Agenda Item: 7

Meeting of:	**Cabinet**
Date of Meeting:	**Thursday, 23 June 2022**
Relevant Scrutiny Committee:	Environment and Regeneration
Report Title:	Barry Docks Transport Interchange WelTAG Stage Three Business Case and delivery programme
Purpose of Report:	To update Cabinet on progress on the WelTAG Stage Three Business Case and make recommendations for the next steps.
Report Owner:	Deputy Leader and Cabinet Member for Sustainable Places
Responsible Officer:	Miles Punter - Director of Environment and Housing
Elected Member and Officer Consultation:	Deputy Leader and Cabinet Member for Sustainable Places Head of Neighbourhood Services and Transport Group Manager Transport Services Operational Manager Engineering Operational Manager Property Accountant Environment and Housing Services Accountant Resources Operational Manager Finance Director of Place Legal Services (Committee Reports)
Policy Framework:	This report is a matter for Executive decision by Cabinet

Executive Summary:

- This Report provides Cabinet with an update of progress on the Barry Docks Transport Interchange Scheme and seeks approval of the WelTAG Stage Three Business Case study.
- The Stage Three study has been completed by technical consultants Amey and proposes that Option 2 of the study is progressed. Option 2 sets out a masterplan for an interchange and related development both north and south of the main line at Barry Docks Station. This Report seeks authority to progress part of that option as Phase 1 of the delivery of the larger scheme and in accord with the current funding available to the Council.
- The Report sets out the current funding arrangements for the capital works and consultancy fee for delivery of the Scheme.
- The Report advises on the procurement process and choice of works contract.
- The Report seeks appropriate delegations of authority to both officers in conjunction with the relevant Cabinet Member to allow the award of works contract following a tender process and the award of funding by the Cardiff City Region and Local Transport Funds (Welsh Government transport funding).
- Delegations are also sought regarding agreement of such funding awards and the amendment of the Capital Programme once such awards are agreed. Further delegations are sought to enable the signing of the works contract and to enable internal management arrangements to be put in place to deliver the Phase 1 works.

Recommendations

1. That the Stage Three WelTAG study setting out the full Business Case for the Barry Docks Interchange scheme be agreed.
2. That authority be granted to the Head of Neighbourhood Services and Transport to progress the preferred Option 2 of the WelTAG Stage 3 Report.
3. That authority be given to the Head of Neighbourhood Services and Transport in consultation with the Deputy Leader and Cabinet Member for Sustainable Places and the Council's Head of Finance/Section 151 Officer, to tender Phase 1 of preferred Option 2.
4. That delegated authority be granted to the Head of Neighbourhood Services and Transport in consultation with the Head of Finance / Section 151 officer and the Deputy Leader and Cabinet Member for Sustainable Places to make a contract award for Phase 1 of the Scheme to the most advantageous bidder subject to appropriate funding and other approvals being in place.
5. That delegated authority be given to the Monitoring Officer/Head of Legal and Democratic Services to negotiate contract terms, to complete contract arrangements and execute the associated contract documentation with the preferred contractor emerging from the tender process.
6. That delegated authority be given to the Head of Finance/Section 151 Officer to amend the Capital Programme to reflect the external funding for the scheme once funding award letters have been received from the Cardiff City Region and Merthyr Council acting as the lead authority for the Metro Plus programme (LTF).
7. That delegated authority be granted to the Head of Neighbourhood Services and Transport, in consultation with the Deputy Leader and Cabinet Member for Sustainable Places, the Head of Neighbourhood Services and Transport, Monitoring Officer/Head of Legal and Democratic Services and the Head of Finance/Section 151 Officer to enter into an appropriate contract with an Electric Vehicle services provider in relation to any charging infrastructure provided within the Barry Docks Interchange scheme.

Reasons for Recommendations

1. The Welsh Government's Guidance on funding new transport schemes is set out in the WelTAG Guidance 2017. The Guidance requires new schemes to have a valid Business Case in place before funding is agreed for scheme delivery.
2. In order that the preferred scheme is identified and agreed.
3. To provide authority to the Phase 1 tender process.
4. To authorise the contract award decision given the nature of the external funding deadlines
5. To provide delegated authority for the Head of Legal to complete the contract arrangements.

6. To allow the Capital Programme to be updated to facilitate expenditure on the scheme.

7. To allow for the co-ordination of an EV supplier as part of the scheme. Cardiff City Region has been progressing charging points for taxi services across the region and a contracted supplier is in place in respect of those locations. Integration of service providers appears to be a sensible opportunity but authority to enter into appropriate contracts is required.

1. Background

1.1 Consultant Amey was commissioned by the Vale of Glamorgan Council to develop and appraise potential options for the provision of a transport interchange around the Barry Docks Railway station in support of the previous infrastructure improvement undertaken in 2010-12. The appraisal of options has been undertaken in accordance with the Welsh Government's latest version of WelTAG (December 2017) including advice on the appraisal in relation to the Future Generations of Wales (2015) Act Well-being Goals.

1.2 A decision was made not to undertake a Stage 1 Weltag assessment as it was considered that the Adopted Local Development Plan (2017) allocation of land around the Barry Docks Station for transport interchange purposes provided a sufficiently robust policy framework.

1.3 Following consideration of the options and the development of the Stage Two designs, the following Do-something options were defined for assessment:

Option 1 - Bus Interchange (to be located south of Station on part of Docks Offices Car Park) and additional Park & Ride Car Park (to be located north of Station platform) i.e. no residential or commercial uses.

Option 1A - Bus Interchange (to be located south of Station on part of Docks Offices Car Park) and additional Park & Ride Car Park (to be located north of Station platform) i.e. no residential or commercial uses plus drop off point on the proposed access road to the additional parking to the north of the station platforms.

Option 2 - Bus Interchange (to be located south of Station on part of Docks Offices Car Park), additional Park & Ride (to be located north of Station platform) and Residential Uses possibly with a Commercial Use (to be located north-west of station).

Option 3 Bus Interchange (to be located north-west of the station) plus additional Park & Ride (too be located north of Station platform), that is, no residential or commercial uses.

1.4 A draft WelTAG Stage Two report was prepared by Amey together with an Impact Appraisal Report and presented to the Project Review Group on 22nd April 2021. Following consideration of the Reports by the Project Review

Group, several recommendations were agreed for inclusion in the Stage Three study, including:

- Preference to the bus interchange south of the rail line;
- General agreement to the need to consider phases of development of the preferred scheme to tie in with the various funding programme windows being indicated as the WG Local Transport Grant funding window has a spending deadline of March 2023 which will, at this point in the programming of works generate a risk;
- Further consideration by the Council of the need to replace parking lost to the bus interchange element of the preferred scheme with additional new parking provision north of the line and
- The benefits of achieving the larger preferred scheme through multiple funding sources.

1.5 The Stage 2 WelTAG Report was agreed at 7th June, 2021 Cabinet Meeting.

1.6 The Stage 3 WelTAG Report (attached as Appendix A) sets out the full Business Case for the scheme as required by the Welsh Government's WelTAG Guidance 2017.

2. Key Issues for Consideration

2.1 The WelTAG Stage Three Business Case study has taken forward and appraised the options in relation to the Five Case Business Model: the strategic, transport, management, financial and commercial cases (attached as Appendix A).

2.2 The WelTAG process for this study is accompanied by an Impact Assessment Report (IAR). Its purpose is to provide a permanent record of the appraisal work on the proposed transport interventions and contains the detailed evidence behind the summary of information provided to decision makers in the Stage reports. The IAR remains a live document for updating throughout the process.

2.3 The issues around the station, defined by the WelTAG studies, were identified as follows:

Ref	Issues
1	To repurpose Barry Docks station as a key gateway for Barry, its town centre, employment opportunities and attractions.
2	To improve access routes to/from the station in order to increase the use of rail services as a sustainable means to access employment opportunities and other services, in the town and the wider Cardiff Capital Region.

3	To develop Barry Docks as a Mobility Hub, delivering an integrated network of sustainable transport solutions to provide a wider range of sustainable transport alternatives to those seeking access to/from the station.
4	To incorporate other transport and non-transport related facilities within the Mobility Hub, including housing/social housing, retail/commercial use and for example, a combined business and cycle hub.
5	To integrate and align the Mobility Hub services with the wider transport network for Barry, facilitating co-ordination and seamless interchange between all modes.
6	To bring the vision about, over time, ensuring each development stage provides the foundations required for the next and taking account of the land use allocations necessary to achieve the ultimate, overall, vision

2.4 The objectives as set out below were set for the study in order to address the problems, opportunities and constraints. These were accompanied in the main report by details of what success would look like and how it would be measured.

- To accommodate increasing rail demand both to and from Barry.
- To improve access to/from rail services by sustainable modes and increase access to Park and Ride from Barry Docks.
- To increase access to current and emerging employment opportunities for all.
- To support ongoing and future economic development throughout the region and compliment the bid to UK Government for Levelling Up funding to develop the Barry Waterfront through the development of a marina, a new home for the water sports trust (opposite the interchange) and further business space off Ffordd Y Mileniwm.
- Support Placemaking to establish Barry Docks as a key gateway, including the foundations for further station development phases.
- Equality, in relation to meeting the provisions of the public sector duties are set out in the Equality Act 2010 (Statutory Duties) (Wales) Regulations 2011.
- To work towards reducing climate change impacts, in the light of the declaration of a Climate Emergency by both the Welsh Government and the Council.

2.5 The objectives have been verified to determine how they contribute towards resolving problems of the study area, the Well-being of Future Generations Act Well-being Goals, the Wales Transport Strategy outcomes, the Welsh Government's Strategic Priorities as set out in the Wales Transport Strategy, and the Economic Action Plan Priorities.

STRATEGIC CASE

2.6 The Strategic Case establishes a case for change, based on ambitious imperatives for encouraging and accommodating increased demand for the use of rail services both to and from Barry Docks station. This is set out in the context of national, regional and local policies, including those relating to economic and housing growth and the effectiveness and efficiency of the transport network in supporting this growth. Objectives and critical success factors are defined in the context of stakeholder requirements to identify and select the preferred initiatives to take forward and a causal chain and logic map are provided to summarise the project and frame its appraisal.

2.7 The Barry Docks Transport Interchange will play a significant role in meeting national, regional, and local policy and strategy objectives.

2.8 Within the Strategic case the rationale for intervention is set out in terms of the impacts of the scheme on these economic, social and environmental matters.

2.9 With regard to economic objectives the tables of the Report illustrate how the proposed Barry Docks Transport Interchange will support the growth in rail demand expected as a consequence of housing and economic development within Barry, the Rural Vale and the wider Cardiff Capital Region. It indicates that all improvements will impact fully or to some extent on new demand for travel both to and from Barry. The exceptions to this are the car park measures and any housing or commercial development, which will support travel from Barry to employment and service opportunities in the wider area but not inward travel to Barry.

2.10 To address climate change, reduce emissions and other environmental objectives, a primary aim of the Barry Docks Interchange is to bring about modal shift from car use to more sustainable modes. At present access to the station by sustainable modes is limited. In the case of buses there is only one service that stops within a reasonable walking distance of the station. Council Supported Local Bus Service 88, stops on Dock View Road, but only on its journey out of Barry to Penarth. There is no bus that offers onward travel from the station to access the town centre or that can distribute rail users to other destinations in the town. The nearest point to access such services is the stop west of Barry Dock Station on Ffordd Y Mileniwm and adjacent to Morrisons Supermarket, which is used by a majority of Barry bus services as a major timing point. This stop is some 900 metres walk from the station, over double the maximum walking distance commonly considered acceptable to access a bus stop. This is a

substantial barrier both to those seeking onward travel from Barry Docks to destinations within the town or its surrounds and to residents of Barry seeking to access the station who would potentially use a direct bus.

TRANSPORT CASE

2.11 The four 'do-something' options have been tested alongside the do-minimum option as part of the Transport Case in the various WelTAG stages. The aim of the Transport Case is to explain the expected impacts of the project, how the project will contribute to the well-being goals and whether a project will provide value for public money. The social, cultural, environmental and economic costs and benefits of each option are considered.

2.12 One of the key aims of the Barry Docks Transport Interchange is to encourage those currently using their car to travel between Barry and Cardiff to consider switching to use of the more sustainable rail link. To achieve this additional Park and Ride spaces will provided to the north of the station platforms. Pre-Pandemic the current Park and Ride facilities were operating at capacity not only at Barry Docks but also at Barry Town. The additional spaces are also expected to attract some of those currently parking on Dock View road and using Barry Docks Station instead. However, there will also be new users attracted from amongst those currently travelling by car to destinations in and around Cardiff. The reduction in those using their cars for the whole journey will contribute significantly to reducing congestion on the main corridors and in addition generate further journey, punctuality and emissions savings.

2.13 The need for sustainable, connected and inclusive transport solutions to support economic and housing growth, drive prosperity and tackle climate change is highlighted specifically by WG National, Cardiff Capital Region regional and the Council's local policies and strategies and is also encompassed within the Well-being Act, 2015. To facilitate this, improved bus, park & ride, taxi and active travel services are regarded as having a key role, especially in CCR where the plans for South Wales Metro are regarded as a cornerstone of the City Deal

2.14 This is also reflected in the Vale of Glamorgan where Barry is the significant focus for economic and housing development, while outward commuting from the region is known to be high, especially towards Cardiff. As a result, transport demand in the region is increasing at a greater rate than the national average and this is expected to continue as further economic and housing development takes place.

2.15 Barry Docks station is well placed to cater for this demand on a sustainable and inclusive basis. Bus and taxi services in the area have capacity now to accommodate increased demand and according to the Local Transport Plan this is expected to be the case into the future, assuming the proposals in their immediate and longer terms plans are taken up. However, if Barry Docks station is to undertake a role as a key gateway to/from the town it in particular requires

additional infrastructure to enable improved access by public transport and active modes. This is required ahead of development generating additional travel if Barry Docks Transport Interchange is to attract this new demand from the outset, rather than having to encourage people out of their cars or to shift to bus or active travel use from making their journey in other ways.

FINANCIAL, COMMERCIAL AND MANAGEMENT CASES

2.16 In addition, the WelTAG Stage Three report set outs the anticipated financial, commercial and management cases. The Report utilises the WelTAG guidance which suggests an approach to cost-benefit analysis. Scores of greater than 1 indicate a positive result for schemes. The Stage 3 Report for the Barry Docks Interchange indicates a result of BCR 1.1. Whilst marginal this does provide the positive rationale for intervention required.

2.17 This business case presents the detailed case for these initial improvements and outlines the appraisal undertaken so far to condense the shortlisted interventions to a preferred intervention that can meet the objectives, which is affordable within the limits of available funding and is deliverable. It also outlines how the proposed intervention can establish the foundations for attracting input by developers and service providers to further improve the Barry Docks site, including provision of sustainable homes and complementary infrastructure, at a future development stage. This will further enhance the role of Barry Docks to become the gateway to Barry Town and provide the comprehensive Mobility Hub envisaged, in the medium to longer term.

2.18 Further work was undertaken in this WelTAG Stage 3 report to refine those proposals into an integrated package and fully quantify the benefits they will obtain, alongside establishing how they can be procured and managed.

2.19 The recommendations of this Report seek to acquire a range of delegated authorities which would enable officers, in consultation with the relevant Cabinet Members, to progress the tendering of the works packages, analysis of the bids and contract award for the Phase 1 works south of the main line.

2.20 The Scheme seeks to provide a number of electric charging points for the vehicles using the interchange. Whilst the scheme design provides for the infrastructure required, the long term operation of those charging points is likely to be via an external provider. Delegated powers are being requested to procure such a provider or alternatively extend an existing contract is appropriate.

2.21 The appointed consultants Amey have recommended the use of an NEC 4 works contract using an Option A approach. An Option A works on the basis of an "Activity Schedule" and the contractor, who is required to price each activity, is paid when elements are completed. Recent analysis by officers suggests this approach is preferred to a target cost approach. An Option A approach relies on

the provision of robust detailed design which the Council's consultants, Amey are currently in the process of finalising.

2.22 The detail designs have been part of submissions for both Planning Permission and a drainage approval (Sab/Suds) earlier in the year. At present neither approval is in place which adds risk to the tender process. A detailed Report on such risks will form part of a report due course to the Strategic Transport Board prior to the works being tendered but, at present, overall design change risk is considered to be low.

CONCLUSIONS

2.23 The reports indicate the assessed value of the preferred option using the appropriate methodology as set out in the WelTAG guidance and a positive BCR results.

2.24 While the benefits of Option 3 (with a bus interchange north of the line) appear to be higher than those of Option 2 (because trip lengths are shorter for the majority of trips) the preference from the consultation undertaken and from the Review Group was for Option 2 which appears to sit better with the master-planning vision for the area and has a lower number of risk factors associated with it making it the preference in delivery terms. Option 2 only requires land in the council's control whereas Option 3 would require the completion of land acquisition north of the line.

2.25 There is general agreement to the need to consider the preferred scheme being delivered in phases to tie in with the various funding programme windows being indicated as the WG LTA funding window has a spending deadline of March 2023 which will, at this point in the programming of works generate a risk. Phasing the works in line with the funding packages reduces the financial risk.

2.26 In February 2022 additional funding was agreed by Welsh Government to acquire land to the north of the main line required for the delivery of the transport elements of the larger scheme. Officers are progressing those negotiations and whilst the land use intentions are shown in the preferred Option 2 and interchange works in that location will form part of a later phase of works delivery when funding becomes available (if possible, in the Transport Funding programme post March 2023).

2.27 The benefits of achieving the larger preferred scheme through multiple funding sources needs to be considered in order that both the transport and regeneration benefits can be maximised.

2.28 The recommendations of this Report seek to acquire a range of delegated authorities which would enable officers, in consultation with relevant members, to progress the tendering of the works packages, analysis of the bids and contract award for the Phase 1 works south of the main line. This approach is

line with the Council's Project Management toolkit and makes delivery possible within the restricted funding packages programmes available.

3. How do proposals evidence the Five Ways of Working and contribute to our Well-being Objectives?

3.1 The introduction of the WelTAG report sets out an overview of how the approach and proposals of the appraisal evidence the Five Ways of Working and support the seven Well-being goals set out in the Future Generations of Wales Act 2015. The WelTAG guidance states it is required 'to ensure the needs of future generations are considered and understand how well they help public bodies to meet the well-being objectives and maximise their contribution to each of the seven goals.' Consideration should be given to long-term challenges, trends, opportunities, as well as integration, collaboration, involvement and preventing problems from occurring or getting worse.

Long Term

3.2 The Impacts Assessment Report provides the evidence of both current and future problems, trends and opportunities to inform consideration of the long-term perspective and the development of options. This includes consideration of the existing traffic and transport conditions associated with the Barry Docks Station and the subsequent appraisal of impacts associated with the economy, access to education, jobs and services, health and the environment.

3.3 Current local traffic congestion and connectivity issues are anticipated to be exacerbated in the future with traffic growth as well as new developments. The options considered in the outline business case offer long-term solutions to address the existing issues.

Prevention

3.4 The options under consideration offer the opportunity to prevent/ alleviate as far as possible the future problems and trends from occurring, through the enhancement of the local and strategic highway network. Moreover, the commercial, financial and management cases seek to identify costs and deliverability risks to aid decision making and prevent long-term liabilities for public money by considering all of the issues at the outset.

Integration

3.5 The options under consideration involve the integration of active travel as part of the local and strategic highway network, as well as supporting the potential for enhanced integration with public transport services and facilities as the highway network is enhanced. The WelTAG study has been undertaken in an integrated manner to consider and take account of other schemes and proposals through discussion with stakeholders.

Collaboration

3.6 In undertaking the WelTAG study, there has been collaboration between departments within the local authority and Welsh Government, as well as between stakeholders and Amey.

Involvement

3.7 Stakeholder workshops were undertaken as part of the WelTAG Stage Two studies. A technical review group for the Stage 2 study was held on 22nd April, 2021 and as a result of that meeting a revised version of the study was produced.

Well-being Goals

3.8 The objectives have been developed through consideration of the well-being goals and this is presented in the strategic case section. The strategic case also considers how each of the options meets the well-being goals. Together this seeks to ensure that achieving the well-being goals are at the centre of the setting of objectives for the study and the emerging interventions.

4. Climate Change and Nature Implications

4.1 The scheme development has followed both the WelTAG guidance and the transport policy direction as set out by the Welsh Government in Llwbyr Newydd-The Wales Transport Strategy 2021 with its emphasis on modal shift and de-carbonisation.

4.2 The scheme seeks to promote modal shift and active travel to help reduce carbon emissions and the number of car based journeys by encouraging the benefits of bus use, train use, cycling and walking.

4.3 Procurement decisions will give consideration to locational analysis of supply chains.

4.4 Scheme design provide consideration of drainage networks and the EV strategy will support carbon reduction strategies in the region.

5. Resources and Legal Considerations

Financial

5.1 The study has been financed by funding support from Welsh Government via the Local Transport Fund (LTF). Merthyr CBC act as lead authority for the management of that fund.

5.2 The funding for the delivery of the scheme is intended to come from three sources, these being the LTF, Cardiff City Region CCR) and the Vale of Glamorgan Council. As part of a report on funding of the Metro Plus Programme of March

2021 the CCR Board (made up of the south-east Wales authorities) agreed a three-way split of funding provision for the projects. For this scheme that means that the initial £1.5m of funding comes from the LTF programme, with a further £1.5m being made available from the CCR and a further capped £1.5m having to be found, if required, by the Vale of Glamorgan Council.

5.3 Scheme cost estimates in the Full Business case were at £7.6m in respect of the full Option 2 scheme but this included a 40% risk factor. The Phase 1 works elements being proposed for tender are for a reduced scheme, that is, only for works to the south of the main line and the works costs for them, therefore, are expected to be substantially lower than the larger scheme estimate and within the budget available.

5.4 Contract award would not be made until the appropriate funding packages are in place and the recommendations require Section 151 officer agreement to proceed.

Employment

5.5 Consultants Amey have been commissioned to undertake the technical work on this Project as the technical skills required to do so are not available within the Council.

5.6 Amey's contract provides for support in the procurement of the works, contract provision, contract management and works supervision alongside the Council's project manager.

Legal (Including Equalities)

5.7 The appraisal of options has been undertaken in accordance with Welsh Government's latest version of WelTAG (December 2017) including advice on the appraisal in relation to the Well-being goals set out in the Well-being of the Future Generations (Wales) Act 2015.

5.8 The Vale of Glamorgan Local Development Plan (2017) was adopted by the Council on the 28th June, 2017, which sets out the vision, objectives, strategy and policies for managing development in the Vale of Glamorgan. It also seeks to identify the infrastructure that will be required to meet anticipated growth in the Vale of Glamorgan area up to 2026. The LDP states that priority will be given to schemes that improve highway safety, accessibility, public transport, walking and cycling.

5.9 The Vale of Glamorgan Local Transport Plan (2015) acknowledges the requirement for a collaborative approach for the future development of the Capital Region. The LTP seeks to identify the sustainable transport measures required to ensure Vale of Glamorgan Council adheres to current requirements and good practice, to allow for a sustainable transport environment for the period 2015 to 2020, as well as looking forward to 2030. The plan therefore

seeks to secure better conditions for pedestrians, cyclists and public transport users and to encourage a modal shift away from the single occupancy car.

5.10 The provision of a well organised transport network helps to increase mobility and accessibility.

6. Background Papers

None.

Final Business Case (WelTAG, Stage 3)

Barry Docks Transport Interchange

COGL00000008 / 001 Draft Final

26/05/2022

amey consulting

VALE of GLAMORGAN
BRO MORGANNWG

Document Control Sheet

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DRAFT 1	Name: Paul Beecham Signature: Date: 23/05/2022	Name: Warren Murphy Signature: Date: 26/05/2022	Name: Tony Cahill Signature: Date: 26/05/2022
	Name: Signature: Date:	Name: Signature: Date:	Name: Signature: Date:
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1. Executive Summary

1.1 Introduction

This document sets out the Final Business Case for infrastructure improvements to upgrade Barry Docks Railway Station as a multi-modal transport interchange and key gateway for the town. Alongside promoting increasing demand and capacity for rail services serving the station, undertaking these improvements will enable a step change in the use of sustainable transport modes both by local residents seeking to travel to other parts of the Cardiff region to access employment, training and other services and by those from the Cardiff region and beyond, seeking access to Barry for the same purposes, as well as its visitor attractions.

This increase in use of sustainable modes will reduce the impacts of increasing congestion on roads to and from Barry, especially between the town and the City of Cardiff. Unlocking this potential requires investment in transport infrastructure and to facilitate it, this document provides the case for investment which underpins a funding bid to the Cardiff Capital Region, Metro Plus 1, Regional Transport Authority programme.

As a result of the Covid-19 outbreak in early 2020, all key areas of the WelTAG assessment and appraisal including the case for change and socio-economic, cultural and environmental considerations are anticipated to be affected to a greater or lesser extent beyond expected conditions. At the time of this report, the future medium to longer term implications of Covid-19 at a local, regional and national level remain uncertain and this study has not therefore made any assumptions as to the impacts on these scenarios, although sensitivity tests, as advised by guidance, have been undertaken. As a consequence, this WelTAG Stage Three assessment remains an assessment based on pre-Covid-19 conditions and forecasts and for the purposes of the WelTAG appraisal should be viewed with this in mind.

1.2 The Scheme

The Vale of Glamorgan Council (the council) is seeking to upgrade Barry Docks Railway Station, including:

- Provision of a new bus interchange;
- Provision of a new taxi interchange;
- Provision of electrical vehicle (EV) charging infrastructure (bus, taxi & cars);
- Improvements to access routes within station confines, including aesthetic improvements to the existing pedestrian subway;
- Consideration of minor station infrastructure requirements (ie cycle parking, signage, seating, information, etc);
- Consideration of options for additional linkages to Barry Island;
- Provision of additional park & ride capacity;
- Consideration of the potential for housing/commercial development on land north of the station;
- Development of a high-level Station Masterplan.

The aim of the proposed Barry Docks Transport Interchange is to provide a bus station, enhance station access and facilities to accommodate increasing numbers of people, expected to use an increased number of trains, each with increased seating capacity serving Barry Docks, on a sustainable and inclusive basis. The upgrades will improve local connections between the station and the town centre and between the station and developments taking place along the Waterfront. They will also improve access between the station and communities and businesses throughout the town and connect these to the Rural Vale and the wider Cardiff Capital region. Together these improved connections will offer significant support to the economic development of both Barry and the wider Cardiff City region, assist those seeking to access employment, training and other services in the region, encourage greater use of sustainable transport modes and help improve air quality and reduce congestion and noise.

1.3 Strategic Case

The policy and strategy objectives identified at national, regional and local level can be collated under the following headings:

- Economic objectives;
- Environmental objectives;
- Social objectives;
- Transport objectives; and
- Other objectives.

The infrastructure improvements envisaged for Barry Docks Station have been considered against all 94 sub-objectives identified under each of the above headings (within national, regional and local policy/strategy documents) using a Red, Amber, Green (RAG) analysis (Table 11, in the main body of this report). The table illustrates that taxi facilities, the bus interchange, improvements to the northern access to the station and improved park and ride capacity, in that order, are those elements that meet the most overall policy and strategy objectives. However, all proposed improvements meet a substantial number of objectives and only 3 of the overall national, regional and local policy and strategy objectives are not met in some way by the scheme proposals.

To ensure the overall national, regional and local objectives are addressed, five scheme specific objectives have been identified, as follows:

- Objective A - To accommodate increasing rail demand both to and from Barry;
- Objective B - To improve access to/from rail services by sustainable modes and increase access to park and ride from Barry Docks;
- Objective C - To increase access to current and emerging employment opportunities for all;
- Objective D – To support ongoing and future economic development throughout the region; and
- Objective E – Placemaking to establish Barry Docks as a key gateway, including the foundations for further station development phases.

In addition, there are two overriding imperatives which need to be taken into account:

- Equality, in relation to meeting the provisions of the public sector duties are set out in the Equality Act 2010 (Statutory Duties) (Wales) Regulations 2011; and
- Climate change impacts, in the light of the declaration of a Climate Emergency by both the Welsh Government and the council.

There are also six scheme specific objectives adopted that relate to the delivery of the infrastructure improvements, as follows:

- To provide a cost-effective solution to identified needs;
- To ensure infrastructure improvements are affordable, within available funding;
- To ensure solutions are deliverable;
- To ensure improvements are sustainable;
- To take account of interdependencies; and
- To ensure value for money

1.4 Options Appraisal

In the initial project brief the council specified three options for the Barry Docks Transport Interchange. Each option is identified below:

- Option 1 - Bus Interchange (to be located south of the station on part of Docks Offices Car Park) and additional Park & Ride car park (to be located north of Station platform) i.e. no residential or commercial uses;
- Option 2 - Bus Interchange (to be located south of the station on part of Docks Offices Car Park), additional Park & Ride (to be located north of the station platform) and residential uses possibly with a commercial use (to be located north west of the station);
- Option 3 - Bus Interchange (to be located north west of the station) and additional Park & Ride (to be located north of the station platform) i.e. no residential or commercial uses.

An Option 1a was also added through the design and master planning exercise undertaken as part of the business case preparation. This Option 1a includes a drop off point on the proposed access road to the additional parking to the north of the station platforms, whereas Option 1 does not.

All options (1, 1a, 2 and 3) were appraised at OBC stage. However, at the time, it had not been possible to complete all geotechnical surveys, or due to Covid, a full public consultation. On conclusion of the OBC Stage 2 appraisal, it was proposed that Options 1 and 2 should be considered indicative of the preferred option for further examination at FBC stage, either including some housing/commercial development to the north of the station or not, depending on the outcome of the surveys and investigations it had not yet been possible to undertake.

The FBC Stage 3 appraisal confirmed that, regardless of whether Option 1 or 2 was taken forward this should be in the context of housing/commercial development alongside the proposed transport infrastructure, as a future development phase. This was due to geological surveys demonstrating housing/commercial development to be possible and this development significantly adding to benefits of the Transport Interchange both in terms of its utilisation and placemaking to establish Barry Docks as a key gateway to Barry. It was also supported by responses received to the public consultation and ultimately it offers the best value for money. At this time Option 1a was discounted due to the geological survey confirming this was not deliverable.

Option 1 includes an access road from Subway Road to the proposed car park and housing/commercial development around this. There are a number of difficulties to progressing this due in part to the lease held by a garage business at the northern end of Subway Road being in place until 2024, limiting access to this area until then. In addition the banking to the pedestrian subway would need to be shored up and it is not clear there is the scope to achieve this without moving the garage, something the land owner, lease holder and the general public are not keen to see.

Option 2 includes an access road from Dock View Road to the proposed car park and housing/commercial development around this. This is comparatively much more straightforward to construct and offers a greater scope for development, including more houses. As a consequence it was concluded that Option 2 with housing/commercial development and an access road off Dock View Road should be the preferred option to take forward to delivery.

1.5 Transport Case

Value for money is a critical element of the decision-making process for any proposal that involves the use of public resources. Achieving value for money can be described as using public resources in a way that creates and maximises 'public value'.

Supporting evidence and details of the methodologies used to develop the Transport Case are summarised in the Transport Case in the main body of the report below and detailed in a parallel 'WelTAG Impacts Assessment Report – Transport Case', provided as a separate document at OBC stage. The value of the monetised benefits

identified by mode are provided for Option 2 in the tables below (Tables 23, in the main body of the report). Overall the scheme has Present Value Benefits (PVB) of around £3.6m.

Mode	Benefits
Car Park Benefits	£1,961,286
Bus Interchange Benefits	£554,453
Pedestrian Facilities Benefits	£171,671
Cycling Facilities Benefits	£2,391
Active Appraisal Benefits	£131,870
Land Value Uplift	£750,231
Present Value of Benefits total	£3,571,901

Taking account of a number of sensitivity tests the scheme Benefit Cost Ratio ranges from 0.94 to 1.10 (at 2010 discounted and deflated costs and benefits).

There are a wide range of benefits generated by the Barry Docks Transport Interchange scheme:

- Economy – Economy and Regeneration
  - The measures will encourage and support development and housing in the area.
  - The new facilities (especially the bigger car park) will support improved access to rail services which will, in turn, provide additional access to education, jobs and services elsewhere.
  - Improving the area at Barry Docks Station could act as a catalyst to improving the linkages to the town centre and between the town centre and the nearby parts of Barry Waterfront.
  - The facilities will lead to a reduction in traffic congestion and accidents especially on the approaches to Cardiff.
- Environmental – Reductions in emissions
  - Reduced traffic will lead to a reduction in greenhouse gas emissions, noise and improvement in air quality.
- Environmental – Landscape/Townscape
  - The areas surrounding the station could be improved and the scheme lead to an increase in environmental quality of the streetscape in the wider area.
- Social – Security of users
  - The improvements will be designed with personal security in mind and the increased usage will enhance this further

In addition there are a range of further benefits that cannot be quantified or valued for inclusion in the economic appraisal but which will be brought about by the station improvements, including:

- Increased user satisfaction;
- Improved perceptions of safety and security;
- Better access to jobs and services;
- Increased inclusion;
- More sustainable communities;
- Improved scope for economic growth;

- Improved wellbeing ;
- Better-connected communities; and
- Opportunities for income generation.

Together, the unquantified benefits and potential to off-set costs are significant enough such that, if valued, they can be expected to substantially improve the BCR for the scheme, making this positive in all cases and as a consequence raising the scheme from its current categorisation as low value for money towards, and possibly to achieve, the status of a medium value for money scheme. The scheme benefits are summarised in detail in the Appraisal Summary Table (Table 31) in the main body of the report.

1.6 Financial Case

Cost estimates and associated risks for the elements that make up the preferred Option 2, Barry Docks Transport Interchange scheme, are presented in the table below. The total costs for the scheme in real prices (2021) amount to £7,691,813.04 including on-costs, EV chargepoints and land purchase. In the case of the Transport Interchange south of the station, costs include 20% risk, while costs for all other aspects of the scheme include 40% risk, due to slightly greater uncertainty over costs at later delivery stages.

Scheme Elements	(£)	Notes
Additional park and ride capacity (inc access road for vehicular and active modes, ducting/cabling for EV charging)	2,332,401.33	Inc' 40% risk
Land Purchase	721,000	Inc' 40% risk
Bus and Taxi Interchange (inc ducting/cabling for EV charging)	1,119,017.44	Inc' 20% risk
Improvements to Pedestrian Subway	70,000	Inc' 40% risk
Purchase & Installation of EV Terminals	1,621,540.04	Inc' 40% risk
Other on-costs	£1,827,854.23	
Total	£7,691,813.04	

Costs have been profiled over the time period envisaged from now to delivery, as follows:

Year of Construction	2020/21	2021/2022	2022/2023	2023/2024	2024/2025
			£1,993,189.45	£1,439,048.56	£4,259,575.04

*Compound Interest for year of Construction@ 3.5% is included

The above expenditure profile is based on the delivery programme envisaged, as outlined below:

- Now to Mar 23- Finalise planning approval, complete tender documents, tender/award and build Transport Interchange south of the station;
- Mar 23 – Mar 24 – Produce tender documents for northern enabling works (relocate slow worms, fencing, demolition, vegetation removal), tender/award and undertake works/site supervision etc…;
- Mar 24-Mar 25 – Produce tender documents for northern access road and car park, tender/award and construct/site supervision.

Alongside the funds sought from the CCR Metro Plus, Phase 1, Regional Transport Authority programme, the council has set aside around £250K of Section 106 funding from developments in the area surrounding Barry Docks to support the improvements. There is also funding support envisaged from CCR and TfW for provision of EV taxi and car charging terminals within the interchange, respectively, with both in the process of developing

programmes to support this across the region. While not included in the cost of the interchange, wayfinding signage to/from the north of the station is expected to be funded by TfW's Wayfinding Signage programme.

1.7 Commercial Case

The Commercial Case provides evidence on commercial viability and the procurement strategy that will be used to engage the market and procure the necessary services for delivery. It clearly sets out the financial implications of the proposed procurement strategy. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project and any personnel implications arising from the proposal.

Given that much of the works will be undertaken within the station confines on land surrounding the platforms already owned by the council or that they intend to acquire, the procurement processes will be governed largely by the processes of the Vale of Glamorgan Council. Consultation over the process has been undertaken with Cardiff Capital Region as the primary funder and Transport for Wales as the station owner to ensure it also complies with their requirements.

1.8 Management Case

The Management Case assesses whether the proposal is deliverable. It tests the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

The Management Case sets out a clear and agreed understanding of what needs to be done, why, when and how, with measures in place to identify and manage any risks. It sets out a plan to ensure that the benefits set out in the Economic Case are realised and will include measures to assess and evaluate this. The project and programme are provided a risk management plan, proportionate to its scale.

1.9 Conclusion

Based on the above, it is concluded that Option 2 for the Barry Docks Transport Interchange should be taken forward to delivery.

