

Heart of the South West Local Transport Board

Scheme Prioritisation Proforma

Option Name: Octagon Roundabout to Derry's Cross Roundabout

Date: 25th April 2013

Capital Cost: £9.34m
2015 Q1 Price
Base (10% OB)

Funding Proposal: £8.41m

Delivery Programme:

Project Stage	Status
Project Initiation	Complete
Feasibility	Complete
Option Selection	Complete
Preliminary/Outline Design	Year 1
Detailed Design	Year 1
Contractor Procurement	Year 1
Construction	Year 1 / 2
Monitoring and Evaluation	Year 3

Location:

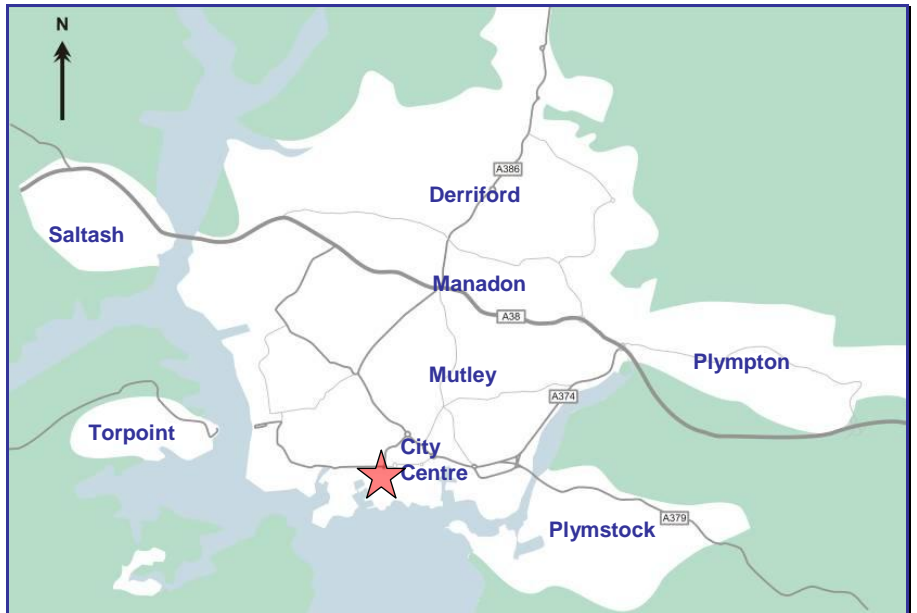


Figure 1. Location of Scheme

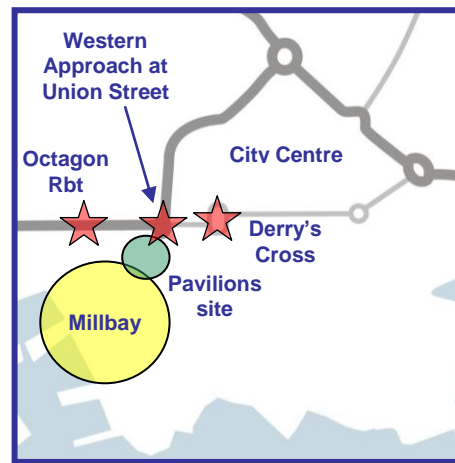


Figure 2. Location of scheme in relation to city centre and Millbay

Description:

This scheme on the A374 improves the existing junctions and the highway network connecting the Octagon Roundabout, the Western Approach at Union Street junction and Derry's Cross roundabout in Plymouth's city centre. These junctions have been identified as amongst the key strategic locations in the city centre and for the city as a whole, particularly that of the Western Approach at Union Street junction.

This route is compromised by the high volumes of traffic using the A374 and the C660 Royal Parade that converge at the Western Approach at Union Street junction and which causes a significant pinch point on the transport network. Royal Parade also acts as the city's principal bus interchange accommodating on average 160 buses per hour. The route needs to manage not just the heavy commuter traffic flows, but also the passenger and freight traffic for Plymouth Port that can add significantly to the vehicle numbers on the already congested road network, making it essential that they exit the local network onto the trunk road network as expeditiously as possible.

The scheme will convert the existing junction designs to optimise operation and performance enabling improved management of competing traffic flows. Bus priority facilities are fundamental to the project in order to achieve the vision of creating a High Quality Public Transport (HQPT) priority corridor that accesses the Royal Parade bus interchange along with improved facilities for pedestrians, cyclists and general traffic.

Octagon roundabout will become a signalised crossroads to enable more controlled management of the competing traffic demands with dedicated pedestrian crossings installed on each approach. The existing arrangement where the A374 Union Street becomes Western Approach will be simplified to encourage use of the strategic road network and to better provide for direct pedestrian movements between the city centre and Millbay via the Pavilions site. Derry's Cross will be reconfigured to offer priority for buses accessing Royal Parade and to enable public realm enhancements to be delivered within the city's cultural quarter.

The ability to offer fast and reliable sustainable travel that is competitive to the private car is critical for this route and this area of the city.

The project seeks to provide targeted highway capacity improvements to ensure that the route and the junctions of interest can successfully accommodate the further phases of the regeneration of the Millbay area, the major redevelopment of the Plymouth Pavilions site and the increased numbers of people that will be living, working and visiting the city centre as detailed in the Council's planning policies, whilst balancing the needs of sustainable transport modes.

Opportunities to integrate public realm improvements and landscaping (including tree planting) are included within the improvement proposals.

