.5%) has been added totalling £190,000. Therefore, the total cost of the balanced network proposals is £1,829,128.

10.6 In preparing the outline construction cost estimate for the modified balanced network the following assumptions/allowances have been made:

- No allowance made for statutory undertakers' diversion of plant and equipment (currently being sought);
- No allowance made for street furniture (eg bollards/bins etc);
- No allowance made for street lighting alterations;
- Assumed Term Contractor working, NOT Tendered;
- Assumed 20% for restrictive working and 30% for nightwork (eg surfacing);
- Assumed use of existing materials (eg precast concrete kerbing etc).

10.7 A detailed breakdown of the outline construction cost estimate is included in Appendix G of this report.

10.8 Three options have been considered for the public realm proposals for Station roundabout and Station Road between Station roundabout and High Street. The cost estimates for these proposals (assuming the highway improvements to Station roundabout are implemented) are:

Option 1 – Pedestrianisation - £914,362

Option 2 – Public open space/carriageway delineation - £1,453,768

Option 3 – Public open space/no carriageway delineation - £1,516,062

10.9 The total cost estimate for the highway improvements and public realm proposals following Stage 2 to completion will be:

- Amendments to design following consultation (indicative) – £25,000
- Undertake Highway Design (indicative) – £362,000
- Street Lighting Improvements (indicative) - £183,400
- Statutory Undertaker's Diversion of Plant (indicative 10%) – £340,000
- Construction Cost – £1,829,128
- Public Realm Cost – £1,516,062
- Contract Administration and Supervision Cost (indicative 3%) – £116,100

Total Cost - **£4,371,690**

10.10 The above costs assume the Term Contractor is used. The pre-construction costs and supervision costs are all subject to change following consultation and reassessment.

11. RISK ANALYSIS

11.1 The proposed highway and public realm improvements have few constraints to their delivery, such as the need for third party land. The only improvement not completely within the current highway limits is at the Redstone Hill junction with Cavendish Road.

11.2 The main constraints are anticipated to be funding availability and highway approval processes. Whilst some of the funding for the highway improvements will be financed through S106 agreements with potential developers such as the Warwick Quadrant site (Sainsbury's), other funding sources will be required. Provided the formal Local Committee in December 2012 support a bid to the Growing Places Fund then financing of the proposals will be secured with an anticipated implementation date of September 2013.

11.3 However, the Local Committee's support for the funding bid will depend on the results of the public consultation which will not be known until January 2013.

11.4 The programme for implementing the proposals may be delayed by the need to divert Statutory Undertaker's plant and equipment. It is essential to involve the Statutory Undertaker's at an early stage to ensure the diversion works are included in their work programmes.

11.5 Because of the size of the Redhill town centre highway and public realm improvements the Client is required to appoint a Construction Design and Management Coordinator (CDM-C) under the Construction Design and Management Regulations 2007. The improvement scheme is deemed notifiable to the Health and Safety Executive if its implementation will last for more than 30 days or involves more than 500 person days of construction work.

11.6 The general arrangement design plans are still to be safety audited by Surrey County Council and therefore, there may be safety concerns raised which need to be addressed, different from those raised on the conceptual plans.

11.7 The balanced network benefits are based on journey time savings compared with the Do-minimum option. The journey times for the Do-minimum option were obtained from the base model (2007 updated to 2011). The base model journey times were validated and audited by Surrey County Council. The Do-minimum option also assumed no growth in background traffic levels, only the generated vehicle trips from developments implemented since 2007 and from the potential developments were added to the network. However, the average and maximum queue lengths also need to be validated.

11.8 The modelling, using Paramics is based on journey distances and journey times. However, validation of existing queue lengths and capacity of the main junctions should also be considered so a performance comparison could be undertaken between the base network and the balanced network. Other network models could have been used to obtain this comparison.

12. PROGRAMME

12.1 The Informal Local Committee (Reigate & Banstead) held on 5th November 2012 noted that:

- The Redhill balanced network is subject to an 8 week public consultation commencing on 9 November 2012 and finishing on 4 January 2013;
- The details of the consultation package is delegated to the Chairman, Vice-Chairman and Divisional Member;
- A report is brought to the formal Local Committee for Reigate and Banstead on 3 December 2012 to support a bid for the Growing Places Fund by Reigate and Banstead Borough Council.

12.2 Assuming the bid is successful in obtaining funding for the implementation of the modified balanced network proposals then a suggested forward programme would be:

- Obtain funding and any further Committee approvals by – Feb/March 2013;
- Commence detailed design – April 2013;
- Statutory Undertakers' diversions – Summer 2013;
- Commence construction works – September 2013;
- Complete construction works – July 2014.