Contents

Tables and Figures

Figures

2. Introduction

2.1. Document Purpose

This document sets out the business case for a number of infrastructure improvements to upgrade Barry Docks Railway Station as a multi-modal transport interchange and key gateway for the town. Alongside supporting increasing demand for an increased number of rail services- with increased capacity- due to serve the station from 2023, undertaking these improvements will enable a step change in the use of sustainable transport modes both by local residents seeking to travel to other parts of the Cardiff region to access employment, training and other services and by those from the Cardiff region and beyond, seeking access to Barry for the same purposes. This increase in use of sustainable modes will help address the global climate emergency and contribute directly to Welsh Government's and the council targets to achieve Net Zero. It will support Well-being goals for greater integration of services and increased inclusion and will also reduce the impacts of increasing congestion on roads to and from Barry, especially between the town and the City of Cardiff. Unlocking the above potential requires investment in transport infrastructure and to facilitate it, this document provides the case for investment which underpins a funding bid to the Cardiff Capital Region, Metro Plus 1, Regional Transport Authority programme.

The WelTAG process incorporates the business case model and is integral to it. The business case is set out using the 5-case approach recommended by HM Treasury[1] and the Welsh Government (WG) in their guidance document, Welsh Transport Appraisal Guidance, WelTAG 2017[2]. This guidance is supplemented by the Cardiff Capital Region, Metro Plus, Common Assessment Framework (CAF) and requirements set out by the Department for Transport (DfT), drawn from the DfT Business Case guidance[3], including WebTAG where necessary. The 5-Case approach encompasses strategic fit (Strategic Case), value for money (Transport Case), delivery (Management Case), affordability (Financial Case) and procurement (Commercial Case). Further details are provided in Section 2.4.

As a result of the Covid-19 outbreak in early 2020, all key areas of the WelTAG assessment and appraisal including the case for change and socio-economic, cultural and environmental considerations are anticipated to be affected to a greater or lesser extent beyond expected conditions. At the time of this report, the future medium to longer term implications of Covid-19 at a local, regional and national level remain uncertain. Whilst the report does provide sensitivity tests to examine the impacts of Covid-19 on its scenarios, this WelTAG Stage Three assessment remains an assessment based on pre-Covid-19 conditions and forecasts and for the purposes of the WelTAG appraisal should be viewed with this in mind.

2.2. Introduction to Proposals

The Vale of Glamorgan Council (the council) is seeking to upgrade Barry Docks Railway Station, including:

- Provision of a new bus interchange;
- Provision of a new taxi interchange;
- Provision of electrical vehicle (EV) charging infrastructure (bus, taxi & cars);
- Improvements to access routes within station confines, including aesthetic improvements to the existing pedestrian subway;
- Consideration of minor, station infrastructure requirements (ie cycle parking, signage, seating, information, etc);
- Consideration of options for additional linkages to Barry Island;
- Provision of additional park & ride capacity;
- Consideration of the potential for housing/commercial development on land north of the station;
- Development of a high-level Station Masterplan.

[1] The Green Book; Central Government Guidance on Appraisal and Evaluation
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf
[2] https://gov.wales/welsh-transport-appraisal-guidance-weltag
[3] The Transport Business Cases, Department for Transport, January 2013
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

The aim of the proposed Barry Docks Transport Interchange is to enhance station access and facilities to accommodate increasing numbers of people using an increased number of trains - each with increased seating capacity - expected to stop at Barry Docks, on a sustainable and inclusive basis. The upgrades will improve local connections between the station and the town centre and between the station and developments taking place along the Waterfront. They will also improve access between the station and communities and businesses throughout the town and connect these to the Rural Vale and the wider Cardiff Capital region. By improving links to residential and business areas to both the north and south of the station the upgrades will also enhance the routes between these areas, especially for those seeking to travel north/south by active travel modes between Dock View Rd and Fford-Y-Mileniwm, via the pedestrian subway within the station confines.

Together the improved connections will offer significant support to the economic development of both Barry and the wider Cardiff City region, assist those seeking to access employment, training and other services in the region, encourage greater use of sustainable transport modes and help achieve Net Zero targets, improve air quality, reduce congestion and noise.

Increased rail and bus use is a key objective for Cardiff Capital Region (CCR), Transport for Wales (TfW) and the Train Operating Companies (TOC). It will lead to a reduction in road traffic, especially between Barry and Cardiff and contribute to the wider well-being, social, health, economic and environmental objectives of the Vale of Glamorgan Council, CCR City Deal and Welsh Government (WG).

2.3. The HM Treasury 5-Case Model

The WelTAG Transport Business Case process is designed to ensure that investments are directed at the right schemes and that these are managed and delivered in the best way. This ensures that transport investment addresses important issues in an effective way, delivering value for money.

Traditionally, there are five stages to the process:

Stage 1 – Scoping: Strategic Outline Business Case (SOBC);

Stage 2 – Planning: Outline Business Case (OBC);

Stage 3 – Procurement: Final Business Case (FBC) – this stage;

Stage 4 – Implementation: What actually happens – next stage;

Stage 5 – Post Implementation: What is achieved.

The first three stages lead up to the selection of the proposed intervention. The final two stages cover the period during and after implementation, recording what actually happens and is achieved. The core of each stage of the Transport Business Case is the 5-Case Model which ensures that schemes:

- Are supported by a robust **case for change** that fits with wider public policy objectives – the 'Strategic Case';
- Demonstrate **value for money** – the 'Transport Case';
- Are **commercially viable** – the 'Commercial Case';
- Are **financially affordable** – the 'Financial Case'; and
- Are **achievable** – the 'Management Case'.

This WelTAG, Stage 3, Final Business Case uses the 5 Case Model in an appropriate and proportionate way to demonstrate the merit of investing in the proposed Barry Docks Transport Interchange.

2.4. Document Structure

Table 1 below summarises the information provided in each section of the business case.

Table 1 - Document Structure

Section	Description	Contents
3	The Project	Provides details of the infrastructure that makes up the project including locations, scale, inter-dependencies and links to wider development.
4	Strategic Case	Sets out the issues which are being addressed in the context of the policies and strategies within the region, especially housing, jobs growth and well-being. Establishes objectives and Critical Success Factors, a robust case for change and the impact of not changing. Sets out what is to be achieved, how this relates to stakeholder requirements and how the proposals will impact on the local, regional and national economy.
5	Options Appraisal	Identifies the options that have been considered, outlines the appraisal of these that has been undertaken and what would happen if the bid to the City Deal fund is not successful.
6	Transport Case	Develops the economic case for investment which demonstrates value for money, detailing the appraisal and modelling of the selected option and how this can be monetised to provide an initial benefit/cost ratio.
7	Management Case (Delivery Case)	Sets out proposals for how the project will be managed and governed, including the approach to the management of risk and a risk register. The ways in which the scheme will be communicated are considered, including stakeholder engagement and the approach towards realising the predicted benefits and how the scheme will be monitored, evaluated and reported is outlined.
8	Financial Case	Presents evidence of the affordability of the scheme, including estimates of scheme costs, inflation assumptions and funding strategy.
9	Commercial Case	Outlines the proposed procurement process, including the specification of the requirements, how the scheme will be procured and contracted.
10	Conclusions and Recommendations	Summarises the five cases and how this demonstrates value for money.
	Appendices	Provide a range of supporting technical documents, maps and tables which support the business case

3. Project Description

3.1. Overview

The Vale of Glamorgan Council commissioned Amey Consulting to provide an Outline and a Full Business Case (WelTAG stages 2 & 3) for a Multi Modal Transport Interchange at Barry Docks station, compliant with stages 2 and 3 of the Welsh Government's WelTAG Guidance 2017[4]. This Final Business Case builds on the previous Outline Business Case to provide the justification for regenerating land in the vicinity of Barry Docks Railway Station to include a proposed new Bus and Taxi Interchange, additional park and ride capacity and associated physical infrastructure improvements. In addition, it includes consideration of the potential to establish a mix of residential and commercial development alongside the Transport Interchange, as a future development phase.

The interchange will improve connections between the station and the town centre, the waterfront, visitor attractions, communities and businesses in Barry and the surrounding area and increase use of rail and other sustainable modes (a key objective of the policies for the region). It will lead to a reduction in road traffic and congestion in Barry and its surrounds, especially between Barry and Cardiff and contribute directly to the objectives for growth in well-being, social inclusion, economic development and environmental improvements of the council, CCR, City Deal and WG. It will also reduce the numbers travelling by car to access visitor attractions in the town.

3.2. The Town of Barry

Barry is located on the north coast of the Bristol Channel approximately 14 km south-southwest of Cardiff. It is well known as a seaside resort, with attractions including several beaches and the Barry Island Pleasure Park. To the west of Barry is Porthkerry Park, a large area of open, green space, with woodlands, streams, and access to a pebbly beach.

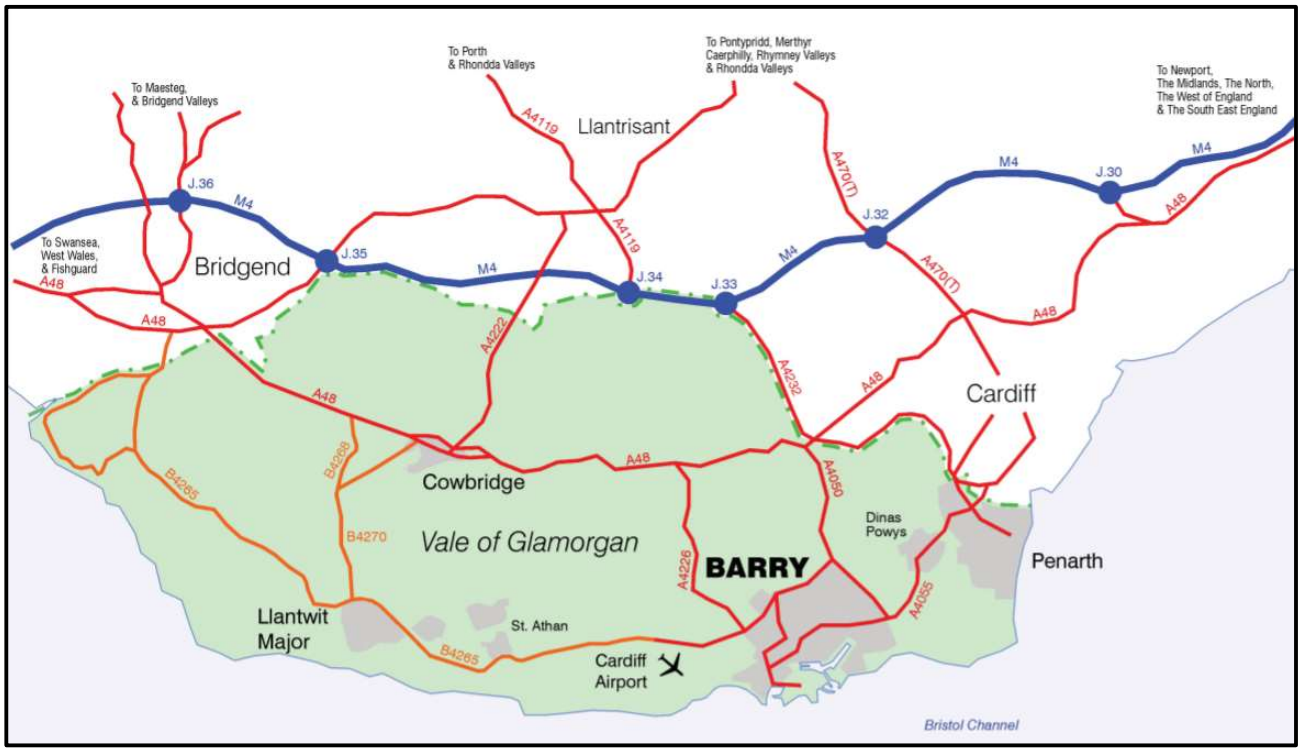


Figure 1 - Barry Location Map

Barry is the administrative centre of the Vale of Glamorgan. According to the Office for National Statistics the population of Barry in 2016 was estimated at 54,673. Once a small village, Barry has absorbed its larger neighbouring places of Cadoxton and Barry Island, while the settlement of Sully is also close by. The town grew

[4] https://gov.wales/welsh-transport-appraisal-guidance-weltag

significantly from the 1880s with the development of Barry Docks, which in 1913 was the largest coal port in the world. Although still a port, Barry is increasingly a prime residential location for those working in the wider Cardiff Capital region and is now considered a commuter town with manufacturing elements, and a service centre for the Vale of Glamorgan.

Currently, people aged between 16 and 64 make up 64% of the population of Barry. The 2011 Census highlights that 73% of the working population of the Vale of Glamorgan commute by car and 45% of the Vale residents commute out of the local authority for work purposes. The majority commute to Cardiff (34.4%), Bridgend (4.8%), Rhondda Cynon Taf (3.6%) and Newport (1.9%).

Barry Docks, and the adjoining Waterfront industrial area, form the largest employment centre in the town. The docks, whose road links were substantially improved with the opening of the Docks Link Road in 1981, now have direct road access to the M4 motorway Junction 33. Most industrial firms are located in the dock area. The largest are the chemical producing concerns such as Cabot Carbon and Dow Corning who recently completed the development of the largest silicones plant in Europe. Other significant employers in Barry Docks are Jewson Builders' Merchants, Western Welding and Engineering, Bumnelly and Associated British Ports Holdings who, since 1982, have administered the docks as successors to the British Transport Docks Board.

Barry is served by four railway stations, Barry Dock Railway Station, Barry Town, Barry Island and Cadoxton, all located within close proximity to one another. Cadoxton, Barry Docks and Barry Town Railway Stations are located on the Vale of Glamorgan Rail Line which runs through the Vale of Glamorgan from Cardiff to Bridgend. Following the closure of the Vale of Glamorgan line to passengers between Barry and Bridgend in 1964, it was reopened on 10 June 2005 and for most of its 19 miles now provides a scenic link from Barry to Rhoose, Llantwit Major and beyond to Bridgend. Barry Island Railway Station is located on a spur off the Vale of Glamorgan line just to the west of Barry Town.

The Vale of Glamorgan line is part of the wider South East Wales Metro rail network proposed by CCR. The Metro network as envisaged by 2023, including both the Vale of Glamorgan line and the Valley lines, is illustrated in the figure below.

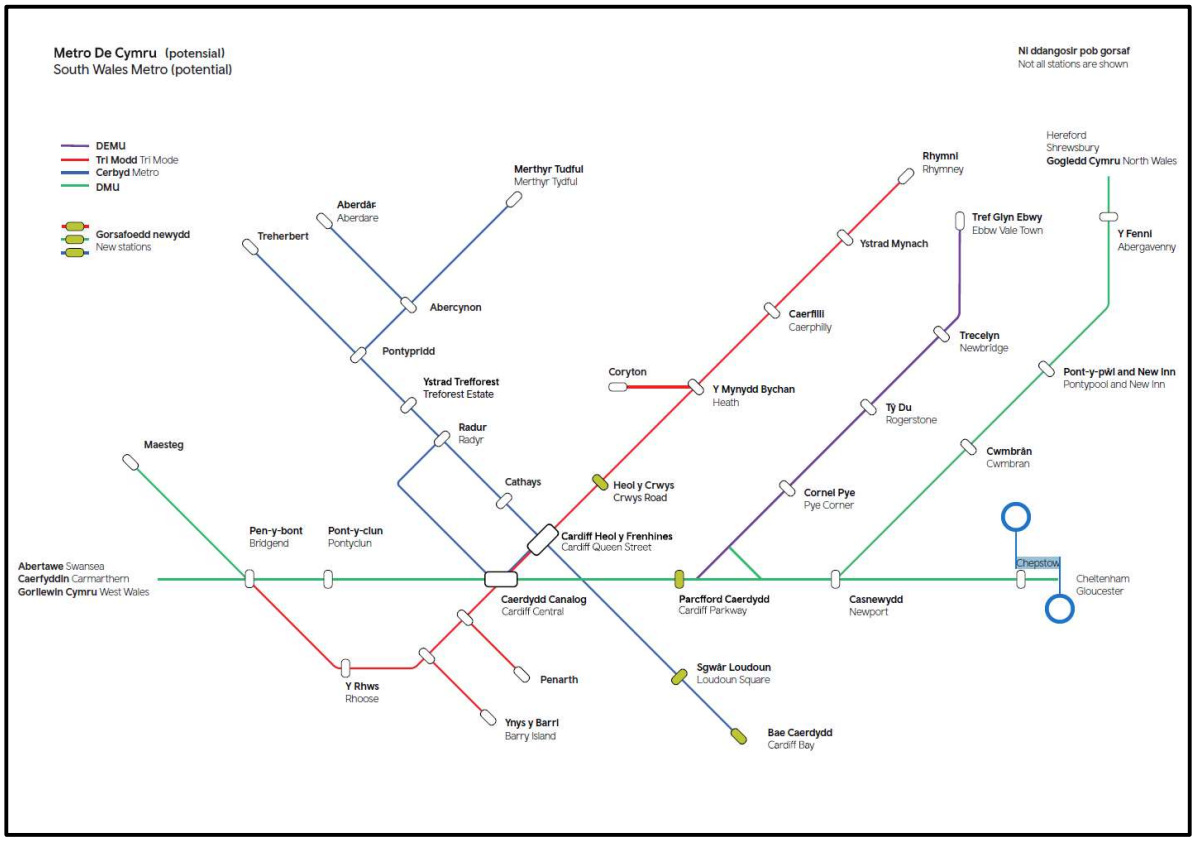


Figure 2 - South Wales Metro network

By bus Barry is served, primarily, by Cardiff Bus which operates the majority of services within the town as well as the 93, 94, 95 and 96/96a services that operate between Barry and Cardiff City Centre. Adventure Travel also operate a service (303/304) between Cardiff, Llantwit Major and Bridgend via St Athan Enterprise Zone, Cardiff Airport, Barry, Llandough Hospital and Cardiff Bay. Easyway of Pencoed provide service (88) between Barry town centre and Penarth, which operates as a circular around the town centre on its way into Barry and then continues on to Morrisons in the Waterfront Retail Park before returning direct to Penarth via Subway Road and Dock View Road. This service (88) is currently the only bus that serves Barry Docks Railway Station directly, from a stop near the northern access to the station on Dock View Road on its route out to Penarth. King's Square in Barry town centre is served by a majority of the buses serving the town.

There are three main road corridors that connect Barry to areas west of Cardiff and its City Centre:

- Barry town centre to Cardiff Central via A4050 and Culverhouse Cross;
- Barry town centre to Cardiff Central via A4055 through Eastbrook / Cogan; and
- Barry town centre to Cardiff Central via A4055 then B4267 via Leckwith.

Cardiff International Airport is less than five miles to the west of the centre of Barry, located in the community of Rhoose and provides access to locations both within the UK and internationally. It is currently accessed by rail from Rhoose (Cardiff International Airport) Station, which is also located on the Vale of Glamorgan line. A Welsh Government supported bus link (Service 905) connects the airport with all passenger rail journeys arriving and departing the station daily (exc. 25th and 26th December). The airport is also served directly by Adventure Travel Local Bus Service 303/304 (Bridgend - Llantwit Major – Cardiff, via Barry). There are aspirations to improve the rail link by provision of a rail spur, to serve the airport directly. Until recently, the airport was also served by the Welsh Government supported frequent TrawsCymru Service T9 (Cardiff Airport Express) that was withdrawn due to Covid-19 travel restrictions and the subsequent downturn in flights/passengers travelling to/from the Airport. However, Welsh Government has indicated it intends to review the situation when the Covid-19 situation improves, and the time is right to reinstate such a service.

With a population exceeding 50,000, many developers (housing and economic), multiple retailers and key inward investors are attracted to Barry and consider it a serious opportunity for future investment. Furthermore, examination of the town's academic attainment highlights that school leavers in Barry and the Vale of Glamorgan are out-performing their counterparts in other areas of Wales, providing employers with a well-educated and balanced pool of potential future employees. This is increasingly important as Barry is identified as having a key role in the Vale of Glamorgan regeneration plans and is considered of significant strategic importance to the Cardiff Capital Region, City Deal and the South East Wales Metro proposals.

3.3. Site and Location Details

3.3.1 Site Location

Barry Docks Railway Station is an important strategic access to Barry's town centre for businesses, residents and visitors. The station is one of four railway stations serving Barry, three located on the Vale of Glamorgan Railway Line and the fourth on a spur from this to Barry Island.

As illustrated by Figure 3 below, the regeneration site proposed consists of two sections divided by the railway line and Barry Docks Railway Station. The parcel to the north of the railway line is bound by Dock View Road and beyond this a large residential area of, circa, 4,600 houses. The western end of this parcel is currently in use as a used car sale outlet and parking compound. The eastern end of the site is formed of scrubby waste land that drops significantly, from an escarpment to the north, adjacent to Dock View Rd.

The land parcel to the south is bound to the west by Subway Road and to the south/south east by Ffordd Y Mileniwm. It currently includes the Dock Office which is a grade II* listed building used by the council and incorporates parking for council staff and visitors adjacent to this. The current park and ride car park is also within this land parcel, located on a raised elevation, immediately south of the rail line. The eastern end of the site is formed of scrubby waste land.

Figure 3 - Barry Docks Railway Station location plan

3.3.2 Surrounding the Development Site

Less than 1km south of the station is Barry Waterfront, a development that is ongoing and which to date, has delivered a new link road through the dock area connecting the docks to the town centre and seaside resort at Barry Island. This provides pedestrian, cycle and vehicular access to the station via Ffordd Y Mileniwm and Subway Road. Plans for development of vacant land at Barry Waterfront are ongoing as part of the Vale of Glamorgan Local Development Plan 2011-2026. Development proposals include residential (2000 dwellings), retail (A1: 6400 m² net), cafés, bars and restaurants (A3), hotel (C1) and, offices (B1: 3450m²). These are covered by outline planning permissions 2009/00946/OUT and 2009/00947/OUT. They also include the development of vehicular and pedestrian/cycle access, re-grading of the site to form new site levels and associated infrastructure works, parking, servicing, landscaping, public realm and public open space provision. The scheme is substantially complete, and the housing consortium is currently constructing the final phase of housing at South Quay.

Barry town centre is approximately 1km to the north/north west of the Barry Docks station site. To the north/north east sits a large residential area containing approximately 4,600 households with a population of approximately 10,674 (2011 census). This residential area stretches north to Gladstone Road (A4055) and together with residential areas to the north west, presents opportunities for encouraging sustainable travel to the station to access economic opportunities in the wider Cardiff Capital region for residents of Barry and the Rural Vale, supported by the infrastructure upgrade at Barry Docks Railway Station.

3.3.3 Station Facilities

Barry Docks Station currently benefits from a ticket machine, real time information, timetable information, seating, CCTV, help points and 10 cycle storage spaces, all on the station platforms. However, the station is un-manned and there is no ticket office, passenger waiting room, toilets or café facilities. A pedestrian subway under the rail line provides access to the station platforms from both the north and south, via a ramp that runs

(east) from the centre of the subway up onto the island platform. The gradient of this ramp is just beyond DDA standards meaning the station is currently not considered accessible to wheelchair users. The height of the subway means cyclists need to dismount to travel through it.

The station has an existing park and ride car park which is situated on a raised platform to the south of the station and accessed through the area alongside the Docks Offices, from a roundabout on Fford-Y-Mileniwm. There is car parking for up to 132 vehicles on the platform area. However, it is not overlooked by CCTV, there are no dedicated disabled parking bays, electric vehicle charge points, or real time information services. This car park is complemented by a further 109 car park spaces surrounding the Docks Offices, including 8 disabled parking bays but no EV charge points. All car park spaces can be used by rail users, council staff or visitors to the town, without any demarcation and all parking is provided free of charge. In general this car parking is accessed on a first come first served basis with spaces by the council's Dock Office tending to get taken up first as these are covered by the Dock Office CCTV system and/or can be overlooked from the building, meaning they are perceived as the most secure. Currently, there is no direct vehicular access to the station from the north, east or west.

No taxi ranks are provided for the station but a taxi lay-by, used as a drop off point for visitors to the Docks Offices, is also used as a drop off/pick up point for the station. Taxis are also known to drop off station users on Dock View Road adjacent to the pedestrian access from this to the station.

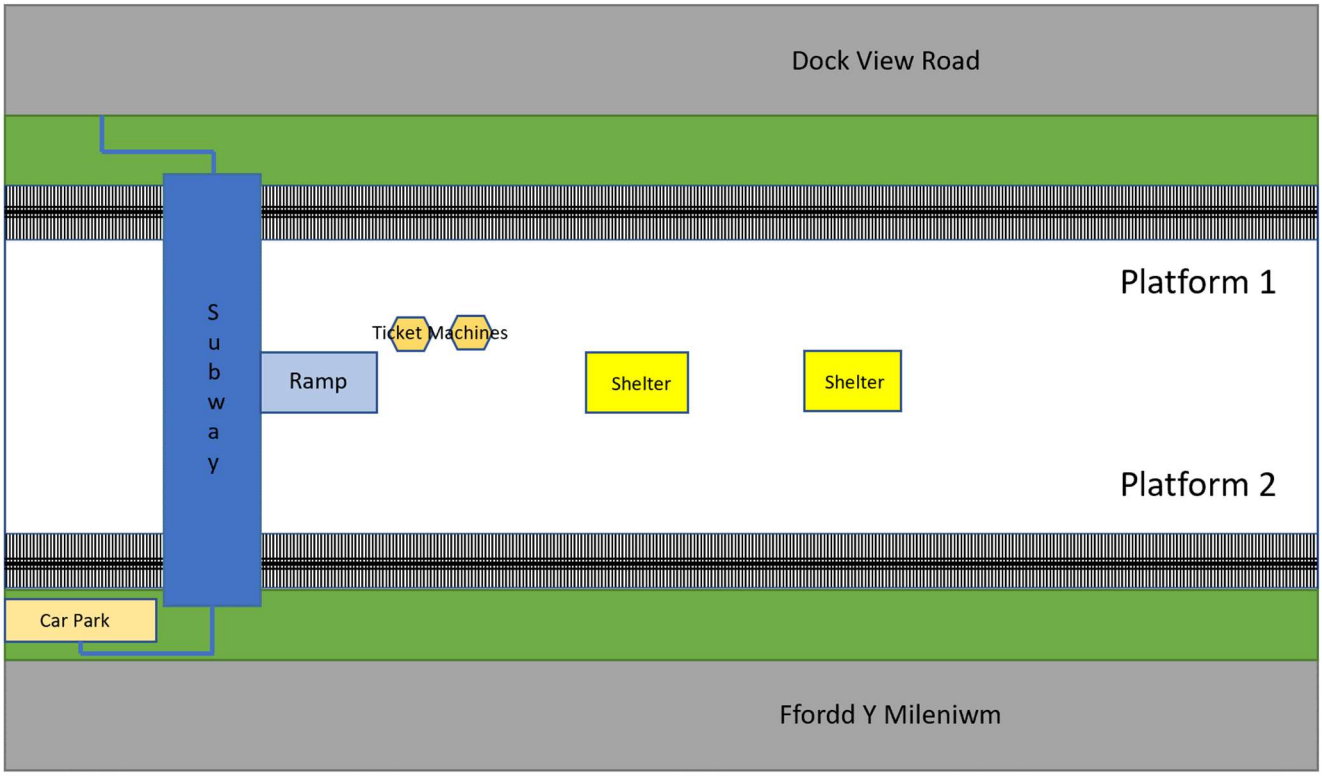


Figure 4 - Barry Docks Station platform layout

3.3.4 Station access

Barry Docks Railway station is within a 10 to 15 minute walk of the town centre and the Waterfront retail park. Land between the station and the Waterfront is flat. However, the gradient from the station north to the town centre and surrounding residential areas is relatively steep. The town centre is not signed from the station. There are no off-road or fully segregated active travel routes to the north of the station but there is such a route along the Waterfront/Ffordd Y Mileniwm, along the south of the station. There is an existing, designated, active travel route leading north along Kingsland Crescent towards the town centre, opposite the access to the station off Dock View Road but this is not a segregated route. The council recently submitted their Active Travel Network Map to WG and this includes aspirational future active travel routes along Dock View Road, Subway Road and to extend the existing route along Fford Y Mileniwm beyond the station to the east.

Pedestrian and cycle access to the station off Dock View Road is currently either via a disused road and footway (previously an access road to BT premises which are no longer in use) which slopes and winds down steeply to join the northern entrance to the pedestrian subway. There is also a route from Dock View Road to Subway Road involving use of steep concrete steps down the embankment (currently closed off for reasons of safety). The footway on Dock View Road is generally in good condition, but relatively narrow. There are also footways alongside most roads leading to the station from the residential area and town centre to the north of Dock View Road.

Directly to the north of the pedestrian access to the pedestrian subway, a designated existing active travel route is available that utilises the existing highway and footpath of Kingsland Crescent, Cross Street, Station Street, Merthyr Street and Llantwit Street to provide active travel access to/from Holton Road and the town centre. Active travel access to the station is also possible using the existing highway or footpath along Dock View Road and other side roads serving the residential area to the north and east, but these are not designated active travel routes.

From the south, pedestrians, cyclists, cars and other motorised vehicles can access the station and existing park and ride car park off the Cory Way/ Ffordd Y Mileniwm roundabout, via the Docks Offices forecourt and parking area. This is the same access as used by those working at or visiting the Docks Office. Along Ffordd Y Mileniwm, which forms part of National Cycle Network route 88 (NCN88), there are segregated foot/cycle ways. However, there are limited priority measures for cyclists on main roads and limited segregated cycle routes through the town to Ffordd Y Mileniwm, meaning for most of their journey to the station cyclists will use the highway.

There is also a third access route to the station, from the West, for non-motorised vehicles (pedestrians and cyclists) off Subway Road. This runs from Subway Road, past the back of the Council House, to join with the southern entrance to the pedestrian subway and via the ramp up to the station platforms. This route is not signed and crosses an area to the back of the Dock Office that is somewhat unkempt.

The general road conditions around the station at peak times are uncongested, with a steady flow of traffic passing the station entrances in both directions and relatively small numbers of HGVs. Some queuing can be experienced, during the peak, to access car park spaces at the station from Ffordd Y Mileniwm. Congestion on roads serving the town centre is greater, especially at peak times.

Barry Docks Station has cycle parking facilities on the platform, with Sheffield type stands for up to 10 bicycles and CCTV surveillance, but the station does not currently provide any additional features such as lockers, changing facilities or designated cycle routes to ensure the safety of cyclists within the station confines.

The three current station access routes are illustrated by Figure 5 below.

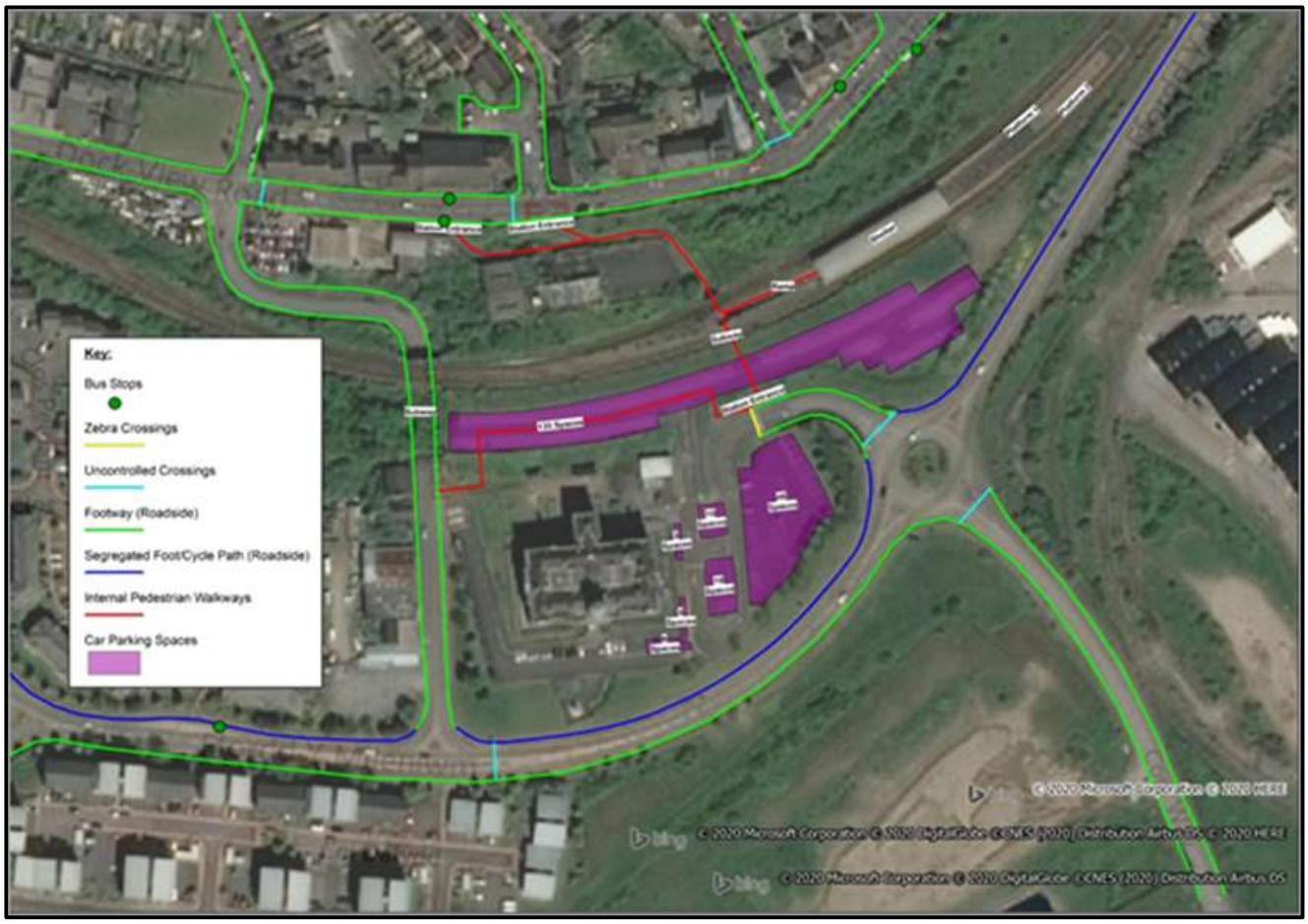


Figure 5 - Barry Docks Station Access Routes

Figure 6 below shows an isochrone for a 10-minute walking distance (720m at 4.3km/h) from the station platforms. The walking speed has been set low due to the steep gradient of the majority of routes from the station, especially north, east and west. Barry Town centre extends along Holton Road, located at the periphery of the 10 minute isochrone.

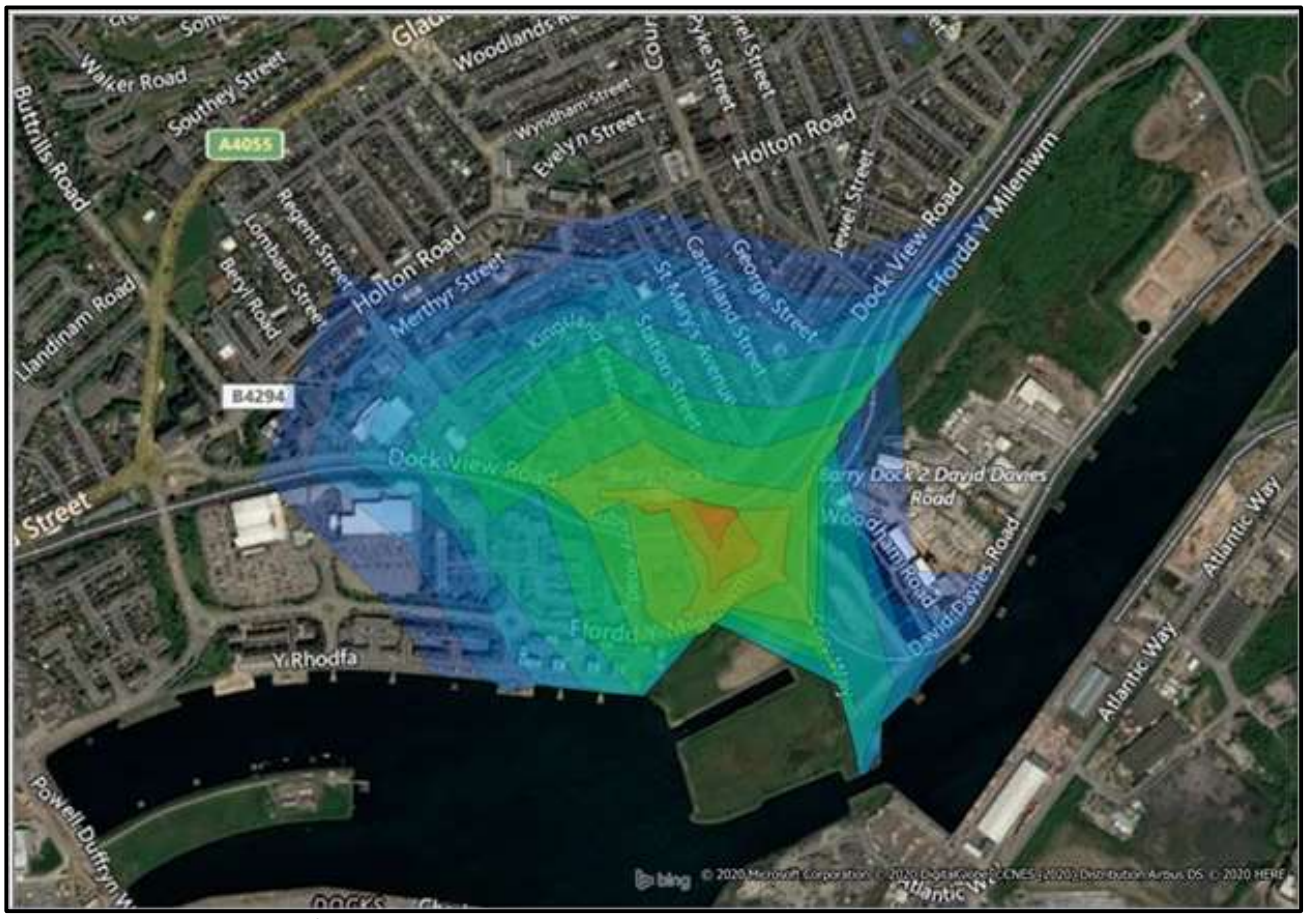


Figure 6 - Walking Isochrone to/from Barry Docks Station

3.3.5 Station Usage

With four stations Barry is relatively well served by the local rail network. However, due to a discrepancy in published data on station entries/exits it is not possible to directly identify current demand for rail services to/from individual stations in the town. It has been necessary first to establish a means to adjust data sources to ensure more accurate demand estimates are applied. To achieve this, we have used a factor drawn from work undertaken by TfW to take account of this issue in the South East Wales Transport Model (SEWTM) and then applied this to individual Barry stations based on an analysis of census travel to work data in the area.