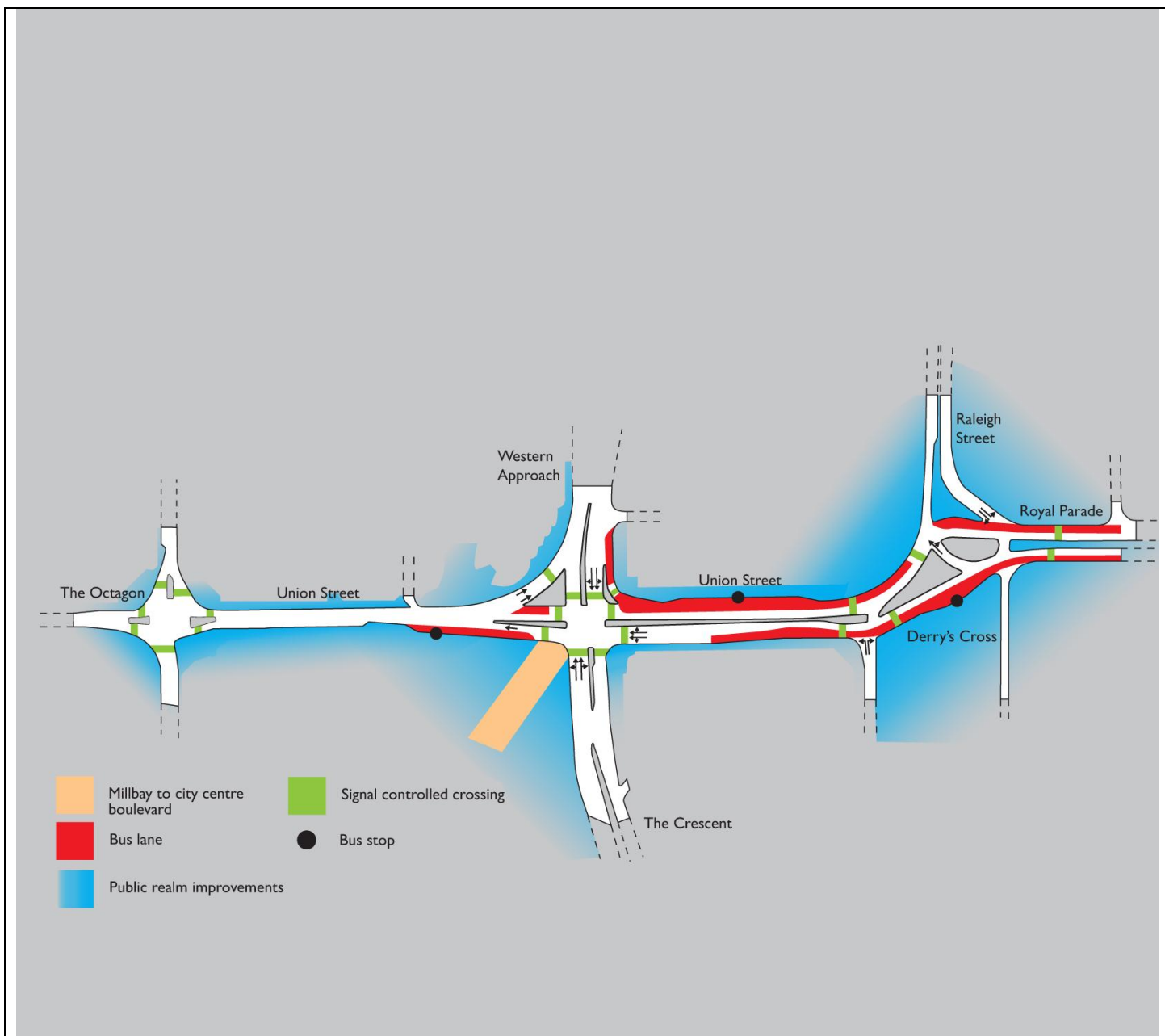


Figure 3. Octagon Roundabout to Derry's Cross Roundabout Scheme Proposals

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Strategic

Identified problems and objectives

Existing Problems

The area covered by the scheme already suffers from traffic congestion and poor pedestrian permeability, with the design of the highway network contributing significantly to the displacement and isolation of the Millbay area and its adjacent neighbourhoods from the city centre.

Congestion at the Western Approach at Union Street junction regularly results in peak time traffic queues along Union Street in both directions towards Stonehouse Bridge and Royal Parade and along Western Approach towards North Cross. This primarily commuter-based traffic congestion is further exacerbated by the significant number of extra vehicles, both passenger and freight that routinely access Plymouth Port at Millbay and that is part of the EU Trans European Transport Networks (TENS). The signed strategic route for vehicles using Plymouth Port is that provided by the A374 via Octagon Roundabout, Union Street west and Western Approach.



Figure 4 Strategic Ferry Traffic Route

This congestion has led to Royal Parade, the city's principal bus interchange, being designated as an Air Quality Management Area (AQMA) due to it persistently exceeding the $40\mu\text{g}/\text{m}^3$ annual mean concentration for Nitrogen dioxide criteria levels.

The current size and operation of the Western Approach at Union Street junction creates a poor environment for pedestrians and cyclists resulting in indirect crossing routes and long crossing times.

Future Growth

Plymouth has been designated as a Growth Point and it is expected that the population will grow from 256,000 to 300,000 by 2026. New and innovative transport solutions are therefore needed to facilitate this growth.

The city centre and waterfront areas are identified in the city's Local Development Framework as pivotal in enabling the city to meet its growth ambitions, both in terms of providing significant levels of new housing, jobs and leisure attractions but also as the primary destination for people

visiting the city.

This scheme directly contributes to Plymouth's growth agenda by delivering part of the essential infrastructure needed to allow development sites within the city centre and Millbay areas to come forward.

Millbay is a designated regeneration area and has an established programme to be transformed from primarily industrial-use to a modern, attractive mixed use development that will enable the city to capitalise on its outstanding waterfront location.

These sites will feature mixed-use type facilities combining new residential development with food and retail outlets as well as creating new employment and leisure facilities.

Development sites within the city centre and Millbay areas make up 16% of the proposed residential dwellings, 30% of employment space and 56% of retail space of the overall envisaged development for the whole city. A significant amount of trips generated from these sites will be expected to use the city centre road network. Without intervention, the existing network will not be able to cope with the additional demand that trips from these development sites will produce.

Half a million passengers and more than two million tonnes of freight currently pass through the Port of Plymouth each year. It has been predicted by Government that port traffic, both passenger and freight, is to grow significantly over the next 25 years, with it expected that the port facilities at Plymouth will see a proportional increase over this time period.

Impact of Future Growth

The impact of the major development identified for the Millbay and city centre areas has already been assessed as compounding and further exacerbating these issues with a significant number of trips that will be generated from these developments expected to use the Octagon Roundabout to Derry's Cross route.

Greater use of the port and its facilities will contribute to increased traffic levels on the road network, particularly on the A374 between the Octagon Roundabout and North Cross that functions as the signed strategic route for ferry traffic accessing the port.

This will result in increased journey times for general traffic and buses, a potentially greater number of accidents occurring and the continued perception that Millbay is remote from the city centre. The Western Approach at Union Street junction currently operates close to capacity with only relatively minor events needed to push the junction over its operating capacity. Without intervention, the existing junction will not be able to cope with the additional demand that trips from the future development sites will produce.

Of greatest concern is the impact this will have on the rest of the city centre road network and in particular the major junctions of North Cross, that provides access to the city's principal railway station and Charles Cross, the main access point for buses exiting Royal Parade.

Scheme Objectives:

- Reduced congestion and improved vehicular journey times including goods and freight vehicles;
- To support the city's growth objective through strategic transport improvements that facilitate and enable major development;
- Dedicated bus priority;
- Improved bus journey times relative to equivalent car journeys;
- Improved reliability and punctuality of bus services;
- Improved air quality particularly in designated AQMA;

- Increase cycle usage through improved cycle link connectivity, providing safer on and off-line routes and reduced journey times;
- Environmental enhancement including where possible retention of established trees and the planting of new trees along with the protection of existing habitat and the creation of new.

