

DfT Strategic Studies Budget Dover

York Street Bus Interchange

July 2010

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1. Introduction

Atkins Transport Planning and Management (Atkins) has been commissioned by the Department for Transport (DfT) Housing Growth Team to undertake a study to provide transport planning support to selected local planning authorities who are seeking to deliver significant quantities of new housing in areas within their jurisdiction.

Each of the areas has been granted growth point status and face numerous and varied challenges to deliver as sustainable a development as possible. Dover District Council (DDC) was successfully selected to receive funding and assistance, and a project inception meeting was held in December 2009, which was also attended by representatives from Kent County Council (KCC). At the inception meeting DDC specifically requested assistance from Atkins with regard to delivery and integration of a Bus Rapid Transit service.

Five tasks were highlighted through discussion with DDC and KCC. These were to consider:

- The corridor and form of the BRT connection across open land between White Cliffs Business Park and Dover Road;
- The most appropriate location for a Park and Ride site at Whitfield, also to be served by the BRT;
- A strategy for incorporating and delivering the BRT service within the proposed development at Whitfield;
- The potential location for a new bus hub on York Street to serve the BRT, but also to consider relocation of the existing interchange on Pencester Road; and
- A strategic assessment of the route corridor for a Park and Ride service (and potentially BRT) from a potential site at Farthingloe.

This report provides a review of the work Atkins has undertaken for the fourth task considering the potential for delivering a BRT hub on York Road, as well as the relocation of the existing bus interchange on Pencester Road. The structure of this report is as follows:

- Section 2 states the overall aim of the document;
- Section 3 looks at the background planning policy and development proposals for the town centre;
- Section 4 looks at the existing interchange on Pencester Road;
- Section 5 considers proposals for a new interchange; and
- Section 6 discusses how the interchange may operate.

2. Project Aim

The overall aim of this report is to provide Dover District Council and Kent County Council with indicative proposals for relocating the bus interchange on Pencester Road to York Street.

3. Background

3.1 Dover District Council Core Strategy (Feb 2010)

The aim of the Strategy is to transform Dover into the leading town within the region and regenerate the District so that economically and socially it equals or out-performs the region. In Dover itself, the strategy will focus on the town centre with urban regeneration supported by planned urban expansion and a step-change in public transport provision. Improvements to the appearance and offer within the town centre along with transport improvements are required to support the uplift in housing, population growth and employment growth.

Within Dover there are four strategic development sites identified within the Core Strategy:

- Dover Waterfront (and adjacent St James's site);
- Mid Town;
- Connaught Barracks; and
- Whitfield.

Of these four sites the Waterfront and Mid Town sites will have the greatest impact on the form and function of the town centre, and are described in more detail below. The Connaught Barracks and Whitfield sites are predominantly residential so their influence on the town centre will be to provide additional customers and employees for the town. The Core Strategy recognises the interconnectivity between an improved town centre and attracting new residents and employers. An improved town centre and transport system is seen as vital to ensure that new, and existing, residents come into Dover for retail and leisure purposes, rather than travelling to competing centres such as Canterbury.

3.1.1 Dover Waterfront

This is a key location in Dover and straddles the A20 immediately to the south of the town centre. To the south of the A20 it includes: Wellington Dock, the De Bradelei Wharf shopping centre, seafront including existing buildings which are listed and within a conservation area, car park and public garden, promenade and beach. On the north side it includes vacant sites and a mixture of retail, office and residential buildings leading up to the east side of Market Square and abutting the proposed St. James's redevelopment. It has a total area of 12.2 hectares.

This is recognised as a unique opportunity to create a development which can be a major attraction for the town and provide upper market sector housing and hotel / conference facilities which are currently lacking in the town. The development proposals are mixed use:

- Residential - minimum of 400 new units with potential for up to 800;
- Hotel with conference and other supporting facilities;
- Restaurants and Bars - up to 5,000 m²;
- Offices;
- Retail - up to 20,000 m² designed to strengthen the existing town centre, not detract from it;
- Commercial Leisure - up to 15,000 m²;
- Tourism and Cultural uses, which with commercial uses creates a visitor destination; and
- A landmark building.

The site will take advantage of the seafront setting and strengthen the link between the current town centre and the seafront. Pedestrian and cycle access is possible via an underpass but this will not be capable of providing the seamless link that is needed. An alternative over-ground solution will be required and a 'land-bridge' has been proposed which will partially address the severance caused by the A20. Improvements to the public realm will be required to improve the intrinsic interest of the site and to increase connectivity with other parts of the town.

Proposals will need to develop an access strategy that maximises the use of public transport, walking and cycling, and to reduce private car usage. Parking for the residual car use should be provided in a way that encourages visitors to use the town centre and other visitor destinations.

The Waterfront site is adjacent to the Port of Dover which also has expansion plans.

3.1.2 Mid Town

This is the most northerly block of Dover town centre located between the High Street, Maison Dieu Road, Park Street and Pencester Road, which houses the town's existing bus interchange. It has a total area of 5.9 hectares and includes South Kent College, shops fronting onto Biggin Street and Pencester Road, the Town Hall (a scheduled monument), Dover Town Council Offices, Visitor Centre, Police Station, Citizens Advice Bureau, two Health Centres, BT Telephone Exchange, EDF Depot, Bowling Green and car parks. There are also a number of residential properties some of which are listed. The River Dour flows through the centre of this area but development has historically tended to ignore the river, mainly due to flooding.

Architectural quality is low and many buildings are vacant, the car parks are an inefficient use of space so close to the town centre and the college is unsuitable for modern teaching purposes. The PCT have identified part of the site as a potential site for a new facility to replace Buckland Hospital. There is great potential to re-shape this area and revitalise it, making positive use of the river through enlarged and improved public areas along the river frontage or a new public square. Walking and cycling routes along the river would be incorporated into the design.

The site has been earmarked for mixed development with both private and public sector uses:

- Health centre: 7,000 square metres (first phase)
- Education: 5,000 square metres (first phase)
- Retail (A1, A3 and A4): 15,000 square metres (second stage)
- Residential: 100 units with parking (second stage)

It is envisaged that the first stage of the development will create the momentum and developer interest for the second stage. Pedestrian connections through to Biggin Street and onto the station should be improved and as part of the regeneration of the site it is possible to provide a new walking and cycle link along the River Dour, connecting to Pencester Gardens.

3.2 Town Centre Regeneration

3.2.1 St James's Development

The St James's Site to the north of the A20 at present comprises a vacant multi-storey car park, Burlington House office block, Russell Street car park and adjoining premises. The proposals which have gained approval are for an anchor superstore, retail units, restaurants, a 100 bed hotel, 53 affordable homes and a 600 space car park. The redevelopment is a key priority for the local authority and the regeneration organisation Dover Pride. Initially the application was for an Asda superstore; however a press release has been issued stating that Asda have withdrawn from the scheme. The local authority and developer are still committed to the scheme.

3.2.2 The Landbridge and Castle Cable Car

Dover Pride has aspirations to create new pedestrian connections between the existing town centre, the Castle, De Bradelei Wharf and the seafront, linking into the identified Dover Waterfront development site. A land bridge intended to link the new seafront developments and the town centre would replace the existing subway. The cable car would provide a direct link from the eastern end of the seafront to the castle, creating better pedestrian connections to the castle to improve the strength of the key tourist attraction within the town.

3.2.3 Public Realm Strategy

Dover Pride, working with other partners, has developed a comprehensive Public Realm Strategy for Dover (Rumney Design Associates, 2006). The strategy, building on the previous Dover Masterplan Report the Public Realm Strategy identifies nine priority projects, or areas, where improvements are required. These are:

- Western Heights;
- River Dour;
- Townwall Street;
- Promenade;
- Station Approach;
- York Street;
- Castle Square;
- Pencester Gardens; and
- Market Square.

Clearly for the scope of this report some of these areas are more relevant than others, particularly York Street and Pencester Gardens.

3.2.3.1 York Street

The strategy highlights York Street as a through-route with little or no connection to the town centre. Improvements to the streetscape including removal of guardrails and obstructions, improved pedestrian crossings, tree planting, traffic calming, high quality materials, with clearer access routes to the town centre and new frontage development could provide significant improvement. Better connection and better visual links to the waterfront are noted, as is the provision of priority to pedestrians rather than cars.

3.2.3.2 Pencester Gardens

Pencester Gardens is the primary public green space in the town and should be enhanced so it can be better used, potentially for public events on a more regular basis. The River Dour runs through the park and this is the only point along its course where it is fully accessible. It is noted that the quality of the buildings surrounding the park are poor.

3.2.3.3 Public Realm Materials

York Street is classified by the strategy as being within the retail / civic core. To unify the appearance of this mixed character area, the strategy proposes the use of the same paving materials, typically larger mid-grey granite on high profile streets with concrete used on more minor streets. Focal points and places will use feature paving.

Street tree planting using semi-mature trees is proposed for York Street, with specimen tree planting on Pencester Road. Many of the routes within the town centre are proposed to have some form of tree planting.

3.2.4 York Street Site Supplementary Planning Guidance (2002)

Though published in 2002 this SPG remains current planning policy. The York Street site is bounded by Bench Street, Townwall Street, York Street and Queen Street and covers 0.32ha. The Council sees the redevelopment of the site as an opportunity to create a gateway to Dover, improving the appearance, appeal and vitality of the town. The planning objectives which the Council are seeking to achieve are:

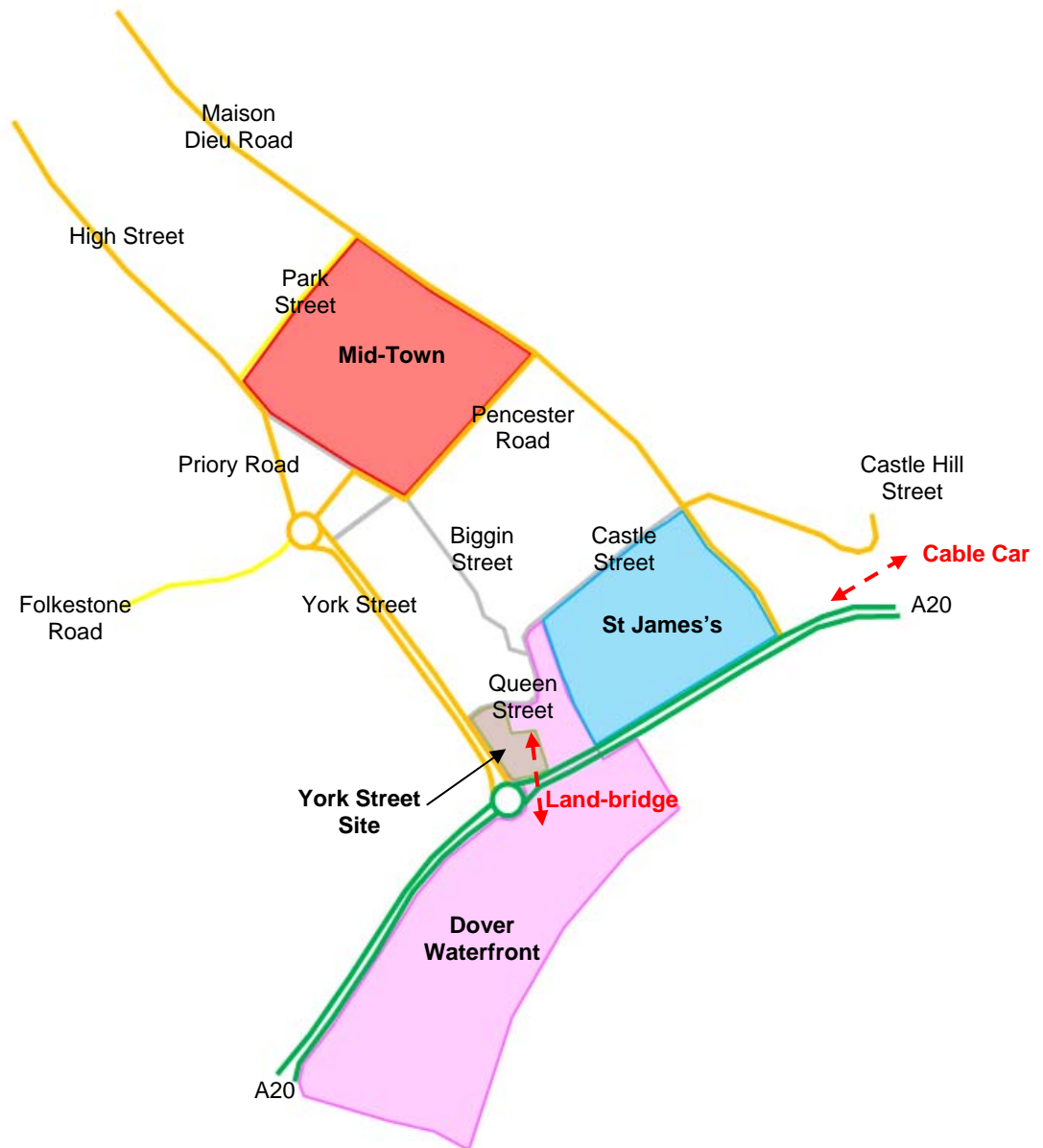
- Regeneration of a 'brownfield' site bringing land back into effective use;
- A mixed use scheme which will reinforce the town centre and contribute to its vitality;
- Environmental enhancement through high quality building and landscape design;
- Townscape improvements which will enhance the entrance to the town, linkages between the core retail area, seafront and neighbouring opportunities.

Access to the site would be from York Street via Chapel Lane. With the designation of the Dover Waterfront strategic site in the Core Strategy (2010) there appears to be an overlap between the York Street SPG site and the waterfront site. However, for the purpose of this study it is simply noted that the area fronting York Street, to the south of Queen Street is earmarked for redevelopment.

3.3 Summary

Significant amounts of work have already been undertaken with regards to the regeneration of Dover. There are many different schemes and development proposals for many sites across the town, all of which will have a combined effect if all were delivered. The location of the development sites are shown on Figure 3.1.

Figure 3.1 – Proposed Development Sites



The key development sites are the St James's site, York Street site, Dover Waterfront and Mid Town. The first of the four sites has planning permission, the remaining three are aspirational, but the local authority is committed to deliver them as part of their commitments within the Core Strategy. The York Street site, Dover Waterfront and St James's site are all to the south of the existing town centre, as shown on Figure 3.1. This could lead to a shift in the focus of the retail core to the south. With the bus interchange on York Street public transport could more effectively serve the existing town centre, and the proposed new development sites. Pencester Road could be redesigned to improve the connection between the retail areas and Pencester Gardens and link into new public spaces proposed as part of the mid-town site. From Pencester Road there are good views towards the castle which can be maximised.

A number of highway proposals which would affect the routing of buses through the town centre have also been proposed. Relocation of the current bus interchange to York Street have not been considered within any of the documents reviewed, but have been considered previously with options developed by Peter Brett Associates.

4. Existing Interchange – Pencester Road

At present Pencester Road is the main bus interchange for Dover, with additional stops on Priory Road. Figure 4.1 shows the view towards the bus interchange along Pencester Road.

Figure 4.1 – Pencester Road



Vehicle access to Pencester Road is only possible from Maison Dieu Road which forms the southbound one-way system. Most local bus services are operated by midi-sized buses due to the gradients and narrow street layouts in parts of the town. The more regional services are operated by single deck vehicles. Low floor buses are standard on most routes.

Pencester Road is a one-way street used by buses as well as by general traffic. On-street parking is available on the northern side of the street adjacent to commercial and retail units with some parking on the southern side close to the junction with Biggin Street. To the south of Pencester Road is Pencester Gardens. The bus stops are located on the southern side of the street adjacent to the Gardens. There is a continuous bus cage marked on street, approximately 100m in length with four shelters. There is a small office operated by Stagecoach.

Much of the town is covered by at least one service and in many cases routes operate with a good frequency. However, cross town travel by bus often requires interchange. Consultation by WSP with Stagecoach during preparation of the *Dover Transport Strategy* (WSP, 2008) indicated the operator was generally happy with the location of the bus interchange on Pencester Road but believes that the one-way system increases journey times and bus routes, restricts the scope for increasing the coverage and frequency of bus services. The route between Dover Priory station and Pencester Road is noted as being particularly convoluted, and that services between these two destinations need improvement.

Generally the bus interchange is suitable however the Transport Strategy (WSP, 2008) suggests two improvements are required:

- Improved information, security and passenger facilities; and
- More, better bus shelters.

Chapter 10 of the Strategy report considers public transport improvements to overcome the effect of the one-way system including:

- Two-way operation of Pencester Road for buses, taxis and cycles only;

- A northbound contra-flow bus lane on Maison Dieu Road between Pencester Road and Park Street; and
- Southbound operation of buses along Canon Street, Biggin Street and Market Street.

These alterations would not necessitate significant changes to the current routes, but would offer opportunities for new routes to accommodate areas of demand and facilitate new links to key destinations. Two-way operation of Pencester Road would allow a direct service between Dover Priory and Pencester Road, which could then travel onto the Port. Southbound routes along Biggin Street, Canon Street and Market Street would improve penetration into the main retail area allowing a route which is currently prohibited by the current road layout. However, keeping the bus interchange on Pencester Road will still cause a conflict between pedestrians and buses at the junction of Biggin Street and Pencester Road.

5. Proposed Interchange - York Street

York Street is a dual carriageway with footways on both sides and a central reservation. Though a dual carriageway, York Street carries far less vehicle traffic than it is designed for. Figure 5.1 shows York Street looking north from the junction of the A20 towards the Queen Street junction.

Figure 5.1 – York Street



At the northern end, York Street meets Folkestone Road, Priory Road and Priory Street at a large roundabout. The York Street approach to the roundabout is two lanes, with the left lane marked left to Folkestone Road and the right lane marked ahead to Priory Road. Priory Street is one-way towards the roundabout from Biggin Street and Pencester Road. Pedestrian facilities at the roundabout are poor, with a signalised crossing on Priory Street to the north of the roundabout and one to the south on York Street. These crossings are not on the direct pedestrian desire line causing a deviation from the most direct route, enforced by guard rails.

To the south York Road meets the A20 at a three arm roundabout. Again the York Street approach is two lanes, and though unmarked it is assumed that the left lane would be for left turning traffic and the right lane for right turning traffic. Pedestrian facilities at this junction are very poor with no facilities at all.

There are a number of junctions along the street:

- Worthington Street – left in only from the southbound carriageway;
- New Street – left in, left out priority junction from the southbound carriageway;
- Durham Hill – left in, left out priority junction from the northbound carriageway;
- Queen Street – signalised junction with left and right exit from Queen Street which is one-way towards York Street.

There is guard railing along the length of York Street, which makes it quite a hostile environment for pedestrians. There is a staggered, signalised pedestrian crossing at the junction with Queen Street and a second staggered, signal crossing just to the south of Worthington Street. Guard railing prevents crossing at any other points along York Street. The street is a bus route with a bus stop on the northbound carriageway, but with no stops along the southbound carriageway.

The *Dover Transport Strategy Infrastructure Design Report* (WSP, 2007) highlighted congestion issues at the York Street / Folkestone Road especially during the AM period, though the poor pedestrian linkages to the town and to Dover Priory Station are noted as key drivers for improvements to the layout, rather than congestion. The report recommended that the roundabout be reduced in size, signalised and with the introduction of pedestrian crossings on all arms and across the central island. A second option of a signalised crossroads was suggested though discounted as benefits were not as great as a signalised roundabout.

5.1.1 Previous Schemes

Peter Brett Associates (PBA) has previously prepared six options for a bus interchange on York Street to replace the current interchange on Pencester Road. Drawings of each of the six are provided in an Appendix to this report.

5.2 Interchange Proposals

Dover District Council has requested Atkins to look at the potential to move the current interchange from Pencester Road to York Street. There are some advantages to doing this, namely:

- Major development sites at Dover Waterfront and St James's would be better served by an interchange to the south of the town;
- Space is available on York Street for a modern, state of the art interchange;
- Removal of buses from Biggin Street therefore providing a fully pedestrianised town centre;
- The proposed BRT is expected to route via York Street, therefore allowing better interchange with other routes;
- With the removal of traffic from Pencester Road, substantial environmental enhancements can be made to Pencester Gardens; and
- Easier access to Dover Priory Station.

Drawing no. 5085627/TP/PR&D/014 shows an indicative layout for the bus interchange on York Street. The carriageway has been narrowed to a single lane which allows for considerable footway widening in some areas. Northbound and southbound bus stops are provided with ample space to the back of the footway for shelters and passing space.

Access to Queens Gardens is maintained, primarily for servicing access with Pencester Road closed to all vehicles at certain times of the day. This allows Priory Street, Pencester Road and the short section of Biggin Street to be pedestrianised, thus maximising the public realm environment within the retail core of the town.