The discrepancy arises because both the Office of Rail and Road (ORR) and LENNON (Latest Earnings Networked Nationally Overnight) data rely on information from ticket sales. In consultations with TfW it became apparent that where stations are located close to one another and hence clustered under the same fare stage, conductors selling tickets on the train will often issue a ticket to/from the furthest station in the cluster, regardless of the station passengers are travelling to or from. In the case of the four Barry stations, with most journeys being to/from Cardiff and its surrounds, the issue potentially inflates ORR/LENNON figures of demand for Barry Island station and deflates the numbers for Barry Town, Barry Docks and Cadoxton stations. This is only in the case of tickets purchased from a train conductor and not for tickets purchased by any other means.

Figures provided by TfW indicate that within SEWTM they reduce demand at Barry Island Station by circa 54% compared to ORR/LENNON data. Analysis of Travel to Work, 2011 Census data identifies that the reduction in patronage this represents should then be reallocated to the three other Barry stations on the following basis:

- Barry Town - 44%;
- Barry Docks - 8%; and
- Cadoxton - 48%.

It is likely the issue has existed for some time. Therefore, in the time series tables below we have adjusted the data for each year to establish more accurate estimates of demand for all Barry stations over time, from the ORR published data.

Table 2 - Barry Stations - Entries & Exits, all ticket types (adjusted).

Year	Barry Island (adjusted)	Barry Town (adjusted)	Barry Docks (adjusted)	Cadoxton (adjusted)
2008/09	*265,845*	*617,569*	*144,912*	*410,580*
2013/14	285,763	706,707	230,461	439,297
2014/15	279,774	675,639	231,500	426,190
2015/16	300,738	699,102	244,175	451,593
2016/17	327,434	701,729	254,996	471,638
2017/18	346,566	712,741	278,307	477,380
2018/19	382,822	721,838	286,996	486,226

The data illustrates that Barry Town station experiences the highest footfall of all Barry stations and Barry Docks currently has the lowest. However, consideration of growth in patronage at each station over time indicates that Barry Docks has seen the most growth (98%) over the past 10 years. Over the past 5 years Barry Island at 34% has experienced slightly greater growth than Barry Docks at 25%.

Table 3 – Passenger Growth at Barry Stations

Growth	10 Years to 2018/19	5 Years to 2018/19
Barry Island	44%	34%
Barry Town	17%	2%
Barry Docks	98%	25%
Cadoxton	18%	11%

The footfall at Barry Island is probably due in part to seasonal visitors in the summer months. However, recent housing development in the area will have also contributed to the growth in footfall at this station over the past 5 years. The substantial growth at Barry Docks between 2008/09 and 2013/14 is probably due to the additional park and ride capacity provided there, initially in 2010. More recent growth is likely to have come from new housing and other developments along the Waterfront. As this development is planned to extend further east along the Waterfront and occur closer to Barry Docks, it is envisaged growth in rail patronage at the station will increase at a greater rate in the future. This increasing patronage will be supported and encouraged by the range of station upgrades proposed for Barry Docks.

The 2019 annual footfall (adjusted) for the Barry stations, averaged out over a year, provides a daily estimate of the 2019 demand, as identified in the table below. The 2019 data is used for this estimate, rather than more recent data, to avoid the impacts of Covid-19.

Table 4 - Number of People Boarding/Alighting Trains in Barry (Daily estimate assumes w/end demand @50%)

Station	Daily Estimate	Annual 2019
Barry Island	1,227	382,822
Barry	2,314	721,838
Barry Docks	920	286,996
Cadoxton	1,558	486,226

Official Labour Market Statistics show that the rail mode share for travel from Barry is 2%. According to the DfT National Travel Survey (2011/12), the mode share for trains in Wales is 2%, therefore the rail mode share for trips for Barry is consistent with the national average.

3.3.6 Rail Services

Public transport provision, both rail and bus, has been impacted significantly by Covid 19 with services amended or reduced significantly during the 'first wave' of the pandemic between March and June 2020. At this time government stepped in to support services financially and continue to provide this support today, including to many services as they re-emerge. However, not all services have returned, and timetables continue to flex. Most recently, to address the emergence of the Omnicrom variant, further but less restrictive measures were put in place by government. As a consequence, the current usage of the public transport network cannot be considered representative. Neither is it entirely clear what the network will look like post-Covid or when this may materialise, although aspirations are for the market to remain at least the same as it was, if not improved.

Similarly, at this time, future plans for the development of the rail and bus networks remain in place, although in the case of rail it is noted that WG announced on the 23 October 2020 that they would take on full ownership of Wales' rail services due to the "dramatic falls in passenger numbers" during the pandemic. In February 2021, following a managed transition process, the Wales and Borders Rail Franchise was brought under Welsh Government control via a subsidiary of Transport for Wales operating under its own licence and approvals, regulated by the independent Office for Rail and Roads in its role as regulator for the U.K. rail industry.

Rail service provision pre-Covid is detailed below. Barry is relatively well served by the rail network with all services via the town, previously operated by KeolisAmey, continuing to be provided by Transport for Wales. Regular services link Barry to the wider network via Cardiff and Bridgend. The Vale of Glamorgan line not only links Barry to Cardiff and Bridgend but also extends beyond Cardiff to stations across the South Wales Valleys. Table 5 shows the current level of service provided by the train services calling at the stations in Barry.

Table 5 - Rail Services at Barry Stations

Direction	Main Services (Key Calling Points)	Train Frequency
Towards Barry	Aberdare – Pontypridd – Cardiff Queen Street – Cardiff Central – **Barry Docks** – **Barry** – **Barry Island**	30-minute
	Merthyr Tydfil – Pontypridd – Cardiff Queen Street – Cardiff Central – **Barry Docks** – **Barry** – Bridgend	
	Merthyr Tydfil – Pontypridd – Cardiff Queen Street – Cardiff Central – **Barry Docks** – **Barry** – **Barry Island**	Hourly during AM and PM Periods
Towards Cardiff	**Barry Island** – **Barry** – **Barry Docks** – Cardiff Central – Cardiff Queen Street – Pontypridd – Merthyr Tydfil	30-minute
	Bridgend – **Barry** – **Barry Docks** – Cardiff Central – Cardiff Queen Street – Pontypridd – Aberdare	
	Barry Island – **Barry** – **Barry Docks** – Cardiff Central – Cardiff Queen Street – Pontypridd – Aberdare	

Services run northbound to Cardiff Central and beyond (alternately, to Merthyr Tydfil & Aberdare) and run southbound to Barry Island and to Bridgend via Rhoose and Llantwit Major. Eastbound services connect at Cardiff Central to other valley lines with termini at Rhymney, Treherbert and Ebbw Vale town and also the shorter City Line trains that run between Radyr and Coryton as well as the South Wales main line eastbound to England. The westbound Vale of Glamorgan line to Bridgend provides a connection to the South Wales main line through to Swansea and the Llynfi branch to Maesteg. Figure 7 and Figure 8, below, illustrate the connections with the wider Valley Lines and Wales rail network.

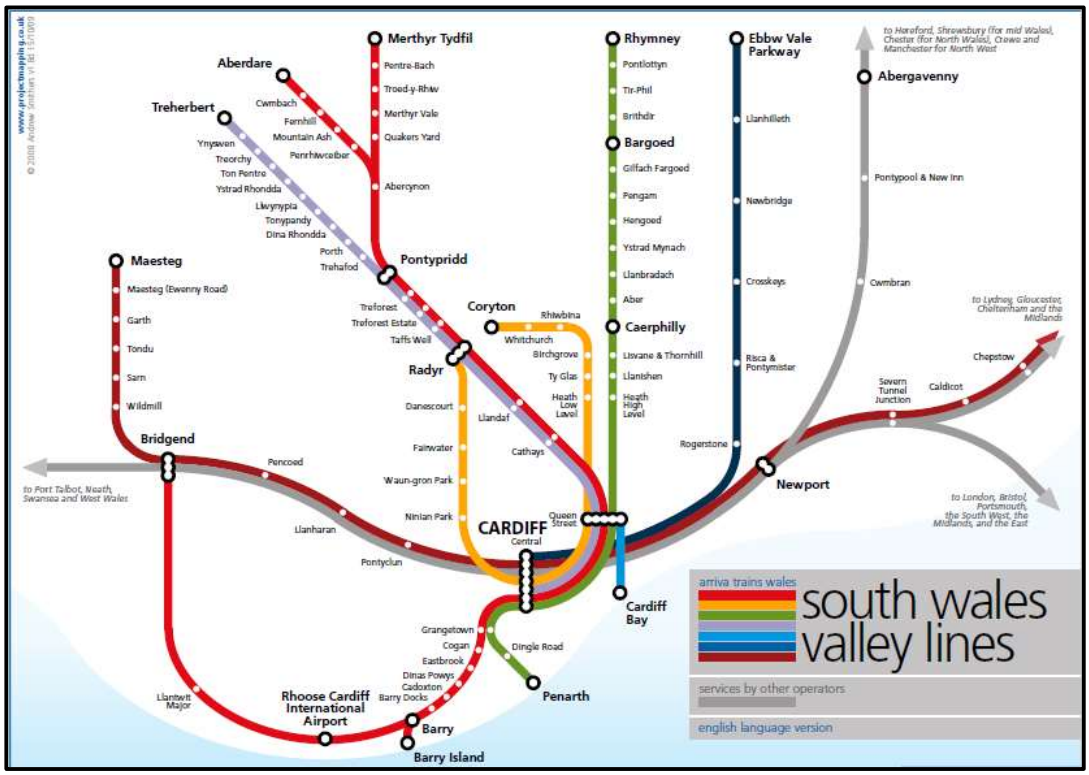


Figure 7 – Vale of Glamorgan line links to South Wales Valley Lines (NB – TOC is now TfW, not Arriva Trains)

Figure 8 - Wales Rail Network

3.3.7 Bus Services

Bus service provision through Covid 19 has seen some significant changes to the network. Substantial public funds have been provided to sustain the network, but not all services have re-emerged as the threat of Covid starts to recede. With high levels of public subsidy continuing WG is considering how it might introduce franchising to better manage the bus network. As the plans for this are firmed up it can be expected that transport authorities will have greater opportunities to influence the bus network for their area.

Consultation is currently ongoing on a White Paper for Buses published by WG in March 2022: One Network, One Timetable, One Ticket: Planning Buses as a Public Service for Wales. Within the White Paper WG outline their intention to achieve a bus system that boosts social equity and is capable of delivering the scale of modal shift required by the climate emergency. This white paper is about creating a bus system dedicated to providing the best possible service to the public. That means a bus system which is governed and designed to serve the public interest, with the widest possible geographic coverage, fully integrated connections between different services, the highest possible service frequencies, and simple unified easy-to-use ticketing and information - expressed simply as 'One Network, One Timetable, One Ticket'.

Once proposals are finalised following the consultation it is expected that WG will allocate responsibility for bringing about the improved bus network to TfW in conjunction with the proposed Corporate Joint Committee's for each region of Wales. At this time a data-driven redesign of networks is envisaged, based on 6 parameters (reliability, integration, efficiency, optimisation, simplicity and insight). The diagram below sets this out:

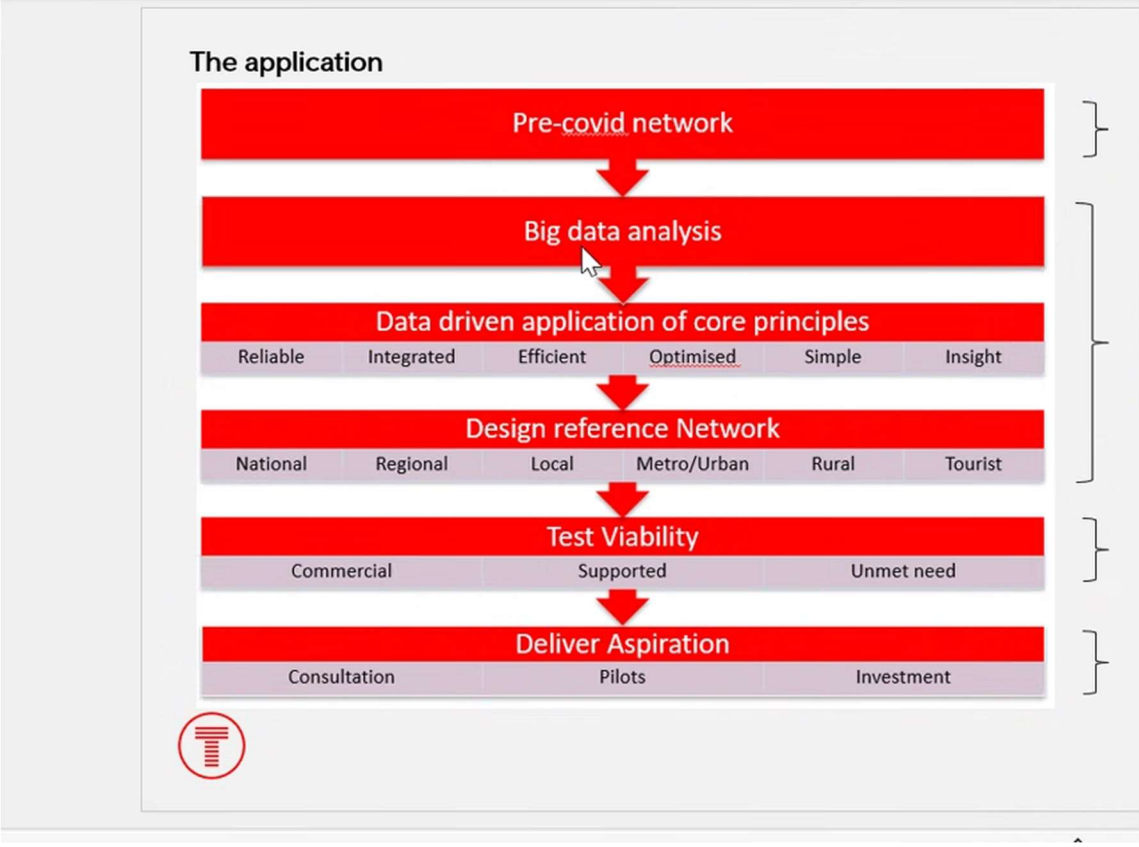


Figure 9 - Approach to Bus Network Development

Underpinning this are a number of tools and systems, drawn from a number of suppliers, as below:

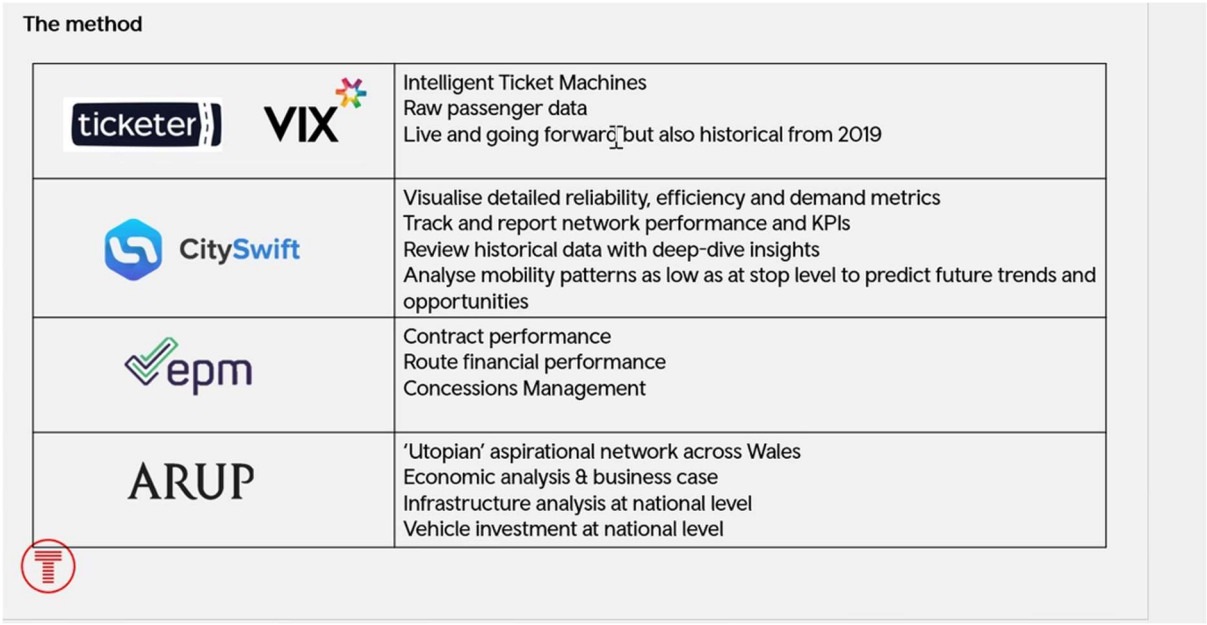


Figure 10 - Bus Network design tools

It is expected this approach will generate a 'rough cut' network which will need to be subjected to a consultation process. In the short term there is likely to be a limit to what will change – and given the overwhelming bias towards commercial services in towns such as Barry, it might be some time before the delivery of a comprehensive revised network could be achieved. There will also be short-medium-long term aspects of network development. For example, routes showing high levels of passenger-weighted delay might be prioritised for action (bus priorities etc) – but in the meantime could be given short-term enhancements. The White Paper proposes an overarching 'nowhere left unserved' philosophy behind the network design. Whilst this is a sound approach, there is a risk that relatively deprived areas will suffer reduced bus services in order to favour provision of buses in wealthy areas, which otherwise would not be served.

Another key imperative is in avoiding fragmentation, with a focus on a high-frequency core network, supplemented by slower services where necessary to increase coverage. This is one of the key justifications for the proposed approach. WG/TfW appear to perceive a risk that a more locally driven approach could lead to fragmentation and jeopardise the delivery of effective car-competitive services which are seen as crucial for decarbonisation and inclusion. The approach also strengthens the need for interchange, including the provision of local hubs where slower 'distributor' services meet the core network, as well as providing the facility for onward travel (such as to a college or hospital not served by the core service, as is currently the case in Barry).

Bus service provision for Barry, prior to Covid, is described below:

The number 88 bus operates between Penarth and Barry and is a fully subsidised service. The service runs hourly and is operated by Easyway of Pencoed. It serves Barry Docks station on its return to Penarth, from its stop on Dock View Road between St Mary's Avenue and Station Street, approximately 60/70 metre walk from the station platform. On its inward journey to Barry from Penarth the service does not serve the station, instead turning north just before reaching Dock View Road, then south to operate a loop around the town centre. The service terminates at the stop outside Morrisons in Waterfront Retail Park. To return to Penarth it travels east from Morrisons along Ffordd Y Mileniwm and then turns into Subway Road to join Dock View Road just ahead of its stop at Barry Docks.

Other bus services for the town do not run close enough to Barry Docks Station to be attractive for rail passengers to use. However, there are eight services that stop outside Morrisons on Ffordd Y Mileniwm approximately 1km walking distance from Barry Docks Station platforms. Many of these services return via the town centre to serve residential areas north, northeast and northwest of Barry Docks. All these services are illustrated in Figure 11, below:

Figure 11 - Buses stopping at Morrisons

The number 303 bus service is inter-worked with the 304 bus service to provide a service from Cardiff to Barry and onwards to Llantwit Major and Bridgend. The service is partially subsidised and operated hourly during peak times by New Adventure Travel. Commuters change buses at Llantwit Major interchange. The 304 bus stops outside of Morrisons on Ffordd Y Milenwm. On its journey from Barry to Llantwit Major it also serves Cardiff International Airport/Enterprise Zone and St Athans Business Park.

The 93, 94, 95 and 96/96a all provide a service between Cardiff and Barry, on a commercial basis, with all serving Barry town centre, its residential surrounds and Morrisons in the Waterfront Retail Park. All are operated by Cardiff Bus. The 93 operates hourly and other services twice hourly. The 94 runs between Cardiff and Barry via Penarth, the 93 and 95 via Dinas Powys and Penarth, with the latter also serving Barry Island after stopping at Morrisons. The 96/96a operates between Cardiff and Barry via Culverhouse Cross.

The 100 service provided by Cardiff Bus operates 6 services a day in a loop around Barry Town between Barry Highlight Park and Merthyr Dyfan. The service is fully subsidised. The B3 bus service is operated by Easyway of Pencoed and provides an hourly service stopping outside Morrisons on Ffordd Y Milenwm road. It operates between Barry and Cadoxton and is a fully subsidised service.

All Barry bus services operated prior to Covid are illustrated in the figure below and summarised in the table below this.

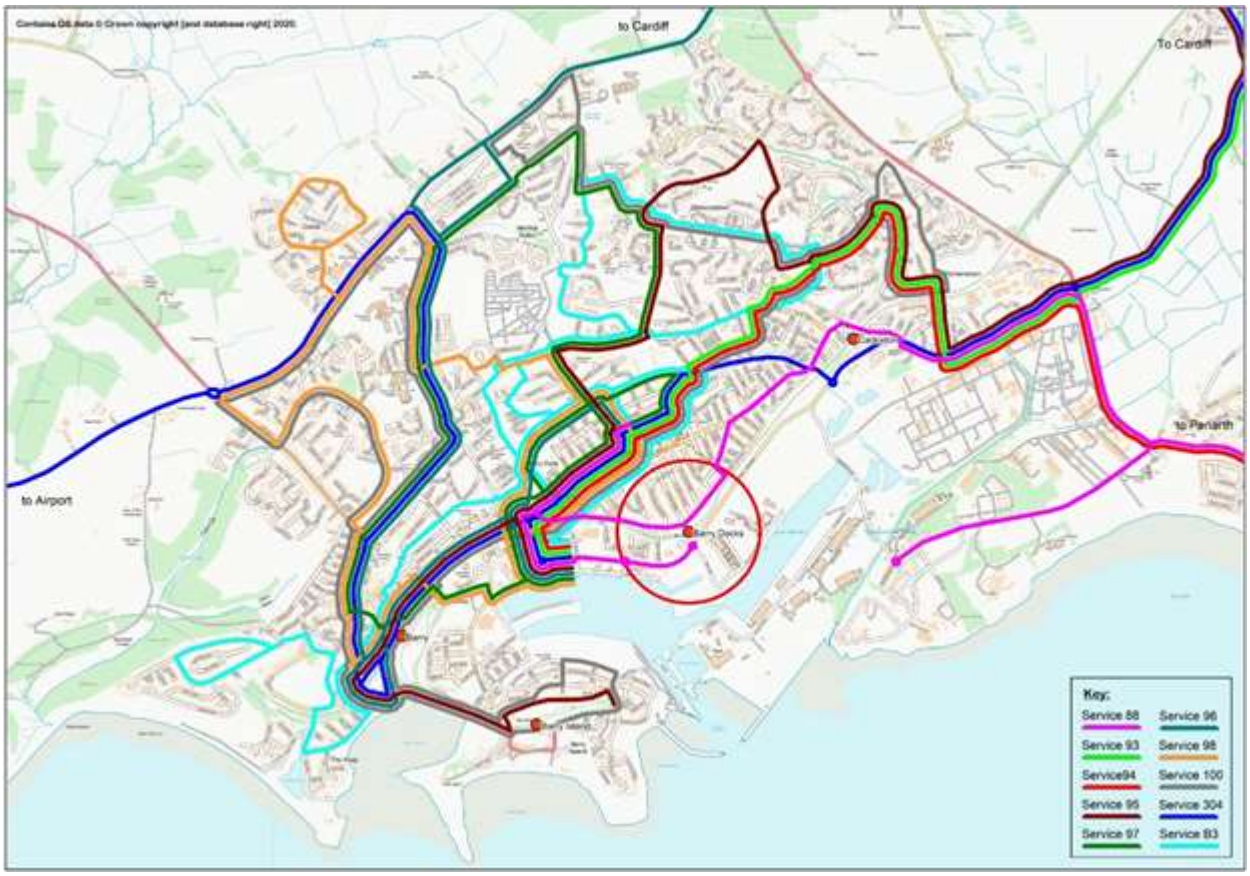


Figure 12 -: Buses serving Barry (pre Covid)

Table 6 – Summary of Barry Bus Services (pre-Covid)

Service	Operator	Route	Type	M-F (Excl Bank Holidays)			Saturday			Sunday			Public Holidays		
				Typical Frequency	First Service	Last Service	Typical Frequency	First Service	Last Service	Typical Frequency	First Service	Last Service	Typical Frequency	First Service	Last Service
88	Easyway	Barry - Penarth	Fully Subsidised	Hourly	06:55	17:55	Hourly	06:55	17:55	Nil	-	-	Nil	-	-
88	Easyway	Penarth - Barry	Fully Subsidised	Hourly	06:48	18:26	Hourly	06:48	18:26	Nil	-	-	Nil	-	-
93	Cardiff Bus	Barry - Dinas Powys - Penarth - Cardiff	Commercial	Hourly	09:26	17:38	Hourly	09:26	17:36	Nil	-	-	Nil	-	-
93	Cardiff Bus	Cardiff - Penarth - Dinas Powys - Barry	Commercial	Hourly	07:14	18:20	Hourly	08:15	18:20	Nil	-	-	Nil	-	-
94	Cardiff Bus	Barry - Penarth - Cardiff	Commercial	2 per hour	06:14	22:04	2 per hour	08:46	22:16	Hourly	06:40	23:15	Hourly	06:40	23:15
94	Cardiff Bus	Cardiff - Penarth - Barry	Commercial	2 per hour	07:03	23:00	2 per hour	07:10	23:00	Hourly	07:30	23:00	Hourly	07:30	23:00
95	Cardiff Bus	Barry Island - Dinas Powys - Penarth - Cardiff	Commercial	2 per hour	04:53	20:45	2 per hour	06:10	20:40	Hourly	09:00	17:55	Hourly	09:00	17:55
95	Cardiff Bus	Cardiff - Penarth - Dinas Powys - Barry Island	Commercial	2 per hour	06:35	19:40	2 per hour	07:24	19:40	Hourly	10:05	17:05	Hourly	10:05	17:05
96/96A	Cardiff Bus	Barry - Culverhouse Cross - Cardiff	Commercial	2 per hour	06:40	22:48	2 per hour	06:47	22:48	Hourly	09:50	23:45	Hourly	09:50	23:45
96/96A	Cardiff Bus	Cardiff - Culverhouse Cross - Barry	Commercial	2 per hour	07:35	22:45	2 per hour	07:40	22:45	Hourly	09:05	22:45	Hourly	09:05	22:45
97A	Cardiff Bus	Barry - Colcot - Barry (Anti-clockwise)	Commercial	2 per hour	07:35	16:50	2 per hour	09:10	15:40	Nil	-	-	Nil	-	-
97	Cardiff Bus	Barry - Colcot - Barry (Clockwise)	Commercial	2 per hour	07:40	16:30	2 per hour	09:15	15:45	Nil	-	-	Nil	-	-
98	Cardiff Bus	Barry - Highlight Park	Commercial	8 per day	08:13	14:23	Nil	-	-	Nil	-	-	Nil	-	-
98	Cardiff Bus	Highlight Park - Barry	Commercial	6 per day	09:27	14:04	Nil	-	-	Nil	-	-	Nil	-	-
100	Cardiff Bus	Barry Highlight Park - Merthyr Dyfan	Fully Subsidised	Nil	-	-	Nil	-	-	6 per day	12:17	19:47	6 per day	12:17	19:47
100	Cardiff Bus	Merthyr Dyfan - Barry Highlight Park	Fully Subsidised	Nil	-	-	Nil	-	-	6 per day	11:30	19:00	6 per day	11:30	19:00
304	NAT Group	Cardiff - Barry - Llantwit Major	Partially Subsidised	Hourly	00:02	23:02	Hourly	00:02	23:02	10 per day	06:31	22:36	10 per day	06:31	22:36
304	NAT Group	Llantwit Major - Barry - Cardiff	Partially Subsidised	Hourly	00:24	23:55	Hourly	00:55	23:55	9 per day	01:40	22:50	9 per day	01:40	22:50
B3	Easyway	Barry - Barry (via Cadoxton)	Fully Subsidised	Hourly	07:25	18:25	Hourly	07:25	18:25	Nil	-	-	Nil	-	-

The table indicates there is a reasonable level of bus provision within Barry during the day, but this is much reduced during the evening and on Sundays. Only the 88 bus serves Barry Docks Station directly. All services pass through the town centre, with the nearest stop to Barry Docks station for most being on Ffordd Y Mileniwm outside Morrisons supermarket.

3.3.8 Taxi Services

There are a number of different companies (circa 20) providing taxi services in Barry. Most offer a range of taxi services, including both Hackney and Private Hire vehicles. A few focus on providing specific services, such as airport services. Many also provide education transport on behalf of the council meaning their availability ahead of school opening times 07:30 to 09:00 and just after schools close 15:00 to 16:30/17:00 can be limited.

There is no taxi rank at Barry Docks Station, however, taxis currently serve Barry Docks either from the drop off/pick up point to the south of the station, which also serves the Dock Office or from Dock View Road where they drop and pick up passengers near the pedestrian access route to the north of the station.

3.4. The Vision for Barry Docks

In the project brief the council specify three options for the Barry Docks Transport Interchange. Each option is identified below together with an illustration of what this could look like. In the case of the scheme Option 1 there are two alternative layouts. Option 1 does not include a drop off point on the proposed access road to the additional parking to the north of the station platforms, whereas Option 1a does. In the case of scheme Option 2, which itself is the same as scheme Option 1 but with residential and/or commercial development incorporated, an alternative access route to the additional car parking is proposed from Dock View Rd, instead of from Subway Rd. This provides for the largest developable area for housing/commercial use:

- *Option 1* - Bus interchange (to be located south of the station on part of Docks Offices car park) and additional park & ride car park (to be located north of the station platform) i.e. no residential or commercial uses;

(Note that large scale versions of the following plans can be viewed in Appendix D.)