Documents:

[City Centre & University Area Action Plan](#)

[DfT National Policy Statement for Ports](#)

[European Commission TENS](#)

[Local Air Quality Assessment and Progress Reports](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Scale of Impact	1	2	3	4	5
				X	

The scheme will aim to create increased capacity for vehicles using the city centre's A road network including the significant extra traffic generated by the Continental Ferryport at Millbay, providing greater priority for buses accessing Royal Parade, reducing the impact from the road network on communities wishing to access the services in the area through better pedestrian facilities and by enabling and mitigating the impact of the major development identified for the city centre and Millbay areas.

The scale of impact is expected to be dramatic as the changes proposed are considerable and will facilitate major development proposals in the area, at the Plymouth Pavilions site, Derry's Cross and within the rest of the city centre and waterfront areas.

The importance of the Western Approach at Union Street junction and its relationship with the Pavilions site is detailed in the City Council's Millbay & Stonehouse Area Action Plan and within the City Centre Area Action Plan.

The scheme will seek to provide a road system to meet the demands placed on it from the increased resident, worker and visitor populations that the city's growth ambitions will result in. This will include providing for greater traffic volumes using the city centre's A roads, installing priority for buses, delivering improved access for pedestrians and cyclists between the city centre and the waterfront areas, and enabling complementary development to be built through reducing the land used for highway purposes.

The A374 Western Approach has sufficient capacity for it to manage the increased traffic volumes that will be encouraged to use it instead of the C660 Royal Parade. Reduced traffic volumes using Royal Parade will benefit not just the Western Approach at Union Street junction, but also the major junction at Charles Cross.

The scheme will result in reduced traffic volumes using Royal Parade that will contribute significantly towards improving pollution levels and Royal Parade's status as a designated Air Quality Management Area (AQMA).

Better connecting the Millbay area with the city centre is crucial to the city maximising its potential through its prime waterfront location. The Millbay regeneration project is the largest regeneration project south of Bristol and has been recognised as one of the 50 most important projects of its kind in the UK. Its importance to both the city and the south west region is huge and is seen as crucial to delivering on the objective of significantly improving the regions offer in economic, leisure and quality of life terms.

Alternative Considered

Various options for each of the three main junctions of interest (Octagon Roundabout, Western Approach at Union Street and Derry's Cross) have been considered in combination with each other. This is the preferred option as it meets the transport, economic, environmental and social objectives we have for the scheme.

The extent of changes proposed and identified as necessary for each of the junctions would require this scale and cost of intervention. Lower cost alternatives would not meet all the objectives that the scheme has.

Documents:

[City Centre & University Area Action Plan](#)

[Local Air Quality Assessment and Progress Reports](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Fit with wider transport and government objectives	1	2	3	4	5
<p>The scheme does not contravene state aid rules or present any other legal difficulties related to the EU. It supports the principles set out within the 2007 European Green Paper Towards a New Culture for Urban Mobility particularly with regard to improving fluidity in towns by improving public transport reliability and connectivity.</p> <p>The scheme is in support of the adopted City Centre and Millbay Area Action Plans. The AAPs are a key element of Plymouth's growth plan which is designed to increase the population of the city to 300,000 by 2026 and raise the prosperity and quality of life of all residents. This fits with Government policy for economic growth (Plan for Growth, HM Treasury 2011) by investing in infrastructure which enables jobs creation and new homes. Please see table in "fit with other objectives" for more detail.</p> <p>The scheme is designed to deliver improvements for non-car modes and it is also designed not to be detrimental to cars or freight.</p> <p>Government priorities for sustainable growth and carbon management are supported by the scheme by improving the quality of travel options by non-car modes but without detriment to other users. Increased active travel will support Department for Health policies on increasing levels of physical activity.</p> <p>Improving the immediate road network serving Plymouth Port will enable the Port to meet the demands that are expected of it in the future, thus contributing towards the Government objectives for the ports and shipping sector, predicted to experience significant growth over the next 25 years.</p> <p>Improving air quality particularly within Air Quality Management Areas is another Government objective that this scheme will significantly contribute towards.</p>					
<p>Documents:</p> <p>DfT National Policy Statement for Ports</p> <p>European Commission TENS</p> <p>DEFRA Air Quality</p>					

Fit with other objectives	1	2	3	4	5						
						✓					
<table border="1"> <thead> <tr> <th>Policy Document</th> <th>Objective</th> <th>Scheme Fit</th> </tr> </thead> <tbody> <tr> <td>Plymouth City Council Corporate Plan 2012 to 2015</td> <td>1. Deliver Growth</td> <td>The area covered by the scheme is a key strategic location providing access by all road users to the city centre and Millbay areas including the Barbican, the Hoe and the University, providing access to these employment and housing</td> </tr> </tbody> </table>						Policy Document	Objective	Scheme Fit	Plymouth City Council Corporate Plan 2012 to 2015	1. Deliver Growth	The area covered by the scheme is a key strategic location providing access by all road users to the city centre and Millbay areas including the Barbican, the Hoe and the University, providing access to these employment and housing
Policy Document	Objective	Scheme Fit									
Plymouth City Council Corporate Plan 2012 to 2015	1. Deliver Growth	The area covered by the scheme is a key strategic location providing access by all road users to the city centre and Millbay areas including the Barbican, the Hoe and the University, providing access to these employment and housing									

		<p>markets alongside the cultural and leisure facilities located in these key areas.</p> <p>The junction improvements complement the Council's Market Recovery Scheme as it will put in place a proportion of the strategic transport infrastructure that will support new residential, leisure and employment development in the city centre and Millbay areas, including further phases of the major regeneration programme for Millbay, the redevelopment of the Plymouth Pavilions site and the modernisation and extension of Theatre Royal Plymouth.</p> <p>The scheme forms part of the strategic route for traffic accessing Plymouth Port that provides connections to European and other international markets. Improvements to this route will facilitate the growth in use of the port and its facilities in line with national policy.</p>
Plymouth City Council Corporate Plan 2012 to 2015	3. Reducing Inequalities	<p>The scheme will provide significant improvements for public transport, pedestrians, cyclists and drivers.</p> <p>The new junctions will reduce crossing distances. This will help people who are mobility and / or visually impaired to access shops and services independently.</p> <p>Increased accessibility and reduced community severance will enable more local people including the BME community to use the local facilities. Improved reliability of bus journey times will benefit those who do not have access to a car.</p>
Plymouth City Council Corporate Plan 2012 to 2015	4. Value for Money	<p>The Scheme will help reduce the negative impact of traffic growth thereby assisting the viability of the city centre and local businesses.</p>