12.3 This programme depends on obtaining the funding and assumes the Term Contractor would be used rather than tendering out the work. The suggested forward programme gives the earliest dates for progressing this scheme. However, because of third party involvement delays are likely to occur especially the date for commencing the construction works.

13. CONSULTATIONS

13.1 Public consultations commenced on 9th November 2012 with a staffed exhibition, held at the Belfry shopping centre (9 and 10 November) in Redhill town centre and followed by an un-staffed exhibition to be held on display at the Harlequin Theatre until Friday 23 November.

13.2 These events are to be complemented with a web based survey questionnaire and direct mail consultation of those relevant parties listed on RBBC's policy consultation database. Information will also be made available in relevant helpshops, libraries in the borough and on the web making use of printed and social media channels.

13.3 The public consultation period finishes on 4 January 2013. The results of the consultation will be reported to the Chairman, Vice-Chairman and Divisional Member of the Local Committee in January. Subject to their agreement, a bid would be made to the Growing Places Fund, through RBBC.

13.4 The bus operators in the area have been consulted on the proposals, but at the time of writing this report their responses are still awaited. Informal feedback received from the bus operators has made it clear that there is a need to get further clarity on what measures are included in the Redhill balanced network proposals. The scale and nature of the developments/changes to Redhill town centre being planned will have a widescale impact on passenger transport infrastructure and operations.

13.5 A meeting with bus operators has taken place on Tuesday 13 November so that further consideration can be given to the proposals before Surrey County Council and the bus operators will provide their combined feedback into the project proposals.

13.6 The main comment from the meeting with bus operators on the balanced network was the continued lack of bus priority measures to reduce bus delays and to improve reliability. Whilst they could see benefits for buses they have requested the following improvements be considered for inclusion in the balanced network proposals:

- Buses are allowed to turn right from Princess Way into the bus station;
- Marketfield Road is turned into a bus link between Cromwell Road and Marketfield Way;
- Buses are allowed to turn right from Princess Way into Ladbroke Road;
- Need to retain existing bus stands/stopovers;
- Bus stop be considered for eastbound buses on Redstone Hill near station;

- The existing Community transport accessibility (current drop off point in 'Boots Alley') be taken into account when considering potential developments especially Marketfield Way car park.

13.7 As well as consideration being given to the above the three proposed signalled junctions on the A25 will also delay buses and therefore, bus priority measures in the signals should be provided. The suggested bus improvements have not been considered in the detailed design or modelled to ascertain their impact on the network. Comments on possible route changes and bus stop are still to be submitted.

13.8 Any changes considered worth pursuing to the detailed design following the public consultation period will be undertaken during the next stage of the work.

14. CONCLUSIONS

14.1 Following the completion of the traffic modelling in stage 1 of the Redhill town centre proposals the various concepts have been taken forward to the feasibility (stage 2) design, with modifications where necessary. This work has involved:

- Preparing the layout designs on accurate topographical survey bases;
- Upgrading the designs to reflect upon highways design criteria;
- Assessing the operational effectiveness of the layouts using industry standard software;
- Undertaking an accident investigation and analysis to identify any other road safety issues, and incorporate measures within the designs as appropriate;
- Liaising with statutory undertakers to confirm the potential impacts and costs on their plant and equipment; and
- Carry out Stage 1 Safety Audits on the preferred layouts.

14.2 In addition, the work has involved identifying measures to improve the walking, cycling and public transport as well as preparing conceptual proposals for Station roundabout and the Station Road link between the High Street and Station roundabout.

14.3 The balanced network proposals have been designed to cater for existing traffic flows and the vehicle trips associated with the potential developments in and around Redhill town centre.

14.4 Following a stage 1 road safety audit carried out by Surrey County Council the proposals for the A25 Redstone Hill junction with Cavendish Road have been redesigned. The mini-roundabout junction layout has now been changed to a small roundabout layout. However, because of the configuration of this junction not all the design criteria for a small roundabout have been possible such as reverse curvature. However, the proposals for this junction are considered safer than if a mini-roundabout was proposed.