Figure 13 - Option 1 Indicative Layout (no layby on northern access road)

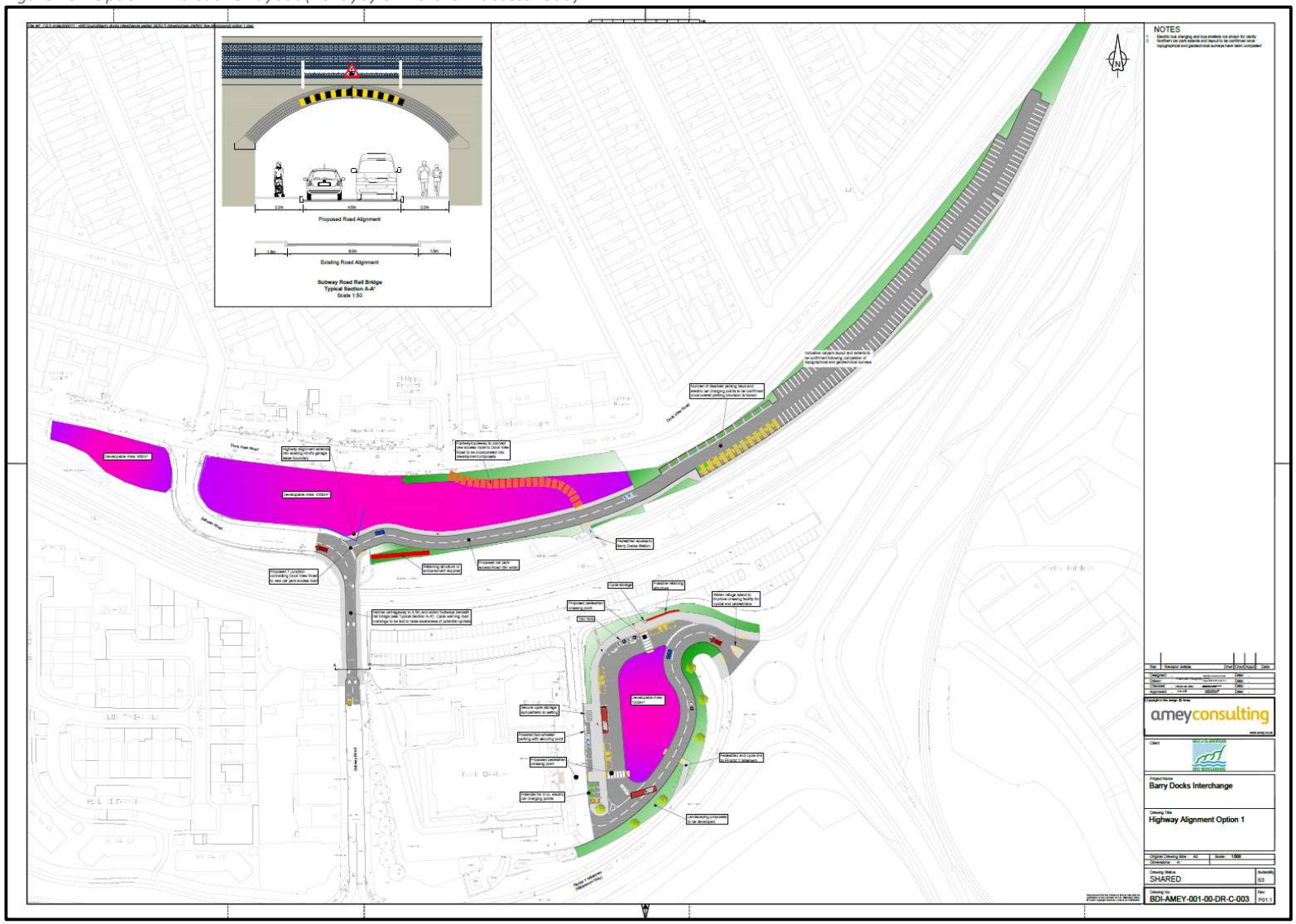
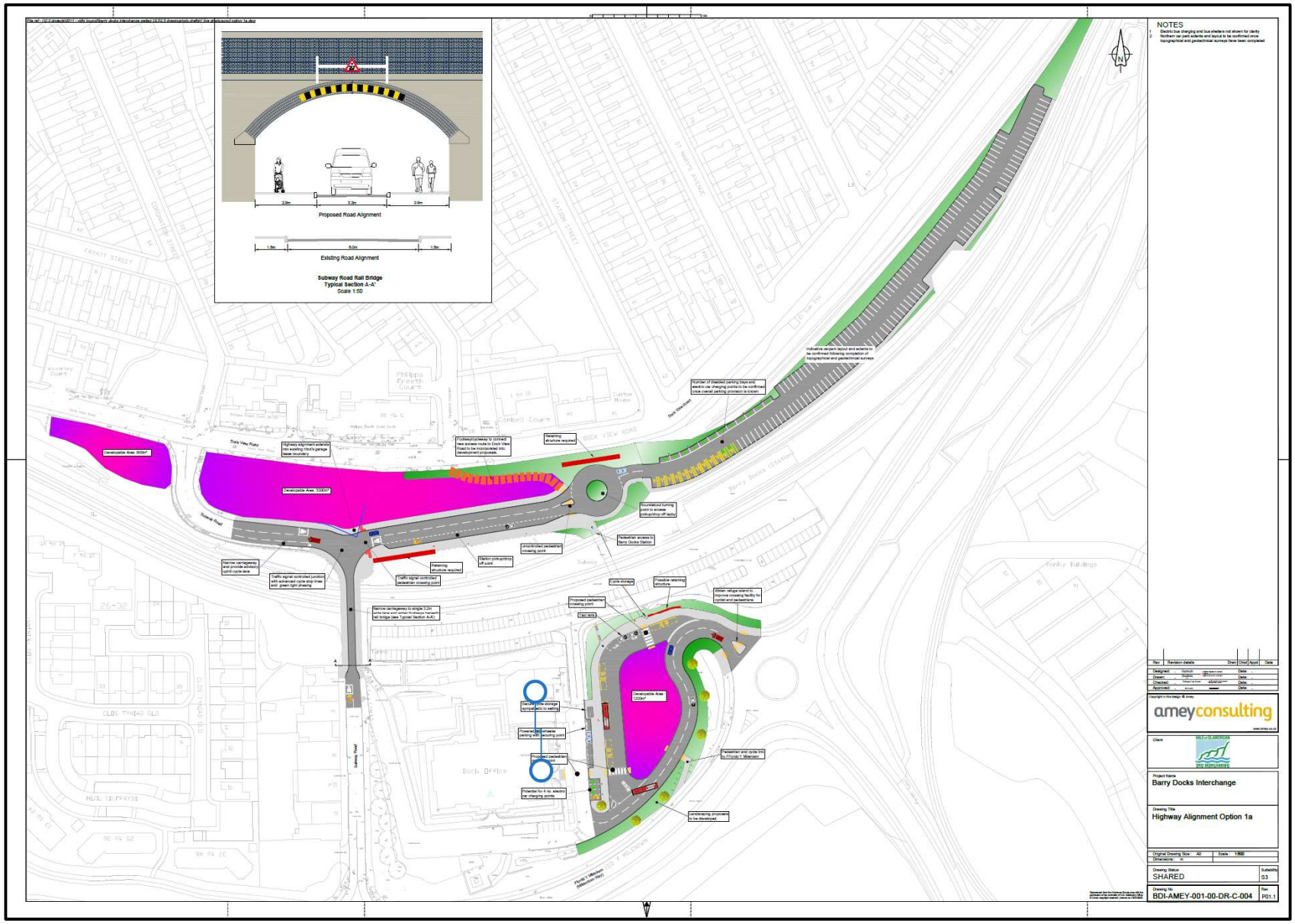
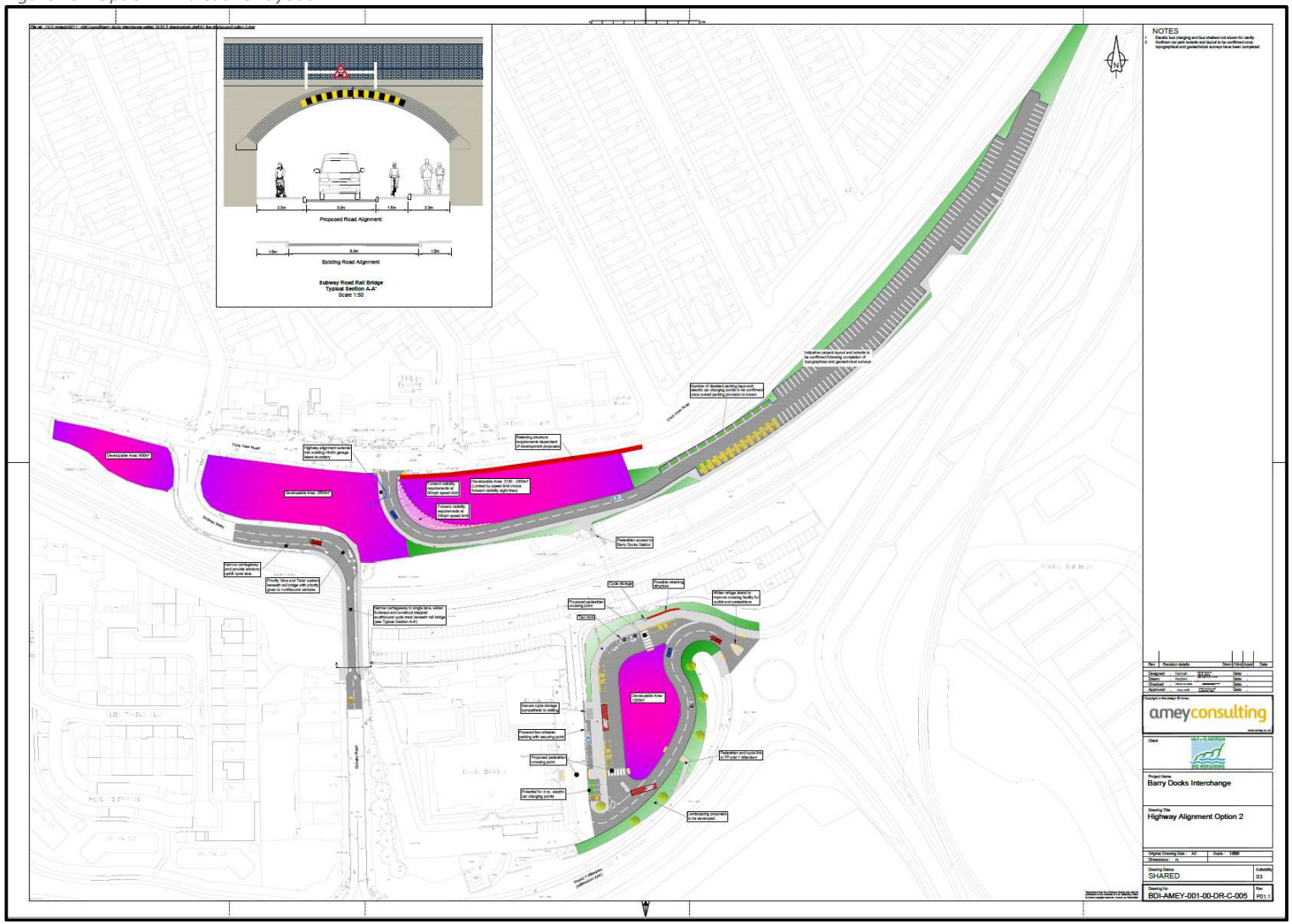


Figure 14 - Option 1a Indicative Layout (including layby on northern access road)



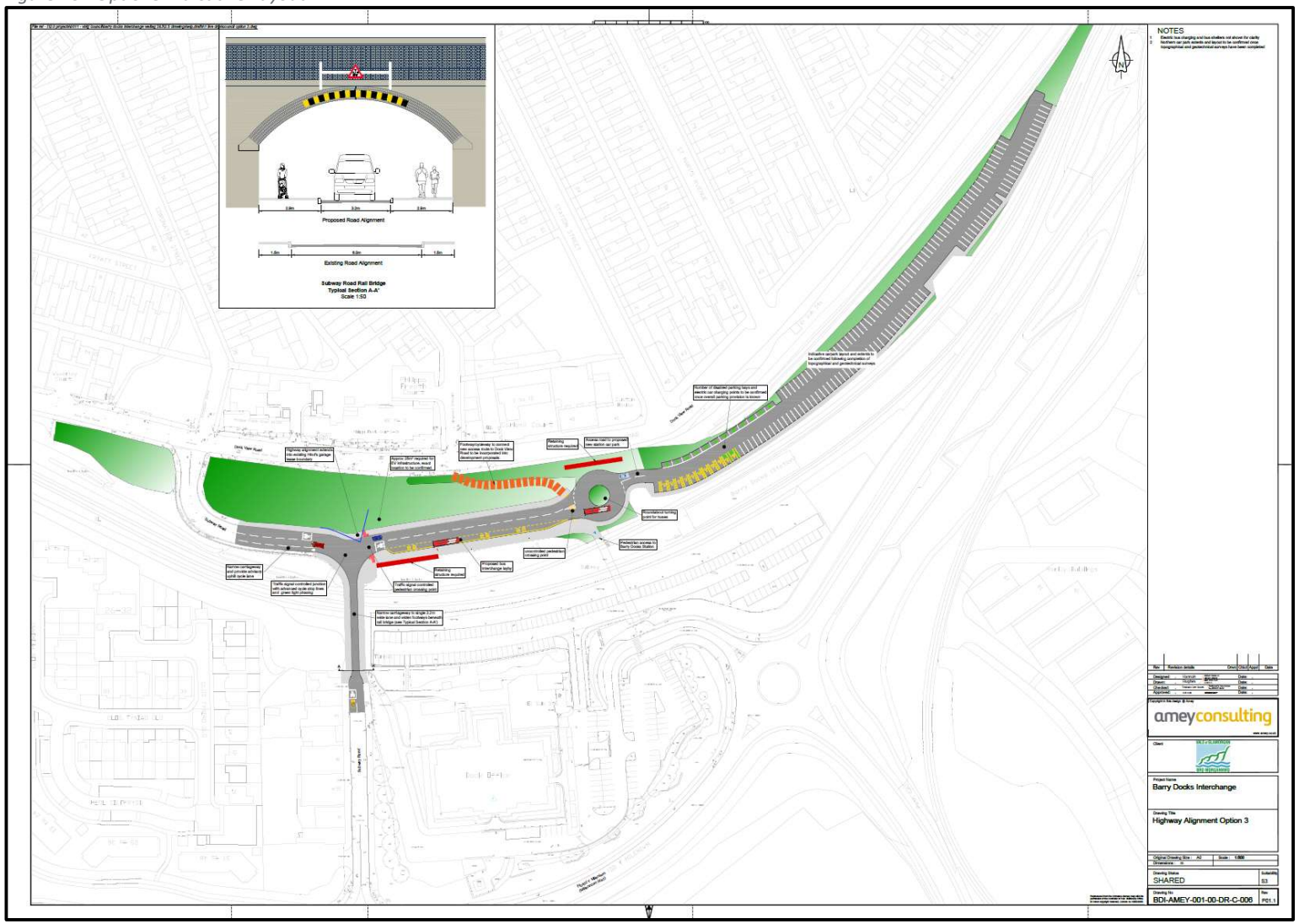
- *Option 2* - Bus interchange (to be located south of the station on part of Docks Offices Car Park), additional park & ride (to be located north of station platform) and residential uses possibly with a commercial use (to be located north west of station);

Figure 15 - Option 2 Indicative Layout



- *Option 3* – Bus interchange (to be located north west of station) and additional park & ride (to be located north of the station platform) i.e. no residential or commercial uses.

Figure 16 - Option3 Indicative Layout



Improving Barry Docks Station will play a significant role in supporting the ongoing development and regeneration of Barry. It will help shape the public realm by establishing an improved physical environment linking the residential areas to the north of the station with the Waterfront development to the south. It will improve the sustainable transport links required to access employment sites, both for those travelling inwards to Barry and those travelling outwards to the wider Cardiff Capital Region (CCR). Improved sustainable transport links will also support town centre regeneration and accommodate the movement of tourist/visitors who frequent Barry Island each year. Together, the improvements will reduce congestion on arterial roads and carbon emissions within the town, whilst also attracting new housing and business development, new visitors and opening up access to employment in the area.

However, the Barry Docks Transport Interchange is regarded as only the first step in Barry Docks becoming a key gateway to Barry Town. Over time it is envisaged that further development will build on the foundations it will provide to establish an even more comprehensive mobility hub at the station, encompassing all modes and to further enhance the station experience for all potential users. It will also be at this later stage that any housing and commercial development, if considered feasible, will be brought forward. This longer-term vision for Barry Docks Station incorporates the following aims:

- To repurpose Barry Docks Station as a key gateway for Barry, its town centre, employment opportunities and attractions;
- To improve access routes to/from the station in order to increase the use of rail services as a sustainable means to access employment opportunities and other services, in the town and the wider Cardiff Capital Region;
- To develop Barry Docks as a comprehensive mobility hub, delivering an integrated network of sustainable transport solutions to provide an increasing range of sustainable transport alternatives for those seeking access to/from the station;
- To incorporate other transport and non-transport related facilities within the mobility hub, including housing/social housing, retail/commercial use and for example, a combined business and cycle hub;
- To integrate and align the mobility hub services with the wider transport network for Barry, facilitating co-ordination and seamless interchange between all modes; and
- To bring the vision about in stages, over time, ensuring each development stage provides the foundations required for the next and taking account of the land use allocations necessary to achieve the ultimate, overall, vision.

3.5. Development Stages

The following development stages are envisaged to bring about this overall vision. (See options appraisal for further details on the choices made for the options specified in the study brief.):

Stage 1, Current Proposal – Establish Barry Docks as a Transport Interchange

- A bus interchange (Up to 4 bays – south of the station);
- A taxi interchange (Up to 2 bays – south of the station);
- Discussions with potential suppliers re provision of services in the public space, located centrally within the interchange (ie cycle hire, refreshments, community hub, information point)
- Aesthetic improvements to the pedestrian subway (station platform access);
- Improved northern access point to the station for cars, cyclists & pedestrians;
- Improved southern access point to the station for vehicles, cyclists & pedestrians;
- Improved walk/cycle through routes within station confines and car park areas (all directions);

- Improved signage (within station confines);
- Improved seating, lighting and security measures (within station confines);
- Improved aesthetic and environment surrounding the station;
- Revised and improved Dock Office parking layout (south – circa 63 spaces removed and relocated north);
- Extend Park & Ride capacity (additional spaces – north of the station);
- Ducting/draw ropes/socketed bases for electric vehicle charge point/s (bus, taxi & cars);
- Wayfinding signage for active travel routes to/from the station, from 2021/22 (via a programme being progressed by TfW);
- Rail service improvements (via TfW):
  - New Tri-mode trains to be introduced on Vale of Glamorgan line from 2023, increasing capacity from 2/3 carriages per train to 3/4 carriages per train;
  - Additional train/hr between Cardiff & Bridgend, via Barry Docks, Mon to Sat from December 2023;
  - Additional train/hr between Cardiff & Bridgend, via Barry Docks, Sundays, from 2024.

Stage 2, Short/Medium Term – Complimentary Rail Service & Infrastructure improvements, including Park and Ride extension

- Install EV charging terminals, to meet up to 50% of overall requirement (via programmes for provision of EV charging terminals being progressed by CCR and TfW)
- Improvements to road tunnel (Subway Rd);
- Improved pedestrian, cycle and vehicular access along Subway Road (including, potentially, priority signals through tunnel);
- Establish a comprehensive cycle hub at Barry Docks (offering cycle repairs, electric cycle hire, secure cycle parking, cycle equipment, lockers, etc);
- Improvements to active travel routes between the station and town centre and within the surrounding residential areas, including in particular to the north/north east of the station;
- Barry Bus network review and service improvements, including additional/amended routes to serve Barry Docks Interchange and the Waterfront development;
- Review and revise the alignment/permeability of Barry Town with Barry Docks to consolidate the station gateway role;
- Discussions with developers & suppliers re: housing development, commercial uses, electric cycle/scooter provision, CAV/EV vehicle hire, etc, at Barry Docks (north of the station);
- Establish private and public sector funding sources (ie WG Regeneration Fund, Shared Prosperity Fund, Section 106/CIL developer contributions, etc) to support the station improvements at this stage.

Stage 3, Medium/Long Term – Barry Docks as a comprehensive Mobility Hub

- Improvements to station facilities – café, toilets, changing room, Wi-Fi, extended CCTV coverage, waiting room, seating, RTI, ticket office, staffing, etc;
- Install any remaining EV charging terminals to meet long term requirements for all modes (ie bus, taxi, P&R/car, bicycle, scooters, motorbike, mobility scooters);

- Consideration of further improvements to pedestrian subway, including examining the feasibility of re-profiling the ramp with a 'landing' to break the gradient, as far as possible aligning this with DDA standards;
- Housing development, including social housing (to the north of the station);
- Commercial development (to the north of the station);
- Development of buildings for community use (to the north of the station);
- Direct links from station through routes to all active travel routes throughout Barry Waterfront (including link road) and throughout the residential areas north and east and the Town Centre;
- Consideration of options for additional controlled/signalised crossings on Barry Docks View Rd and Ffordd y Milenywm to join active travel routes beyond these;
- Consideration of junction improvements along Ffordd y Milenywm to improve access to the station along this route for cyclists and pedestrians;
- Sustainable transport link (ie road train, heritage rail) between Barry Docks and Barry Island, potentially via Barry Waterfront;
- Consideration of options for a shared path, alongside railway, from medical centre bridge to station platforms and from this bridge to town centre;
- Establish further private and public sector funding sources to support the station improvements proposed at this stage.

This business case considers and appraises all proposals included in the development stages outlined above, while focussing in particular on delivery of Stage 1 of the overall vision. Stage 1 will establish the Transport Interchange, meeting the significant and increasing passenger demand already emerging and the current local, regional and national objectives for decarbonisation, sustainability and inclusion. It will also put in place the foundations for future development, taking account of the land allocations necessary for this, the land purchase required to facilitate it and provide a preliminary, high level, Station Masterplan for the future development stages envisaged. This masterplan will inform the discussions required with developers, service providers and funding bodies to establish their interest in partnering with the council to bring forward the complimentary transport and non-transport related infrastructure necessary to build on the initial transport interchange and establish the comprehensive mobility hub and gateway to the town, envisaged.

4. Strategic Case

4.1. Introduction

This Strategic Case establishes a case for change, based on ambitious imperatives for encouraging and accommodating increased demand for the use of rail services, both to and from Barry Docks station. This is set out in the context of national, regional and local policies, including those relating to economic and housing growth and the effectiveness and efficiency of the transport network in supporting this growth. Objectives and critical success factors are defined in the context of stakeholder requirements to identify and select the preferred initiatives to take forward and a causal chain and logic map are provided to summarise the project and frame its appraisal, respectively.

4.2. Background

Barry is the administrative centre of the Vale of Glamorgan (VoG) and is identified as a 'key settlement' in the Wales Spatial Plan in recognition of its place in the South East Wales Capital Region. The current Vale of Glamorgan, Local Development Plan, 2011/26 (LDP) focuses on maintaining and enhancing the town's role as an important service centre for the council by exploiting its strategic road and rail links as well as its attractive coastal location.

In 2010, the Welsh Government designated Barry as a Regeneration Area to help co-ordinate regeneration activities and to encourage engagement with relevant interested parties. The Barry Regeneration Partnership Board identified skills and employment as the overarching theme and agreed two objectives for the programme:

- Supporting the development of Barry as an attractive place to live; and
- Supporting the development of Barry Island as a destination primarily for activity-based day trips.

Powell Dobson Urbanists ("the Urbanists") were subsequently commissioned by the Vale of Glamorgan Council and produced a report "Barry Town Centre – Framework for Future Public Realm Improvements". Completed in early 2010, the Framework provided various ideas for regeneration of the town in the form of public realm sketch proposals for enhancing:

- Thompson Street;
- Gladstone Road Roundabout junction; and
- Dock View Road.

This provided the basis for the Barry Gateway Regeneration plan which outlined a range of proposals to improve the town, including identifying both Dock View Road to the south of the town centre and the Gladstone Road area to the north as key gateways to the town. In regard to Barry Docks the plan identifies a need to "*Unlock the development of a key site identified in the Local Development Plan at Barry Dock Station for a mix of uses including a bus interchange*". During 2011/12 the council successfully implemented the Thompson Street Public Realm Improvement Project which included providing a footbridge at the end of Thompson Street across Dock View Rd and the rail line to the newly built Waterfront Medical Centre, 250m to the west of Barry Docks station. From the medical centre the bridge also links to footpaths alongside roads leading to Ffordd Y Mileniwm, offering an active travel route from Thompson St to the Waterfront area.

At this time, the council was also successful in obtaining funds to establish a park and ride car park at Barry Docks station. Prior to this there was no station car park available, with users parking on roads around the station and in nearby town centre car parks. Jacobs Consultancy were commissioned and in April 2010 provided a proposal for a scheme that took some of the parking spaces from around the Docks Offices that were dedicated for use by council staff and converting these to park and ride spaces. This was combined with construction of a car park on a raised platform just south of the rail line to provide further park and ride spaces at its eastern end, and at its western end, spaces to replace the council staff parking. Together this created 101 park and ride spaces at the station. No charge was introduced for the parking and this remains the case today. Also, over time, dedicated car park spaces for council staff, both at the Docks Offices and on the car park

platform, have been released and all 241 spaces (132 on the raised platform and 109 at the Docks Offices) are now available to council and rail users on a first come first served basis.

The council has also been successful in obtaining funds or establishing investment for other developments within the town identified initially in the Regeneration Plan or subsequently the Barry Waterfront Regeneration scheme and overarching Local Development Plan. This regeneration of the town is ongoing, in line with the LDP objective to make the town a key residential and service centre for the county. Key elements include improvements to the town centre, Barry Island and Barry Waterfront, as described below. There is also continuing housing and commercial development on various brownfield sites throughout the town.

As outlined above, in recent years there have been various schemes and initiatives to improve and promote the town centre. As part of the Castleland Renewal Project, around £600,000 of council funds was spent on upgrading the shop fronts of commercial properties on Holton Road and there has been nearly £1 million spent on extensive refurbishment of residential properties to improve the overall appearance of the area. There has also recently been major work carried out to upgrade infrastructure at Holton Road, which involved the road and pavements being resurfaced, kerbs re-laid, and safer crossing points installed.

Another key element in the regeneration of Barry has been to maximise opportunities for new visitor and tourist facilities at Whitmore Bay, Barry Island for the benefit of both residents and visitors to the area. Barry Island seafront and Whitmore Bay are recognised as the main tourist destinations within the Vale of Glamorgan. The resort is well known throughout the Valleys of South Wales, South East England and the West Midlands from which historically a high proportion of visitors are drawn. The resort's main attractions include the beach, Barry Island Pleasure Park, other smaller attractions and numerous amusements, cafes and bars. Housing development and other improvements have sought to change the perception of the area from that of a traditional seaside resort to a modern residential, leisure and visitor attraction. Despite facing major market changes and ever increasing demands the area continues to attract an estimated 300,000 visitors per year.

In July 2011, the Vale of Glamorgan Council approved plans for a £230m development of the Waterfront area, including the redevelopment of West Pond/South Quay, East Quay and Arno Quay areas of the old docks. Land at Barry Waterfront is allocated for the development of 1,700 new affordable and private dwellings, 5,824 sqm (net) new retail floorspace, a hotel, cafe, bars and restaurants, offices (class B1), community, leisure and education facilities. The Waterfront development will facilitate improved transport connections between the wider town and Barry Island. As a first stage to this a new link road to Barry Island incorporating new walk and cycle routes has been provided. Over time it is anticipated a waterfront café quarter will be established as well as further expansion of the residential area to some 2,000 houses. There are also proposals to establish a public park and green space within the Waterfront area, opposite Barry Docks Rail Station.

In October 2017 the Welsh Government launched a capital regeneration programme known as Targeted Regeneration Investment (TRI), for the three-year period 2018/19-2020/21. Under the programme local authorities, along with their partner organisations, could apply for capital investment for projects that promote economic regeneration and serve the aims of wider sustainable development, with activities focussed at individuals and areas of need. The TRI programme targets a small number of Regeneration Areas, including Barry, identified in the South East Wales Regional Plan for Regeneration, approved by WG in September 2018. Taking advantage of this funding the council has focused on bringing forward regeneration initiatives in the vicinity of the Gladstone Road Roundabout Junction and Dock View Road, specified as:

- Dock View Road Regeneration Area; and
- Gladstone Road Regeneration Area;

Within the Dock View Road Regeneration Area, the council has identified the need to comprehensively regenerate land in the vicinity of Barry Docks Railway Station, as an important gateway to the town centre and Waterfront. They recognise that much of the land alongside the station is semi derelict and in a poor environmental condition, thereby providing a poor first impression of Barry. To address this, they propose a master planned bus interchange and additional park and ride, potentially including new residential and commercial development sites. This is seen as offering an opportunity to bring forward multi-million pound investment that will help transform the area and create a positive first impression of the town.

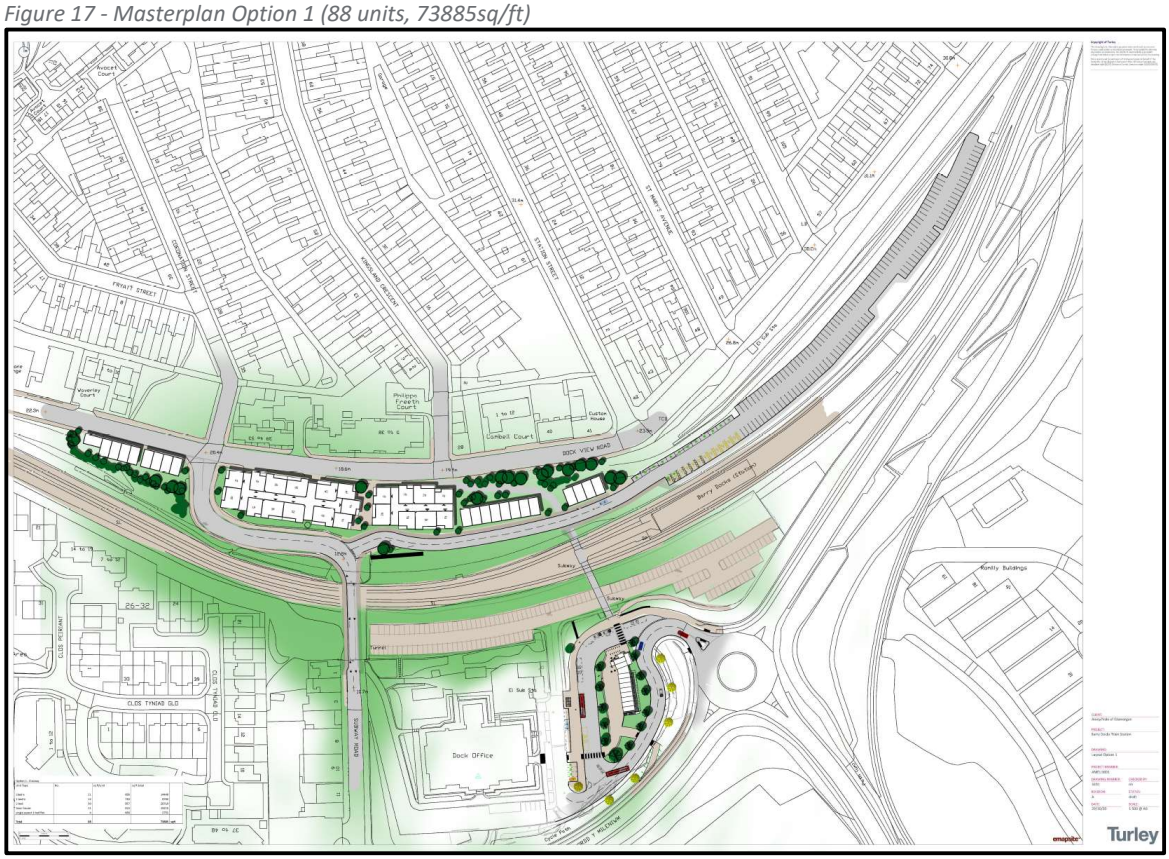
In 2019/20 the council commissioned this business case to support a bid to the Cardiff Capital Region, Metro Plus 1, Regional Transport Authority programme seeking funds to bring about the Transport Interchange and additional park and ride capacity. Alongside this they have held discussions with WG about a potential bid to their Targeted Regeneration Investment Programme (TRIP)[5] to support housing and commercial development at Barry Docks. Surveys confirm the derelict land available to the north of the station is suitable for development and this business case considers a number of options that allow for different scales of development. Together, this is the subject of the high-level masterplan for the station required in conjunction with this business case and is therefore included as part of the same commission.

4.3. Barry Docks Station Masterplan

Indicative, draft, high level, masterplans were drawn up initially for the specified scheme options 1 to 3, plus an alternative Option 1. This alternative (Option 1a) included a bus and taxi layby on the access road to the additional parking on the north of the station. However, following the results of recent geotechnical surveys this has now been discounted as a potential option due to the ground conditions not allowing the space required for the lay-by.

The masterplan drawings produced provide indicative numbers for the housing that could be built on the potentially developable land and identify the scope for commercial development. Based on the outcome of recent geotechnical surveys and discussion with the current landowner, a decision was made to carry forward the masterplan identified for Option 2, as the preferred option, at FBC stage (see options appraisal section). However, for completeness, the initial drawings for each of the options are provided below. In addition, a masterplan drawing for a Transport Interchange to the south of the station platforms is provided, based on option 2 being the preferred scheme option to take forward to FBC.

Figure 17 - Masterplan Option 1 (88 units, 73885sq/ft)



[5] https://gov.wales/support-improve-town-centres/targeted-regeneration-investment-programme

Figure 18 - Masterplan Option 1a (56 units, 48,162sq/ft)

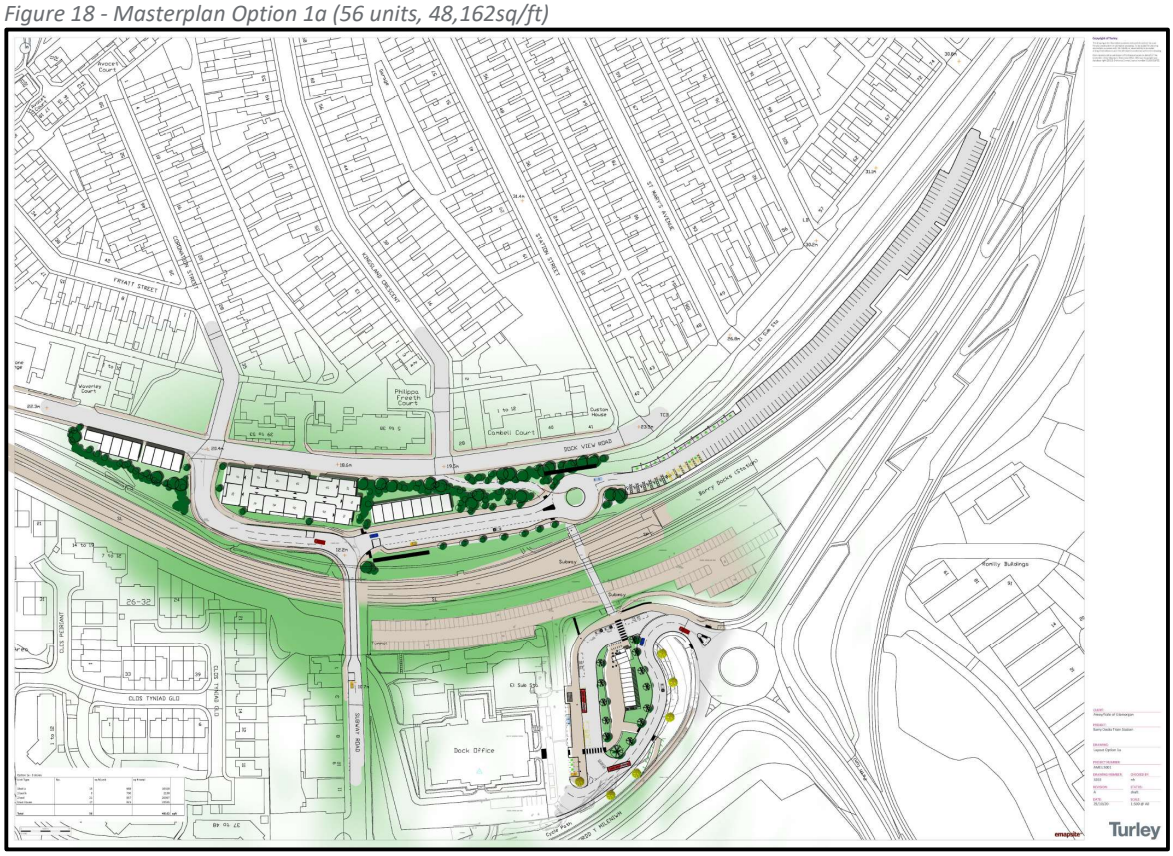


Figure 19 - Masterplan Option 2 (99 units, 79,410sq/ft)

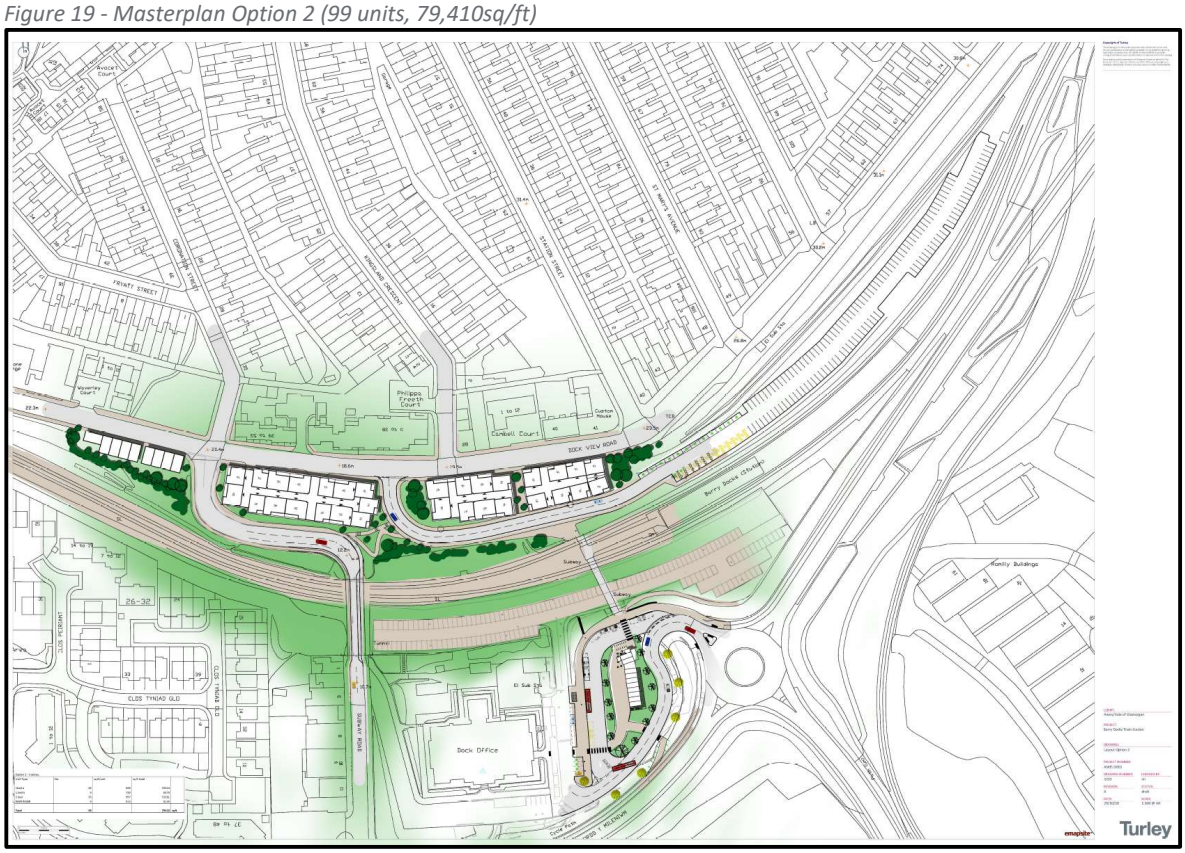


Figure 20 - Masterplan Option 3 (62 units, 53,223sq/ft)