		Other VFM benefits will be achieved through: Time savings; Reduced carbon footprint; Improved local air quality; Improved noise emissions; Reduced congestion; Safety improvements; Reduced operating and maintenance costs by rationalising the amount of infrastructure and street furniture required.
Local Transport Plan	Maximise the transport contribution to Plymouth's carbon reduction target	The scheme improves provision for non car modes and makes journeys by these modes easier.
	Use transport to drive the local economy	The scheme supports the delivery of the Local Development Framework (see below) and Local Economic Strategy by enabling sustainable growth.
Local Economic Strategy – Revised Centres Action Plan 2011	Improve Connectivity and Infrastructure	The scheme improves infrastructure which will enable better connectivity between the key centres of Derriford, Sherford and the City Centre.
Plymouth Core Strategy 2006 – 2021 (Adopted April 2007)	Policy CS27 - Supporting Strategic Infrastructure Proposals	The scheme improves provision for public transport by delivering elements of infrastructure necessary for the HQPT network.
	Policy CS28 - Local Transport Considerations	The scheme improves accessibility by making better provision for non-car modes.
Millbay & Stonehouse Area Action Plan (Adopted August 2007)	Proposal MS03 - Land between Western Approach/ Union Street and East Quay/ Clyde Quay	The scheme facilitates the significant mixed-use development proposed within the Millbay area
	Policy MS09 - Union Street corner with Western Approach	The scheme delivers improvements to the junction at Western Approach and Union Street, as per this proposal.
City Centre and University Area Action Plan (Adopted April 2010)	Proposal CC06 - The Strategic Road Network	The scheme forms part of the city centre strategic road network and delivers improvements to the movements around and across the network by all modes.
	Proposal CC07 - Royal Parade and Exeter Street (West)	The scheme delivers improvements to the junction at Western Approach and Derrys Cross which will improve movements and

		create better public spaces, as per this proposal.
City Centre and University Area Action Plan (Adopted April 2010)	Proposal CC18 - South of Derry's Cross and Royal Parade (West)	The scheme would contribute towards the creation of a positive gateway to the City Centre and the West End when approached from Millbay and would help create a better public space at Derry's Cross.
Devon Structure Plan 2001 to 2016 (Adopted 2004)	Policy TR13 - Ports	The scheme would improve access between the port and the strategic road/rail networks (especially the TENs) therefore enabling the port to fulfil its strategic role.

Documents:

[City Centre & University Area Action Plan](#)

[Devon Structure Plan](#)

[Local Development Framework](#)

[Local Economic Strategy](#)

[Local Transport Plan](#)

[Market Recovery Scheme](#)

[Millbay & Stonehouse Area Action Plan](#)

[Plymouth Corporate Plan 2012 to 2015](#)

Key uncertainties

The scheme is not directly dependant upon any one development site, however it does put in place the strategic transport infrastructure needed to help mitigate for the impact of the significant changes that are proposed for the Millbay and city centre areas over the next 20 years.

The economic climate means that predicting that a development will be delivered as planned with any certainty is a risk. However, in terms of this scheme and its relationship with the major development proposals it will facilitate and mitigate for there can be a degree of confidence that they will be delivered as anticipated.

Wider Millbay Area Regeneration

The wider regeneration of Millbay has been actively progressing since 2005 and has a recognised masterplan to guide how the area will evolve. A number of phases have already been completed, resulting in significant numbers of new residential and complementary development being delivered. Further phases are programmed and have already been successful in securing major investment from the Homes and Communities Agency (HCA) to ensure they do progress.

The confidence, support and investment from Government agencies for the regeneration of Millbay significantly reduces the chance that future phases are not delivered.

Plymouth Pavilions Redevelopment

The £83m redevelopment of the City Council-owned Plymouth Pavilions site into an integrated mixed-use development but maintaining its strong leisure and entertainment focus is also secure with the development partner selected.

Theatre Royal Plymouth

Plymouth's Theatre Royal is located on the south west side of Derry's Cross roundabout. It is one of the city's principal cultural centres and generates significant income for the south west economy. It is identified within the City Centre AAP as critical to the Derry's Cross area consolidating and enhancing its position as the gateway to the city's leisure and entertainment district. Work to redevelop the facility to bring it up to modern standards and increase its offer started in early 2013 and will provide the catalyst for other changes to the Derry's Cross area as identified in Proposal CC18 of the City Centre AAP. The funding required for the Theatre Royal redevelopment included £5m from the Arts Council.

Plymouth City Council as the landowner for both the Pavilions and Theatre Royal sites should significantly reduce the risk that redevelopment of either does not occur. The undertaking of these major redevelopment projects in such a visible part of the city should instil confidence and appetite for further major changes in the area to be brought forward.

The scheme is within Highways Maintainable at Public Expense (HMPE) and this further reduces any uncertainty related to land acquisition or approval to undertake the works. Compulsory Purchase Order (CPO) processes should therefore not be required.

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Degree of consensus over outcomes	1	2	3	4	5
					✓

Significant consultation was undertaken as part of the statutory process for both the City Centre and Millbay Area Action Plans where the Millbay regeneration and improvements to the Western Approach at Union Street junction are specific policies and proposals. Prior to adoption, concerns and comments raised in relation to the AAPs would have been assessed and used to help inform the final versions.

Amongst the consultees that would have been afforded opportunity to comment would have been local elected members, the business community, Government agencies and bodies, other key stakeholders, public transport operators and the general public.

The masterplan for the Millbay area has also been extensively consulted on and includes the dramatic and significant changes to the Millbay area.

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Economic

Economic growth				
Connectivity	What impact on end to end journey time?			✓
	Does it impact cost of travel?		✓	
Reliability	Impact on journey time variability or average delay?			✓
	Impact on number of incidents?			✓
Resilience	Impact on the resilience of our infrastructure?			✓
Delivery of Growth	Will the option facilitate new housing / employment / retail?			✓

The scheme is required to support, enable and mitigate for, major development being delivered in the city centre and Millbay areas as identified in their respective AAPs:

	Residential (dwellings)	Employment (m ²)	Retail (m ²)
Millbay & Stonehouse AAP	1,514	40,000	9,000
City Centre AAP	1,100	107,000	97,000

The following flagship projects that have a high level of certainty for implementation provide clear evidence that the proposals and policies detailed in the AAP documents are being progressed.

Millbay Regeneration

The regeneration of the primarily industrial Millbay area, has been underway since 2005 with significant numbers of new housing and associated development uses already delivered. The masterplan covers an area of 19.5 acres and will deliver 196,490m² of mixed use development and including 1500 units of new housing, significant numbers of new jobs through the creation of 40,000m² of employment space and 9000m² of new retail space. The regeneration of Millbay is key to the city capitalising on its waterfront location and is pivotal to both the Millbay & Stonehouse AAPs objectives and the City Council's growth objective.