Castle Street becomes the main bus route through the town centre, linking into new development sites and onto York Street. At the junction of Queen Street and York Street the signalised junction is retained with pedestrian crossings on all arms. A pedestrian crossing is also provided in the centre of the street and at the junction with Folkestone Road. These crossing locations should cater better for pedestrian desire lines than is currently the case.

The junction of York Street and Folkestone Road has been redesigned as a signalised crossroads. As can be seen on the drawing this frees up a considerable amount of space for public use which could be used as a gateway feature to the town for train passengers and people travelling from the west. Pedestrian crossings are provided on all arms of the junction. Both the WSP Transport Strategy and Rumney Associates Public Realm Strategy suggest removal of the roundabout. At present the right turn from Priory Station Approach Road onto Folkestone Road is banned. Any vehicles exiting the station to travel westbound along Folkestone Road should use the roundabout to U-turn. If the scheme to relocate the interchange is pursued then surveys will be

required to determine traffic volumes through the junction and the number of U-turners. If U-turn movements are low it may be possible to instate a right turn from the station or force vehicles to the A20 roundabout to U-turn. If they are high this may affect plans to remove the roundabout. As the scheme is progressed different layout options will need to be considered and either operationally tested individually using software such as Arcady and Picady, or modelled using the DDC VISSIM model.

The proposed BRT on route from Folkestone Road to Castle Hill Road will travel south on York Street and navigate through the St James's area towards Castle Street. A simple study has been undertaken to provide an indicative route for the BRT which is shown on Drawing no 5085627/TP/PR&D/014. This will require Queen Street to operate as two-way along a short length with widening and strengthening of an existing footbridge to access St James's Street and then through Russell Street car park. This route is indicative only and needs to be tied in to the existing site layout plans and agreed with the developer.

It should be noted that at this stage layouts are indicative and based on OS map information and on-site observations. Topographic and utility surveys would be required at the detailed design stage. However, the layout does show that it is feasible to provide a bus interchange on York Street.

5.3 Interchange Facilities

One of the advantages of a new interchange on York Street is that there is ample space to provide a new state of the art facility, which operates efficiently and provides a focal point for public transport in the town. High quality interchange facilities can assist with regeneration of town centres becoming local landmarks and should include as a minimum the following:

- High quality shelters designed to be modern and iconic;
- Ample, comfortable seating;
- Good lighting and natural surveillance to provide a sense of safety and security;
- Real time passenger information; and
- Timetables, maps and local information including tourist information.

Clear signs must be provided between the interchange, the town centre, Dover Priory Station, and seafront with crossings provided along pedestrian desire lines. Buses should drop off and pick up in the same location to ease passenger legibility and understanding. High quality materials should be used, and these will need to tie in to the public realm strategy. With the creation of a new interchange it is possible to provide additional benefits, such as a coach drop off and pick up facility, taxi ranks, cycle parking and additional public open space.

Sustainability should be a key consideration in the decisions about structures and materials. Opportunities exist for generating sustainable power for lighting and information signs through placement of solar panels on roofs for example.

5.4 BRT Routing

Dover District Council is committed to delivering a new Bus Rapid Transit service between Whitfield, Dover town centre and the potential Farthingloe Park and Ride site. It is intended that the BRT will enter and exit the town via Castle Hill Road to connect with the Castle and Connaught Barracks site.

5.4.1 Interim Routing

The BRT is likely to be operational from before the construction of the new link from White Cliffs Business Park to Dover Road, meaning that when first operating the BRT will use Archers Court Road to the Whitfield Roundabout, then route via existing roads to the town centre. The existing service 61 that operates between Whitfield and Dover uses Melbourne Avenue. Roads along this route are narrow, traffic calmed in places and with steep gradients in places. The service is operated by a smaller midi-sized bus as a result of these constraints. It is unlikely a full sized bus, as would be used for the BRT could navigate this route. The more appropriate route would be via Whitfield Hill, London Road and Crabble Hill, then into the one-way system. In the interim, with the service operating via Whitfield Hill it would seem sensible for the BRT to use Pencester Road as this is the most direct route from east to west through the town centre. When the bus station is relocated, or if a BRT stop on York Street is preferable from the outset then the route could use Castle Street.

The return route from the Dover Priory Station, through the town centre is more difficult. The one-way system means that a route which calls at either York Street or Pencester Road is a long and convoluted route, thus increasing journey times significantly. To maintain the express nature of the service it is considered that the service should route from the station, onto the High Street and continue northbound through the one-way system to Crabble Hill. This route does however limit the penetration of the return service into the town centre.

At this stage the BRT will form an express service between Whitfield, the town centre and Dover Priory Station. It would not be possible to serve the Castle or the port without significant deviation from the most direct route, which would increase journey times considerably.

5.4.2 Future Routing

As the development at Whitfield progresses the link between White Cliffs Business Park and Dover Road will be completed and the route will enter the town centre via Castle Hill Road. With buses using Castle Hill Road the most efficient east to west route through the town centre becomes the route via Castle Street / Queen Street and on to York Street. This is the most direct route through the town centre and can be implemented quickly and easily. There is an existing bus stop on the northbound York Street which could be utilised. It is the aspiration of the Council that the bus interchange is relocated from Pencester Road to York Street, therefore the BRT can connect to existing local bus services.

As with the interim route, it is the return route which is more problematic. There is the potential to create a route through the St James's development site, as shown on Drawing XXXXXX. This would be the most direct route and would maintain inbound and outbound services on York Street meaning the service is simpler for passengers to understand, plus it best serves the new development sites at St James's and Dover Waterfront. It does however, potentially affect the proposed St James's development as it takes developable land and as the site layout is already approved through a planning application.

An alternative would be to route the BRT via Park Street, which would be far easier to achieve as this would use existing infrastructure. This route is slightly longer and new bus priority measures would be required to reduce delay to the service caused by general traffic congestion.

The most appropriate route for the BRT will change over time as new developments come forward and as Dover changes. How and when the route changes will depend on how developments come forward in relation to one another, as summarised in Figure 5.2 below.

Figure 5.2 – Summary of how route may develop over time

<p>Start of Whitfield Development</p>	<ul style="list-style-type: none"> •BRT becomes operational •Initially uses existing road network via Whitfield Hill, London Road and Crabble Hill •Stops on Pencester Road and High Street
<p>Completion of link from White Cliffs Business Park to Dover Road</p>	<ul style="list-style-type: none"> •Route moves to using new link and entering town via Castle Hill Road •East to west route through town moves to Castle Street with stop on York Street •West to east route via Park Street •service starts calling at the Castle
<p>Connaught Barracks site completed</p>	<ul style="list-style-type: none"> •BRT must be using Dover Road before Connaught Barracks site occupied to maximise sustainable travel from this site
<p>Relocation of bus interchange to York Street</p>	<ul style="list-style-type: none"> •BRT ideally needs to stop on York Street on both the inbound and outbound journey •New west to east route required.
<p>St James's development completed</p>	<ul style="list-style-type: none"> •potential for BRT to route through this site •route changes from Park Street to a route through the site and onto Castle Hill Road

5.5 Bus Routes

The current bus routes are affected, in some cases quite severely, by the one way system which operates in the town centre, as shown by Figure 5.3.

Figure 5.3 - One-Way System



Moving the bus interchange from Pencester Road to York Street will require changes to the current bus routes. Without changes to the one-way system buses from the north and east would

still need to use an east-west connection between Maison Dieu Road and York Street. This would either continue to be Pencester Road, or could be Castle Street / Queen Street or the A20 Townwall Street.

The A20 Townwall Street is the main route to and from the Port and as such carries a considerable volume of traffic, particularly heavy vehicle traffic. Buses could experience delay along this route, and the A20 would represent the greatest increase in route length.

Pencester Road joins York Street at the Folkestone Road roundabout, so in many cases routes would have to be diverted south at the roundabout onto York Street, then make a U-turn to resume a northbound route. This would increase route lengths by approximately 500m. Priority signals at the U-turn facility and on the approach to Folkestone Road roundabout would minimise delays. However, as the buses are still using Pencester Road there would still be delay caused by the pedestrian crossing on Biggin Street and buses would still conflict with pedestrians within the main retail core. Providing a new interchange on York Street and still routing buses via Pencester Road seems counter-productive.

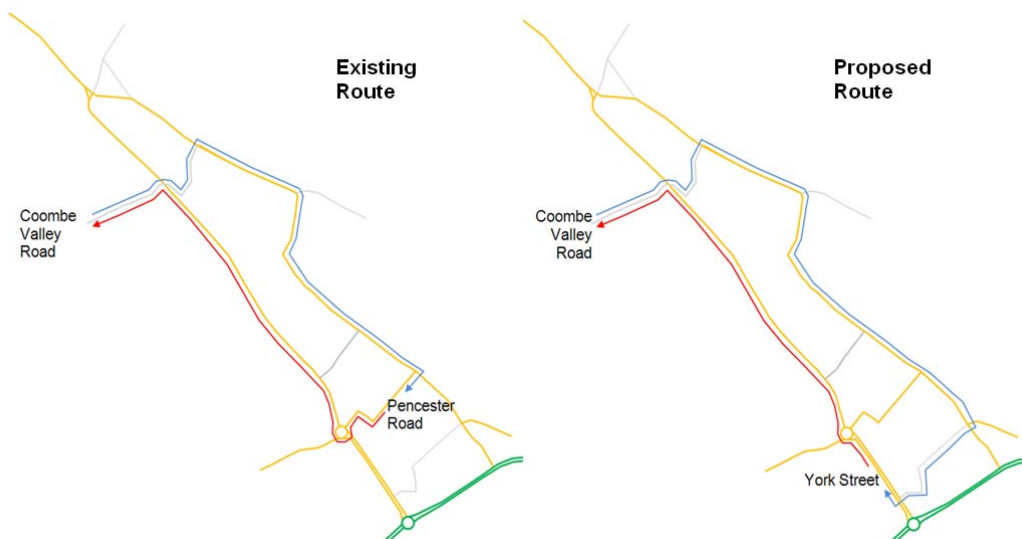
A route via Castle Street and Queen Street would slightly increase the length of the bus routes, however would better serve the proposed St James's Development site and Dover Waterfront. Access to the existing retail areas is possible via the Market Place, therefore easy access to the town centre can be maintained. In addition public transport access to the museum, Discovery Centre and library would be improved. Greater emphasis could be placed on the Market Square and Pencester Road could be closed to all traffic, thus making Biggin Street fully pedestrianised. It is considered that this option is the most appropriate. The impact on routing for each of the current routes is described below.