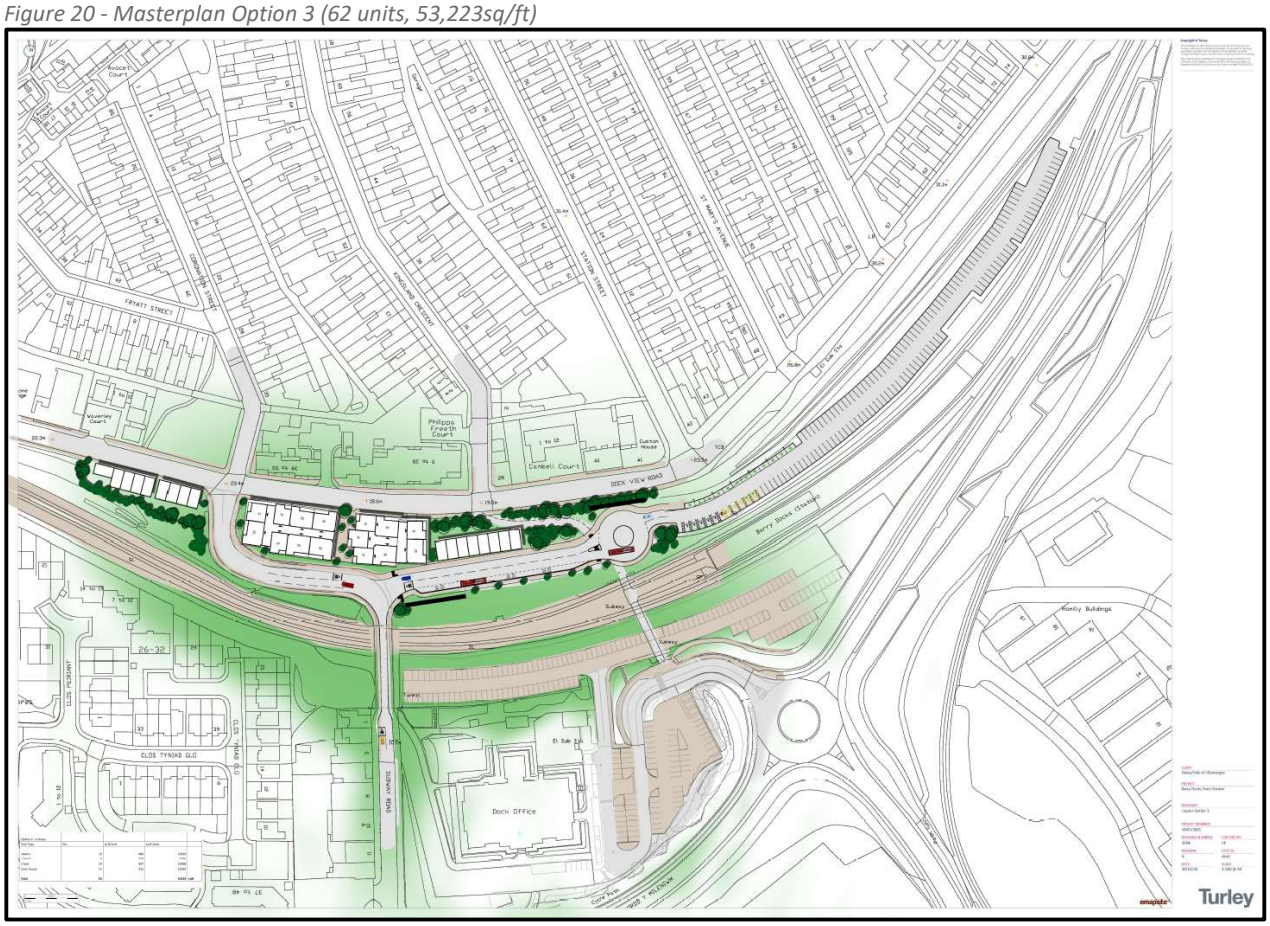
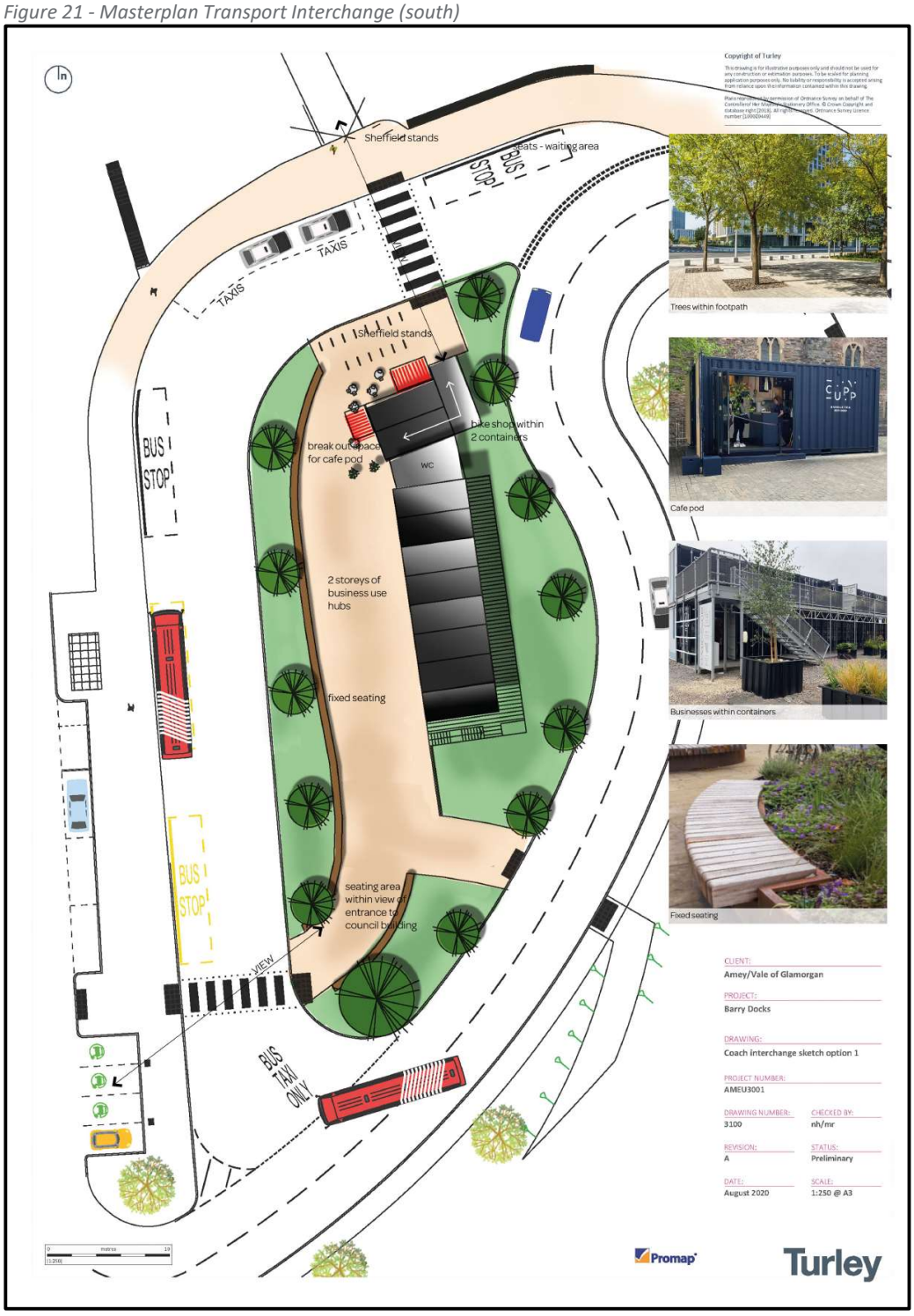


Figure 21 - Masterplan Transport Interchange (south)



4.4. Strategic Context

4.4.1 Policy Overview

A detailed summary of all relevant national, regional and local policies and strategies is provided in Appendix A to this business case.

In 2019 the UK Government amended the Climate Change Act 2008 by increasing the target for reducing greenhouse gas emissions in the UK to at least 100% lower than 1990 levels by 2050. This is otherwise known as the Net Zero target. The Environment (Wales) Act 2016 supports finding ways to secure healthy, resilient and productive ecosystems for the future whilst still meeting the challenges of creating jobs, housing and

infrastructure. Welsh Government has set out its legal commitment to achieve net zero emissions by 2050, but is pushing to "get there sooner". It recognises that climate change will impact us all, but the stark reality remains our most vulnerable communities will be hit the hardest. Welsh Government recognises that transition towards a Net Zero Wales must be fair and just, in order to achieve a green and clean future with good quality jobs and leave no communities behind.

The overarching transport policy, strategic development and planning framework for Wales is formed by Welsh Government. This sets out the requirements for growth across the country, whilst taking account of the need to improve well-being for residents and ensure growth is sustainable. The overriding theme of national transport policy is that the local transport systems must support growth in the economy through connectivity, capacity and sustainability, as well as supporting decarbonisation and inclusion. Regional and local policy supports the thrust of the national policies, highlighting that the development of housing, employment and the key logistics hubs and corridors aligned with this will all play a crucial role in meeting the vision for growth.

Of particular importance at a regional level are the plans for Cardiff Capital Region and within this the City Deal and South Wales Metro, being brought about with support from both UK and Welsh Government. At a local level, the key overarching strategies are the Local Development Plan (LDP) and the well-being plans of the Vale of Glamorgan Partnership Board and Vale of Glamorgan Council. Decarbonisation goals are promoted through the council's Project Zero and Climate Change Challenge Plan. Transport strategy, including the need for improvements to Barry Docks Station, is provided through the Vale of Glamorgan Local Transport Plan.

The work undertaken to date, that led to the Barry Docks Transport Interchange being included in the LDP has been accepted by CCR and WG as meeting the requirements for producing an SOBC for the scheme. This in turn led to the scheme being listed as one of the schemes expected to be funded through the CCR, Metro Plus 1, Regional Transport Authority programme as follows:

'A bus and rail interchange at Barry, complete with four to five bus bays, provision for taxis and the potential extension of the existing park and ride site'.

4.4.2 The Vale of Glamorgan Local Development Plan, 2011 to 2026

The Local Development Plan provides the framework for sustainable development within the Vale of Glamorgan up to 2026, guiding growth over a fifteen-year period. It identifies the infrastructure needs of the communities within Vale of Glamorgan, in terms of employment, facilities and services needed to support that growth.

The LDP demonstrates the essential role that the Vale of Glamorgan area plays in the success of the wider Cardiff City-Region and highlights the proposals for Barry Docks to become a key transport interchange and gateway to the town. Alongside this, the council has identified an integrated and phased approach to the redevelopment and improvement of Barry Dock Station commencing with the Transport Interchange and then enhancing this by linking it to transport developments in the surrounding areas and providing homes and commercial development alongside it. Prior to this, initial phases have resulted in the upgrading of the station platforms and the construction of a new strategic footbridge linking Thompson Street to the Holton Reach site on Barry Waterfront. Supported by the Welsh Government and the South East Wales Transport Alliance a park and ride site was also completed at Barry Docks station. However, use of this has now reached capacity and the car park requires expanding.

Overall, the LDP Strategy seeks to promote new development opportunities in the 'South East Zone' of the county, which is inclusive of Barry. Whilst the Barry Docks Transport Interchange scheme will complement the public transport routes and provision of new facilities for walking, cycling and rail surrounding the station, it will also further integrate Barry Town centre with the surrounding area. For example, the station will link Barry's key economic assets such as Barry town centre and MoD St Athan to the proposed housing developments in areas such as Barry Waterfront, Llantwit Major, Dinas Powys and the Rural Vale. It will also link the station to key employment sites within Barry, Cowbridge, Penarth and Cardiff International Airport and its surrounding enterprise zone and to retail developments in Barry town centre.

It is envisaged that the development proposed for Barry will help to provide new and improved community services and facilities and create new local affordable housing, education and employment opportunities during the LDP period. In order to ensure the successful delivery of the LDP Strategy, specific area objectives have

been identified for the key settlement of Barry. These objectives provide a framework for Managing Development and Growth in the area.

The LDP objectives for Barry include:

- Create new employment, training and learning opportunities to support existing businesses and encourage appropriate economic development and inward investment to further the regeneration of Barry;
- Provide new opportunities for enhanced community services, facilities, public realm and infrastructure to support the important role of Barry, both locally and regionally, as a key settlement;
- Improve the existing housing stock through continued investment in area-based renewal and promote a range and choice of new housing, particularly affordable housing given the high level of need identified in Barry;
- Support the Welsh Government's Tackling Poverty agenda through 'Communities First' working with residents, community organisations, business and other key agencies, leading to the long-term sustainability and wellbeing of communities;
- Improve access to and within Barry, through strategic and local highway improvements and a range of sustainable transport measures, which will support regeneration whilst at the same time effectively managing congestion on the town's main arterial roads;
- Improve walking and cycling links between the town centre, the Waterfront and Barry Island;
- Promote continued investment and environmental enhancement in Barry's retail centres, particularly Holton Road and High Street to reinforce their vitality, viability and attractiveness, whilst at the same time encouraging the beneficial use of retail premises upper floors;
- Promote Whitmore Bay and Barry Waterfront as all year-round attractive tourism and leisure destinations by encouraging a range of high quality serviced accommodation, all weather attractions, improved visitor facilities and event led tourism; and
- Favour development proposals which assist the long-term viability of Barry's Port to facilitate the efficient and reliable movement of freight by sea.

All current development proposals within Barry, included in the LDP, that will be supported by the proposed Barry Docks Transport Interchange are illustrated on the map below. Each of the residential and economic developments are then listed in two tables following this, respectively, based on the number given to each on the map, together with their predicted impact on demand for rail services from Barry Docks.

Figure 22 - Proposed Development sites in Barry

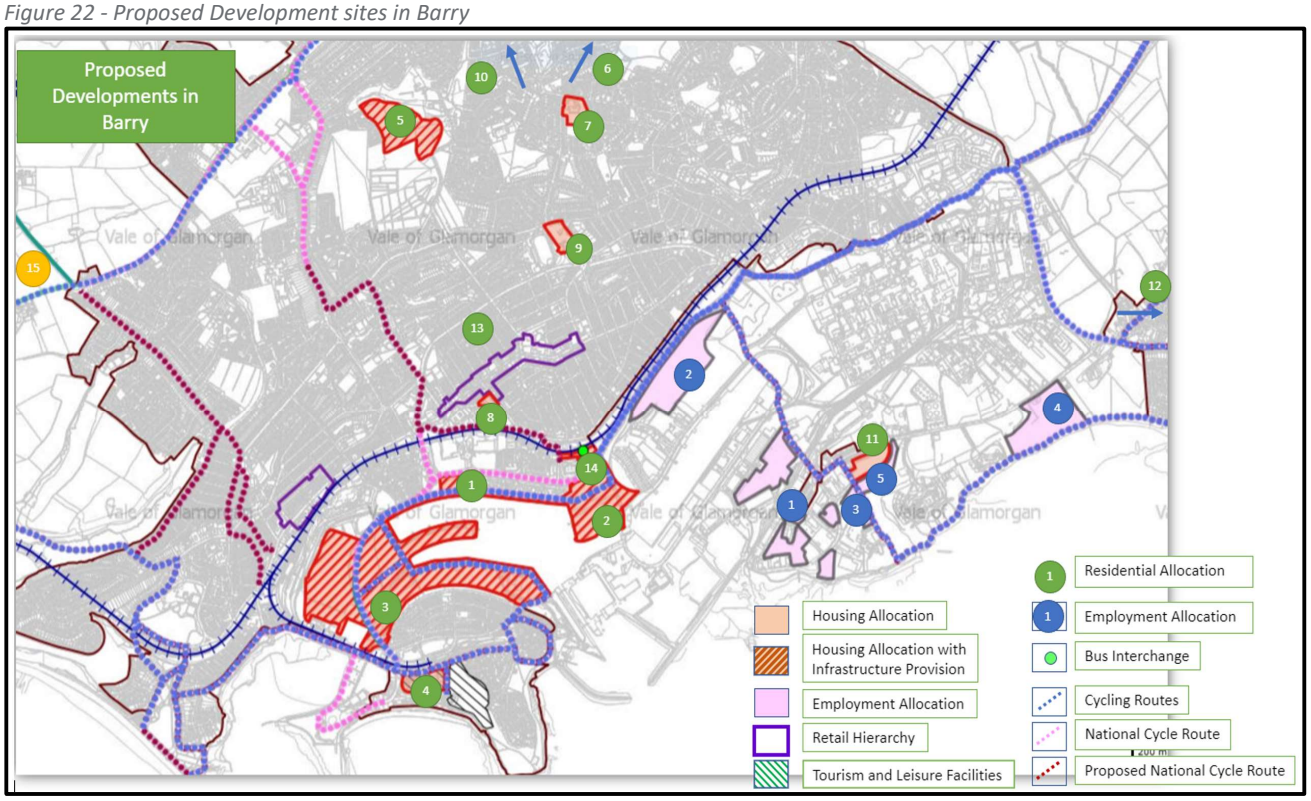


Table 7 - Table of Proposed Residential Development Sites in Barry

	Projects	Status	Predicted Impact	Project Details
1	Waterfront Development – Arno Quay MG2 (1)	Completed	High due to proximity to Barry Docks	0.8 Ha - 75-200 Residential Units
2	Waterfront Development – East Quay MG2 (1)	Started (groundworks only)	High due to proximity to Barry Docks	3.1 Ha - 175 – 450 Residential Units; 130 sqm of A3 uses; Potential Site for Barry College and Primary School
3	Waterfront Development – South Quay, West Pond, District Centre MG2 (1)	Almost Complete	Medium as between Barry and Barry Docks	> 19.5 Ha – 1150 – 1600 Residential Units; A1, B1, C1, D1, A3 Uses
4	Barry Island Pleasure Park MG2 (8)	Not Started	Low due to proximity to Barry Island Station	1.18 Ha - 25 Residential Units/ Mixed Use
5	White Farm MG2 (9)	Completed	Accounted in current population	12.1 Ha – 177 Residential Units
6	Residential Developments along Pencoedtre Lane, North East Barry MG2 (10) & MG2 (11)	Not Started	Low due to proximity of the location to Cadoxton	204 Residential Units (67 in east and 137 on west of the lane)
7	Ysgol Maes Dyfan MG2 (12)	Completed	Medium as between Cadoxton and Barry Docks	1.44 Ha – 81 Residential Units
8	Barry Magistrates Court MG2 (13)	Completed	Medium as between Cadoxton and Barry Docks	52 Residential Units
9	Court Road Depot MG2 (14)	Not Started	Medium as between Cadoxton and Barry Docks	1.6 Ha – 50 Residential Units
10	Holm View MG2 (15)	Started	Medium as far from Barry Docks station	1.2 Ha – 50 Residential Units
11	Hayes Wood, The Bendricks MG2 (16)	Started	Medium as between Cadoxton and Barry Docks	1.8 Ha – 55 Residential Units
12	Land West of Swanbridge Road, Sully MG2 (37)	Started	Medium as far from Barry Docks station	325 Residential Units
13	St. Pauls Avenue – Hafod Housing Association	Started	Medium as between Barry and Barry Docks	27 Flats
14	Residential Development, Subway Road	Started	High due to proximity to Barry Docks	72 Residential Units
15	Waycross Road Developments	Not Started	Low due to proximity of the location to Barry	710 Dwellings; 10 Ha Employment Use
16	Dock View Road – Newydd Housing Association	Not Started	High due to proximity to Barry Docks	28 Affordable Housing Units

There are 16 separate residential development sites in Barry identified as being supported by the Barry Docks Transport Interchange scheme. The majority are expected to have a medium (8 in total) or high (4) impact on demand for rail services from the station. Together, the sites provide for at least 53ha of land for up to 4,106 additional housing units in the town, between now and 2026. Based on the average household size in England and Wales, identified by the 2011 Census, of 2.36 persons, this is equivalent to the Transport Interchange supporting up to 9,690 additional Barry residents. With four of the development sites including mixed use the

Transport Interchange will also support a new site for academic learning (circa 1,000 students) due to be established by Barry College, and a primary school alongside this at East Quay, as well as emerging employment opportunities at South Quay, Barry Island and Waycross Rd.

Table 8 - Table of Proposed Economic Development sites in Barry

	Projects	Status	Predicted Impact	Project Details
1	Proposed Employment Location (Atlantic Trading Estate) MG9 (4)	2025	Medium as closer to Cadoxton	9.14 Ha – B1/ B2/ B8 Use
2	Proposed Employment Location (Land at Ffordd y Mileniwm) MG9 (5)	Ongoing	High due to proximity to Barry Docks	8.9 Ha – B1/ B2/ B8 Use
3	Proposed Employment Location (Hayes Wood, Barry) MG9 (6)	Ongoing	Medium as closer to Cadoxton	1.4 Ha – B1/ B8
4	Proposed Employment Location (Hayes Road, Sully) MG9 (7)	Current: Residential; Might be re-assessed	Medium as closer to Cadoxton	7.5 Ha – B1/ B8
5	Proposed Employment Location (Hayes Wood) MG9 (8)	Ongoing	Medium as closer to Cadoxton	1.9 Ha – B1/ B8
6	Town Centre Regeneration	Ongoing	Low	Low impact on demand

There are six separate economic development sites in Barry identified as being supported by the Barry Docks Transport Interchange scheme. The majority are expected to have a medium (4) or high (1) impact on demand for rail services from the station. Together, these sites provide for 28.84ha of employment use.

It should be noted that in addition to the above there are also proposals to expand services at Barry Hospital which is located next to the current Vale of Glamorgan College site on Colcot Rd, approximately 2km from Barry Docks Station. This includes providing additional satellite services for mental health at community locations throughout the town. With the hospital serving the wider Rural Vale as well as Barry town some residents will be able to utilise the improved Barry Docks to access these services on a sustainable basis.

4.4.3 Rural Vale and Cardiff Capital Region

Rural Vale is identified as the rural surrounds to Barry found within the southern area of Vale of Glamorgan, to the east, north and west of the town. This in turn is part of and surrounded by the Cardiff Capital Region which is made up of ten local authority areas, including the Vale of Glamorgan and Cardiff immediately to the east, Bridgend to the west and Rhondda Cynon Taf to the north of the county.

An improved Barry Docks Station will provide improved sustainable transport access for Barry residents to an increasing range of employment opportunities being developed in the Rural Vale and wider Cardiff Capital region. In particular, increased park and ride capacity and improved sustainable mode access to the station will encourage greater use of rail services to access this employment sustainably and as a consequence reduce traffic congestion in the area, in particular on the three key road corridors between Barry and Cardiff. Many existing and emerging employment sites in this area are located adjacent or close to the rail network, whilst CCR's plans for the South East Wales Metro will enhance the rail services and infrastructure available to improve the experience of rail users over the next 5 years and beyond. This includes extending provision on the Vale of Glamorgan line serving Barry from 4 trains an hour to 5 trains an hour on weekdays by 2023 and also on Sundays from 2024, as well as providing new trains with increased passenger capacity.

The development sites in these areas identified as those most likely to be supported by the proposed Barry Docks Transport Interchange scheme are illustrated by the two maps below, the first identifying developments within Rural Vale and the other those proposed adjacent to rail stations for the wider Cardiff Capital Region. Two tables are also provided following each map. The first lists each economic development site in the Rural Vale numbered as per the preceding map, plus the total expected housing and economic development in Cardiff Capital Region (as item 8). The second lists each relevant development in the Cardiff Capital Region correlating with the lettering of sites on the preceding map and based on information drawn from the current Cardiff LDP. The relevant numbers of housing and jobs these developments are expected to generate are also listed.

Figure 23 - Proposed development sites in Rural Vale

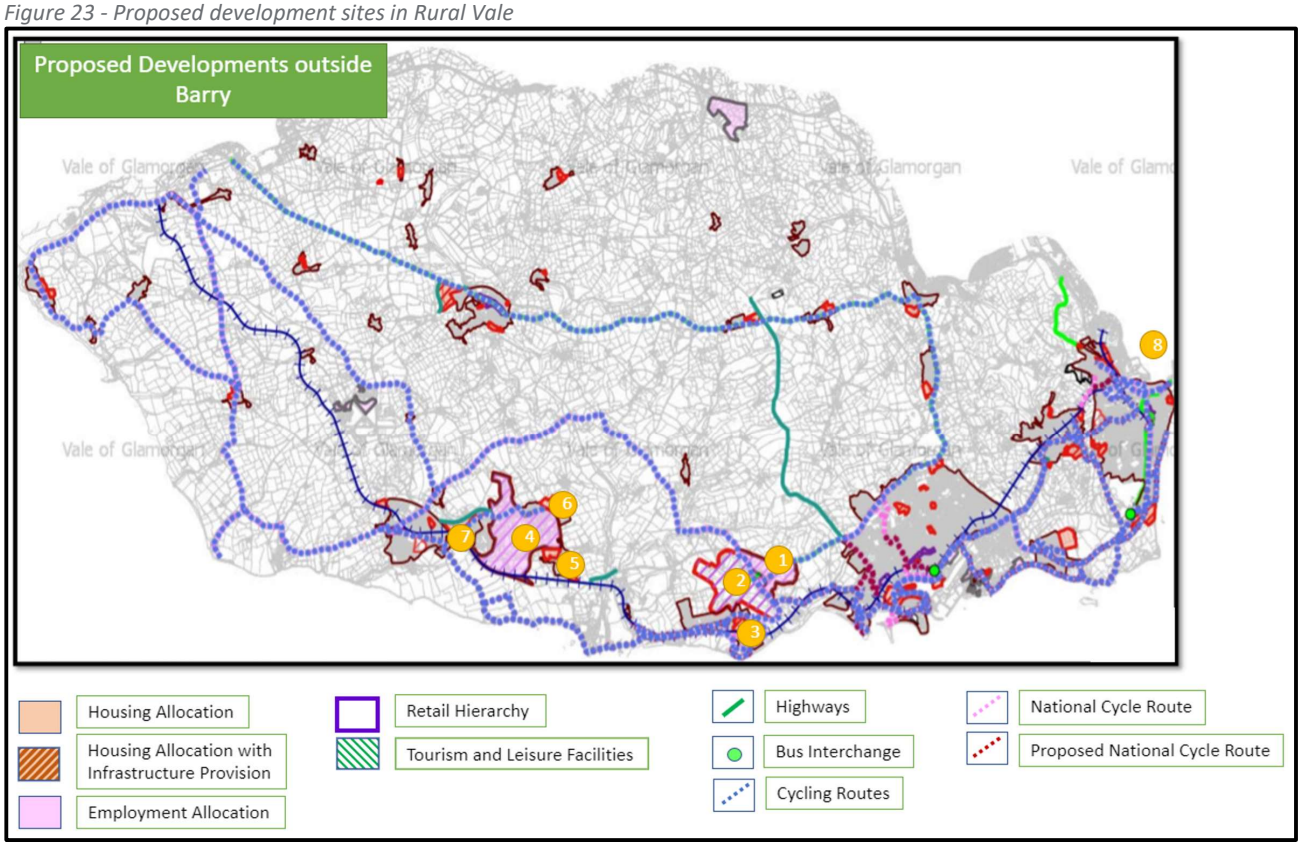


Table 9 - Table of Proposed Development sites in Rural Vale

	Projects	Status	Predicted Impact	Project Details
1	Cardiff and Vale College – New Campus MG 9 (2)	Not Started	Medium as an attraction zone	800 Students/ 90,000 sqft/ Part of St Athan – Cardiff Airport Enterprise Zone (77.4 Ha)
2	Cardiff International Airport MG 9 (2)	Not Started	Medium as an attraction zone	Part of St Athan – Cardiff Airport Enterprise Zone (77.4 Ha)
3	Residential Development around Rhoose Settlement MG 2 (35) MG 2 (36)	Started	Low due to proximity to Rhoose station	MG 2 (35) – 25.82 Ha - 700 Residential Units MG 2 (36) – 2.65 Ha - 87 Residential Units
4	Aerospace Business Park MG 9 (2), MG 9 (3)	Not Started	Medium as an attraction zone	Part of St Athan – Cardiff Airport Enterprise Zone (305 Ha)
5	Residential Developments in St. Athans MG 2 (2) MG 2 (3),	Started	Low due to proximity to Llantwit Major station	MG 2 (2) – 9.78 Ha – 220 Residential Units MG 2 (3) - 8.47 Ha – 250 Residential Units
6	Residential Developments in Eglwys-Brewis MG 2 (4), MG 2 (5)	Not Started	Low due to proximity to Llantwit Major station	MG 2 (4) - 2.2 Ha – 65 Residential Units MG 2 (5) – 10.9 Ha – 255 Residential Units
7	Residential Developments in Llantwit Major MG 2 (6), MG 2 (7),MG 2 (21) MG 2 (22), MG 2 (23)	Completed (21) & (22). Others Not Started	Low due to proximity to Llantwit Major station	MG 2 (6) – 4.4 Ha – 90 Residential Units MG 2 (7) – 15.8 Ha – 375 Residential Units MG 2 (21) – 4.4 Ha – 149 Residential Units MG 2 (22) – 2.4 Ha – 70 Residential Units MG 2 (23) – 2.41 Ha – 72 Residential Units
All	Cardiff Capital Developments	Ongoing	Medium as an attraction zone	14550 Houses; 13400 – 19200 Jobs

There are seven separate development sites identified in Rural Vale that a Barry Docks Transport Interchange will support. Four of these are residential sites whose residents' sustainable access to Barry by rail will be enhanced by the Barry Docks Transport Interchange scheme. Two of the sites are economic development sites that will extend employment opportunities to residents. The final site is a new Vale of Glamorgan College site for vocational training that students will be able to access, sustainably, from Barry Docks, via Rhoose station and onward journey by bus. Together the residential sites will accommodate 2,333 new housing units or the equivalent of circa 5,506 additional residents. The two economic development sites will provide for 382.4ha of employment use and the new college site will accommodate circa 800 students.

It should also be noted that there are plans to significantly expand hospital services at the University Hospital site in Llandough, which is linked with Barry Hospital and also serves Barry and Rural Vale residents. Sustainable access from Barry Docks to the hospital by rail is available via Cogan rail station on the Vale of Glamorgan line. Access to the hospital will be improved by provision of a Barry Docks Transport Interchange, especially if the hospital can establish the direct bus link from Cogan Station to the hospital, that they aspire to.

Figure 24 - Proposed Development sites in Cardiff Capital Region

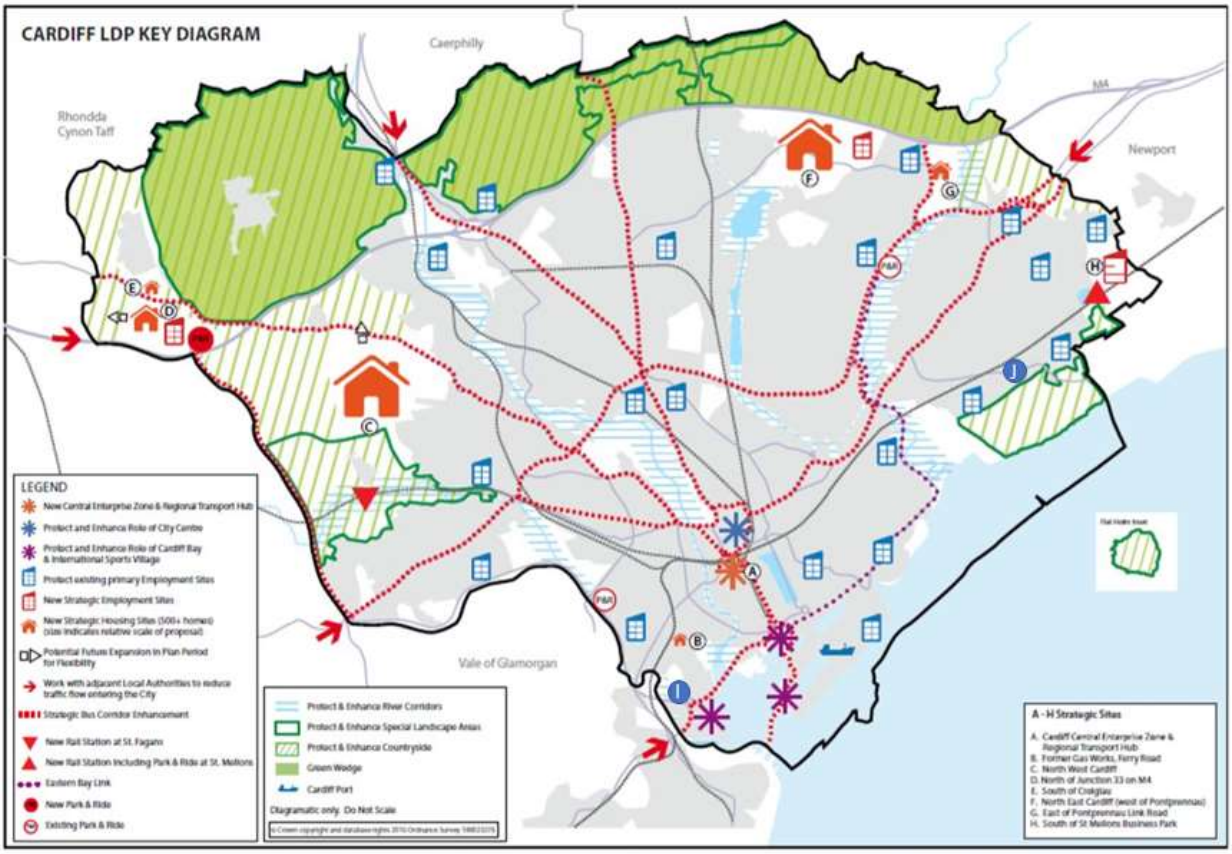


Table 10 - Table of Relevant Proposed CCR Development sites

A	Cardiff Central Enterprise Zone	2026	10,000 – 15,000 Jobs
B	Former Gas Works, Ferry Road	2026	500 Houses
C	North West Cardiff	2026	5000 Houses + 400 – 600 Jobs
D	North of J33 on M4/ Former Arjo Wiggins Paper Mill site, Canton	2026	800 Houses + 400 – 600 Jobs
E	South of Creigiau	2026	650 Houses
F	North East Cardiff (West of Pontprennau)	2026	4500 Houses + 800 – 1000 Jobs
G	East of Pontprennau Link Road	2026	1300 Houses
H	South of St Mellons Business Park	2026	1800 – 2000 Jobs
I	Sports Village site, Grangetown	2026	800 Houses +
J	Porth Teigr, Butetown (Roath Basin South)	2026	1000 Houses +
	Strategic Sites		14550 Houses; 13400 – 19200 Jobs
	Cardiff LDP 2026		41415 New Dwellings; 40000 Jobs

There are 10 development sites in the wider Cardiff Capital Region identified as potentially benefitting directly from provision of the Barry Docks Transport Interchange due to their proximity to rail services. Five are housing developments, three are mixed use sites and two are economic development sites generating jobs. Together these strategically relevant sites provide for up to 14,550 residential units, equivalent to circa 34,338 residents and up to 19,200 jobs.

4.5. Scheme Objectives

The policy and strategy objectives identified at national, regional and local level can be collated under the following headings:

- Economic objectives;
- Environmental objectives;
- Social objectives;
- Transport objectives; and
- Other objectives.

The infrastructure improvements envisaged for Barry Docks Station development as a transport interchange have been considered against all policy objectives under each of these heading using a Red, Amber, Green (RAG) analysis, as outlined in the table below. The scores allocated in the table are based on Green = 2, Amber = 1 and Red = 0.

The table illustrates that taxi facilities, the bus interchange, improvements to the northern access to the station and improved park and ride capacity, in that order, are those elements that best meet the overarching policy and strategy objectives. However, all improvements meet a substantial number of objectives with electric vehicle charge points, improved pedestrian subway and improved car park walking routes, in that order, being the improvements that next best meet the objectives.

Only 3 of the 94 individual policy and strategy objectives assessed are not met in some way by at least one or more of the proposed infrastructure improvements. Those that aren't met – "to give children the best start in life", "minimise the need to travel" and "facilitate the efficient and reliable movement of freight by sea" are objectives the improvements wouldn't be expected to address. Housing adjacent to the interchange will minimise the need to travel to the station for those who take up occupancy of this.

Table 11 - RAG Analysis of Barry Docks Transport Interchange

Development Phase	Included in Phase 1 (Transport Interchange)										Included in Future Phase/s				
Scheme Elements	Bus Interchange	Taxi Facilities	Council House Parking	Electric Vehicle chargepoint/s	Improved Pedestrian Subway	Improved Northern Access Point	Improved Southern Access Point	Improved Car Park Walking Routes	Improved Signage	Improved Lighting	Park & Ride	Improved Road Tunnel	Sustainable Link to Barry Island	Housing development	Commercial development
Economic Objectives															
Wales as a Networked City Region															
Ambitious															
Attracting Inward Investment															
Buildig Capacity for Growth															
Making efficient use of Resources															
Increasing Learning & Upskilling															
Promoting Innovation															
Growing the Economy/Increased GVA															
Improving Productivity															
Increasing Competitiveness															
New Jobs Created															
New Housing created															
Increased Prosperity															
Supporting Regeneration															
Supporting Business Clusters															
Expanding the Labour Market Catchment															
Meeting Cardiff City Deal KPI's (Jobs, GVA, Private Investment)															
Supporting strategic development sites; ie Access to Enterprise Zones and Airport															
Improve Barry Town as a Retail Centre															
Promoting Barry as an all year round attractive tourism and leisure destination															
Score	28	28	2	10	9	24	12	6	3	3	21	10	19	22	23
Environmental															
Combating Climate Change															
Protecting and Valuing the Environment															
Reducing Carbon Footprint															
Reduced greenhouse emmissions															
Minimising Noise															
Sustainable growth															
Promoting use of ULEV															
Promoting use of Electric Vehicles															
Improved Public Realm															
Score	18	18	4	18	8	8	8	2	8	2	16	2	16	12	4
Social															
Improving Health															
Healthy Environments															
Improved Well-being & Quality of Life															
Addressing an Ageing Society															
Inclusive, addressing inequalities															
Addressing Deprivation (Hot Spots)															
Tackling Poverty															
To give Children the Best Start in Life															
Enhanced local facilities															
Increased Community Participation															
Enhanced Community Services															
Safe & Secure															
Score	16	16	3	18	17	17	17	16	7	7	16	12	14	6	4
Transport															
Meeting Metro Plus, Phase 1 Criteria															
High Quality Integrated Network															
Accessible Environments															
New Transport Capacity (to cope with future demand)															
Connected - to commercial, social, leisure and education attractors															
Improved Access to Employment, Training, Education and Post 16 Education															
Improved Access to Health facilities															
Improved Access to Retail and Leisure															
Improved Access to Culture and Tourist sites															
Minimise Need to Travel															
Comparable public/private journey times															
Improved access to Public Transport															
Improved Public Transport															
Increased modal choice															
Interchages/Hubs (for all modes)															
Increased Service Co-ordination															
More Direct Services															
Better Pedestrian & Cycle Links to Public Transport Stations															
More reliable, affordable and attractive services															
Ensuring Access for All															
Improved Road Safety															
Aligned with Land Use Planing															
Reduced Car Dependency															
Reduced Congestion															
Reduced operational & maintenance costs															
Supporting Active Travel															
Supporting Freight Terminals															
Facilitate the efficient and reliable movement of freight by sea															
Taxis to be zero emmissions by 2028															
Transport as a Digital Communications Asset															
Enhanced Park and Ride with Electric Charge Points															
Enhanced local, regional, national & International Links															
Supporting CCR Key Hubs & Corridors															
Facilitating Sustainable access to Cardiff															
All Key Settlements linked to Cardiff or Newport by Public Transport															
Improved access to and within Barry															
Improve walking and cycling links between Barry town centre, the Waterfront and Barry Island.															
Score	56	60	50	42	47	59	56	43	40	45	54	46	50	33	29
Other															
Meeting WBFG Goals and 5 ways of Working															
Establishing a Clear Identity															
Resilient															
Increased Pride															
Modern															
Promoted															
Protected															
Private sector leverage															
Future Proofed/Long Term Sustainability															
Placemaking															
Collaborative/Partnership working															
Openess and Transparency															
Supporting a Vibrant Culture & Language															
Increased Digital Infrastructure															
Supporting Cardiff to Develop its Capital Functions															
Establishing CCR as a Global Gateway															
Score	31	31	28	32	28	30	28	28	28	28	28	28	30	30	30
Total Score	165	169	90	138	126	155	138	111	93	92	151	110	143	109	94

In order to ensure the Barry Docks Transport Interchange scheme addresses the core issues faced and hence meets the national, regional and local, policy and strategy objectives it aims to support, five scheme specific objectives have been identified, as follows:

Objective A - To accommodate increasing rail demand both to and from Barry;

Objective B - To improve access to/from rail services by sustainable modes and increase access to park and ride from Barry Docks;

Objective C - To increase access to current and emerging employment opportunities for all;

Objective D – To support ongoing and future economic development throughout the region; and

Objective E – Placemaking to establish Barry Docks as a key gateway, including the foundations for further station development phases.