Pavilions Redevelopment

The redevelopment of the Pavilions site is an £83m capital investment project that will create 1500 construction jobs and 955 equivalent full time positions. The Pavilions is the premier concert arena in the far south west and therefore attracts significant investment into the regions' economy. Its redevelopment will dramatically redefine the site and area through the provision of new housing, retail space, a hotel, a food store and an improved leisure offer with a renovated and modern, increased capacity concert arena at its heart. It can only be envisaged that this will further enhance its appeal to both performer and audience alike contributing to the facility increasing its value economically to the region. Construction work is expected to start sometime in 2013.

Theatre Royal Redevelopment (Derry's Cross)

Plymouth's Theatre Royal is located on the south-east side of Derry's Cross roundabout. The theatre is one of the city's and the south west's premier cultural attractions and has been assessed as having the third highest economic impact of all theatres in the UK, in levering in an annual £26 million benefit to the city and south west economy.

The theatre is to be expanded and modernized to further cement its position and further

enhance its appeal through a £7m investment programme that started in early 2013. £5m of which was secured from the Arts Council.

The redevelopment of the Theatre Royal will greatly enhance this part of the city centre and contribute towards the aim of it becoming the gateway to the city's leisure and entertainment district as envisaged in the City Centre Area Action Plan.

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Wider Economic Benefits			
		Yes	No
WITA Assessment	Assessment of the move to more / less productive jobs		x
	Agglomeration – Is the scheme located within a FUR?	x	
	Labour supply impacts	x	
	Output supply in imperfectly competitive markets	x	
<p>As a city centre scheme its impact on the wider regional economy will be considerable. It will directly facilitate the redevelopment of the west end of Plymouth city centre and enable the city to fully capitalise on its unique waterfront location, contributing immeasurably to the city's objective of becoming a vibrant and thriving regional destination..</p> <p>The scheme is essential to ensuring the city can adequately support the greater economic activity that will be generated from a twenty per cent increase in its resident population and in further establishing Plymouth as a primary visitor destination that is capable of hosting major sporting and cultural events, building on its success with the America's Cup sailing and British Art Show events in 2011. The impact of such national and internationally-renowned events on the region is dramatic; it is estimated that more than £9million was brought directly into the economy due to the America's Cup alone. The world wide exposure that successfully hosting this scale of event provides will benefit the city and the wider region for many years to come.</p> <p>Its objective of improving access and better connecting the city centre and the waterfront areas of Millbay will have far reaching economic benefits for the region. The Pavilions redevelopment, the outstanding living, eating and working experience available at the Royal William Yard and the modernisation of Plymouth Theatre Royal will all prove major attractors for people to live, work and visit the city from across the UK and further afield, with this scheme only contributing to further enhancing the appeal the city has.</p> <p>Improved access to Plymouth Port will support its expansion and the increased freight, goods and passenger movements that will occur, thus contributing towards the Government objectives for the ports and shipping sector, predicted to experience significant growth over the next 25 years.</p>			

Documents:

[City Centre & University Area Action Plan](#)

[DfT National Policy Statement for Ports](#)

[European Commission TENS Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

[Plymouth Visitor Plan](#)

Carbon emissions				
		Yes	No	
Embedded Carbon	Is significant construction work required?	X		
Carbon Content	Does the option involve a lower carbon fuel?			X
		+		-
Efficiency	Does fuel per vehicle-km change?		X	
Activity	Does vehicle-km change?	X		

The objective of the scheme to reduce the attractiveness of Royal Parade for through traffic, thus delivering air quality improvements in the AQMA will likely lead to an increase in carbon emissions from vehicles.

However, the scheme has been developed to facilitate and connect the significant regeneration and redevelopment proposals for the Millbay and city centre areas, and will be designed to primarily encourage pedestrian and cyclist access and movement above other modes. It is anticipated that this would counteract any increase in carbon emissions from vehicles.

The assessment of walking and cycling benefits against greater vehicle journey length will be undertaken at full business case stage..

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Socio-distributional impacts and the regions

		Yes	No
Regeneration	Does it impact on accessibility to key locations?	✓	
	Does it impact on connectivity to central business districts?	✓	
	Does it impact on a Regeneration Area(s)?	✓	
	Assessment of Regeneration required? (If Yes to any of the above or scheme cost > £5m)	✓	

The scheme will better connect the Millbay & Stonehouse areas with the city centre providing improved accessibility to the services and facilities available in the city centre, the improved leisure offer at the Pavilions site and the new housing that is to be built at the waterfront areas of Millbay.

The city centre and Millbay areas are part of the city's St Peter & the Waterfront ward that is amongst the country's most deprived wards with one of its Lower Layer Super

Output Areas (LSOAs) in the most deprived 1% LSOAs in England.

Millbay is a designated regeneration area and has already changed dramatically in the last 5 years with new housing, new employment and related facilities delivered.

The scheme should have benefits for many groups, particularly those without access to a car by improving pedestrian access and provision to the range of city centre services and facilities from the Millbay, Stonehouse and adjacent neighbourhoods. The 2011 Census reports that the greatest number of households in the city without access to a car is the St Peter & the Waterfront ward and that 34% of its residents walk to work, which is the second highest figure in the city.

Better priority and provision for buses accessing Royal Parade will also have benefits for those people that rely on public transport to get to shops, healthcare facilities and other essential services.

Documents:

[City Centre & University Area Action Plan](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

[South West Observatory](#)

Local environment

Air Quality

The scheme is partially within the Royal Parade Air Quality Management Area (AQMA) at Derry's Cross. One of the objectives of the scheme is to make the use of Royal Parade by through traffic less attractive and therefore contributing to improving the air quality within the Royal Parade AQMA through reduced traffic volumes.

Noise

There are not any sites identified through the Defra Noise Action Planning process within the scheme area.

Natural Environment

It is not considered that there will be major impacts on the natural environment as the majority of the scheme is already highway or footway space. The exception is Derry's Cross roundabout that is a grassed landscaped area with several well-established trees that may support a number of species.

A species survey will be undertaken as part of the Environmental Impact Assessment for the scheme at the appropriate time and that will better inform this aspect.

Heritage

Plymouth is recognised as having the greatest number of listed post-war buildings anywhere in the UK outside of London and this is particularly evident around the Derry's Cross and Royal Parade areas. The need to complement, protect and promote this aspect of Plymouth's built environment will be afforded high priority and attention throughout the design and construction processes.

Union Street west is part of the Stonehouse Conservation Area and therefore appropriate materials will be employed for this section of the scheme.

Landscape

All of the scheme is within HMPE and is largely carriageway or footway. The exception is Derry's Cross roundabout that is a greened area with several large trees within it that are considered as important and of having intrinsic value by breaking up the harshness of the surrounding urban area and road network. However, none of the trees have been protected by a tree preservation order. Any design will seek to mitigate any loss of green space and in particular will seek to retain these well-established trees where possible.

There will be opportunities for green space to be created by the options being considered for Western Approach at Union Street and at Derry's Cross which will be used to mitigate any loss.