5.5.1 Route 60

Service 60, one of the 'Dover Heart' routes currently operates between the town centre, St Radigund's, River, Kearnsey and White Cliffs Tesco and B&Q stores. The service operates 3 buses per hour during departing Pencester Road at 00, 20 and 40 minutes past the hour. Buses arrive back at Pencester Road on their inward journey at 25, 45 and 05 minutes past the hour.

On the outbound route (red route, Figure 5.5 Existing Route) the bus departs Pencester Road and travels northbound on the High Street and London Road, then onto Coombe Valley Road. On the return journey (blue route, Figure 5.5 Existing Route) when the bus reaches the junction of Coombe Valley Road and London Road, the bus travels a short distance in a southbound direction before turning onto Cherry Tree Avenue and joining the one way system.

Figure 5.4 – Route 60 Inbound and Outbound Bus Routes



The right hand map shows how the Number 60 service would re-route as a result of the use of Castle Street instead of Pencester Road. Buses would pick up and drop off on the northbound York Street. The route is not significantly affected by the proposals and can easily be re-routed to an interchange on York Street; however there would be a small increase in route length.

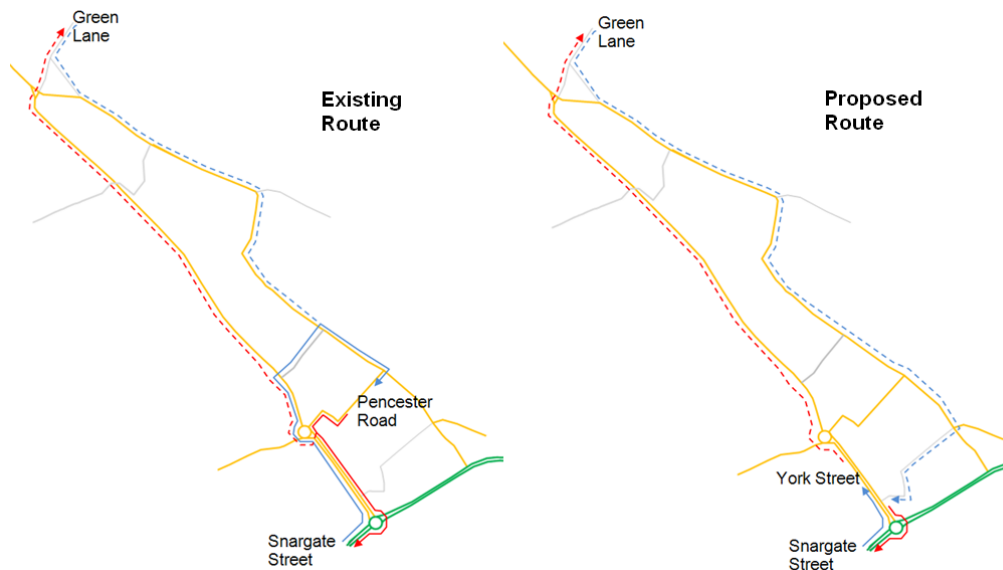
5.5.2 Route 61

Service 61, also a 'Dover Heart' service operates between Aycliffe and Whitfield via the town centre. The service operates 4 buses per hour with departures to Aycliffe at 11, 26, 41 and 56 past the hour. Buses departing Pencester Road to travel to Whitfield leave at 18, 33, 48 and 03 minutes past each hour.

On the route from Aycliffe to Pencester Road (solid blue route, Figure 6.3 Existing Route) the bus travels north on York Street from the eastbound A20, onto High Street, right into Ladywell, then south onto Maison Dieu Road before turning into Pencester Road. The route from Pencester Road to Aycliffe is via Priory Road, then southbound on York Street and onto the westbound A20 (solid red route, Figure 6.3 Existing Route).

On the route from Pencester Road to Whitfield (dotted red route, Figure 5.6 Proposed Route) the bus travels to the York Street / Folkestone Road / Priory Road roundabout, turns right to travel the length of the one-way system and onto Green Lane. On the return journey (dotted blue route, Figure 5.6 Proposed Route) the bus enters the one-way system at Brookfield Avenue travelling south to Pencester Road.

Figure 5.5 – Route 61 Inbound and Outbound Bus Routes



With the relocation of the interchange to York Street the route between Aycliffe and Whitfield is far more direct as there is no need to circulate the one-way system. Buses would travel from Aycliffe to York Street, passengers would alight and the bus would continue to the Folkestone Road Roundabout and north through the one-way system. However, with the route from Whitfield to Aycliffe moved from Pencester Road to Castle Street buses will turn onto York Street to the south of the proposed interchange. Therefore an additional bus stop would be required on Queen Street.

The route is streamlined as the service no longer needs to circulate the one-way system, however the penetration of the service into the northern parts of the town are reduced as the service no longer routes along Ladywell.

5.5.3 Route 62

Route 62, the third of the ‘Dover Heart’ services operates between the town centre, Friars Way and The Linces. The service operates three buses per hour arriving at Pencester Road at 15, 35 and 55 minutes past each hour and departing at 49, 09 and 29 minutes past each hour.

The service travels through the one-way system via the same route as Service 61 between Dover town centre and Whitfield, as shown on Figure 6.3. With the relocation of the interchange there would be minimal disruption to the route.

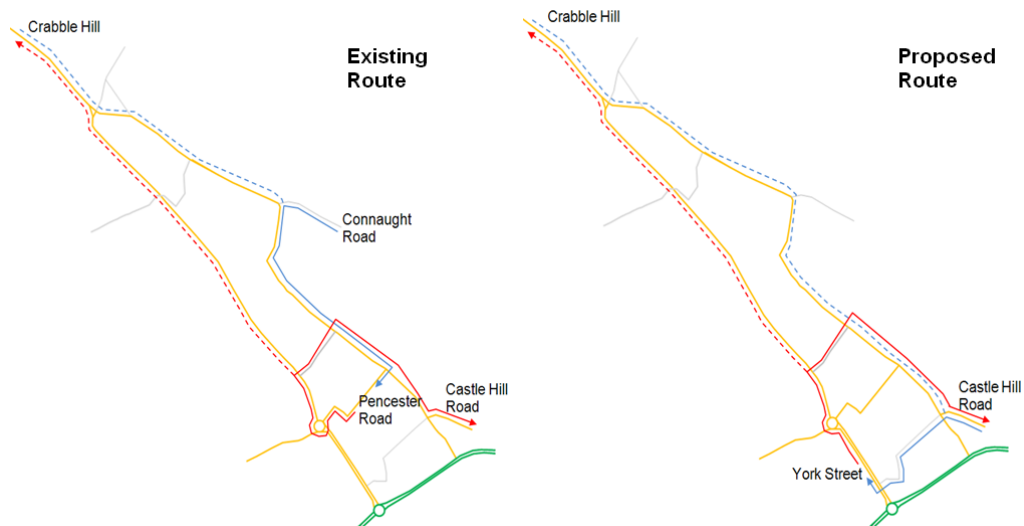
5.5.4 Route 15 and 15A

These routes, named the ‘Diamond’ operate between Deal, Dover and Canterbury with the 15A extending to Sandown. The service operates two buses per hour, with departures to Deal at 34 and 04 past each hour, and departures to Canterbury at 10 and 40 past each hour. In both cases there is a short lay-over of buses on Pencester Road.

On the outbound route from Dover to Deal (solid red route, Figure 5.7 Existing Route) the service departs Pencester Road, travels via Priory Road to the York Street / Folkestone Road / High Street roundabout. The bus then travels north on High Street, turning into Ladywell then turns south onto Maison Dieu Road before turning into Castle Hill Road. On the return journey (solid blue route, Figure 5.7 Existing Route) from Deal the bus turns onto Connaught Road entering the one-way system to travel south to Pencester Road.

On the route from Dover to Canterbury (dotted red route, Figure 5.7 Existing Route) the bus leaves Pencester Road and travels north through the one-way system to Crabble Hill. For the return journey the bus travels south down Crabble Hill and through the one-way system to Pencester Road (dotted blue route, Figure 5.7 Existing Route).

Figure 5.6 – Route 15 and 15A Inbound and Outbound Bus Routes



Currently the route from Deal into Dover diverts via Connaught Road to join the one-way system. With the use of Castle Street instead of Pencester Road the service is able to continue on Castle Hill Road then travel into Castle Street. The onward journey to Canterbury would depart York Street and continue north as at present through the one-way system.

For the route between Canterbury and Dover there would be little change, simply the use of Castle Street instead of Pencester Road. Passengers would alight on York Street, before the bus continues north rejoining its current route via Ladywell to Castle Hill Road.

5.5.5 Route 63

This is a circular route starting and finishing in the town centre, and travelling via Tower Hamlets and Folkestone Road. This service calls at Dover Priory station. There are three buses per hour on this route, departing Pencester Road at 30, 50 and 10 minutes past each hour.

On the outbound route (red route, Figure 5.8 Existing Route) the bus leaves Pencester Road, to travel north along High Street before turning left onto Tower Hamlets Road. The bus travels through the residential areas of Tower Hamlets and Elms Vale before joining Folkestone Road via Elms Vale Road. On the return route (blue route, Figure 5.8 Existing Route) the bus travels along Folkestone Road to the York Road roundabout, turns left onto High Street then via Ladywell and Maison Dieu Road to Pencester Road.

Figure 5.7 – Route 63 Inbound and Outbound Bus Routes



This route is a local service between the town centre and Tower Hamlets. At present the service departs Pencester Road and travels north through the one-way system to Tower Hamlets Road. This would remain relatively unchanged under the proposals with the route starting on York Street rather than Pencester Road. However, on the route back into the town the service operates along Folkestone Road. From the Folkestone Road roundabout there are two routing options:

- Right turn onto York Street, calling at the interchange before completing a U-turn and resuming the route northbound via York Street and through the one-way system to Tower Hamlets Road; or
- Keep the same inbound route turning left onto Priory Street, then via Ladywell, Maison Dieu Road, Castle Street, Queen Street and on to the northbound York Street.

The first option, as shown on Figure 6.6 Proposed Route and shown by the solid blue route, is the most direct and this would significantly shorten the length of the route. However, by constraining the route to York Street alone reduces the penetration of the service into the eastern parts of the town centre. This is addressed by the second option which maintains the route through the one-way system, as shown by the dashed blue route on Figure 5.8 Proposed Route.