In addition to the above, there are two overriding imperatives which will be taken into account:

- Equality, in relation to meeting the provisions of the public sector duties are set out in the Equality Act 2010 (Statutory Duties) (Wales) Regulations 2011. Although these imperatives will be discharged through an Equality Impact Assessment it is important that the principles of the equality legislation, guidance and the Wellbeing of Future Generations Act are fully considered throughout the scheme design and delivery process; and
- Climate change impacts, in the light of the declaration of a Climate Emergency by both the Welsh Government and the council. This is likely to require that any climate impacts of a scheme proposal are fully assessed and that this is reported as part of the governance procedures. In practice, this will be determined through the WelTAG assessment set out in the Transport Case.

In addition to these core objectives there are also objectives relating to the delivery of the infrastructure improvements that will be adopted, as follows:

- To provide a cost-effective solution to identified needs;
- To ensure infrastructure improvements that are affordable, within available funding;
- To ensure solutions are deliverable;
- To ensure improvements are sustainable;
- To take account of interdependencies; and
- To ensure value for money

4.6. Critical Success Factors

To assist delivery of the scheme objectives a number of Critical Success Factors (CSF's) are defined.

Table 12 - Critical Success Factors

Key CSFs	Broad description	Specific Assessments
Strategic fit and need (Strategic Case)	**How well the scheme:**	
	Meets the need of the surrounding communities, businesses and visitors now and into the future	Delivery of additional car park capacity to accommodate increasing demand for park and ride Improved facilities for buses and taxis to enable seamless interchange between these and rail services Improvement to walk and cycle infrastructure to improve active travel access to, from and across the station

	Fits with wider strategic vision, programmes and projects;	Delivers against the vision set out in Cardiff Capital Region, City Deal & Vale of Glamorgan LDP and LTP Improvements to access points to enhance the station's gateway role and open up land around the station for future development
	Delivers against Welsh Government imperatives as set out in the Wales Transport Strategy and National Transport Finance Plan	Meets the ambitions, including: Reducing greenhouse gas emissions, Growing public transport use, Safe, accessible, well-maintained and managed transport, Making sustainable transport choices more attractive and affordable and Supporting innovation. Supports public transport and active travel improvements between Cardiff & Barry and Barry and local regions.
Value for Money (Economic Case)	**How well the scheme:**	
	Maximises the return on the required spend (benefits optimisation) in terms of economy, efficiency and effectiveness from both the perspective of the local authority and wider society.	Wide ranging benefits Quantitative and qualitative ztransport appraisal undertaken Infrastructure proposals offering value for money
	Minimises associated risks.	Detailed risk identification and management in place
Potential achievability (Management Case)	**How well the scheme:**	
	Is likely to be delivered in view of the organisation's ability to assimilate, adapt and respond to the required level of change	Infrastructure improvements programmed within available timescale Procurement using viable processes Design & delivery in conjunction with TfW & TOCS, bus and taxi operators and other stakeholders
	Matches the level of available skills which are required for successful delivery.	Design and construction adequately resourced
Supply-side capacity and capability (Commercial Case)	**How well the scheme:**	
	Matches the ability of suppliers/service providers to deliver the required improvements	Design and construction programmed within available timescale
	Appeals to the supply-side.	Will utilise existing contractors through existing Vale of Glamorgan Council and potentially TfW frameworks
Potential affordability (Financial Case)	**How well the scheme:**	
	Meets the sourcing policy of the local authority	Assessment against Vale of Glamorgan sourcing policies

	Demonstrates the availability/reliability of additional funding sources that form part of bid	Potentially Vale of Glamorgan Council, TfW, CCR, WG and private sector
	Leverages the resources of the private sector to sustain the investment trajectory in the long term	Investment sought from developers and suppliers to provide housing and commercial services
,Sustainability	**How well the scheme provides long-term sustainability in terms of:**	
	Managing and improving local air quality and noise, including from transport;	Comprehensive assessment based on both quantitative and qualitative appraisal to WelTAG standards
	Provides Sustainable Drainage (SuDS);	Unlikely SUDS can be provided due to underlying clay soil, however this is mitigated through design, including provision of a drainage tank Will meet planning policies and Natural Resources Wales (NRW) requirements
	Provides flood resilience in the context of ongoing climate change;	Meeting planning policies and NRW requirements
	Reduces greenhouse gas emissions, including from transport;	Comprehensive assessment based on both quantitative and qualitative appraisal to WelTAG standards
	Improving the overall health and wellbeing of the communities, including the provision of active travel facilities; and	Meeting requirements of Well-being of Future Generations (Wales) Act 2015 & Active Travel (Wales) Act (2013)
	Ensuring inclusion, allowing all community members to benefit from the investment	Meeting planning policies and corporate plans (ie Vale of Glamorgan Well-being Plan, Healthy Travel Charter, etc)

4.7. Rationale for Intervention

A Barry Docks Transport Interchange will play a significant role in meeting national, regional and local policy and strategy objectives. In particular, considering each of the overriding objectives in turn:

4.7.1 Economic objectives

The table below illustrates how the proposed Barry Docks Transport Interchange will support the potential growth in rail demand expected as a consequence of housing and economic development within Barry, the Rural Vale and the wider Cardiff Capital Region. It indicates that all improvements will impact positively, fully or to some extent, on new demand for travel both to and from Barry. The exceptions to this are the car park measures and any housing or commercial development, which will support travel from Barry to employment and service opportunities in the wider area but not inward travel to Barry.

Table 13 - Relevance of Infrastructure Improvements to Growth in Rail Demand

Development Phase	Included in Phase 1 (Transport Interchange										Included in future phases				
Facilitating Growth in Rail Demand as a result of:	**Bus Interchange**	**Taxi Interchange**	**Council House Parking (relocated)**	**Electric Vehicle chargepoints**	**Improved Pedestrian Subway**	**Improved Northern Access Point (walk/cycle)**	**Improved Pedestrian Crossing/s (Sth)**	**Improved Car Park Walking Routes**	**Improved Signage**	**Improved Lighting**	**Additional Park & Ride (North)**	**Improved Road Tunnel**	**Sustainable Link to Barry Island**	**Housing development**	**Commercial development**
Population Change															
Population Growth															
Behaviour Change - Toward Increased use of sustainable modes															
Barry Town Development															
Town Centre															
Barry Waterfront															
Barry Island/Whitby Bay															
Economic Development Sites															
Rural Vale Development															
Cardiff Airport															
Enterprise Zone															
Wider Regional Development															
Economic Development sites in proximity to rail															
Other Economic Development sites															
Abstraction															
From Barry (Town) Station															
From Barry Island															
From Cars Travelling to Cardiff/Newport															
From Cars Travelling longer distances (ie London, Bristol, etc)															
Rail Service Improvements															
Increased frequency to Cardiff/Bridgend															
Total Score	28	28	12	27	27	21	24	25	26	25	20	24	24	9	9

Based on the modelling of potential demand we have undertaken, there is also expected to be some abstraction of existing demand from other Barry stations as a result of the improved facilities at Barry Docks, in particular the additional car parking. This abstraction is most significant from Barry Town due to its close proximity and location to the west of Barry Docks and that its car park is currently used to capacity. The modelling suggests there are also some rail users arriving by car to use Barry Town that currently park on street. It is expected these will switch to Barry Docks to use its car park, when this is expanded. In addition, the lack of any car park at Barry Island and the improved access to Barry Docks by bus is expected to encourage a small number of current users of this station to be attracted to Barry Docks. As Cadoxton is further east, despite its car park also currently being used to capacity, it is not expected any existing users of this station will travel west to Barry Docks, to then return east by rail.

We have ensured the additional car parking provided at Barry Docks provides capacity beyond that required for this shift in station use, as without that the improvements would not generate new benefits but simply move them from one station to another. However, it should also be noted that the shift in use from Barry Town to Barry Docks will also free up parking spaces on road and in nearby car parks at Barry Town, used previously by those that shift. Without separate intervention by the council it is very likely that these will be taken up by additional, new users of Barry Town station. Therefore, the overall effect will be to enable increased use of rail services from both stations, in turn further increasing the benefits generated by improving Barry Docks. Further information on these additional benefits is provided in the qualitative benefits section of the Transport Case.

It is also the case that provision of additional car parking at Barry Town station is being considered by the council although there are no firm plans in place for this and hence it is not taken into account in the modelling. Were this to take place then it may be that some of those who transfer to Barry Docks to use its increased car park capacity would revert back to using Barry Town. However, this will simply have the effect of freeing up spaces in Barry Docks car park to accommodate more new demand.

4.7.2 Environmental objectives

To address climate change, reduce emissions and other environmental objectives, a primary aim of the Barry Docks Interchange is to bring about modal shift from car use, to more sustainable modes. At present access to the station by sustainable modes is limited. In the case of buses there is only one service that stops within a reasonable walking distance of the station, the council supported local bus service 88, which stops on Dock View Rd, but only on its journey out of Barry to Penarth. There is no bus that offers onward travel from the station to access the town centre or that can distribute rail users to other destinations in the town. The nearest point to access such services is the stop west of Barry Dock Station on Ffordd Y Mileniwm adjacent to Morrisons Supermarket, which is used by a majority of Barry bus services as a major timing point. This stop is some 900 metres walk from the station, over double the maximum walking distance commonly considered acceptable to access a bus stop. This is a substantial barrier both to those seeking onward travel from Barry Docks to destinations within the town or its surrounds and to residents of Barry seeking to access the station who would potentially use a direct bus.

By providing a bus interchange at the station it is expected that operators will be encouraged to relocate the terminus for their services from Morrisons to Barry Docks. This will not only offer many Barry residents the choice of using a direct bus to the station and rail for onward journeys, for the first time, but also a distribution network from the station to enable rail users to access most destinations around the town. It will also remove any disruption caused at Morrisons by the number of buses currently laying over at this stop. The provision of a bus link will complete the 'first mile/last mile' element often missing when a sustainable alternative is sought to using the car. At present, without it, many residents seeking to travel to take up work opportunities, education, health or other services in Cardiff and its surrounds, or around the airport/St Athans, and many of those travelling to Barry and its surrounds for the same purposes or to access its visitor attractions, have no alternative to using their car. It is intended to provide an EV charge point at the bus interchange proposed for Barry Docks. This will encourage bus operators to consider the introduction of electric buses in the town, further increasing the sustainability of the bus services available.

The above will be complemented by the provision of the taxi interchange. Taxis can fill the gaps where the bus network does not reach, is not available due to accessibility or service frequency or at the times bus services may be reduced, especially the evening and weekends. They also provide a door to door service for those that can't reach or use a bus due to mobility difficulties or their disability. There are also aspirations to make taxi's more environmentally friendly in the form of recent guidance on taxi provision from CCR and WG which will improve the sustainability of the local taxi fleet. This in turn will be supported by providing for an EV charge point for taxis at the Barry Docks taxi interchange.

It is also intended to provide EV charging terminals within the park and ride Car Park to encourage and support the increased use of 'greener' electric vehicles by rail users accessing the station by car. At present there are no EV charging points provided within the residential areas to the north and east of Barry Docks Station and addressing this is likely to prove difficult due to the density of housing, limited off-road parking and the nature of the terrain. As a consequence it is envisaged that by providing electric charging at the new car park, in the short to medium term, it may encourage local residents to take up EV's and we will see additional demand from residents using the station EV charging points to charge their cars overnight. This, in turn, may also impact their use of rail services, potentially increasing this.

It should also be noted that the local Greenlinks bus operation which is specifically targeted at meeting the needs of people who face mobility difficulties, are keen to serve the bus interchange. Within Barry Greenlinks offers a fully demand responsive door to door service for those unable to use conventional bus services which can include those seeking to access Barry Docks. Within the Rural Vale, Greenlinks provides two community bus services linking both isolated and disabled individuals to key centres outside of Barry. Greenlinks have suggested they would be keen to explore how both these services might also serve the Barry Docks Transport Interchange before exiting the town to continue their provision to the Rural Vale.

Current access to the station for those seeking to use of active travel modes is similarly poor, especially in terms of segregated routes from the north, east and west. There is an existing cycle route and reasonable footpath along Ffordd Y Mileniwm. However, there is a need to improve access from this into the station and onwards to the pedestrian subway, to the station platforms as well as to improve the safety of this route for users. The proposed station improvements will establish the link required to facilitate active travel between the station and the Waterfront area, including both the housing and commercial developments already in place and

those proposed, as these are extended along the Waterfront both adjacent and to the south east and south west of the station.

The current access to the station from Dock View Road requires significant improvement if it's to become attractive and encourage people to use active travel modes to get to and from rail services. At present both cyclists and walkers have the option of using either an unkept access road that follows a relatively steep gradient to curve down to the pedestrian subway leading to the station platforms or a footway which is in slightly better condition. The BT premises the road previously served are no longer in use and run down. Lighting along the road is limited and it is generally uninviting, raising security concerns for users, especially in winter evenings when it's dark by 16:00. The surface of the road is beginning to break up, vegetation to the sides is overgrown and there is substantial ponding outside the BT premises where the road curves before leading down to the subway.

For those approaching or leaving the station on foot there is also a set of relatively steep steps leading from Dock View Road down the embankment to join the subway. These steps become slippery in wet weather and although there are handrails provided the steepness of the gradient makes them difficult to use for many and impossible for anyone that has any kind of mobility difficulty, even slight. In recent years the steps have been cordoned off because of the dangers of using them and it is uncertain, without improvements, whether they can be opened up again for use by the public.

Improving this access to/from the north of the station offers the potential to link it to the existing active travel route to the town centre and to improve this to offer segregated provision. Similarly, it will create opportunities to provide further active travel routes to connect with the majority of residential and development areas in Barry which lie to the north, east and west. Such improvements will also offer a direct active travel link for others who may not be intending to use the rail services but require access by active modes between the areas to the north of the station, across the station confines, to the Waterfront to the south. Without such improvements the current routes are, realistically, not fit for purpose and only suitable for the most determined of pedestrians and cyclists.

Complimentary facilities for cyclists and pedestrians at the station are also lacking. At present there are only 10 spaces available for cycle parking and none of these are considered to offer the security for parking a bike that cyclists seek. Cycle and pedestrian routes within the station confines are not marked or well segregated from other vehicles using the station areas and there is no seating for those that may require this along the route of their journey, or information on the options for onward travel. Overall, there is a need to improve signage and information to indicate the opportunities to make the first mile/last mile links required to encourage residents accessing the station and those travelling from elsewhere to do so by sustainable mode.

The more sustainable links are improved or provided, the more likely rail, a sustainable mode in its own right, can provide the basis for the whole journey to be made by sustainable means. Even where this is not the case the expansion of park and ride car park capacity will increase the opportunity for more residents to use rail, to make at least the greater majority of their journey by sustainable mode.

4.7.3 Social objectives

Critical to meeting the social objectives is the need to improve access to employment and training opportunities, social inclusion and equality, access to health services, improved well-being and quality of life.

The proposed Barry Docks Transport Interchange will facilitate access to a substantial number of increasing employment opportunities in Barry and the wider Cardiff region for both Barry residents and those living elsewhere. In addition, by improving links by sustainable modes both to and from the station it will also extend these opportunities to those who currently do not have access to or cannot afford a car.

One of the main reasons Vale College is seeking to relocate its academic services is to enable better access by sustainable modes. The current college campus is on the opposite side of the town centre to Barry Docks and requires those who might consider walking or cycling to it, from the station, to negotiate a significant uphill route. Direct bus access to the current college buildings is also not currently available from Barry Docks. By relocating its academic activities to the Waterfront area, the college will be more or less equidistant from both Barry Docks and Barry Town stations, in each case establishing a walk/cycle distance from the station of around 1km. This will not only reduce the distance to the college using either mode but also, crucially, place the

College on a, more or less, level access with either station. That buses will also serve this location directly from Barry Docks will provide a further sustainable link to students arriving by train.

Similarly, the College is developing its new vocational learning site in the Enterprise Zone alongside the entrance to Cardiff City International Airport, near St Athans. The site is around 3km from Rhoose Station, which is located on the Vale of Glamorgan line, thus not within a reasonable walking distance, but it can easily be reached by cycle from the station. There is also an existing bus service that provides a link between Rhoose station and the airport that students will be able to use if they catch the train to access the site from Barry or other stations on the line. There are also proposals being considered to provide a direct rail link to the airport from Rhoose station, although it is not clear at this time if/when this may go ahead. Alternatively, the current 303/304 service will serve the new bus interchange at Barry Docks and provide a direct link to the vocational college site from there. This improved access to both proposed college sites will not only benefit existing students but also those who may currently be unable to take up college courses because of a lack of available or affordable transport solutions.

The main hospital for Barry residents is split across two sites, one within the town and the other, the second largest hospital in Wales, at Llandough. For any Barry residents seeking to access the Llandough site by rail the Barry Docks Transport Interchange will significantly enhance their opportunities to access its health services by improving both bus and active travel links to the station. At present there is not a bus link from Cogan on the Vale of Glamorgan line, the nearest station to the hospital. However, there are aspirations to bring this about alongside the current expansion of hospital services, and it is possible this will be made more viable by the Interchange at Barry Docks. With the hospital only 1km distance from Cogan Station the alternative of walking or cycling from the station to the hospital will be feasible to those whose health condition allows this.

The hospital site in Barry is located alongside the Vale College site and in that context experiences the same access difficulties as the college does currently. However, by providing a bus and taxi interchange at Barry Docks direct access by either mode to the site will be available for the first time for those coming from the surrounding areas to the hospital by rail. There are also plans to provide more of the hospital services, especially mental health services, at satellite locations in the town. Where these sites lie on the bus network, they will be available directly by bus from Barry Docks Interchange. Those that are located closer to Barry Docks than the current hospital site may also be made possible to access by active modes.

The increased opportunities to access employment, education and health services and to bring about inclusion for more vulnerable or less well-off groups in the population by improving Barry Docks will in turn also impact their well-being and quality of life. It is well documented that use of such modes has a bearing on productivity and this results directly from reducing the stress of travelling. Similarly, reduced stress is known to be directly related to improved feelings of well-being in general amongst the population. Increased opportunities to access a broader range of employment or training opportunities will also increase the chances of unemployed people to gain employment and address poverty, which in turn will have an impact on their quality of life and community participation.

4.7.4 Transport objectives

There are some significant congestion issues currently on roads to and from Barry, especially the main corridors to Cardiff and its surrounding area. There is also some limited congestion within Barry town itself and in the summer, in particular, on roads to Barry Island.

In dialogue with TfW they identified 3 key corridors between Barry and Cardiff to examine:

- Route 1 - Barry town centre to Cardiff Central via A4050 and Culverhouse Cross;
- Route 2 - Barry town centre to Cardiff Central via A4055 through Eastbrook / Cogan;
- Route 3 - Barry town centre to Cardiff Central via A4055 then B4267 Leckwith.

TfW have provided information from the SE Wales Transport Model that highlights the primary congestion hot spots along each of these corridors, as below:

- Route 1 – From Barry traffic is particularly slow on the approach to Culverhouse Cross then slow going into Cardiff;

- Route 2 – traffic is particularly slow from Dinas Powys through Eastbrook to the Leckwith Road, then slow going through to Cardiff;

- Route 3 – traffic is particularly slow from Dinas Powys through Eastbrook to the Leckwith Road but picks up again past the hospital, then slows again after the Leckwith Road roundabout.

Whilst not as significant, some limited congestion can also be found on these routes closer to Barry. On Route 1 traffic flows slowly through Wenvoe, around the junction of the A4050 with the A4231 and just outside of Wenvoe at the junction of the A4050 with St Andrews Road. Similarly, on Route 2 and 3 there is some congestion on the A4055 through Palmerstown, especially at its junction with the A4321.

One of the key aims of the Barry Docks Transport Interchange is to encourage those currently using their car to travel between Barry and Cardiff to consider switching to use of the more sustainable rail link. To achieve this additional park and ride spaces will provided to the north of the station platforms. With the current park and ride operating at capacity not only at Barry Docks but also at Barry Town these additional spaces are expected to attract some of those currently parking on the road at Barry Town to transfer to Barry Docks to use the train. However, there will also be new users attracted from amongst those currently travelling by car all the way to destinations in and around Cardiff. This reduction in those using their cars for the whole journey will contribute significantly to reducing congestion on the main corridors and in addition generate further journey, punctuality and emissions savings.

By providing the additional parking at Barry Docks to the north of the station platforms it will also address some of the congestion issues in Barry town. At present, to access the station car park, users from the north and east have to drive through the town centre to access Ffordd Y Mileniwm and then the car park to the south of the platforms. Siting parking to the north will enable a new station access road to be provided off Dock View Road, which in turn can be accessed without entering the centre of Barry, at least for those from residential areas to the north and the east. Those from the west of the town, predominantly, already use Barry Town station and although some will transfer, needing to drive through the town to do so will limit this.

Providing EV charge terminals within the resulting car park areas will increase the opportunities to consider use of sustainable modes to access the station for onward journey by rail. This can be expected to lead to those currently using the station and those encouraged to switch to doing so considering how they can make their entire journey sustainable. For car users this may lead to them purchasing an electric car, which they will not only use for journeys to/from the station but other journeys as well, improving the sustainability of all their car travel.

4.7.5 Other Objectives

A number of other objectives will be met by the proposed Barry Docks Transport Interchange, as follows:

- Promotion/Establishing a Clear Identity – There is a Barry wide programme, Sense of Place, that is considering the identity of all attractions and places of interest in the town. The identity of the Barry Docks Transport Interchange will be aligned with this programme and enhanced by it, including signage to/from the station;

- Resilient/Future Proofed/Long Term Sustainability – Together with the assessment of potential demand extending to 2036 and beyond, the materials and construction process applied to the station improvements will ensure the resilience and sustainability of the Barry Docks Transport Interchange;

- Modern/Place Making/Increased Pride – By creating a pedestrian and cycle friendly and generally more attractive environment around the station it will make using the station a much more pleasant experience for residents and visitors alike. With the bus interchange also being served by all bus services this improved ambience will be retained throughout the day, evenings and at weekends. In addition, the aim is to link the active travel access to the station from both the north and south to create a through route between the town centre and residential areas surrounding this and the Waterfront area. This place making will significantly improve off road access through the improved environment at the station removing the need for residents to use the much less inviting and more convoluted route via Subway Road and its tunnel or that through the commercial area adjoining the new pedestrian bridge linked to Thompson St;

- Secure/Protected – Improved lighting with marked and signed pedestrian and cycle routes through the station surrounds, segregated from other vehicles, will significantly increase security and the perception of personal security at the site as well as the aesthetic and ambience of it. Similarly, increased use of the site and the commercial facilities it will offer will add to perceptions of safety and reduce the likelihood of anti-social behaviour;

- Collaborative/Partnership/Openness/Transparency – Substantial consultation has been undertaken to ensure proposals for the Barry Docks Transport Interchange take account of and meet the needs of potential users, as well as the overall policy and strategy objectives of the Town Council, VoG, CCR, TfW and WG. Opportunities to link the proposals with the wider development aspirations of key stakeholders have been identified through this consultation and taken into account in developing the proposed options and high-level masterplan for the interchange;

- Increased Digital Infrastructure – Infrastructure improvements will include provision of Wi-Fi in station areas, provision of real time information at interchange points and the development of digital signage to better inform both residents and visitors to Barry using the station;

- Supporting Cardiff to Develop its Capital Functions – Linking with the wider South East Wales Metro the Barry Docks Transport Interchange will provide a key node on the network serving both Barry residents and those travelling to the town. This will increasingly enable residents to reach employment, education and other opportunities throughout the wider Cardiff Capital Region and others to travel from outside Barry to take up emerging opportunities there;

- Private sector leverage – Private sector investment will be sought to support those elements of the Barry Docks Transport Interchange scheme not directly associated with the station or its surrounds. Primarily, this will be achieved by working with the landowner to develop housing and commercial uses on land to the north of the station, through the section 106 planning process and by engaging with suppliers to provide station services. In addition, further public sector investment will be sought from CCR and TfW in the form of Car and Taxi EV charging terminals.

4.8. Case for Change

The need for sustainable, connected and inclusive transport solutions to support economic and housing growth, drive prosperity and tackle climate change is highlighted specifically by national, regional and the council's local policies and strategies and is also encompassed within the Well-being Act, 2015. To facilitate this, improved bus, park & ride, taxi and active travel services are regarded as having a key role, especially in CCR where the plans for South Wales Metro are regarded as a cornerstone of the City Deal.

This is also reflected in the Vale of Glamorgan where Barry is a significant focus for economic & housing development, while outward commuting from the region is known to be high, especially towards Cardiff. As a result, transport demand in the area is increasing at a greater rate than the national average and this is expected to continue as further economic and housing development takes place. Adding to this is the development of visitor attractions, not only at Barry Island but also in terms of parks and landmarks such as the Dock office.

Barry Docks Station is well placed to cater for this demand on a sustainable and inclusive basis. Bus and taxi services in the area have the capacity to accommodate increased demand and according to the Local Transport Plan this is expected to be the case into the future, assuming its proposed immediate and longer terms plans are put in place. However, if Barry Docks Station is to undertake a role as a key gateway to/from the town it requires additional infrastructure to enable improved access by public transport and active modes and it needs additional car parking to facilitate increased park and ride. This is required ahead of economic development generating additional travel, if Barry Docks Transport Interchange is to attract this new demand from the outset, rather than having to encourage people out of their cars or to shift to bus or active travel to access the station at a later date.

This business case presents the detailed case for these initial improvements and outlines the appraisal undertaken to condense the shortlisted interventions to a preferred intervention that can meet the objectives, which is affordable within the limits of available funding and is deliverable. It also outlines how the proposed intervention can establish the foundations for future development phases, including attracting input by

developers and service providers to improve the Barry Docks site. This will further enhance the role of Barry Docks to become the gateway to Barry Town and establish the comprehensive mobility hub envisaged, in the medium to longer term.

4.9. Causal Chain and Logic Map

To assist in communicating the scheme to stakeholders and framing the appraisal, a causal chain is included below. To frame the scheme appraisal and assist in developing the monitoring and evaluation framework, a logic map is also provided following this.

Figure 25 - Barry Docks Interchange Scheme - Causal Chain

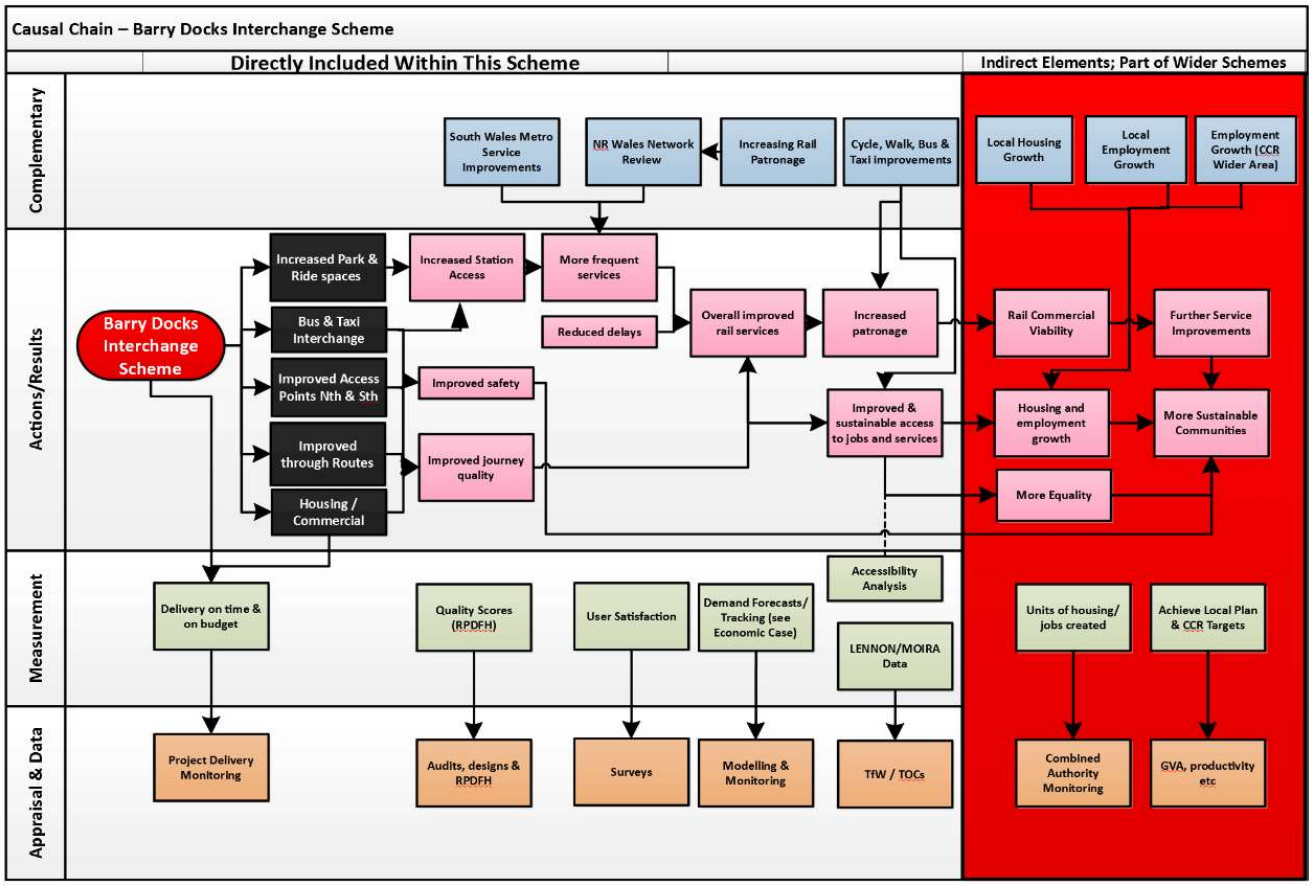
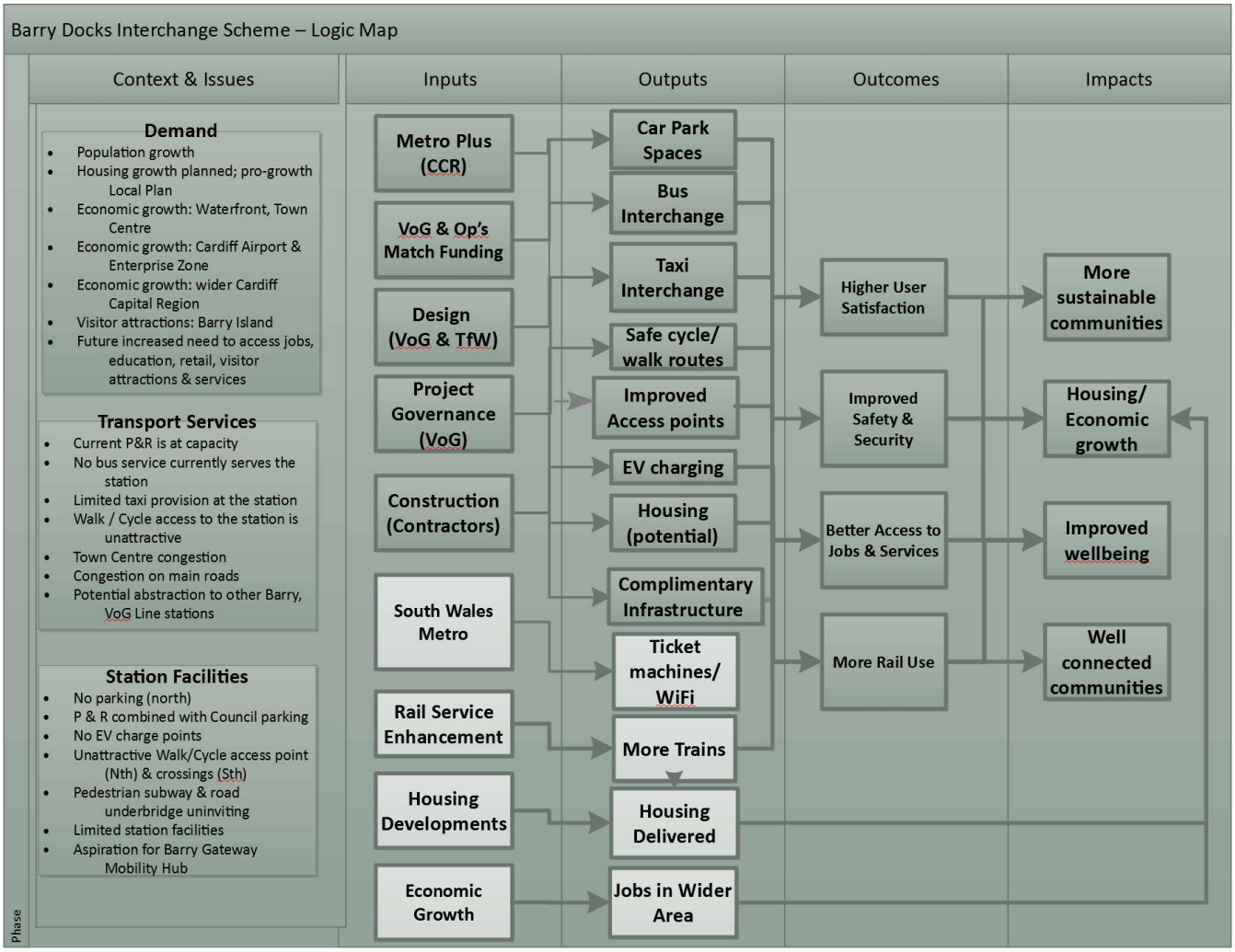


Figure 26 - Barry Docks Interchange Scheme - Logic Map



4.10. Public Consultation

4.10.1 Introduction

Full public consultation was not undertaken at OBC stage due to concerns it may be impacted by the Covid pandemic. However, as these concerns reduced, following completion of the OBC it was agreed public consultation could go ahead. The consultation commenced on the 11 October 2021 and ran for a period of 8 weeks through to 7th December 2021. All stakeholder organisations previously consulted were notified of the consultation individually and encouraged to pass it on to their individual members and others expected to have an interest. In addition, the consultation was promoted by the council, who hosted the survey on their consultation website and used a range of media channels, including local press, social media and newsletters to raise awareness of the consultation and encourage respondents.

The consultation focussed primarily on establishing respondents' views on the current arrangements at the station and how the improvements proposed might change their use of the station in the future. The outputs of the consultation are provided in full in the appendices and summarised below.