Streetscape

The streetscape changes in character within the scheme area. Octagon Roundabout and Union Street west are within the Stonehouse Conservation Area. The major junction at Western Approach at Union Street is part of the city centre's strategic road network and has a much less welcoming feel to it, particularly for pedestrians with its scale and design acting to disconnect Stonehouse with the city centre. Derry's Cross roundabout anchors the western end of Royal Parade that includes many of the city's best examples of post war architecture and is the city's principal bus interchange.

The architecture and the leisure uses in close proximity give Derry's Cross an abundance of pedestrian activity and an altogether warmer, more enticing feel.

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[City Centre & University Area Action Plan](#)

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[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

Well being

The scheme lies within the Stonehouse and City Centre neighbourhoods of Plymouth. In 2011 Stonehouse had a total population of 10,476. Of these 55.2% were male and 44.8% were female. 6.3% of the population was aged 0-4 years and 1.4% was aged over 85. The index of multiple deprivation 2010 score ranks Stonehouse at number two of the most deprived of the city's neighbourhoods. Life expectancy in 2009-11 was 77.5 years, below the city-wide average of 80.3 years.

Stonehouse is not performing well in the areas of health and the economy when compared to other neighbourhoods in the city and along with crime; these pose the biggest challenges for the neighbourhood. High levels of childhood and adult obesity are of particular concern along with the high percentage of Jobseeker's claimants which at 8.1% is 4.3% above the city average, with the neighbourhood having the second highest number of total benefit claimants in the city. The rate of crime was 260.5 per 1000 population in 2011-12 which is well above the city-wide figure of 105.6 and is the second highest rate for a neighbourhood in the city.

In 2011 the City Centre had a total population of 7,281. Of these 52% were male and 48% were female. 3.3% of the population was aged 0-4 years and 2.7% was aged over 85. The index of multiple deprivation 2010 score ranks the city centre at number 13 of the most deprived of the city's neighbourhoods. Life expectancy in 2009-11 was 79.6 years, below the city-wide average of 80.3 years.

The city centre neighbourhood had the highest rate of crime in the city in 2011-12 of 581.9 per 1,000 population which is significantly higher than the city-wide figure of 105.6. The percentage of Jobseeker's claimants for the city centre at 5.1% is 1.3% above the city average.

Improvements to pedestrian and cycle facilities delivered as part of this scheme will encourage active travel within the neighbourhood as access is improved and links to facilities, services and employment markets are strengthened.

Impact on physical activity

The option will deliver greater connectivity between Plymouth city centre and the Millbay areas of the city including the deprived ward of Stonehouse. The transport scheme complements the major redevelopment proposals for the Plymouth Pavilions site, the city and south-west's premier live entertainment venue, that is to be transformed to meet the needs of both the local population and the city's substantial visitor numbers with a mix of housing, supermarket, retail and leisure provision.

Millbay is in the throes of a 20 year regeneration programme that will dramatically change this previously industrial centre into a modern, vibrant, attractive mixed-use area fully capitalising on its prime waterfront location.

Key objectives of the scheme include improved pedestrian and cyclist connectivity in the area from Millbay to the city centre, linking easily into the city's adopted Strategic Cycle Network (SCN) that provides safer cycle routes and the world-renowned South West Coast Path that provides access to many waterfront walks.

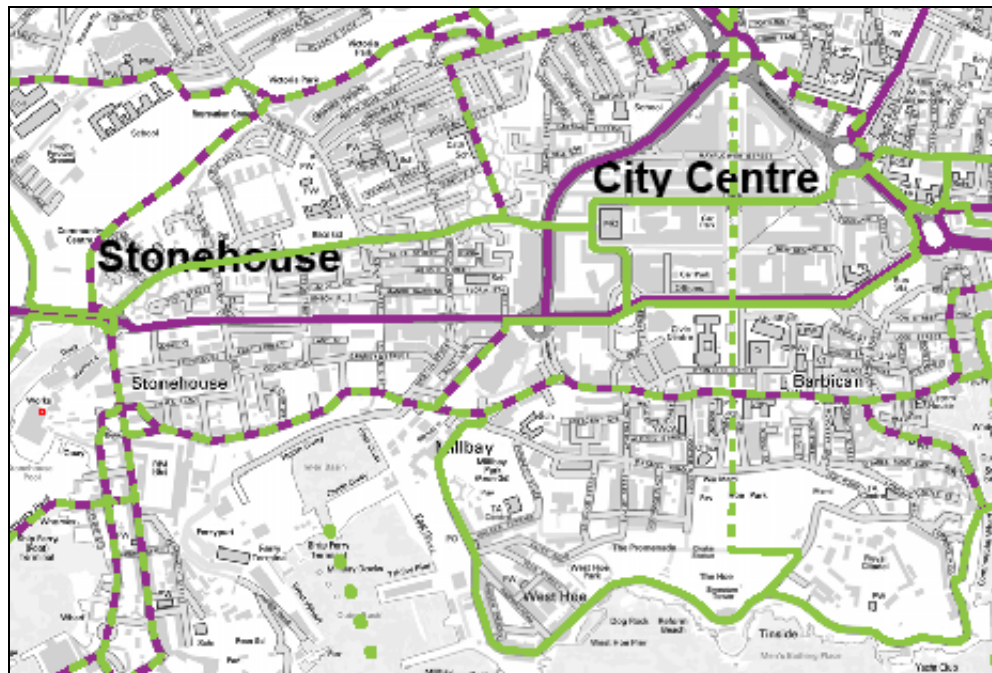


Figure 4. Plymouth's Strategic Cycle Network – Millbay and Stonehouse

Accidents

A review of accidents between the Octagon roundabout and Derry's Cross roundabout between 2007 and 2012 has shown a total of 61 injury accidents with 5 classified as serious and 56 classified as slight resulting in 73 casualties. The number of vulnerable road users involved in accidents was 36, with four motorcyclists, 25 pedestrians and seven cyclists.

Signalisation of the Octagon Roundabout will lead to safety improvements through the greater control of vehicle movements and the greater priority from the provision of formal pedestrian crossings across each of the roundabout arms. Advanced cycle stop lines will also be provided at the new junction thus improving safety and priority for cyclists using National Cycle Network 2 (NCN) and the city's SCN routes.

The reconfiguration of the Western Approach at Union Street junction into a more compact design, removing the offset right turn Western Approach to Union Street, will lead to safety improvements through significantly shortened and more direct pedestrian crossings across fewer traffic lanes. Improvements for cycling will be integral to the design, improving safety and priority for cyclists using the NCN and SCN routes.

Derry's Cross Roundabout will become a far more pedestrian-friendly environment potentially benefiting from extending the Homezone-type principles employed in the west end of the city centre where vehicles and pedestrians share the space.

Fear of crime

The scheme will facilitate the continued regeneration of this part of the city by enabling development to be delivered with a major emphasis on encouraging and providing for greater number of users to the area. This increase in people traffic, during the day, evening and night time hours should contribute to an improved perception that people using and living in the area may have in terms of the fear of criminal acts.