Consideration has been given to providing a U-turn facility on York Street at the junction of Queen Street. The radius of the turn facility would have to be quite large to maintain passenger comfort levels. The proximity of the Discovery Centre to the northern side of the junction means that the U-turn would cut into the development site to the south (York Street SPG site, and also included in Dover Waterfront Site). Whilst this land is currently vacant using the northern section for highway

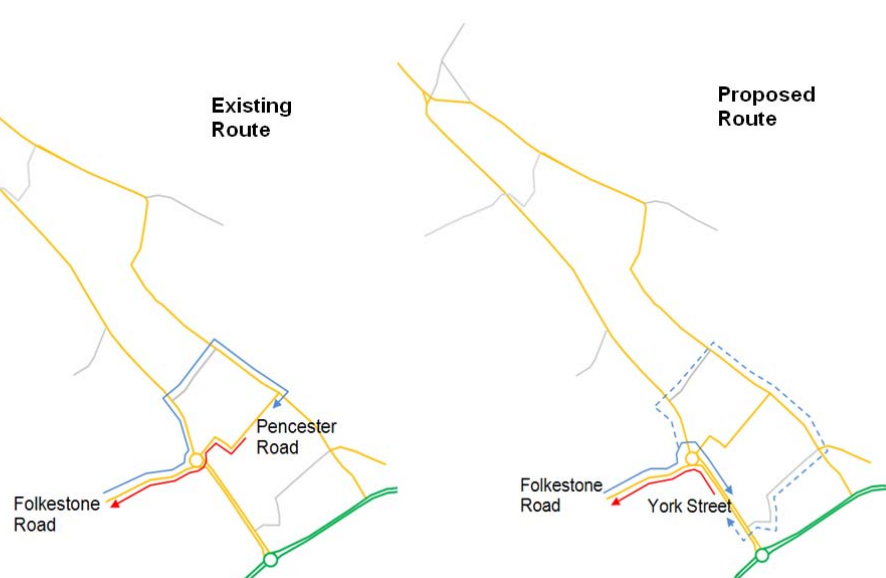
works will undermine the value of the land and potentially affect development opportunities. In addition the facility would be used by a minority of bus routes, therefore may not be financially feasible to implement.

5.5.6 Route 101 and 102

These services, named 'The Wave' operate between Dover and Lydd. During the day there are three services per hour departing from Pencester Road at 35, 55 and 15 minutes past the hour. Buses from Lydd arrive at Pencester Road at 30, 50 and 10 minutes past the hour allowing a 5 minute lay-over before departure.

Buses travel to and from Dover via Folkestone Road. For inbound buses (blue route, Figure 5.9 Existing Route) the route follows Folkestone Road as far as the York Street roundabout, and then deviates north along High Street, Ladywell, then via Maison Dieu Road to Pencester Road. The outbound route is far simpler with buses leaving Pencester Road and travelling directly to Folkestone Road (red route, Figure 5.9 Existing Route).

Figure 5.8 – Route 101 and 102 Inbound and Outbound Bus Routes



As with the Route 63 there are two options as to how the bus service can route through the town to and from an interchange on York Street. The service enters and exits the town via Folkestone Road, currently using the one-way system on the inbound route (Figure 5.9). With the interchange moved to York Street buses could reach Folkestone Road roundabout, make a right turn to travel southbound on York Street (solid blue route, Figure 5.9 Proposed Route). Passengers would alight / board on the southbound side before the bus makes a U-turn to travel north on York Street to return via Folkestone Road (re route, Figure 5.9 Proposed Route). As with Route 63 this would reduce the connectivity to the north and eastern parts of the town, therefore it may be more appropriate to maintain a route through the one-way system (dashed blue route, Figure 5.9 Proposed Route).

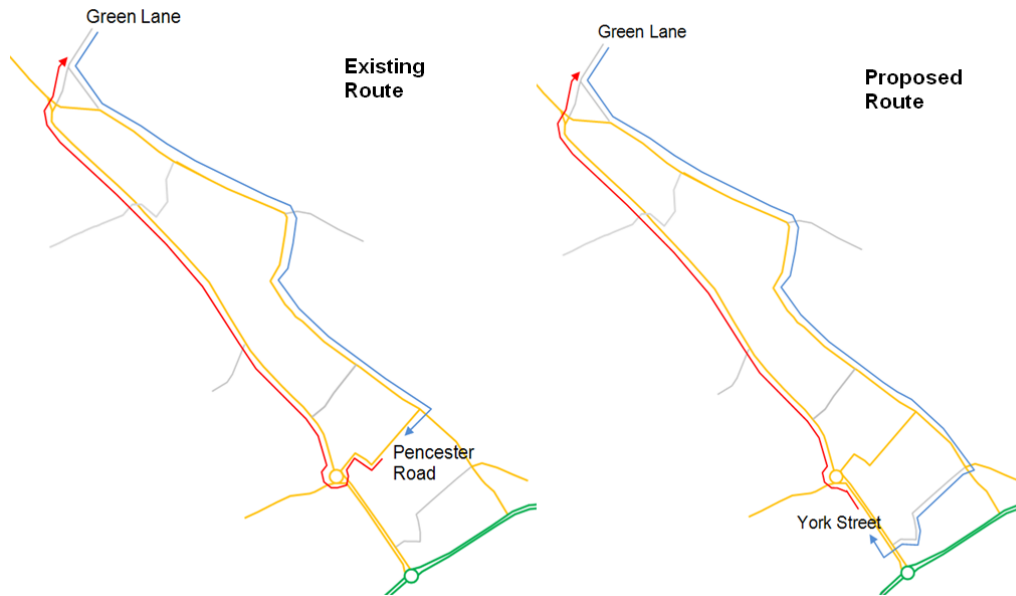
5.5.7 Route 87, 88 and 89

Service 87 and 88 operates between Dover and Ramsgate with an hourly daytime frequency. Arrival and departure times are not consistent across the day. On the inbound route (blue route, Figure 5.10 Existing Route) the bus travels through Whitfield to the Tesco superstore on Honeywood Parkway, then via Melbourne Avenue to enter the one-way system via Brookfield Road. On the outbound route (red route, Figure 5.10 Existing Route) the bus departs Pencester Road, travels north through the one-way system to Green Lane. This service follows the same

route as the Service 61 to Whitfield, with the exception of an occasional school service which deviates from this route to River and Temple Ewell.

Service 89 operates between Dover and Canterbury with an hourly daytime frequency, again not at consistent times across the day. The service follows the same route as the 87 and 88.

Figure 5.9 – Route 87, 88 and 89 Inbound and Outbound Bus Routes



The service operates between Dover and Ramsgate entering and exiting the town centre at the northernmost extent of the one-way system. Re-routing this service via Castle Street instead of Pencester Road is straightforward, as shown on Figure 5.11 Proposed Route.

6. Summary

It is proposed to provide a new interchange on York Street, with the associated closure of Pencester Road. Buses would re-route using Castle Street and Queen Street to access York Street.

It is considered that changing the route to Castle Street and Queen Street, with provision of a bus interchange on York Street is viable; however there are still advantages and disadvantages for this proposal which would require more detailed consideration and design.

Table 6.1 – Advantages and Disadvantages of York Street Interchange

Advantages	Disadvantages
Buses better serve new development sites at St James's and Dover Waterfront	Northern areas of the town centre potentially poorer served by buses
Potential to regenerate Pencester Road and Pencester Gardens	Northbound and southbound bus stops required which may increase corridor width
Better connection to the proposed BRT and Dover Priory	Majority of services will be travelling northbound therefore interchange on the opposite side of York Street to the main retail area
	Closure of Pencester Road may increase traffic flow on Castle Street / Queen Street which could delay buses

With regard to the disadvantages there are simple amendments which can be made to address some of these disadvantages.

- By retaining the route of services 63, 101 and 102 via the one-way system the level of access to the northern and eastern parts of the town are maintained;
- Maintaining the route of services 63, 101 and 102 via the one-way system only the BRT will be travelling south along York Street, therefore the corridor can be narrowed;
- Castle Street / Queen Street could be closed to through traffic by placing a bus gate on the corner of Bench Street and Queen Street; additionally access could be restricted past the Church Street junction. On street parking could be rationalised.
- A narrower corridor and an improved layout could allow for the provision of a greater number of pedestrian crossings.

By keeping all boarding and alighting on the northern side of the carriageway the legibility for passengers will be far easier, as they board and alight from the same place, with the exception of the BRT. It may be possible with the majority of services travelling northbound to provide a segregated contra-flow bus facility on the eastern side of York Street, with bus priority to allow vehicles to cross onto the northern carriageway prior to the roundabout.

6.1 Pedestrian Connections

Pedestrian connectivity between the new interchange and the town centre is vital to be a more successful interchange than the current Pengester Road facility. There are currently four pedestrian access points between York Road and Biggin Street. These are:

- Queen Street;
- New Street;
- Worthington Street; and
- Priory Street.

The quality of the pedestrian connection needs to be maximised using high quality materials, clear signs and lighting. A new connection could be made through the vacant site to the north of the Discovery Centre.

The narrowing of the carriageway can provide opportunities for wider pedestrian footways and better crossing facilities. The removal of guardrails will open up the street to greater pedestrian activity.

The change in the routing of local bus services to use Castle Street provides a better connection to the St James's site, not just for the BRT but for all. This will greatly improve the public transport connectivity of the site, for employees, visitors and residents. Biggin Street, which forms the main retail street, is still easily accessible either from additional stops adjacent to the Market Square or via a short walk from York Street. De Bradelei Wharf and the Dover Waterfront site lie to the south of the A20. From the existing Pengester Road bus interchange there is a considerable distance to walk to the seafront. From York Street the development would be visible to those alighting from the buses and would also be a far shorter walk via the proposed landbridge or via the existing subway. Pedestrian movement is largely dependent on visibility, with people moving where they are familiar or where they can see. Relocating the bus interchange will greatly enhance the visibility of the Dover Waterfront site to those arriving by bus.

The Mid-Town site is potentially less accessible by public transport as currently the bus interchange is directly adjacent to the site. For those able to walk there is an easy route from

Castle Street, through Pencester Gardens to Mid-Town, or alternatively via Biggin Street and the retail area. For those more reliant on public transport some routes should continue to use the one-way system and will therefore pass the site, and for those that do not pass the site there is easy interchange at York Street.

The Core Strategy and Dover Transport Strategy seek to increase and maximise the use of public transport and walking/cycling over the private car. For the major developments set out in the Core Strategy, maximising accessibility by non-car modes is fundamental to minimising the impact of additional traffic on the road network, and in particular the A20 with regard to Dover Waterfront and St James's. It is considered that the relocation of the bus interchange will assist in achieving this.

Relocating the bus interchange will provide additional open space in the town centre for use as public space. This will connect into Pencester Gardens, the River Dour and open space proposals included within the site allocation plans. The removal of traffic from Pencester Road will allow Biggin Street to be fully pedestrianised, removing the existing conflict between pedestrians and vehicles. It is considered that these could represent significant improvements to the public realm in Dover town centre.