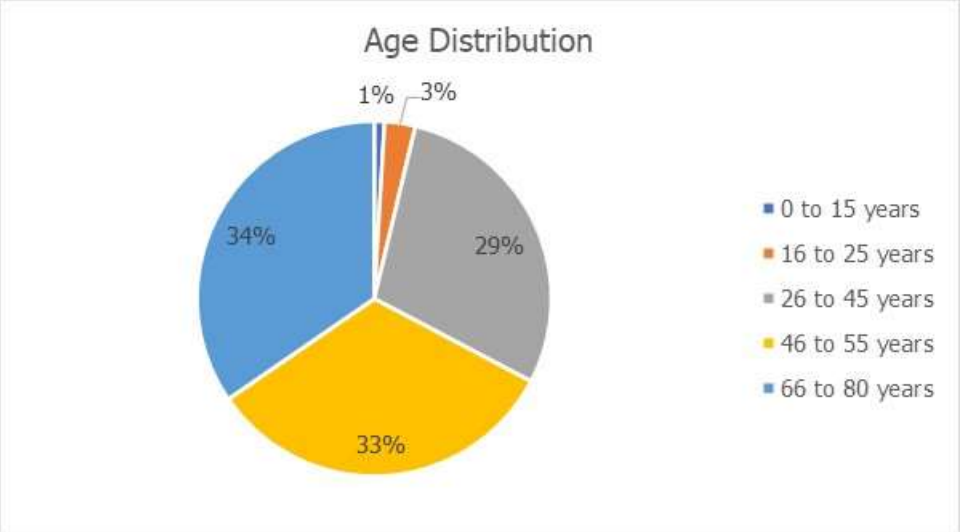
4.10.2 Respondents

There were 107 responses to the consultation. However, it should be noted that not everyone answered every question.

The majority of survey respondents currently live in Barry (68%). Another 17% said that they live in the Rural Vale including the immediate area surrounding Barry. The remaining 15% stated that they live elsewhere. Each respondent provided their age. Only one respondent was under 16 years old, 3% of respondents were between

16 and 25 years old, 29% said that they were between 26 and 45 years, 33% were between 46 and 65 and 34% were between 66 and 80 years old.

Figure 27 - Age Distribution of Respondents

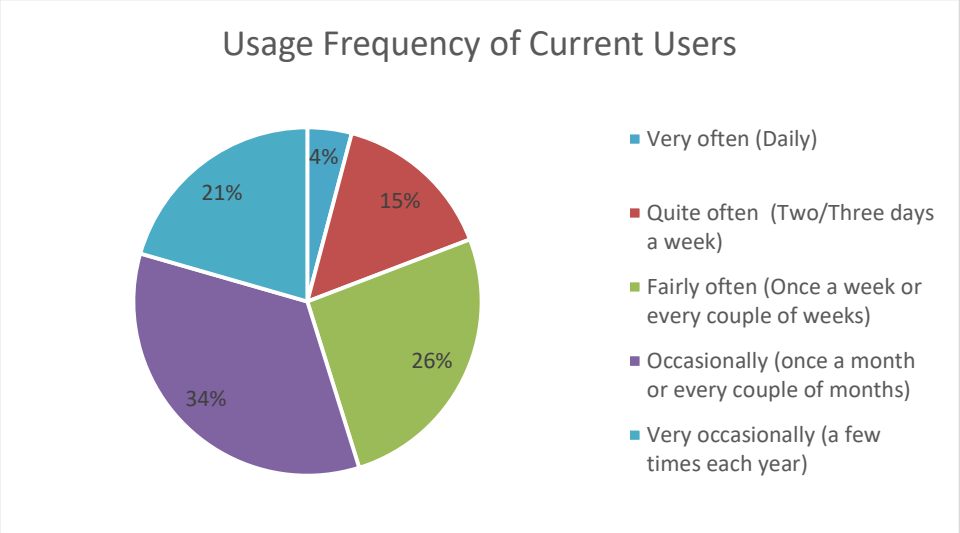


89% of respondents stated that they had no mobility issues. The remaining 11% stated that they had issues limiting their mobility. 3% of respondents stated that they could not easily walk more than 100 metres and a further 1% stated they could not easily walk more than 20 metres.

4.10.3 Current use of the station

All 107 respondents gave information about their usage of Barry Docks Station. There were 73 that said they were currently using the station, while 34 stated that they were not currently using it. Only 4% of respondents, stating they used the station, use it 'very often'; ie on a daily basis, and 15% said they used the station 'quite often', meaning two or three times a week. A further 26% of respondents stated they use the station 'fairly often', which means up to once a week or every two weeks. The largest proportion of respondents (34%) claimed to use the station 'occasionally', meaning around once a month or once every couple of months. The remaining 21% said they used the station 'very occasionally' or a few times per year

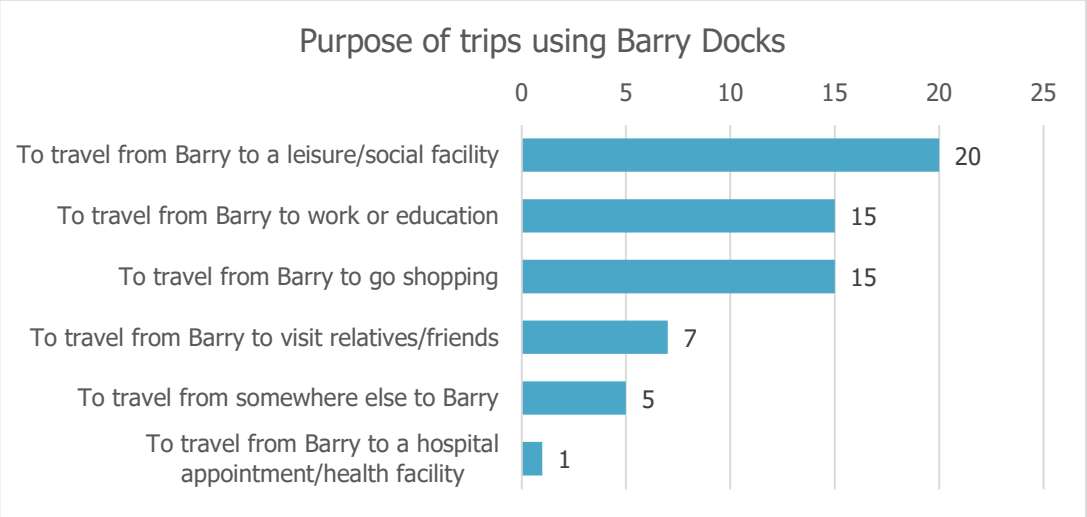
Figure 28 - Usage Frequency of Current Users of Barry Docks



Of the users who do not use Barry Docks, just over 47% also do not use any of the other train stations in Barry. 26.5% of respondents who do not use Barry Docks used Barry Town instead and 20.6% used Cadoxton. Nearly 6% of non-users used Barry Island.

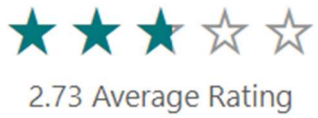
The figure below shows the purpose of trips of Barry Docks users. The most common trip purpose was to travel to a leisure or social facility, mentioned by 20 respondents. There were 15 people who used the rail service to travel to their place of work or education and there were also 15 people that used it to access the shops. A total of 7 users travelled from Barry to visit relatives or a friend and 5 users travelled into Barry from a different place. Finally, one person travels from Barry to a hospital appointment or health facility.

Figure 29 - Purpose of trips using Barry Docks



4.10.4 Current Access to the Station

When asked to rate the current access to or from Barry Docks on a scale from 1 to 5, respondents gave it an average rating of 2.73.



There were 10 respondents who said that they found it difficult to access the station on foot and another 7 who said they found it difficult accessing the station by bus. There were 6 users that found it difficult to access the station by car and 5 found it difficult to access by bike.

Respondents were also asked to rank the accessibility within the station area, such as the car park, station access and the pedestrian subway. This received a rating of 2.64, slightly lower than the wider accessibility rating with 50 respondents stating they had safety and security concerns when moving around the station area. Poor lighting, a lack of toilet facilities, the lack of a bus stop nearby, difficulty finding a parking space and using the ramp to access the station platforms were also all cited.

Of the respondents currently using the station, over 51% (n=37) arrived at the station on foot and a further 36% (n=26) arrived by car, either as a driver or passenger. Access by other modes of transport achieved significantly fewer responses, with up to 3 responses per category.

4.10.5 Future Access to the Station

If the works proposed at Barry Docks went ahead, 89 people or 84% of all respondents indicated that they would then use the station. This represents an increase of 23.6% over respondents indicating they are currently used the station.

When asked about how they would access the station if the improvements were made, 43% (n=38) stated that they would access it on foot. While this represents a slight decrease in the proportion of users arriving on foot, it still results in a net gain in total users arriving this way.

Table 14 - Summary of Current and Future Modes of Station Access

	Current Mode	Future Mode	Difference
On foot	37	38	+1 (+2.7%)
Bicycle	3	7	+4 (+133.3%)
Car, as driver	24	30	+6 (+25%)
Car, as passenger	2	3	+1 (+50%)
Taxi	2	3	+1 (+50%)
Train	2	3	+1 (+50%)
Bus	2	5	+3 (+150%)
Not using the station	34	17	-17 (-50%)
TOTAL	106	106	

Nearly 8% of all future users stated that they would access the station by bicycle. This represents an increase in both proportion and total numbers of cyclists. Number of users arriving by car, either as a driver or as a passenger, increase as well, representing 37% of all users. Respondents stating that they would use the bus in the future increased to 5, representing 5.6% of all users of Barry Docks station.

4.10.6 Current and future demand

The total current trips taken to Barry Docks by survey respondents can be estimated by multiplying the frequency of trips in a year by the number of users in each category of use. As can be seen from Figure 28, most respondents indicated that they use the station occasionally or fairly often. This results in a total of around 3,499 yearly trips currently being undertaken by the survey respondents. This equates to approximately 48 trips annually for each respondent that stated they were using the station. However, when including the respondents who indicated that they were not currently using the station, it results in approximately 33 trips per respondent.

Based on the same calculation but taking into account the additional users Barry Docks will attract in the future as a result of the proposed improvements, produces a total of 3,703 yearly trips undertaken by the respondents. This is an increase of 6.2% compared to existing usage. On average, this would equate to 41 trips per annum for each user that indicated using the station in the future, and 35 trips per annum across all respondents.

4.11. Options Appraisal

4.11.1 Introduction

All options (1, 1a, 2 and 3) were appraised at OBC stage. However, at the time, it had not been possible to complete all geotechnical surveys or, due to Covid, a full public consultation. It was, therefore, concluded that Options 1 and 2 should be considered indicative of the preferred option for further examination at FBC stage, either including some housing /commercial development to the north of the station or not, depending on the outcome of the surveys and investigations it had not yet been possible to undertake. As a consequence, it was proposed that the preferred option be finalised at FBC stage, once public consultation had been completed and the additional surveys and any further information required had been obtained. This includes any adjustments required to costs and benefits in the economic appraisal of each option. (Please see Figures 13 to 16 for illustrations of the four options)

4.11.2 Appraisal at OBC Stage

Detailed plans of each of the options can be seen in Appendix D.

How well each scheme option meets the national, regional and local policy and strategy objectives; how deliverable each is and their value for money is key to establishing which should be the preferred option to carry forward for detailed design, further economic appraisal and delivery planning at FBC stage. At OBC stage we were unable to finalise the economic appraisal that would identify the true BCR of each option due to further survey work being required to establish housing options, reduced risks in costs EV benefits not being possible to quantify/value and further work being required to firm up land value uplift. However, the options appraisal should not be based on the BCR calculations alone, as this just forms a part of assessing the value for money of each option. To place the BCR in context and reflect the impact the options have on the issues that exist the appraisal also needs to take account of the strategic case and in particular the 5 scheme specific objectives, 2 imperatives and the 6 scheme delivery objectives identified within this.

All scheme options meet by far the majority of the 94 national, regional and local policy and strategy objectives identified, as outlined in the Strategic Case. In terms of the scheme specific objectives all options will accommodate increased rail demand (objective A), improve access to rail services (B), increase access to employment (C) and support economic development in the region (D). However, while options 1, 1a and 2 also meet objective E, placemaking, option 3 does much less to achieve this. All the former options propose the bus/taxi interchange to the south of the station and the car park extension and potential for housing to the north. This makes full use of the available space and joins up the north of the site with the south improving not only access to the station platforms from either direction but also the route across the site, linking the town centre and residential areas in the north with the Waterfront developments. It also enables a comprehensive bus interchange to be constructed, accommodating the bus bays and infrastructure sought by operators and by its circular nature enable a focus on passenger facilities within its centre. This clearly meets the vision for Barry Docks to form a gateway to/from Barry and will aid its promotion as such. It also takes account of the aspirations for further development phases including provision of business, active travel and other passenger facilities and in the case of Option 2, offers the greatest potential for housing/commercial development on site.

Option 3 locates both the car park extension and bus/taxi interchange to the north of the station platforms. It is notable that this still leaves space for some housing/commercial development, albeit at a lesser scale than options 1 and 2. However, by concentrating facilities to the north it does little to improve the southern access to the station or to link areas to the north of it with the Waterfront development to the south. By stretching out the bus/taxi interchange along the proposed new northern access road it actually creates a new barrier to crossing the station confines rather than removing the barriers to this. The interchange provided is obtained at a lower cost than that to the south but the layout proposed doesn't provide the comprehensive facilities sought by rail passengers or bus operators, offering no focal point for additional passenger facilities or the space to develop these at a future phase. Option 1a, by utilising the new access road to provide drop off points, has similar issues of reduced capacity for housing/commercial development but as this retains the bus interchange to the south the other limitations faced by option 3 are not encountered.

The key differences in deliverables between the options that propose the bus/taxi interchange to the south and Option 3, that proposes this to the north, are highlighted in the table below.

Table 15 - Key Differences between Interchange North or South

Interchange to the North	**Interchange to the South**
Lowest Cost	Comprehensive interchange
Largest car park capacity	The largest housing/commercial development capacity
Shortest journey time for buses and cars	Most attractive to bus operators
Limited improvements to station access from the south and no active travel links across the site	Improved active travel links north, west and south and across the site
Makes less of an impression as a gateway	Barry Docks clearly presents as a gateway to Barry
Limited scope for future development	Greatest scope for future development

That the interchange to the north is achieved at lower cost is primarily a function of not having the cost of re-constructing the existing car park, together with the lesser facilities offered within a bus/taxi interchange to the north. Also, while it offers a slightly shorter journey time to access the station than the options to the south, all bus operators have suggested they would not divert their services to it in this location and would it to the south. An interchange to the south will also mean buses would be less likely to congregate at Morrisons in the future and operators would be able (utilising the interchange) to consider future provision for the Waterfront as the development of this extends further east.

The greater car park capacity offered by locating an interchange to the north is significant as this will do most to take cars off the road and encourage park and ride to access employment opportunities and other services, in particular between Barry and Cardiff and its surrounds where roads are most congested. However, it also has a direct impact on the scope for housing and commercial development on site with Option 3 offering only around two thirds the housing of options 1 and 2. Option 1a which adds drop off points to the northern access road but retains the interchange to the south offers both the least housing and the lower number of car park spaces. Assuming that many buying houses located at the station will do so in order they can access rail services without needing to use their car, and a house occupancy rate of around 2.2, additional housing on site could effectively make up for much of the reduction of 63 car park spaces from the south of the station due to the provision of the interchange there. In addition, as occupants of these homes will no longer need to use their car to access the station, this will not only reduce congestion between Barry and Cardiff but also on roads within Barry.

In the table below, each of the individual options are considered against each of the scheme specific objectives, key imperatives and the delivery objectives. The table uses a RAG analysis to score the options with green indicating the objective is fully met scoring 2, amber indicating the objective is partially met scoring 1 and red indicating the objective is not met, scoring 0. To assist in understanding the judgements made for each option we have also provided below a table, produced at OBC stage, summarising their potential outputs in terms of car park spaces and housing. The table also includes potential costs and high-level estimates of the BCR (both with and without land value uplift included) for each option, as identified at OBC stage. These outputs together with the key differences shown in Table 15 above are all taken into account in the assessment.

Table 16 - Key outputs of scheme options (Cost & BCR based on OBC estimates)

	Option 1	Option 1a	Option 2	Option 3
Car Park Spaces	308	308	308	371
Housing Units	88	56	99	62
Cost	£7.1m	£7.3m	£7.8m	£5.9m
BCR	0.79/0.77	0.76/0.74	0.71/0.69	1.12/1.09
BCR (inc LVU)	0.94/1.12	0.85/0.97	0.87/1.04	1.12/1.40

Table 17 - RAG Analysis of Scheme Options

Scheme Objective	Option 1	Option 1a	Option 2	Option 3
A. Accommodate increasing rail demand				
B. Improve access to/from rail services				
C. Increase access to current and emerging employment				
D. Support ongoing and future				

economic development				
E. Placemaking inc. the foundations for further station development				
F. Equality				
G. Climate Change				
H. Cost effective/VfM				
I. Deliverable				
J. Affordable				
K. Sustainable				
L. Takes account of interdependencies				
Score	23	19	22	19

It is clear from this overall analysis that the differences between options are marginal. However, scores do indicate that Option 1 – a bus/taxi interchange to the south, in this case with scope for development of 88 housing units, and Option 2 - Interchange to the south with scope for housing/commercial development including up to 99 housing units, offer slightly better overall strategic benefits than options 1a and 3.

What, ultimately, tips the balance in favour of Option 1 and 2 is their capacity to support further development and the greater focus on sustainability and inclusion they offer. Both options provide greater scope for housing and commercial development to take place alongside the transport interchange than the other options under consideration. However, at the OBC stage, whether this further regeneration opportunity could be taken (as originally proposed by Option 2) or not (as originally proposed by Option 1) was yet to be finalised.

Locating the bus/taxi interchange to the south of the station establishes it as a distinct facility in its own space, emphasising its role as the gateway between the station and the town. It takes away some car park spaces, potentially replacing these with housing and as a result, gives greater prominence to the bus/taxi interchange over the park and ride car park. It also offers greater support for active travel by improving access to the station platforms from the north, the south and the west, as well as establishing a direct active travel link between the town centre and residential areas to the north of the station and the developments taking place along the Waterfront to the south.

By placing the focus on use of sustainable modes, options 1 and 2 also offer greater capacity to achieve inclusion and equality, with those excluded more likely to be able to access these modes than they are to own or have access to a car. Increased inclusion will, in turn, lead to greater opportunities for vulnerable groups to access jobs, training and services via the rail network. This will be particularly relevant to post-Covid recovery.

This placemaking will clearly do much to improve the overall image of the station and assist in promoting it as the sustainable gateway for the town sought by the Local Development Plan. Options 1 or 2 will also put in place the foundations for future development that can best facilitate further use of sustainable modes in the future, for example by adding cycle hire facilities or a combined cycle and business hub, etc in the central area of the bus/taxi interchange. Whereas, locating the interchange to the north alongside car parking, while retaining only car parking to the south of the station platforms and nothing more, risks the image of the station remaining car centric and limiting future development to only the north of the station site. In the case of the latter, for example, this would locate buses in the wrong place to serve future developments along the Waterfront from the interchange, as these emerge.

4.11.3 Appraisal at FBC Stage

Options 1 and 2 were identified at OBC stage as indicative of the preferred option to carry forward for further examination at FBC stage. (Again, plans of the options can be seen in Appendix D.) Option 1 originally proposed a bus/taxi interchange to the south of the station platforms with additional park and ride provision to the north but without any housing/commercial development and Option 2 proposed the same but with housing/

commercial development to the north. In addition, when drawing up the initial designs for each option it was agreed with the council that Option 1 should also incorporate an access road to the park and ride north of the station, off Subway Road. and consider the scope for housing/commercial development in this context, while Option 2 should include an access road off Dock View Road. An Option 1a was also added that included a lay-by on the access road proposed for Option 1, but this is not one of the preferred options to be carried forward to FBC.

By considering an overall masterplan for Barry Docks station, alongside the specific requirements to establish a Transport Interchange, the intention has always been to take account of the wider vision to establish Barry Docks as a comprehensive mobility hub and gateway for Barry, whilst recognising it was likely this would need to be brought about in phases. In particular, the geotechnical surveys undertaken in the area to the north of the station were required to consider not only the scope for providing transport infrastructure but also whether it was possible to undertake housing/commercial development in this area and if so, on what scale. To achieve this, station masterplan designs drawn up at OBC stage considered how transport infrastructure and housing/commercial development could be combined in the area, setting out potential land allocations for each and, as a consequence, providing a clear indication of what land could be built on initially and what allocations would need to be retained for future development phases, if surveys confirmed such development was possible.

The geotechnical surveys have now been completed and have confirmed that the land to the north of the station is suitable for development and can accommodate both transport infrastructure and/or housing/commercial development in the form and scale proposed by the Masterplan preliminary designs for either Option 1 or Option 2. The surveys indicated the geological structure would not allow for provision of a Roundabout of sufficient size to allow buses to turn on the access road as proposed by Option 1a and as a result confirmed that this should be discounted.

In addition, dialogue with the landowner has confirmed their willingness to work with the Council to bring about the vision for Barry Docks in full; ie including housing and commercial development. However, in the process it was noted that the garage located at the western boundary of the available plot had a lease on their section of the plot that runs to 2024 and had no desire to relocate. Neither the council nor landowner regard this section of land as critical for their development proposals. However, were the garage to be maintained it makes providing access to the site off Subway Road (as in Option 1) more difficult to achieve due to its proximity to the tunnel. This limits the scope to shore up the banking in this location to allow for construction of the access road. Were the garage lease allowed to run out in 2024 this might be mitigated by moving the access point from Subway Road further to the north, however, construction work on any such proposal could not commence until after 2024, by when the proposed Metro funding programme will no longer be available to support this.

Finally, the public consultation undertaken in late 2021 has confirmed public support for the development of Barry Docks Station proposed, including locating the bus interchange south of the station and the inclusion of housing and commercial development. The consultation clearly indicated the proposed improvements to the station will generate an increase in the use of its rail offer and encourage the mode shift from car to more sustainable modes. It also indicated a need to focus on improving the station access for active modes from Dock View Rd with many respondents referring to safety and security concerns when using the current arrangements. Similarly, the consultation indicated the public would welcome greater segregation of active travel and vehicular routes across station confines, again for reasons of safety. Option 1, including an access road off Subway Road, will work against this principle by adding a road barrier for those accessing the station by active modes from Dock View Road, to cross. Option 2, by combining both vehicular and pedestrian access off Dock View Road, will avoid creating such a barrier and also improve perceptions of safety as active mode routes will be overlooked by vehicular traffic.

In terms of housing/commercial development the masterplanning exercise has shown that either Option 1 or Option 2 can accommodate this, with up to 88 housing units available alongside the former and 99 units alongside the latter. Either option will return much the same level of benefits but due to its slightly higher costs Option 2 will not return quite the same BCR/Value for Money for investment as Option 1, even though the number of houses it can offer is slightly greater. However, as there is little information to do so with any certainty, the economic appraisal undertaken does not specifically quantify and value the transport benefits (only the housing benefits) of locating housing alongside the proposed Transport Interchange.

We can assume such housing is likely to be taken up by many who will seek to access rail and other transport services directly from the interchange to go about their daily activities. This will likely increase their use of

sustainable modes and reduce their need to own or use a car for some journeys. However, the limited precedent for this and the lack of any studies elsewhere assessing the transport impacts of locating housing within a transport interchange, means there is little basis for attributing the number of people taking up such housing that will do this. Without this quantification we cannot value the benefits generated in terms of additional revenue to operators, to the individual or public purse in terms of the opportunities for employment, inclusion, etc that it will bring. Clearly, Option 2 by offering a slightly greater number of houses, will generate slightly more such transport benefits than Option 1. However, we cannot establish if this will make up the difference in BCR/Value for Money between Option 1 and Option 2. We can only expect that it will reduce this difference.

Regardless of which option is carried forward, whether housing/commercial development should be provided alongside side it or not, is the first key consideration. Clearly it is the aspiration of key stakeholders, including the council and landowner as well as the general public, that it should be. Alongside this, Table 16 (above) demonstrates that the BCR and Value for Money of doing so will be greater than if housing/commercial development were not provided, primarily due to the uplift in land value it offers. Other qualitative benefits of providing housing/commercial development identified include:

- Additional transport as well as land value benefits from locating housing next to the ztransport interchange (as outlined above);
- The increase in social housing made available to Barry;
- An improved environment and aesthetic provided in the station area;
- Improved safety and security and perceptions of this, in the station surrounds;
- Increased commercial and community services and facilities at the station; and
- Improved cohesion between Barry town centre and residential areas north of the station and the Waterfront to the south

To bring about housing/commercial development will require additional funds to that potentially available through the CCR Metro programme, which is only available to support transport infrastructure improvements. The value of the land north of the station has been established by the council and dialogue commenced with WG to explore if a bid to their regeneration programme to provide the additional funds required would be eligible for consideration, which it would. As a result, two alternatives have emerged that have been considered by the council in dialogue with the landowner:

a) The council purchases the land it needs to put in place the transport infrastructure using support from the CCR Metro programme and also works with WG to seek support from their Regeneration programme to purchase the remaining land needed for the housing and commercial development. In these circumstances the Council would aim to purchase the land as a whole (cost circa £1.5m) and subsequently work with developers to invest in bringing about the housing and commercial development sought;

b) The council purchases only that land it needs to put in place the transport infrastructure (cost circa £0.515m), leaving the remainder in the ownership of the current landowner. However, in so doing the Council establish an agreement with the landowner to work with developers to invest in bringing about the housing and commercial development sought.

The outcome of these discussions was that both the council and the landowner would prefer the second alternative (b). From the council perspective it is the alternative that can be most readily progressed as it does not depend on two separate funding bids both being successful and aligned in terms of their timescale. It also relieves them of the responsibility for negotiations with developers, whilst via their agreement with the landowner (and their own role as the planning authority), ensuring the development that does take place aligns with their overall vision for the station. From the landowner's perspective, they retain the land not needed for transport infrastructure to enable them to maximise their original investment in purchasing the plot, whilst obtaining an immediate return from the council purchase and adding value to their remaining land due to the transport infrastructure being put in place.

There is little benefit to be gained from not including housing/commercial development to the north of the station, apart from the fact that additional funds to support this would not need to be sought. In this scenario, although the park and ride extension would still be constructed, it would be provided in isolation, meaning its

location and the routes between it and the station would not be overlooked. While landscaping could take place on the parts of the land not used, the area around the car park would remain exposed and it would offer little cohesion between the town centre and housing north and east and the Waterfront area. It is also the case that the current landowner is unlikely to be willing to release the land in parcels suited to this alone. Their preference is either a sale for the land as a whole or the opportunity themselves to develop any parcels of land that remain.

Whether Option 1 or Option 2 is progressed, the appraisal above confirms that this should be in the context of housing/commercial development alongside the proposed transport infrastructure, as a future development phase. Option 1 includes the access road from Subway Road with all the difficulties this presents for construction and its potential to delay progress, whereas Option 2 is comparatively much more straightforward to construct and offers a greater scope for development, including more houses. As a consequence, it is concluded that Option 2 with housing/commercial development and an access road off Dock View Road should be the preferred option to take forward to delivery.

The final overall design proposed for the preferred Option 2 is illustrated in the figure below, together with the final design for the bus and taxi interchange to the south of the station platform, that is incorporated into the overall design, below that:

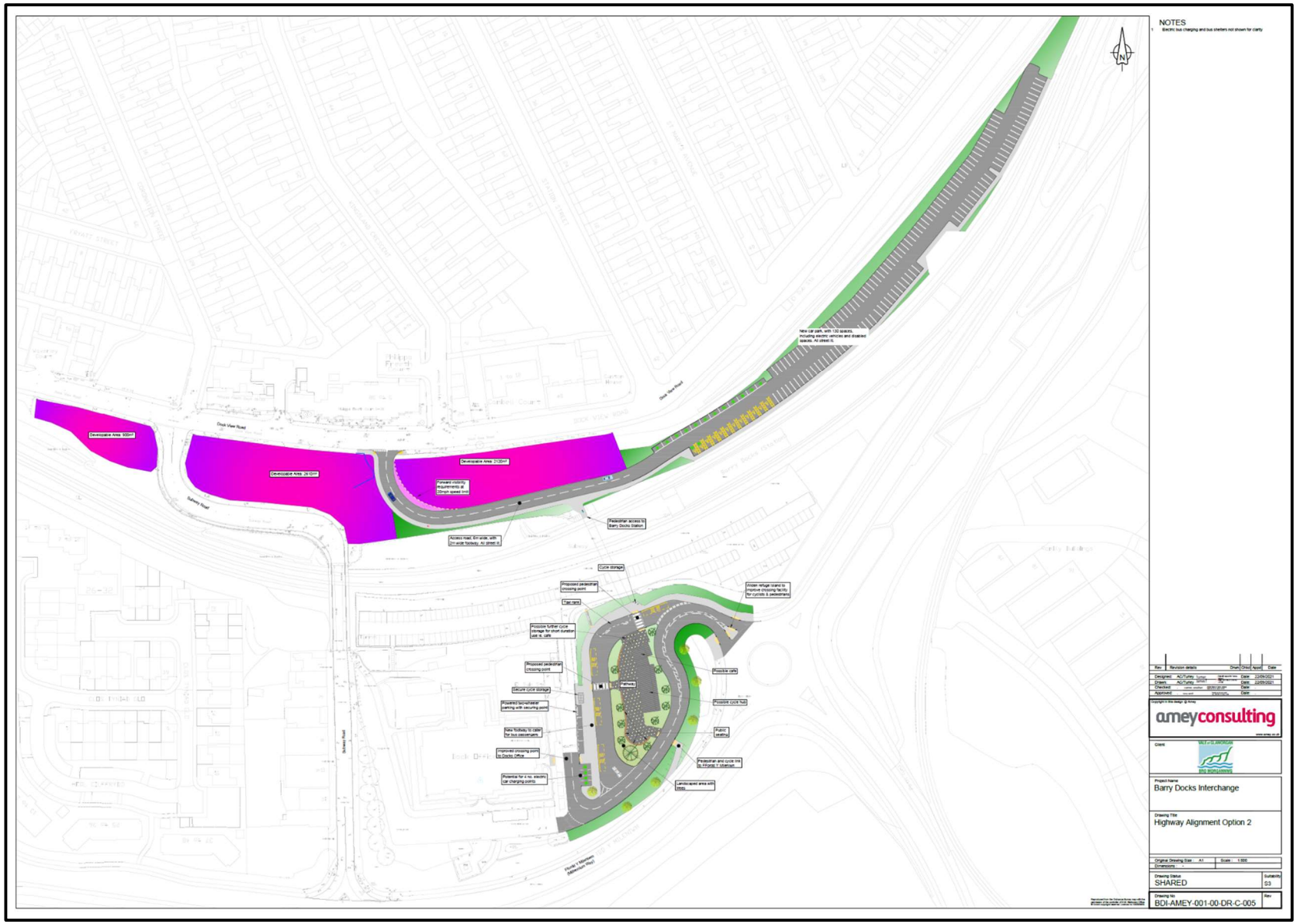


Figure 30 – Final Design for Option 2 (Preferred Option)

Figure 31 - Final Design, Bus and Taxi Interchange

5. Transport Case

5.1. Introduction

Value for money is a critical element of the decision-making process for any proposal that involves the use of public resources. Achieving value for money can be described as using public resources in a way that creates and maximises 'public value'. Demonstrating value for money is the role of the Transport Case.

Public value is defined as the total well-being of the UK public as a whole. In a transport context, this covers all the economic (e.g. travel time, vehicle costs, tax revenues); social (e.g. health, safety, accessibility); and environmental (e.g. noise, air quality, landscape) impacts of a proposal.

The appraisal approach focuses on how different parts of the preferred package (Option 2) will provide synergy, building up the benefits of the proposed car park, bus and taxi interchange, walk and cycle aspects. The aim is to demonstrate the economic and social benefits at a 'package' level.

The facilities' demand modelling and scheme costings required to quantify and monetise the economic impacts has been undertaken by Amey Consulting. Cost investigations have taken account of local conditions, guidance and precedents from elsewhere, including industry standards.

The Transport Case follows the guidance given in 'WelTAG 2017, Welsh Transport Appraisal Guidance' and in particular the sections relating to Stage 2: Outline Business Case and Stage 3: Full Business Case.

This chapter also draws heavily on the advice and parameters contained in the Department for Transport's TAG and TAG Databook, version 1.17, November 2021, as referenced in WelTAG guidance.

5.2. Critical Success Factors

The core requirement of the Economic Case is to understand the expected value for money that the scheme is likely to deliver. In this respect, generic CSFs that could apply to any project are appropriate:

- Ensure that any approach provides an adequate return on investment, as determined in this case by Cardiff Capital Region and its Assurance Framework
- Maximise return on investment, striking a balance between the cost of delivery and the cost to the economy of non-delivery

5.3. Proposed Appraisal Methodology

The methodology for appraising the transport benefits that will derive from the railway station improvements is broadly in six stages:

- Calculate the likely level of baseline rail passenger demand at opening year of the scheme.
- Calculate future post opening 'exogenous' rail demand that will be generated by external factors such as population, jobs and services growth. This future demand might not be able to be satisfied if the new facilities are not provided, therefore the facilities generate important future benefits for these sources.
- Calculate 'endogenous' rail demand that will be generated by internal factors such as the proposed increase in rail frequency in December 2023. Again, endogenous demand may not be realisable unless the proposals are provided.
- Where possible assess 'modellable' demand for the new facilities. Modelled demand is that which can be computed on the basis of a potential change that a new facility can provide in the time or cost of a journey from its origin to its destination. A quicker, cheaper way of getting from A to B will attract users and it is the volume of this use that will be calculated.
- Also, assess 'induced' demand for facilities. This is demand that cannot be modelled because a facility brings something other than an improvement to the time or cost of journey. Induced demand is assessed on the basis of empirical evidence, usually from elsewhere.

- Calculate the effect of opposing forces: Barry Docks Station is less than 2 kilometres from both Barry Station and Cadoxton Station, both of which therefore compete for future demand.

Once the sources of demand have been enumerated, societal benefits generated for and by the extra passenger demand can be calculated. Some of these benefits are economic and can be monetised whilst social and environmental benefits are qualitatively presented. Some so called 'Wider Economic Benefits' can also be monetised. A primary example is the uplift in value that providing new transport infrastructure can have on commercial and residential properties in the vicinity. These too can be classed as societal benefits.

Two important tools are used to calculate future passenger demand arising from the new facilities, these are:

- mathematical spreadsheet models that calculate changes in journey time and cost and the impact this might have on demand for the new facilities; and
- evidence of year on year rail passenger growth over the last decade or so and in particular growth that could be attributable to previous events such as the additional parking spaces that were provided at Barry Docks Station in March 2012.

Calculations of future demand need to be developed from a baseline figure. The Office of Rail and Road (ORR) publishes annual passenger 'entries and exits' for every UK railway station. Unadjusted totals for Barry Docks and other stations in the Barry area: Barry Island, Barry and Cadoxton, are shown in the table below. The data excludes the years that the Covid pandemic affected passenger numbers. It should also be noted that adjusted patronage figures for the 4 Barry Stations were used in the economic calculations undertaken (see section 3.3.5, including Table 2, which explains this)

Table 18 - Annual passenger entries and exits at stations in the Barry area from 2008-09 (un-adjusted)

Year	Barry Island	Barry	Barry Docks	Cadoxton	Total	Annual change
	Thousands of entries and exits per year (Index: 2008–09 = 100)					
2008–09	578 (100)	480 (100)	119 (100)	261 (100)	1438 (100)	-
2009–10	561 (97)	505 (105)	132 (111)	257 (99)	1455 (101)	+1%
2010–11	618 (107)	504 (105)	149 (125)	248 (95)	1519 (106)	+5%
2011–12	617 (107)	506 (105)	176 (148)	254 (97)	1553 (108)	+3%
2012–13	592 (102)	527 (110)	191 (161)	273 (105)	1583 (110)	+2%
2013–14	621 (107)	559 (116)	204 (171)	278 (107)	1662 (116)	+6%
2014–15	608 (105)	531 (111)	205 (171)	269 (103)	1613 (112)	-4%
2015–16	654 (113)	544 (113)	216 (182)	282 (108)	1696 (118)	+6%
2016–17	712 (123)	533 (111)	224 (188)	287 (110)	1756 (122)	+4%
2017–18	753 (130)	534 (111)	246 (207)	282 (108)	1815 (126)	+4%
2018–19	832 (144)	524 (109)	251 (211)	271 (104)	1878 (131)	+5%

The ORR station usage data is an estimated count using ticket data. Future demand and the calculation of benefits that will arise also requires information about the origins and destinations of passenger journeys. In this case baseline data is in the form of ticket information supplied by the Train Operating Company, Transport for Wales (KeolisAmey). The information comes from the industry wide LENNON database - Latest Earnings Networked Nationally Overnight – and has been provided for 2018/19. This year therefore provides the base year for forecasts.