Vulnerability to terrorism

It is not considered that this scheme will affect the UK's vulnerability to terrorism.

Access to key locations

The scheme will enable improved access to new and existing services including supermarkets, healthcare and leisure facilities as well as employment markets. At present the Pavilions site and the Millbay area itself is remote to the city centre with the road network a dominating presence.

Impact on severance

The scheme will reduce the severance between the Millbay and city centre areas and encourage greater pedestrian movement particularly from the most vulnerable members of society including the young and the elderly.

Documents:

[City Centre & University Area Action Plan](#)

[City Centre Neighbourhood Profile](#)

[Local Development Framework](#)

[Local Transport Plan](#)

[Millbay Masterplan](#)

[Millbay & Stonehouse Area Action Plan](#)

[Plymouth City Council Strategic Cycle Network](#)

[South West Coast Path](#)

[Stonehouse Neighbourhood Profile](#)

Expect Value for Money Category

1	2	3	4	5
✓				

The BCR of this scheme would be poor when calculated using the items that are currently quantified in webTAG. The proposed changes and in particular the objective of the scheme to encourage a significant proportion of through traffic away from the declared AQMA C road of Royal Parade on to the city centre A road network would mean an increase in overall car journey times and distances. Unfortunately this would not be offset by the considerable walking, cycling and air quality benefits that the scheme delivers.

The regeneration and public realm benefits that are essential to the scheme's economic objective have significantly less prominence in webTAG, particularly when compared with car journey time improvements. The layout of the city centre road network with the strategic A road option being nearly double the length of the C road option for the same journey, would make it very difficult to achieve overall car journey time improvements, particularly as one of the scheme's primary objectives is to encourage traffic to use the longer A road network away from the shorter, more direct Royal Parade option.

Documents:

Managerial

Implementation timetable	1. 0-1 months																																																					
	2. 1-6 months																																																					
	3. 6-12 months																																																					
	4. 1-2 years																																																					
	5. 2-5 years	✓																																																				
	6.5-10 years																																																					
	7. 10+ years																																																					
	Don't Know																																																					
<p>The scheme has been worked up to a preliminary standard, which has included extensive optioneering design and testing.</p> <p>The table below summarises the remaining high level activities required to deliver the scheme.</p> <table border="1"> <thead> <tr> <th></th> <th>Year 1 Qtr 1</th> <th>Year 1 Qtr 2</th> <th>Year 1 Qtr 3</th> <th>Year 1 Qtr 4</th> <th>Year 2 Qtr 1</th> <th>Year 2 Qtr 2</th> <th>Year 2 Qtr 3</th> <th>Year 2 Qtr 4</th> <th>Year 3 Qtr 1</th> <th>Year 3 Qtr 2</th> <th>Year 3 Qtr 3</th> <th>Year 3 Qtr 4</th> </tr> </thead> <tbody> <tr> <td>Detailed Design & Procurement</td> <td>█</td> <td>█</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Construction</td> <td></td> <td></td> <td>█</td> <td>█</td> <td>█</td> <td>█</td> <td>█</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Monitoring</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>█</td> <td>█</td> <td>█</td> <td>█</td> <td>█</td> </tr> </tbody> </table> <p>The option is expected to be in operation for 25+ years.</p>				Year 1 Qtr 1	Year 1 Qtr 2	Year 1 Qtr 3	Year 1 Qtr 4	Year 2 Qtr 1	Year 2 Qtr 2	Year 2 Qtr 3	Year 2 Qtr 4	Year 3 Qtr 1	Year 3 Qtr 2	Year 3 Qtr 3	Year 3 Qtr 4	Detailed Design & Procurement	█	█											Construction			█	█	█	█	█						Monitoring								█	█	█	█	█
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Construction			█	█	█	█	█																																															
Monitoring								█	█	█	█	█																																										
Documents:																																																						

Public acceptability	1	2	3	4	5
			✓		
<p>It is anticipated that the public will be supportive of the scheme as there are clear objectives and recognisable benefits and improvements that will be delivered, both in pure transport terms, but also as the scheme is critical in enabling significant improvements to the Millbay and city centre areas including substantially new and improved leisure facilities, new housing and the creation of new jobs.</p> <p>Public consultation on the principles of the scheme was undertaken during the statutory public consultation for both the Millbay & Stonehouse and the City Centre & University Area Action Plans.</p> <p>Redevelopment of the Pavilions site that is intrinsically-linked to the scheme is progressing and has resulted in attention being received from the local press so there is awareness at a local level.</p> <p>A full public consultation on the preferred option for this scheme will be required once funding has been secured</p>					
Documents:					

Practical feasibility	1	2	3	4	5
					✓

The option has been tested using traffic modelling software to understand how it will operate and to identify potential impacts of its use.

The scheme uses existing highway authority land so in terms of governance and legality this should not be a problem.

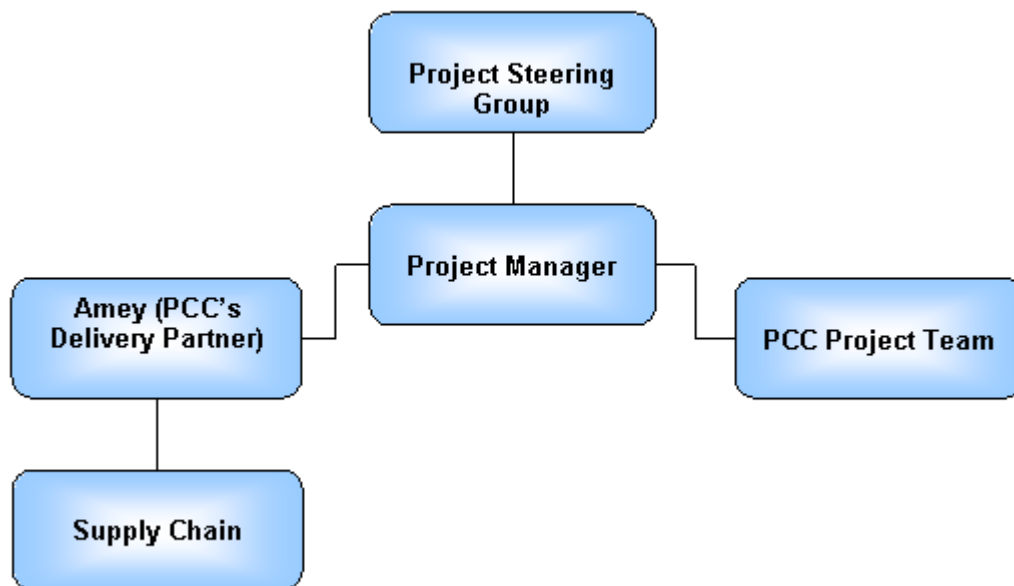
The local authority as highway authority would operate the scheme including adding it and its infrastructure to the Council’s Asset Management Plan to proactively manage future maintenance and asset replacement issues.