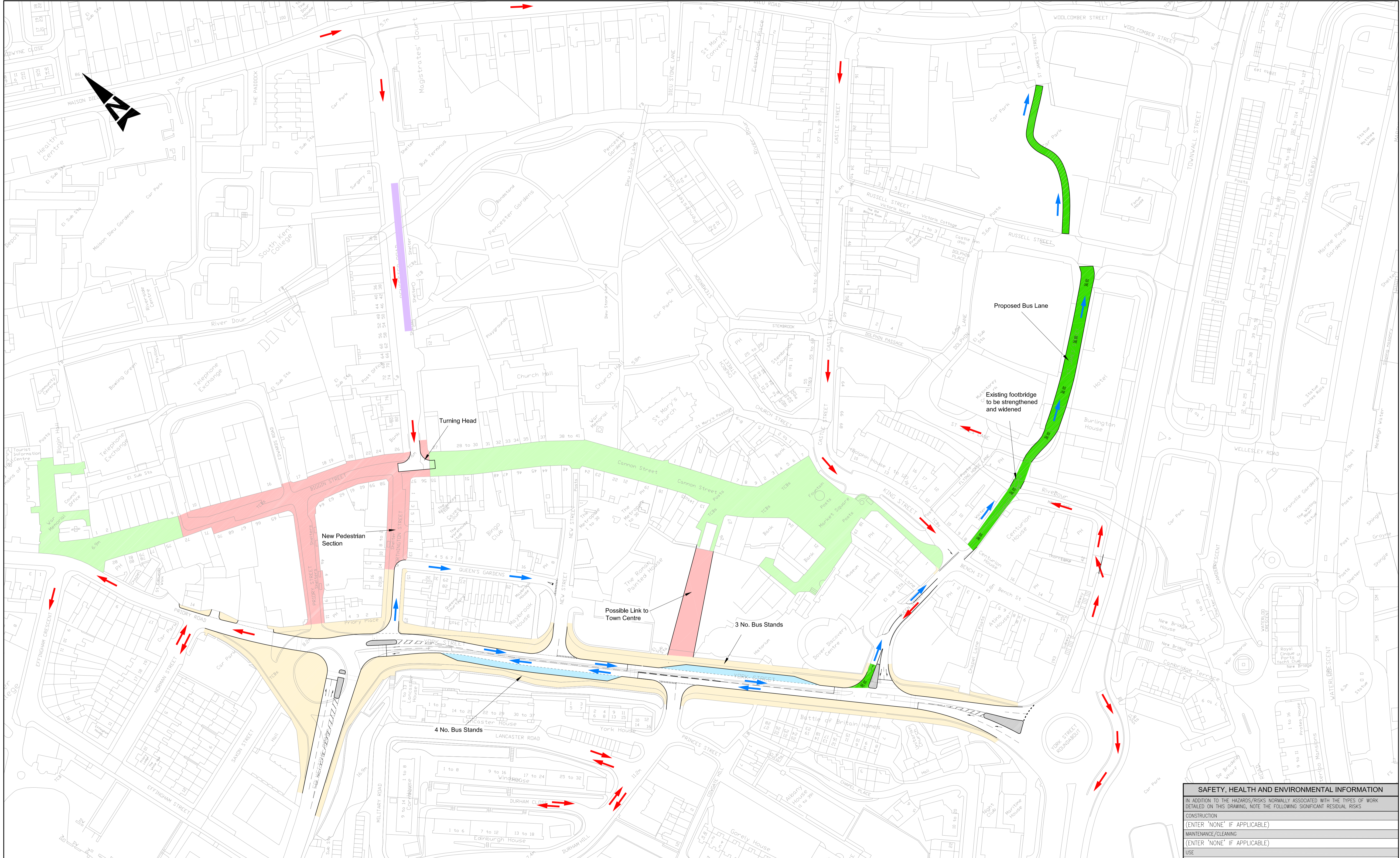
6.2 Next Steps

Should the scheme to relocate the bus interchange be pursued then these are the tasks which would need to be completed:

- Consultation with Stagecoach and any other bus operators;
- Consultation with the Highways Agency over potential impact on the A20;
- Topographical and utility surveys on York Street;
- Traffic surveys as a minimum at the Folkestone Road and A20 roundabouts, on Castle Street and on Pencester Road;
- Review of bus routing and operation with options put forward for changes to routes;
- Detailed design of highway layout and public realm improvements;
- Liaison with developer of St James's site with regard to BRT routing;
- Pedestrian studies looking at improving the linkages between York Street and the town centre; and
- Assessment of the scheme using the DDC VISSIM model to determine impact on the road network of a changes to Folkestone Road roundabout, reduction in capacity of York Street, closure of Pencester Road, rerouting of buses and impact of this on Castle Street.

At what point the interchange is relocated depends primarily on funding streams to pay for the work. Ideally the interchange would be relocated as a fore-runner to major public realm improvements in the town centre, which would include Pencester Road, thus needing the interchange to be relocated. Alternatively the town centre could be enhanced, with the interchange in its current location, which could be a catalyst for increases in future tourism and increase attractiveness for local residents and employment, thus creating the additional demand for a new bus interchange to serve.

Appendix A : Drawing



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Notes

- Proposed layout based on OS base only. Design subject to change once topographical survey is available.
- The need for amendments to kerb line and footway narrowing to be determined at detailed design stage and avoided if possible.

Key:

- Existing pedestrianised space
- Proposed pedestrianised space
- Proposed widened footway
- Proposed bus stop
- Existing bus stop
- Existing traffic flow
- Modified traffic flow

Stat	Purpose of Issue	Date	Auth	Rev	Description	By	Date	Chk'd	Auth
A	FOR INFORMATION	04.10	CRC	A	BUS STOP AMENDED AND CROSSING ADDED	AE	05.10	PE	CRC

Atkins Limited
 Consulting Engineers,
 The Axis
 10 Holliday Street
 Birmingham
 West Midlands B1 1TF

Tel: 0121 483 5000
 Fax: 0121 483 6161
 www.atkinsglobal.com

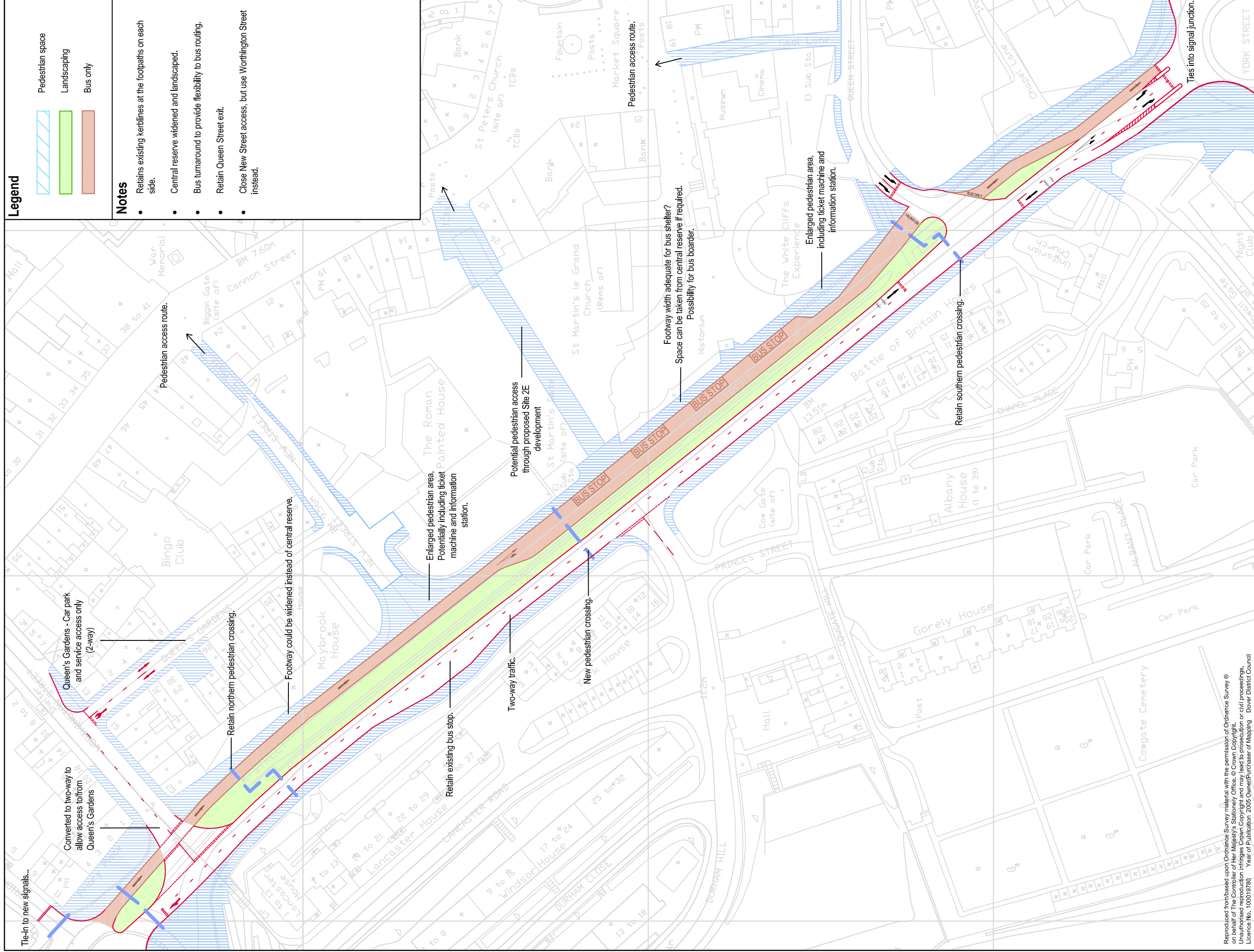
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Project	DFT STRATEGIC STUDIES BUDGET

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IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS	
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MAINTENANCE/CLEANING	(ENTER 'NONE' IF APPLICABLE)
USE	(ENTER 'NONE' IF APPLICABLE)
DECOMMISSIONING/DEMOLITION	(ENTER 'NONE' IF APPLICABLE)