14.5 RBBC requested that a pedestrian crossing be retained by the Memorial Park access on A23 Princess Way. The proposed pedestrian crossing integrated in the

proposed traffic signals on the A23 by Sainsbury's access would not then be required. Further modelling was carried out to assess the impact of retaining a staggered pedestrian crossing by Memorial Park with either two lanes on the approach to Lombard roundabout and one lane exiting or vice versa. Neither of the proposals were considered acceptable because of concerns regarding the capacity of the network during the PM peak period. Therefore, an option for providing a straight across pedestrian crossing has been developed which allows two lanes on the approach and exit to Lombard roundabout.

14.6 Similarly, further modelling was carried out to ascertain the impact of a straight across pedestrian crossing on A23 Marketfield Way, just south of the Station roundabout to replace the existing staggered pedestrian crossing. Again, the modelling indicated this did not have a significant disbenefit on the operation of the network in this location.

14.7 The modified balanced network proposals are considered fit for purpose. Whilst the highway improvements cater for the future vehicle trips likely to be generated by the potential developments around the town centre there are reductions in journey distances and journey times compared with the Do Minimum option. However, generally the journey times will be reduced significantly on the A23 corridor it is anticipated that there will be an increase in journey times for vehicles using the A25 corridor from the east i.e. Redstone Hill – Station Road. The increased journey times will be caused by the pedestrian crossings on the Station roundabout approaches and the reduction from three lanes to two lanes.

14.8 There are significant improvements for cyclists and pedestrians with widened footways, straight across crossings and the potential public realm treatment of Station roundabout and the Station Road link between the High Street and Station roundabout. The public realm proposals will provide a 'gateway' to the town centre from the rail station and bus station.

14.9 Proposals for changes to the public transport network are still to be considered. This could involve changes to existing bus services, bus stop locations and the provision of bus stands/stopover.

14.10 Existing signing of through traffic movements will be retained. Through movements on the A23 will continue to be signed via Princess Way and Marketfield Way. Through movements on the A25 will be signed via Lombard roundabout.

15. RECOMMENDATIONS

15.1 Although the proposed modified balanced network highway and public realm improvements are estimated at £3.87m (excluding design, administration and supervision costs) they are still considered good value for money. There are considerable benefits to cyclists, pedestrians and public transport users.

15.2 Therefore, it is recommended that the highway and public realm improvements will assist in the development and regeneration of Redhill town centre. The highway improvements will cater for any future growth in vehicle trips generated by potential developments. Not only will general traffic benefit especially along the A23 corridor but there will also be benefits for cyclists and pedestrians with wider footways for shared use and the provision of straight across crossings.

15.3 The public realm proposals for Station roundabout and the Station Road link between the roundabout and High Street will complement the existing pedestrianised areas and provide a 'gateway' into the town centre from the rail and bus stations. It is recommended also that the pedestrianised section of London Road between Queensway and Station Road is upgraded to those in the other arms of the town centre.

16. NEXT STEPS

16.1 On the basis that the recommendations of this report are agreed, the next stage will be to progress the highway and public realm improvements through Detailed Design. This would include:

- Amending General Arrangement design following results of consultation and safety audit;
- Undertake additional modelling;
- Preparing detailed construction designs for the highway and public realm improvements;
- Review existing TRO's and identify necessary amendments;
- Coordinate Statutory Undertaker's plant and equipment diversions;
- Provide a CDM Coordinator to satisfy the Health and Safety Executive;

Quality

It is the policy of Project Centre to supply Services that meet or exceed our clients' expectations of Quality and Service. To this end, the Company's Quality Management System (QMS) has been structured to encompass all aspects of the Company's activities including such areas as Sales, Design and Client Service.

By adopting our QMS on all aspects of the Company, Project Centre aims to achieve the following objectives:

- Ensure a clear understanding of customer requirements;
- Ensure projects are completed to programme and within budget;
- Improve productivity by having consistent procedures;
- Increase flexibility of staff and systems through the adoption of a common approach to staff appraisal and training;
- Continually improve the standard of service we provide internally and externally;
- Achieve continuous and appropriate improvement in all aspects of the company;

Our Quality Management Manual is supported by detailed operational documentation. These relate to codes of practice, technical specifications, work instructions, Key Performance Indicators, and other relevant documentation to form a working set of documents governing the required work practices throughout the Company.

All employees are trained to understand and discharge their individual responsibilities to ensure the effective operation of the Quality Management System.

APPENDIX A – GENERAL ARRANGEMENT

APPENDIX B - PUBLIC TRANSPORT

APPENDIX C - CYCLING

APPENDIX D – WALKING

APPENDIX E – PUBLIC REALM

APPENDIX F – COLLISIONS

APPENDIX G – SCHEME COSTS

Accreditations

Memberships