It is unlikely that there will be planning implications as there is already recognition and details of the scheme within the planning framework for Plymouth in terms of the LDF Core Strategy and the Millbay and City Centre AAPs.

If any implications in planning terms do emerge there are clear processes for engagement to secure the necessary approvals by the local planning authority. There are no cross boundary planning issues.

Project Governance

Once funding has been secure a Project Steering Group will be established to oversee the development and delivery of the Octagon Roundabout to Derry’s Cross scheme and will meet on a monthly basis. A Project Manager, responsible for delivering the whole project, will also be appointed and they will report directly to the Project Steering Group



The Project Manager will be responsible for co-ordinating the delivery of the individual scheme elements, identifying key interdependencies and ensuring that the overall project is delivered to programme, quality and budget. The Council has an adopted set of Project Management Procedures to improve the control of its projects and the Project Manager will ensure these are adhered to and will report to tThe Council's Capital Delivery Board, which oversees the delivery of all Capital Schemes

within the Council.

Documents:

What is the quality of the supporting evidence

1 2 3 4 5

Strategic

The Local Development Framework, Local Transport Plan, City Centre and Millbay & Stonehouse Area Action Plans are all adopted Council strategies.

Data

- 12 hour traffic counts were undertaken at Western Approach at Union Street junction in early 2013
- Automatic Traffic Counters (ATCs) are installed on Royal Parade, Stonehouse Bridge and Western Approach.
- Air quality data is collected as part of the Council's air quality monitoring programme through a combination of fixed diffusion tube sites and continuous analysers. Monitoring sites include Derry's Cross, Royal Parade and Western Approach.
- Accident data has been obtained using the Authority's 'Accsmap' GIS system which holds stats19 data from which the Police and public report collision data. Accsmap is used to inform DfT on our PCC's monthly & yearly stats which are statutory.

Design

The scheme design has been produced by Plymouth's partnering consultant Amey Ltd. The scheme design has been informed by topographical surveys and a NRSWA Utility survey

The evolution of the scheme design has been tested using an S-Paramics local junction model.

Costs

The scheme construction costs have been produced by PCC's partnering consultants Amey. Their recent experience in delivering the £19m East End Transport Scheme (EETS) means that they have excellent access to supply chain partners and are in a strong position to apply the information gained through the delivery of the EETS to this scheme.

A Quantified Risk Assessment has been produced using the Monte Carlo Simulation system in order to provide a robust cost estimate for the scheme and minimise future risks.

Modelling

The scheme has been developed and assessed using the validated 2008 Plymouth City Centre S-Paramics microsimulation model.

Documents:

Key risks	1	2	3	4	5
					✓
<p>1. Construction cost increases due to unknown physical factors e.g. ground conditions etc. The consequence of this would be that either not enough funding is available or that there is less time to address overspends. <i>Control Procedure:</i> <i>Carry out detailed surveys and assessments at early stage to ensure that design is based on sound information.</i></p> <p>2. Additional utility works required The consequence of this would be that additional costs and programme delays may be incurred. <i>Control Procedure:</i> <i>Carry out early assessment of utility information through NRSWA enquiries.</i></p> <p>3. Local authority funding contribution and/or developer funding contribution is not secured The consequence of this would be that either the scheme may need to be scaled back or delayed until contribution funding has been secured. <i>Control Procedure:</i> <i>Redevelopment of the Pavilions site is a Council priority. As the landowner the Council is in an advantageous position to guarantee that the scheme is supported and delivered as needed including supportive infrastructure.</i></p> <p>4. Lack of appropriate resources to deliver project The consequence of this would be that the scheme construction may be longer than anticipated resulting in greater costs. <i>Control Procedure:</i> <i>Identification and securing of appropriate personnel will be managed early on in the process and will be reviewed throughout the process. Significant in-house experience is already available after delivering recent major transport schemes and additional/expert resource can be obtained through the partnership arrangements the Council has with a private highway services provider</i></p>					
<p>Documents:</p>					

Financial

Affordability	1	2	3	4	5
					✓
The provision of £8.41m from the LTB towards the scheme in the region's second most populous urban area is considered affordable particularly when set against the economic and social benefits this scheme will help deliver.					
Documents:					

Capital Cost (£m)	£9.34 m
The capital cost of the scheme has been estimated at £9.34m, including Optimism Bias of 10% (pre business case.)	
The construction cost estimates have been prepared by Amey LG, Plymouth's partnering consultants, based upon rates identified in the sample schemes within the Highway Services Contract, rates generated through market testing or from recent experience of projects of a similar nature for example the East End Transport Scheme. Additional costs have then been added for costs to be incurred directly by Plymouth City Council such as land, project management and legal fees.	
Documents:	

Revenue Costs (£m)	
Annual maintenance costs have been estimated at £21,000 with these additional costs being met from Plymouth's revenue annual maintenance budgets	
Documents:	

Development Contributions (£m)	
£0.93 million of Developer Contributions are allocated to this scheme	
Documents:	

Cost Profile				
Earliest Start Date				
Expenditure Source	Yr 1	Yr 2	Yr 3	Yr 4
Local Authority				
Developer	£0.93m			
LTB	£3.205m	£5.205m		
Total	£4.135m	£5.205m		
<p>Construction for the scheme is anticipated to be undertaken from the third quarter of Year 1 through to the end of the third quarter of Year 2, with preparation works to complete the design early on in Year 1.</p>				
Documents:				

Cost Risk	1	2	3	4	5
			x		
<p>Quantity Increase Risk - Design at Feasibility Stage - assumptions made on drainage, construction depths, types of construction</p> <p>Price Increase Risk - Design at Feasibility Stage - assumptions made on drainage, construction depths, types of construction</p> <p>Allowances for Risk have been made within the overall cost plan along with the application of Optimism Bias of 10% to reflect the relatively early stage of design.</p>					
Documents:					

Commercial

Flexibility of option	1	2	3	4	5
<p>The scheme has some degree of flexibility in terms of potential to be scaled up or down however scaling down the project will erode the benefits and likely impact upon the outcomes that the scheme is trying to deliver.</p> <p>Once construction has started it would be difficult to stop the scheme as the location is a live traffic site which could not simply be left uncompleted. The scheme could potentially be stopped prior to construction however this could result in cost implications depending on the timing, reasoning and the contract details.</p>			✓		
Documents:					

Where is funding coming from?
The funding is a combination of developer contributions and major scheme funding.
Documents:

Any income generated (£m)	
The scheme will not generate any income however it is anticipated that during the design process opportunities can be taken to reduce ongoing maintenance costs for example through minimising infrastructure.	
Documents:	