Title	
YORK STREET INTERCHANGE INDICATIVE LAYOUT	

Appendix B : Peter Brett Interchange Options



Legend

- Pedestrian space
- Landscaping
- Bus only

Notes

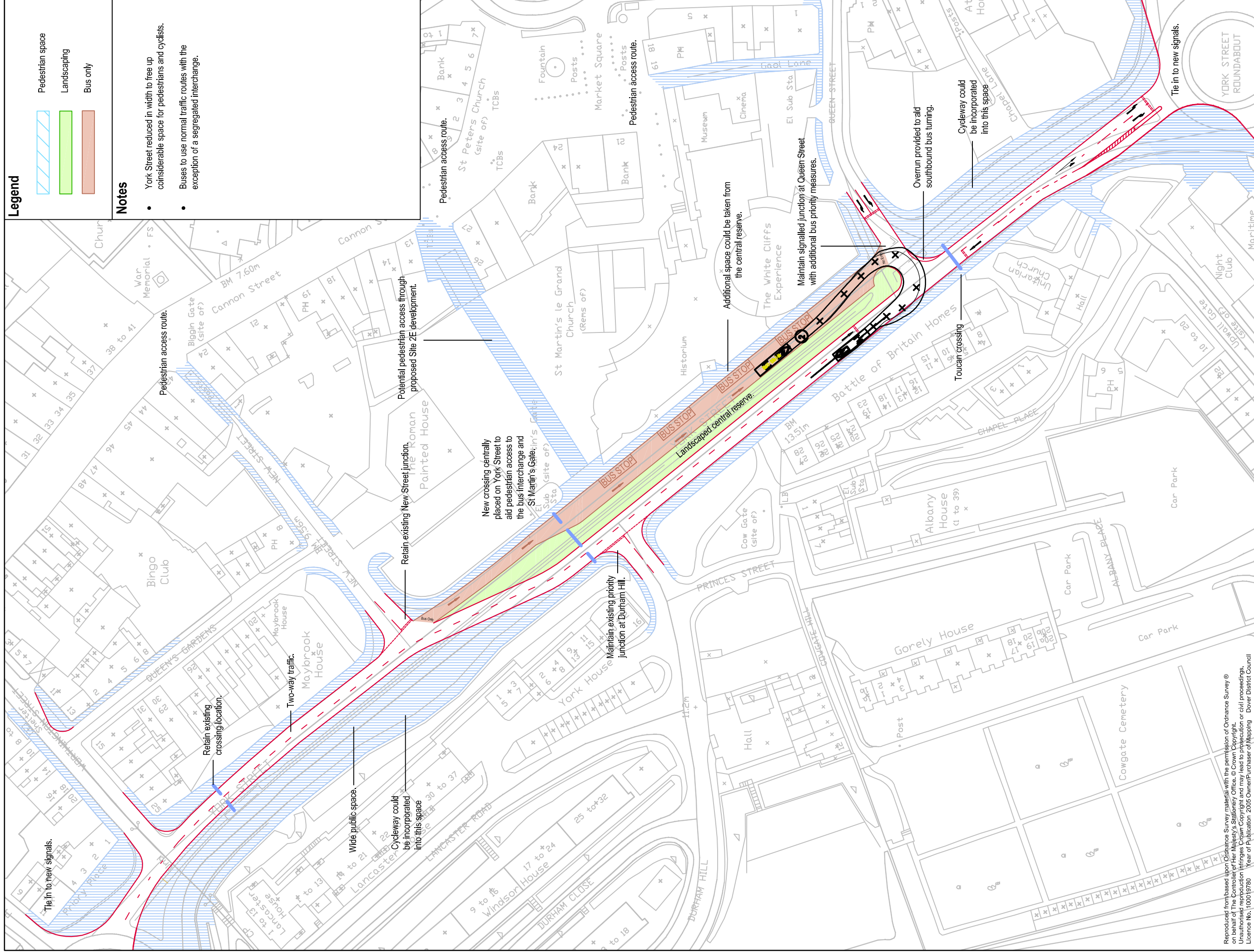
- Retains existing kerblines at the footpaths on each side.
- Central reserve widened and landscaped.
- Bus turnaround to provide flexibility to bus routing.
- Retain Queen Street exit.
- Close New Street access, but use Worthington Street instead.

York Street Proposals Dover, Kent		Option 1A
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Contractor	 Offices throughout the UK, Ireland, continental Europe, Africa, Asia and Australia www.pba.co.uk © Peter Brett Associates LLP ASHFORD Tel: 0123 365 1740 Fax: 0123 365 1741 <small>user name: mark.thomas</small>	
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A3 Scale	Drawing Number	Revision
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Legend

- Pedestrian space
- Landscaping
- Bus only

Notes

- York Street reduced in width to free up considerable space for pedestrians and cyclists.
- Buses to use normal traffic routes with the exception of a segregated interchange.

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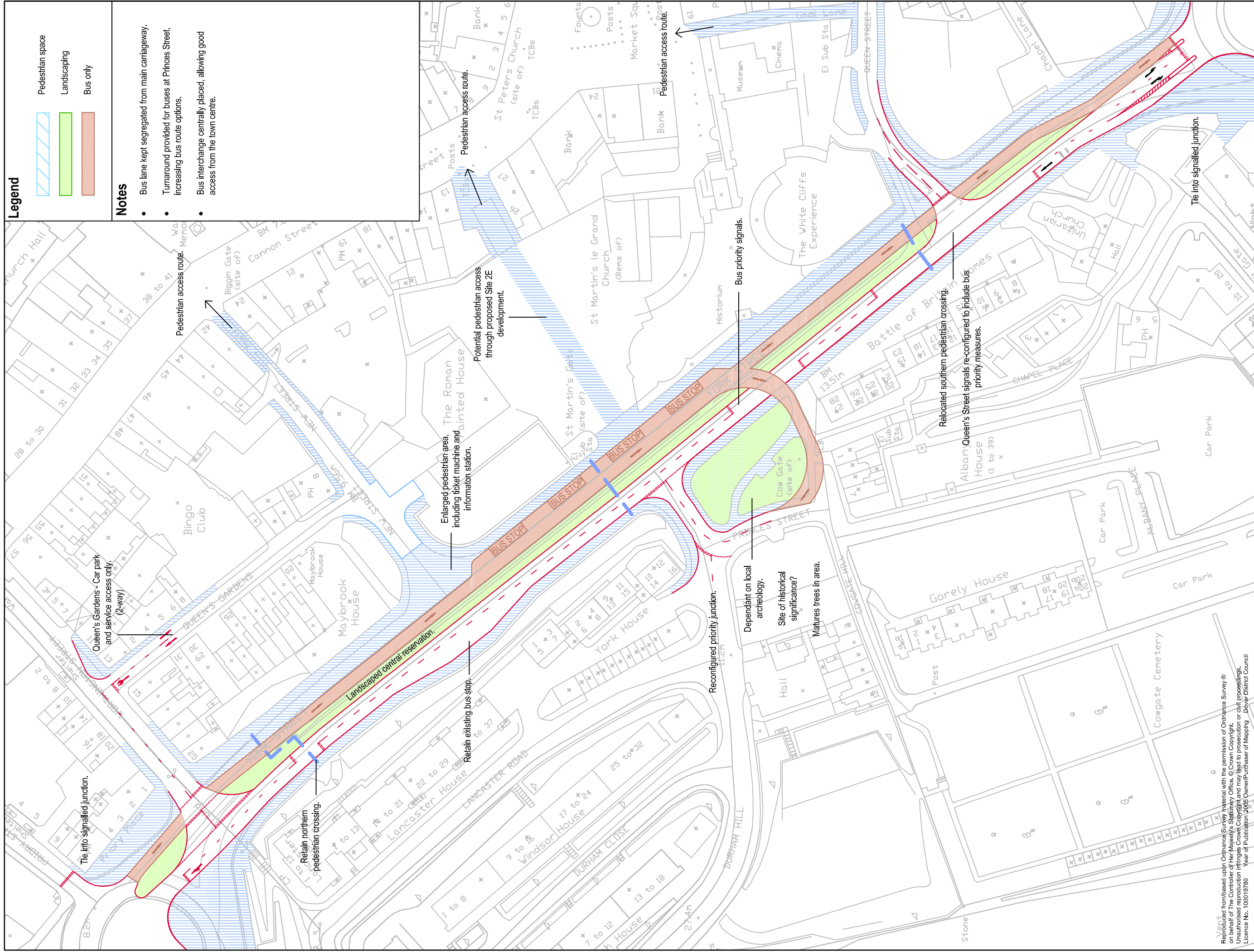
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York Street Proposals
Dover, Kent
Option 1B

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Legend

- Pedestrian space
- Landscaping
- Bus only

Notes

- Bus lane kept segregated from main carriageway.
- Turnaround provided for buses at Princes Street, increasing bus route options.
- Bus interchange centrally placed, allowing good access from the town centre.

York Street Proposals

Dover, Kent

Option 2A

Client
SOUTH EAST ENGLAND DEVELOPMENT AGENCY



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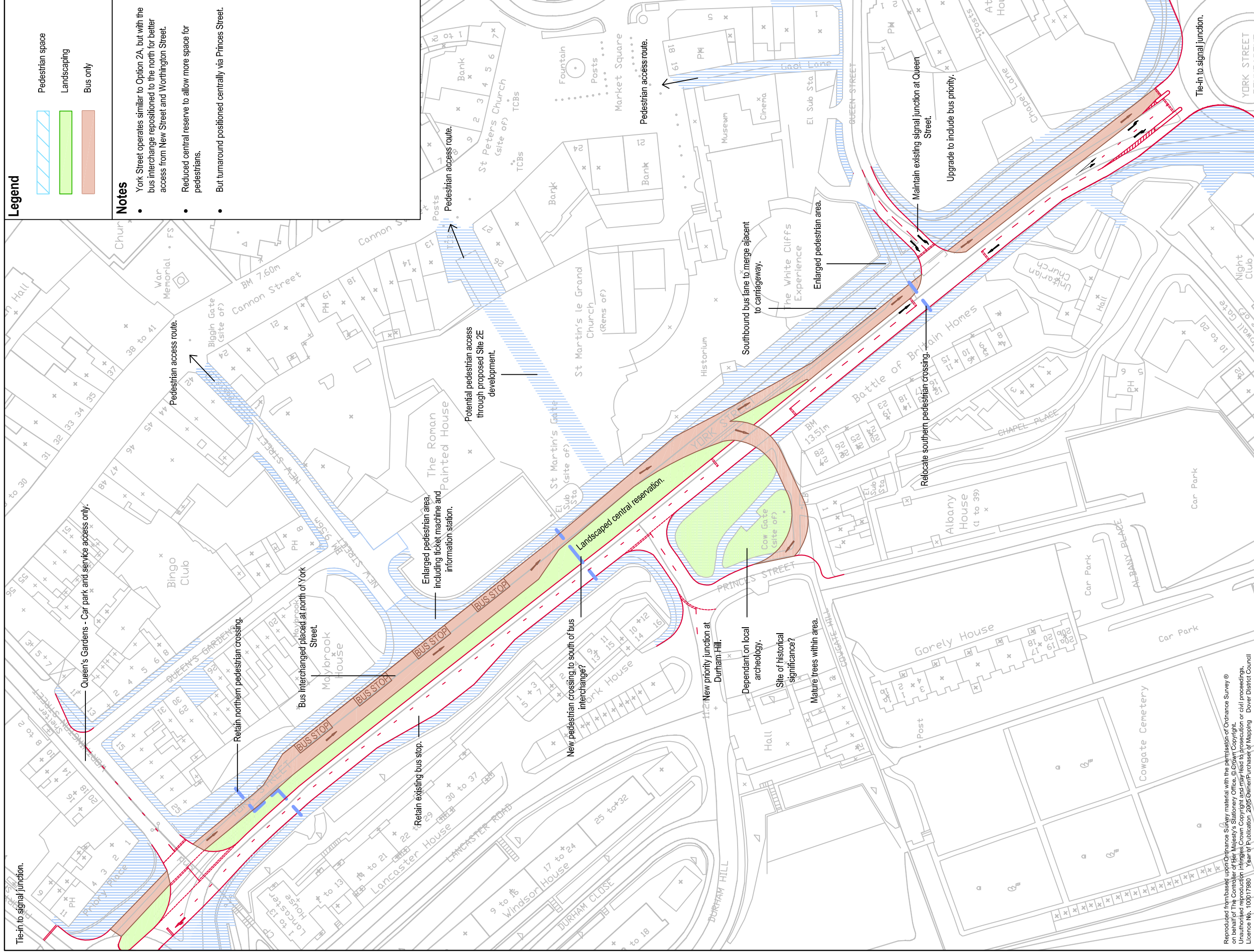


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- Legend**
- Pedestrian space
 - Landscaping
 - Bus only
- Notes**
- York Street operates similar to Option 2A, but with the bus interchange repositioned to the north for better access from New Street and Worthington Street.
 - Reduced central reserve to allow more space for pedestrians.
 - But turnaround positioned centrally via Princess Street.

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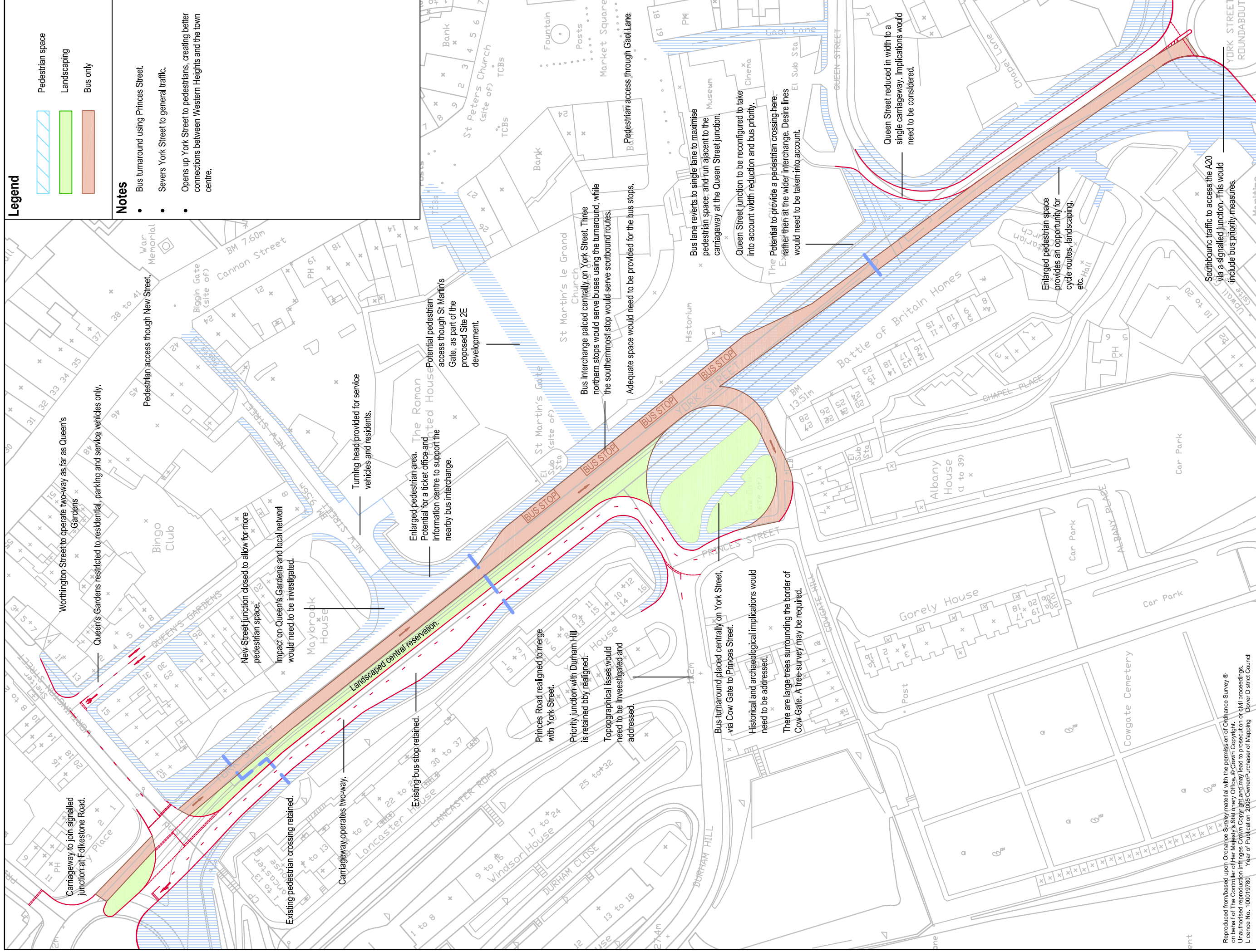
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York Street Proposals
Dover, Kent
Option 2B

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Legend

- Pedestrian space
- Landscaping
- Bus only

Notes

- Bus turnaround using Princes Street.
- Severs York Street to general traffic.
- Opens up York Street to pedestrians, creating better connections between Western Heights and the town centre.

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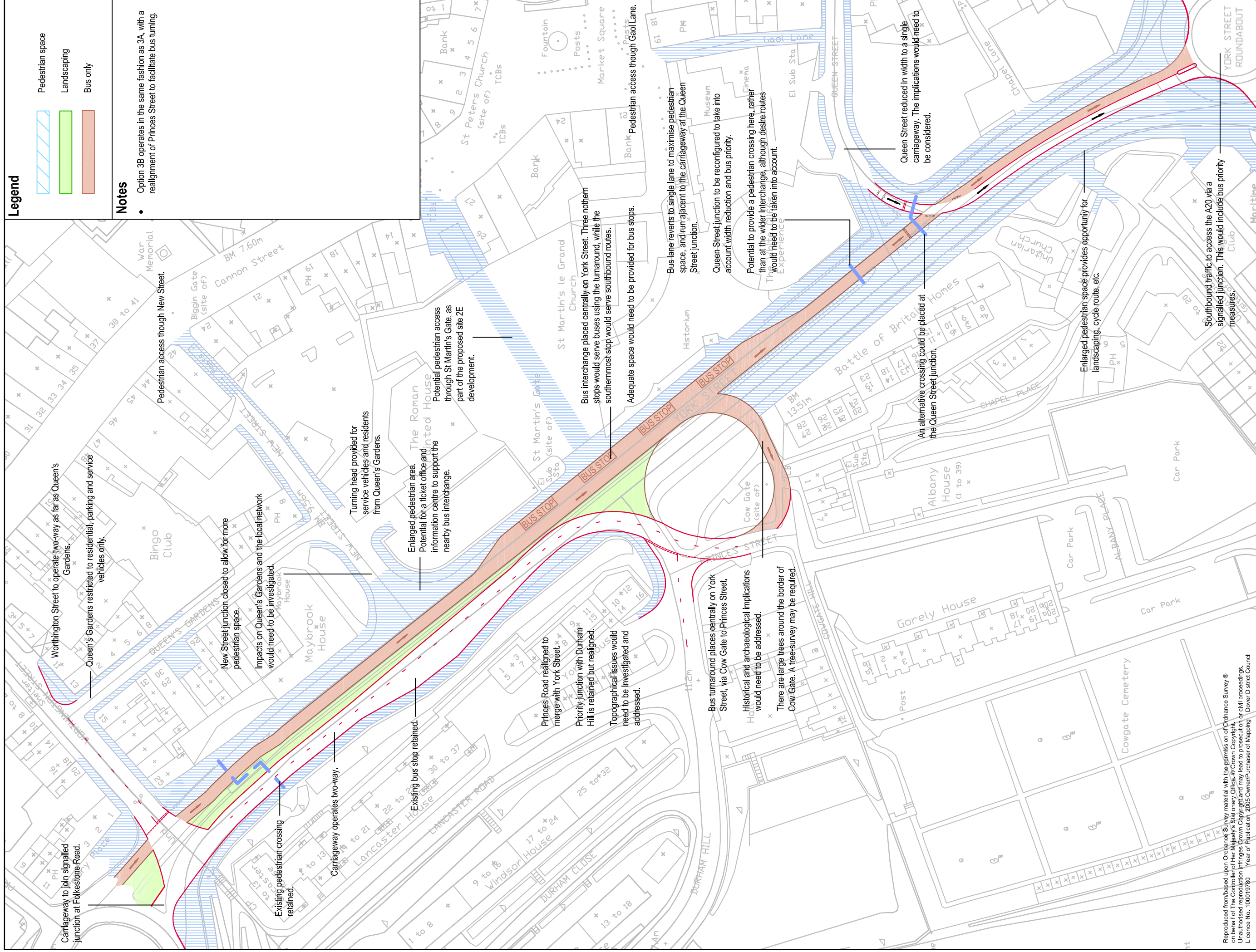
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York Street Proposals
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 Option 3A

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Legend

- Pedestrian space
- Landscaping
- Bus only

Notes

- Option 3B operates in the same fashion as 3A, with a realignment of Princes Street to facilitate bus turning.

**York Street Proposals
Dover, Kent**

Option 3B



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Mark	Revision	Drawn	Date	Chkd

For Information	
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Atkins Limited
Woodcote Grove
Ashley Road
Epsom
Surrey KT18 5BW
England

info@atkinsglobal.com
www.atkinsglobal.com

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