The LENNON data is commercially confidential, so it is important to limit the amount of information published on it to that which is essential to develop the forecasts. In this case it is sufficient to establish the main destinations of rail journeys starting or ending at Barry area stations. Table 19 shows that the great majority of rail journeys from the Barry area go to Cardiff, followed by the Cardiff Capital Region (CCR) excluding Vale of

Glamorgan (VOG) stations, then VOG (excluding Rhoose Cardiff International Airport station), then Bridgend, Newport and the south west of England (Bristol). The pattern is similar for rail journeys that originate elsewhere except that there are relatively fewer starting at Cardiff and more in the rest of the CCR, except for VOG.

Table 19 - Destinations and origins of rail journeys starting in the Barry area and starting elsewhere

	Originating in Barry area stations					Originating elsewhere				
Destination	Barry	Barry Docks	Barry Island	Cadoxton	Total	Barry	Barry Docks	Barry Island	Cadoxton	Total
Barry	0%	0%	0%	1%	0%	0%	1%	0%	2%	0%
Barry Docks	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Barry Island	0%	0%	0%	1%	0%	0%	1%	0%	2%	0%
Cadoxton	0%	0%	0%	0%	0%	1%	1%	1%	0%	1%
Bridgend	2%	3%	0%	4%	2%	8%	6%	0%	5%	3%
Cardiff	82%	82%	87%	77%	83%	50%	46%	46%	50%	47%
Cardiff City Region	5%	5%	7%	6%	6%	14%	13%	45%	20%	33%
London	1%	0%	0%	0%	0%	2%	1%	0%	1%	1%
North West England	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Rhoose Cardiff Intl. Airport	1%	1%	0%	1%	1%	5%	7%	0%	5%	2%
South East England	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
South West England	2%	2%	1%	2%	1%	3%	2%	2%	1%	2%
Vale of Glamorgan	5%	5%	4%	7%	5%	13%	20%	4%	12%	9%
Wales	0%	0%	0%	0%	0%	1%	1%	0%	1%	1%
West Midlands England	0%	0%	0%	0%	0%	1%	1%	1%	0%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

A combination of the 2018/19 ORR and LENNON percentage data provides a reasonably robust estimate of the number of baseline rail journeys. Rail demand post Covid is still unsettled making data over recent years difficult to use for baselining purposes. To address this, sensitivity tests are run against the baseline figures and the results of these are discussed later in the chapter.

5.4. Do Minimum Exogenous Demand

Before calculating future demand resulting from new facilities it is important to calculate the do minimum demand that will occur from other exogenous and endogenous factors including any:

- Increase in the local population;
- Change in jobs and services both locally and elsewhere, for example in the Cardiff area;
- Other railway improvements or enhancements such as service frequency.

There will be other factors that play a part but the above are likely to be the most important. The likely medium to longer term impact of the Covid pandemic on future is based upon the values in the Department for Transport's (DfT) Transport Appraisal Guidance (TAG) version 1.17.

The DfT's Exogenous Demand Growth Estimator (EDGE) model assesses growth in demand for rail travel based on exogenous factors such as employment, population and Gross Domestic Product (GDP). It uses the industry accepted method for forecasting demand based on forecasts of demand drivers and elasticities. The model is based on the National Trip End Model (NTEM) that was developed in 2011 and it contains annual forecast changes in rail demand after 2011 for all UK station to station flows. The data for Barry area stations was kindly provided by the DfT. Forecast changes in demand for each of the stations in the Barry area are shown in Table 20.

When it was developed, EDGE took account of a wide range of factors including future land use developments. Since EDGE was built, Barry Waterfront has seen significant redevelopment for housing and support services such as retail. Anecdotally, and pre-Covid, the new flatted dwellings are of the type that will attract a high proportion of workers that are likely to use the train to commute to employment opportunities in Cardiff. The correlation between the increasing number of new dwellings built near Barry Island and increasing use of the station shown in ORR data appears to be significant, although it is known that the LENNON ticket data shows there to be a higher number of journeys to and from Barry Island Station than is actually the case.

Table 20 - Forecast annual growth in passenger demand as in the EDGE model

Financial Year	Barry	Barry Docks	Barry Island	Cadoxton
2019/2020	0.6%	0.5%	0.6%	0.7%
2020/2021	1.0%	0.9%	0.8%	1.1%
2021/2022	0.7%	0.5%	0.6%	0.7%
2022/2023	0.8%	0.6%	0.9%	0.7%
2023/2024	0.6%	0.4%	0.6%	0.5%
2024/2025	0.8%	0.6%	0.8%	0.8%
2025/2026	1.0%	0.8%	0.9%	0.9%
2026/2027	1.0%	0.9%	0.6%	1.0%
2027/2028	0.6%	0.5%	0.0%	0.7%
2028/2029	0.7%	0.6%	0.3%	0.8%
2029/2030	1.1%	1.0%	1.0%	1.1%
2030/2031	1.0%	0.9%	1.1%	1.0%
2031/2032	-0.2%	-0.3%	-0.3%	-0.2%
2032/2033	-0.3%	-0.3%	-0.3%	-0.2%
2033/2034	-0.4%	-0.5%	-0.7%	-0.3%
2034/2035	-0.5%	-0.6%	-0.8%	-0.4%

Financial Year	Barry	Barry Docks	Barry Island	Cadoxton
2035/2036	-0.3%	-0.3%	-0.5%	-0.2%
2036/2037	0.2%	0.2%	-0.2%	0.3%
2037/2038	0.0%	0.1%	-0.4%	0.2%
2038/2039	0.5%	0.5%	0.0%	0.6%
2039/2040	0.4%	0.5%	0.0%	0.6%
2040/2041	0.5%	0.5%	-0.1%	0.6%
2041/2042	0.7%	0.8%	-0.1%	0.8%
2042/2043	0.6%	0.7%	-0.2%	0.8%
2043/2044	1.1%	1.3%	0.0%	1.4%
2044/2045	1.6%	1.9%	0.1%	2.0%
2045/2046	0.4%	0.5%	-0.3%	0.6%
2046/2047	0.4%	0.4%	-0.2%	0.6%
2047/2048	0.6%	0.7%	0.1%	0.8%
2048/2049	0.2%	0.2%	-0.4%	0.4%
2049/2050	0.3%	0.4%	-0.2%	0.5%

The annual year on year increase in rail demand at Barry Docks Station in EDGE is forecast to be a very low average of only 0.5%. This is considerably lower than the actual pre-pandemic increase as shown in the ORR data above.

Consequently, the business case uses the ORR trend as the basis of future exogenous growth. After removing the likely 'induced' impact of additional parking implemented in 2012 (which is discussed below) and any 'outlier' years, exogenous demand is considered to have actually increased by an average of 6% per annum at Barry Docks Station in recent years.

The appraisal therefore assumes that 6% exogenous growth is sustained until 2049/50 when growth flattens. This is in line with TAG guidance. Note though that car-based demand is capped to the capacity of the car park and assumed to zero growth once capacity is reached. The proposed car park, with 308 parking bays, is expected to be at capacity in 2029.

The 6% 'base' is varied from year to year using the variation in EDGE relative to its average of 0.5%. So, for example, if EDGE indicates an increase of 0.4% in one year then 5.9% is used in the appraisal.

5.5. Do Minimum Endogenous Demand

The rail frequency change proposed to take effect in December 2023 will increase the number of trains stopping at Barry Docks, Barry and Cadoxton from four to five per direction, per weekday daytime hour. The additional train will operate between Cardiff and Bridgend and vice versa, thereby doubling the frequency to Bridgend from one to two trains per hour per direction. Rhoose Station is on this line therefore connections will double from Barry Docks to Cardiff Airport via Rhoose and Llantwit Major. It also makes the Enterprise Zone in the vicinity of the airport and at St Athan more accessible.

Whilst there is known to be a high elasticity of demand for frequency improvements the 25% increase in trains will not generate 25% more passenger demand *per se*. The estimate of additional demand is considered to be more likely to be 15% and therefore this percentage is added to other sources of demand that are calculated for 2023. Once applied it is retained in future years at the same 15% level without any further growth or decline. This is because any change in demand in future years will be driven by the exogenous factors only.

The effect of alternative percentages on endogenous demand is discussed in section 5.22. There are no other known and committed future sources of potential endogenous growth at this time.

5.6. Modelled Future Demand

Sources of 'modellable' demand include:

- Increased use of rail services for journeys that currently use a bus to travel all the way from the trip origin to the destination and transfer to a journey by bus to the bus interchange, then by train to get to the destination. The most obvious and voluminous destination for this type of shift is in journeys to Cardiff.
- Existing Barry and Cadoxton station users who either park at the stations or on the streets nearby who, in future, use the extended car park at Barry Docks Station because there are more spaces and therefore it is easier to park in future.
- Use of Barry Docks bus interchange by bus users that currently interchange from bus to rail at Barry or Cadoxton stations.
- Use of Barry Docks bus interchange by taxi users that change to using the bus to the station instead.

Note that modellable demand does not include direct journeys by car from the origin to the destination that transfer to 'drive to Barry Docks Station – then park – then train' to the destination. This is because, *prima facie,* the one variable that changes (i.e. the extra parking spaces), changes neither any time or cost component of the journey from origin to destination. Additional (free) parking simply improves the ease and convenience of parking at the station but these attributes are not simple time and cost components that can be modelled. Instead, this source of demand comes into the 'induced' elements discussed below.

The model that has been developed to support the business case shows that it is likely that some 'direct bus' journeys to Cardiff will change to 'bus – bus interchange – rail' journeys instead. It also shows that the geographical catchment area around Barry Docks Station for these types of change is limited because of the close proximity and competition that comes from Barry Station to the west and Cadoxton to the east. In other words, the time and cost for 'bus – rail' journeys are less than via Barry or Cadoxton for a relatively small geographical catchment area around Barry Docks.

The stimulus to these types of 'Bus – Rail' trips comes from the reduction in the time it takes to transfer between a bus and the railway station because at the moment this requires a lengthy, time consuming walk from the nearest bus stops at either Morrisons or on Holton Road. Bus service 88 stops outside the station in Dock View Road but it is relatively infrequent, and its catchment is limited because it only operates in one direction (eastbound) past the station. It is also an effective server of nearby competing Cadoxton Station.

Modelling has concentrated on journeys to the Cardiff area because they dominate rail trip destinations from the Barry area**Error! Reference source not found.**. 'Bus – rail' journeys could increase to other destinations; however, it is likely that these will be small or very small in number given that baseline rail demand starts small. There are a number of associated issues with this:

- Bus patronage data is not available to show how many people travel to different destinations and therefore baseline information is not available to be able to predict 'direct bus' to 'bus – rail' transfer.
- In consultation, bus operators commented on the existing low volume of bus to rail transfer at Barry Station which is served by a number of bus services from stops directly outside the station.
- For bus travel to Cardiff Airport and the adjoining Enterprise Zone, the necessity to interchange from train to bus at Rhoose Station having already travelled by bus from an origin in the Barry area to Barry Docks Station, is likely to dissuade many people from choosing to use this as a journey. Bus service 303/304 which crosses much of Barry on its run between Cardiff, Penarth and Bridgend is likely to continue to be the public transport service of choice for most to the Airport terminal and surrounding area.

5.7. Induced Future Demand

'Induced' demand will arise from providing additional parking and will most likely arise from providing the bus interchange, walking and cycling provision.

Car park related induced demand is additional to that which will be generated from exogenous and endogenous growth as well as demand that will transfer from Barry and Cadoxton Stations.

The volume of induced car park demand can vary widely. Fortunately, having only opened an extension to the existing car park at Barry Docks in March 2012 it is possible to identify the impact that extension appears to have had on passenger use. As discussed above, recent year on year growth has been around 6%. When this is taken account of in the ORR station usage data (Table 18) the remaining growth in 2012/13 and 2013/14 is probably the result of induced demand caused by the car park extension. This amounts to 7.5% in 2012/13 and a further 5.5% the following year. The total (13%) can then be assumed to be constant, with further growth in later years resulting from exogenous growth only. 7.5% and 13% are therefore assumed to the likely induced demand percentages in the two years after opening of future additional parking provision.

The bus interchange facility will also induce additional trips including 'bus – rail' and vice versa, 'bus – bus' and possibly 'cycle – bus' and 'taxi – bus'. It is not possible to quantify these trips but nevertheless they will have an economic value that can be assessed within the benefits. The overall volume and types of modellable bus interchange journeys are relatively small so induced demand is assumed to add a further 50% of users.

Proposed walking and pedal cycling measures within the site will stimulate some demand too. Forecasts are included below.

5.8. Opposing forces

Accessibility mapping shows that car journey times to Barry Docks Station are, in general, slightly longer than to Barry and Cadoxton stations because the town centre street network to the north is less permeable than that around the other stations. Excluding Subway Road, the distance of the nearest road bridges to Barry Docks Station over the railway also has the effect of diverting traffic away from the station before it can approach the existing car park on its south side via Ffordd Y Mileniwm.

These very localised issues would have little impact were it not for the close proximity of Barry and Cadoxton which compete for demand. (Figure 32)

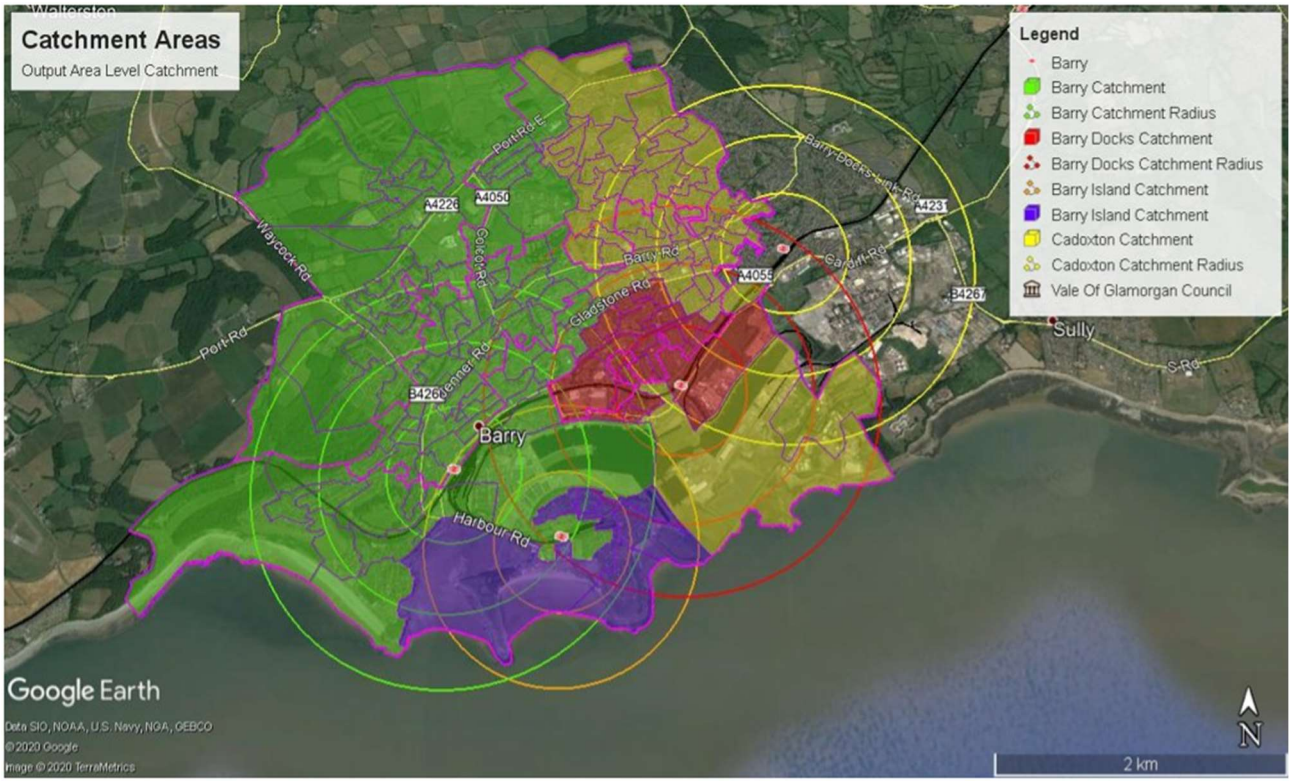


Figure 32 - Barry area stations catchment areas by car by Census Output Area level. Barry Docks catchment area is shown in pink.

The same is true to an extent for 'bus – rail' demand. In general terms bus service accessibility to Barry Station is better, especially from the west and north-west side of the town. Similarly, Cadoxton is slightly more accessible than Barry Docks from most of the north and east of the town, even with the short distances required to walk from Cadoxton to its nearest bus stops.

For an interchange on the south side of Barry Docks the issue that reduces bus service accessibility is - as with access by car - crossing the railway line. Most bus services are likely to serve the station by extending from Morrisons to the interchange to then go back past Morrisons to carry on their routes. This eliminates walking time from Morrisons or bus stops in Holton Road in the town centre, but it also slightly increases the overall time that passengers are on the bus.

The proximity of Barry and Cadoxton is also likely to encourage the transfer of some cars to Barry Docks because of the perception that parking has been become more convenient, even if the average journey time to get to Barry Docks Station is slightly higher. This potentially makes more spaces available at Barry and Cadoxton (which is still a useful way of increasing overall accessibility to rail), but it also means that because these are existing rail users it is not possible to claim economic benefits since these people are making the rail journey already.

5.9. Station Demand

The table below shows how the different components of demand build up. In the base (2018/19) there were around 1,138 trips a day through Barry Docks Station, by 2035/36 there are anticipated to be around 3 times more, with 3,460 trips a day.

Table 21 - Demand components

Daily Travel Demand							
Demand Type	**Intervention**	**Mode**	**2018-19**	**2022-23**	**2024-25**	**2035-36**	**2049-50**
Base		Car	319	319	319	319	319
		Bus	24	24	24	24	24
		Taxi	29	29	29	29	29
		Walk	759	759	759	759	759
		Cycle	7	7	7	7	7
		Total	1,138	1,138	1,138	1,138	1,138
Induced	Exogeneous	Car		86	136	523	1,051
		Bus		6	10	39	118
		Taxi		8	12	47	143
		Walk		204	323	1,239	3,748
		Cycle		2	3	11	34
		Total		305	485	1,860	5,093
	Rail Service	Car		-	64	64	64
		Bus		-	5	5	5
		Taxi		-	6	6	6
		Walk		-	153	153	153
		Cycle		-	1	1	1
		Total		-	229	229	229
	Parking	Car		30	56	56	56
	Bus Interchange	Bus		12	12	12	12
	Walking	Walk		8	8	8	8
	Cycling	Cycle		0	0	0	0
	Total (All Modes)			355	790	2,165	5,398
Direct bus to Bus-Rail		Bus		35	35	35	35
Shift from other stations	Parking	Car		112	112	112	112
	Bus Interchange	Bus		10	10	10	10
Shift from other modes to bus	Bus Interchange	Car		-7	-7	-7	-7
		Bus		22	22	22	22
		Taxi		-1	-1	-1	-1
		Walk		-14	-14	-14	-14
		Cycle		-0	-0	-0	-0
Total additional demand	Non-project related			305	714	2,089	5,323
	Project related			207	232	232	232
	Total (All Modes)			512	947	2,322	5,555
Total Daily Demand			**1,138**	**1,650**	**2,085**	**3,460**	**6,693**

The greatest increase comes from year on year exogenous growth. By 2035 this is expected to produce 1,860 additional trips. The increase in rail frequency is expected to add a further 229 trips per day. There are 112 rail passenger journeys a day anticipated to come from existing rail users that currently park at either Barry or Cadoxton.

5.10. Economics

Having identified future demand, the economics can be calculated. Economic benefits will be derived and monetised from a number of sources described in the following section:

- The economic value of new facilities to users: Physical aspects can be calculated through 'Willingness to Pay' calculations and non-physical aspects such as enhanced feelings of security or ease of access can be calculated on the basis of an equivalent amount of time 'saving' that is then monetised using a local value of time (VOT).
- The value of new facilities to non-users of the facilities and to wider society and the environment, for example, car drivers that continue to drive to their destination and get an improvement in journey time because there is less congestion on the roads because others have transferred; or the reduction in environmental impacts and road accidents. These are called Marginal External Costs (MECs).

5.11. Willingness to Pay

A monetary value can be attributed to passengers' use of new station facilities. These values come from sophisticated 'Willingness to Pay' (WTP) surveys which identify the maximum price at or below which a consumer will definitely 'buy' one unit of a product, in this case the average value that passengers put on different facilities.

Values are contextualised to the average price of a journey so, not surprisingly, the value of individual facilities is quite small, perhaps only a few pence per journey. Nevertheless, when aggregated across all users over the appraisal period their total value becomes much more meaningful.

Locally contextualised WTP values used in the appraisal are taken from Transport for London's 'Business Case Development Manual' published in May 2013.

It is customary to apply only half of the WTP value to demand that has been 'induced' by the facility and the full value for other users.

The second area of benefits relates to the extended car park. Quality off-street parking has a higher value to users compared to parking on-street. Quality parking implies a safer, securer environment both for the vehicle and the people using it. In the same way that WTP is used to value physical facilities, a 5 or 10 minute saving is typically used in rail appraisals as a proxy for the value of enhanced car parking provision. Time can be converted to a cost using 'Value of Time' (VOT) data from TAG.

5.12. Marginal External Costs

The third area of benefits that can be monetised are Marginal External Costs (MECs). A proportion of the new journeys made by train will be by people who would otherwise drive. As a result, there are savings in road traffic congestion, accidents, road maintenance costs, air and noise pollution. There are also economic losses in the form of reduced taxes to the public purse since less driving means less tax revenue on fuel. The more and longer the car journeys that would otherwise be made, the greater the savings. Governments have recognised the potential of MECs and the DfT has published TAG guidance to help practitioners calculate MECs without having to consider lots of different factors relating to the unique circumstances of their scheme. A relatively simple calculation of the anticipated reduction in car vehicle kilometres is all that is required.

MECs can be applied to the different sources of rail demand discussed earlier. Road distances to the main existing rail destinations are identified. It is assumed that in future the same proportion of existing and new rail trips will go to the same destinations. The total road distance saved as a result of car journeys transferring to rail is then calculated. In the case of the Barry area the majority (82%) of rail trips and therefore the road distance saving will be from short, average 16 kilometre trips to and from Cardiff. This saving is off set by the drive to the station car park which, on average, is about 3.5 kilometres to Barry Docks Station.

Obviously, some road to rail transfers are longer than the average distance to Cardiff, for example, there is rail demand for journeys to the valleys, Bridgend and Newport, however these longer distances are off-set by a comparable number of shorter rail trips to Cogan, Rhoose and other stations in the Vale of Glamorgan.

The reduction in road kilometres needs to be adjusted to take account of car occupancy. TAG indicates that in Inter-Urban non-London locations, for every 100 rail passenger kilometres increase in demand the average reduction in car vehicle kilometres is around 30 kilometres because car occupancy is greater than one. This is therefore factored into the car kilometres reduction calculations used in the MECs.

Lastly, TAG contains different MEC values for different parts of the UK because of the differential impact a reduction in vehicles has on congestion, the environment, accident costs etc. MECs are higher in the South East of England, for example, because congestion is greater. Here, the Wales MECs has been applied to the core scenario.

In recognition that this MEC includes rural areas, a sensitivity test that assumes a higher level of MECs is discussed in section 5.22.

5.13. Other considerations

Economic benefits are calculated for 60 years after opening, and benefits and costs are rebased on 2010 prices and the impacts of inflation are taken account of as per TAG guidance.

The split of journey purposes is important because it affects the Values of Time (VOT) used in the appraisal. The VOT for a rail commuter, someone travelling on business or an 'other' purpose has been extracted from the TAG databook and local data from TEMPro used to identify the split of local rail journey purposes. This indicates a typical split of commuter (46%), travel on business (11%) and other purposes (43%). These values represent local trip purposes and were therefore used in preference to the national weekday person trip purpose averages from the TAG Data Book, Table A1.3.4 (namely 50% commuter, 9% business and 41% other trips).

The 'Market Price VOT' in 2022 is used for commuter and 'other' purposes, and Factor Price is used for business trips. The values are £11.07, £32.47 and £5.05 respectively. Applying the percentage volumes of each trip purpose in TEMPro to the respective VOT produces an average VOT of £10.84 per hour in 2022. This VOT is then adjusted for each year of the appraisal in line with deflation values in TAG Unit A.1.3.2.

5.14. The value of new facilities using Willingness To Pay (WTP)

London values for cycle, walk and bus interchange WTP values are estimated to be 35.6 pence, 22.7 pence and 41 pence respectively per user. Local VOTs are lower so each value is reduced by 30% in the appraisal. London values are shown in the following table:

Table 22 - Willingness to Pay values

Facility Improvement	WTP value (p/passenger)	Source: Business Case Development Manual, TfL, May 2013
Cycle parking	5.83	Dedicated surveillance cameras covering the cycle parking
	8.82	Good, bright, even lighting after dark
	6.16	Cycle parking area in excellent condition (in good repair, clean and litter free) and near to cycle servicing shop
Cycle surface	6.84	Even and smooth cycle surface and ride
	0.82	Cycle surface free completely free from debris
	7.14	No standing water on cycle surface when wet
Cycling total	35.61	
Pedestrian and cycle crossing	3.02	Pedestrian 'green man' crossing a few minutes' walk out of your way
Street security	1.03	Good, bright and even lighting after dark

Facility Improvement	WTP value (p/passenger)	Source: Business Case Development Manual, TfL, May 2013
	0.48	No litter, graffiti and fly-posting
Signage	17.38	Maps of the local area, information boards and signs to public transport and major attractions
Pavements	0.79	Pavement has no cracks and is even
Pedestrian total	22.70	
Bus stop/shelter	0.96	Excellent condition, looks like new
	2.74	Shelter very clean
	3.36	Timetable and bus stop flag illuminated
	1.68	No litter
	3.84	No graffiti at all
	1.55	Shelter giving protection from the rain and some protection from the wind
Bus stop security	6.96	CCTV recording at some stops
	4.91	Stop or shelter well lit
Bus station information	4.11	Countdown displays up to the minute bus arrival times, diversions and delays
	1.39	By typing in code shown on bus stop, receive information sent to phone about time of next bus and any service delays
	4.63	Stop with diagrammatic map of bus routes serving the stop
	4.52	Stop with map of local information / services
Bus Interchange total	40.65	

TAG says that the value of facilities should be halved for the portion of demand that is generated just by providing the facilities. This is known as the 'rule of half' and is applied to the induced demand elements of bus interchange, walk and cycle facilities.

Applied to the demand figures identified earlier, the monetary benefit of the new facilities, in 2010 prices, adjusted for inflation, for the 60 Year appraisal period is £76,309 for the bus interchange, £158,953 for the walkways and £2,275 for cycling facilities. The value for walkways is the highest because they benefit all users of the proposed facilities including extended car park users.

5.15. New car parking provision – Equivalent time savings

Attractive parking provision is key to securing future increases in rail demand.

The VOT for local rail travellers, calculated above, is an average of £10.84 per hour (2022 value). If every existing and future car driver and passenger saves the equivalent of 5 minutes in security improvements and another 5 minutes in parking ease and convenience, the cost saving is £0.90 per person. This is only applied to outward journeys.

Savings are calculated for the 60 Year appraisal period. They take account of car park capacity with growth capped in 2029. The resulting equivalent time savings related economic benefits are £1,268,159. Sensitivity tests that consider the impact of alternative equivalent time savings are described in section 5.22.

5.16. Marginal External Costs (MECs)

Table 23 gives the MECs discounted over the 60 Year period from 2021/22 to 2081/82, in 2010 prices. The value of MECs is proportional to the volume of traffic removed from the roads, which in turn is proportional to car user demand. If car user demand is half that forecast the MECs will be half of those shown in the table.

Table 23 - 60 Year Marginal External Costs

Source of demand	Decongestion (£s)	Infrastructure renewals savings	Accidents	Local air quality	Noise	Greenhouse gases	Indirect taxation	TOTAL (£s)
Car park induced demand	158,988	1,987	28,027	4,542	1,713	36,938	-32,795	199,401
Car park yearly growth	293,720	3,657	51,586	8,332	3,153	67,537	-59,331	368,655
Bus interchange induced demand	34,375	429	6,085	988	372	8,016	-7,191	43,073
Bus interchange direct bus to rail	97,203	1,214	17,206	2,795	1,052	22,667	-20,335	121,801
Bus interchange change from bus to another rail station	5,605	70	992	161	61	1,307	-1,173	7,024
Bus interchange change from taxi to bus to station	547	7	97	16	6	128	-114	685
Walking induced demand	5,918	74	1,048	170	64	1,380	-1,238	7,416
Cycling induced demand	54	1	10	2	1	13	-11	68
TOTAL	596,410	7,439	105,051	17,006	6,422	137,986	-122,188	748,123

5.17. Active Mode Appraisal

A further assessment was performed in the Active Mode Appraisal Toolkit (AMAT) which takes account of the economic impact of the number of trips shifted from other modes and willingness to pay values for health benefits and journey ambiance. The AMAT was loaded with the following assumptions:

- Trip generation and growth is as described in Table 20, and all trips are return trips;
- The active mode improvements are over a distance of 140m, the average distance between the platform and road access at Dock View Road, Subway Road or the existing council car park;
- Cycling infrastructure is (and will continue to be) off-road, and secure storage facilities will be added but shower facilities will not;
- The present walking infrastructure includes street lighting, level kerbs, even pavements and benches; overcrowding is not an issue; and information panels and directional signage will be improved;
- All other default assumptions in AMAT were maintained.

The calculated economic benefits from AMAT are £131,870 at 2010 prices and values, consisting of £1,480 benefits from mode shift, £62,040 from health benefits and £68,360 from journey quality.

5.18. Land Value Uplift

The scheme unlocks land for redevelopment for housing and therefore has the potential for 'land value uplift' caused by the development of the transport infrastructure. This land value uplift has an economic value that can be included within the BCR. Consultant 'Steer' in its 'Local Economic Benefits of Station Investment Report, March 2018' draws on research by TfL that:

"suggests that there is a 10% premium for properties within 500m of stations, with the premium falling to 5% and zero at distances of 1,000m and 1,500m respectively. For commercial property, the relationship is less

pronounced, and tends to be stronger for more established commercial centres with a higher degree of in-commuting by rail."

The 10% premium was identified in London. The equivalent for Barry could be around 7.5% given that a relatively high proportion of rail trips are for commuter purposes to Cardiff.

The scheme will accommodate an estimated 96 housing units. The average selling price for a property in the CF63 postcode area for the 12 months to May 2022 was around £177,500. Locating housing within very close proximity to Barry Docks Station can be expected to increase this by 7.5% (around £13,300).

This means that the total land value uplift for new dwellings would be £1,170,000 at 2022 prices. However, to compare with other benefits in the appraisal it is necessary to adjust this to 2010 prices using the government's deflation rates found in TAG. At 2010 prices the value would be £750,231.

The inclusion of housing/commercial development will improve connectivity between the town centre, surrounding residential areas and Barry Waterfront area, although to what extent will depend on proposed improvements to links within the wider area. As well as positive regeneration leading to further land value uplift, these wider linkages will also bring environmental enhancements in terms of public realm, streetscaping and place making enhancements to the area as a whole.

5.19. Other Assumptions and Sundry Items

Parameters in TAG version 1.17 have been used. Market price adjustment has been applied with all benefits and costs rebased to 2010 prices.

An annualisation factor of 253 days per year has been used to reflect the relatively high proportion of work-related rail trips forecast in TEMPro for the Barry area. Use of 253 days is also recommended in TAG.

For modelling purposes, baseline data comes from the LENNON ticket database as described above. The data does not provide any indication of spread by time period or journey purpose. A comparison of 2011 Census journey to work data with total ORR station usage and confidential LENNON data indicates that around 63% of rail journeys are likely to be commuter trips. This is higher than TEMPro data which suggests around 46% so consequently the core scenario average VOT will be low. Sensitivity tests with different trip purpose splits are discussed in section 5.22.

The spread of benefits is heavily weighted towards the Marginal External Cost element with the majority being decongestion benefits to those who continue to choose to travel by road. The biggest direct benefits are in car park safety and security.

5.20. Summary of Present Value Benefits (PVB)

The scheme has Present Value Benefits (PVB) of around £3.6m.

Table 24 shows the benefits for the car park, bus interchange, pedestrian and cycle facilities separately. Table 25

Table 25 shows the split by the different sources of benefits.

Table 24: Summary of Present Value Benefits by mode

Mode	Benefits
Car Park Benefits	£1,961,286
Bus Interchange Benefits	£554,453
Pedestrian Facilities Benefits	£171,671
Cycling Facilities Benefits	£2,391
Active Appraisal Benefits	£131,870
Land Value Uplift	£750,231
Present Value of Benefits total	£3,571,901

Table 25: Summary of Present Value Benefits by type of benefit

Type of benefit	Benefits
Willingness to Pay values	£237,536
Car park equivalent time savings	£1,268,159
Attraction of bus passengers from other stations	£182,157
Marginal External Costs	£1,001,948
Active Appraisal Benefits	£131,870
Land Value Uplift	£750,321
Present Value of Benefits total	£3,571,901

5.21. Costs, 'Benefit Cost Ratio' (BCR) and Net Present Value (NPV)

The median cost estimate to construct the scheme, profiled by year and inclusive of quantified risk, is shown in Table 26. These are converted to Present Value Costs (PVC) using the WebTAG deflator series as per WebTAG Unit A1.1, Sections 2.6 and 2.7. This calculation, using the deflator series in WebTAG Data Book v1.17 and accounting for discounting to the DfT's price base year, gives a PVC of £3,522,241.

Table 26 - Costs incurred and rebasing to Present Year Costs

Financial Year	2022/23	2023/24	2024/25	Total
Cost Incurred	£1,921,953	£1,439,049	£2,709,271	£6,070,273
Present Value Cost (PVC)	£1,186,499	£838,836	£1,496,906	£3,522,241

Although EV costs have been included in the financial case, at this stage, they have been excluded from the economic appraisal as guidance from DfT is awaited to enable the calculation of the benefits EV provision will generate. Including the EV costs in the calculations without including the value of their benefits would create a false picture of the Benefit Cost Ratio (BCR) provided by the scheme.

The table below shows 2010 rebased Present Value of Costs (PVC) which can be directly compared with the Present Value Benefits (PVB), Net Present Value (NPV) and Benefit to Cost Ratio (BCR).

Table 24: Present Value Costs, benefits and benefit cost ratio

Present Value of Costs (PVC)	Present Value of Benefits (PVB)	Net Present Value (NPV)	Benefit to Cost Ratio (BCR)
£3,522,241	£3,571,901	£49,660	1.01

The benefit to cost ratio (BCR) - calculated by dividing the PVB by the PVC - for the funding being asked of the CCR is 1.01.

5.22. Sensitivity Tests

Sensitivity of Endogenous Demand

Table 27 shows the change in economic benefits associated with different levels of endogenous demand generation as described in section 6.5.

Table 27: Sensitivity of PVB to Endogenous Demand

Level of endogenous demand	5%	10%	15%	20%	25%
Present Value of Benefits (PVB)	£3,262,911	£3,396,199	£3,571,901	£3,675,342	£3,778,267

Change relative to core scenario (%)	-8.7%	-4.9%	-	+2.9%	+5.8%

The benefits are sensitive to endogenous demand as increasing demand results in higher benefits, with diminishing returns as the proportion of demand increases. A 25% increase in demand, matching the 25% increase in service levels, would increase benefits by around £206,000 relative to the core scenario of 15%; this represents an increase of 5.8%.

Sensitivity of Marginal External Costs

Table 28 shows the change in economic benefits associated with the "High scenario" for MECs and indirect tax, from the TAG Data Book, Version 1.17, Table A5.4.2.2, as opposed to the "Core scenario" used in the core assessment. The "High scenario" is based upon a greater shift to zero-emission vehicles (Scenario 7 in the DfT Road Traffic Forecasts 2018).

Table 28: Sensitivity of PVB to MEC values

Type of benefit	Core scenario	High scenario	% change
Car park induced demand	£248,817	£251,553	+1.1%
Car park yearly growth	£444,310	£449,268	+1.1%
Bus interchange induced demand	£73,872	£79,330	+7.4%
Bus interchange direct bus to rail	£208,894	£224,328	+7.4%
Bus interchange change from bus to another rail station	£12,046	£12,936	+7.4%
Bus interchange change from taxi to bus to station	£1,175	£1,262	+7.4%
Walking induced demand	£12,718	£13,658	+7.4%
Cycling induced demand	£116	£125	+7.8%
Total MECs	£1,001,948	£1,032,460	+3.0%
Present Value of Benefits (PVB)	£3,571,901	£3,602,413	+0.9%

The net increase in benefits from the "core" scenario to the "high" scenario is £30,000, representing just over 1% of the total benefits of the scheme. The MECs for the bus interchange increase by 7.4% but this has a small impact relative to the car park benefits, which experience an increase of only 1.1%.

Sensitivity of Car Parking Provision Equivalent Time Savings

Table 29 shows the change in economic benefits associated with different levels of equivalent time savings for the provision of an improved car park as discussed in section 6.15.

Table 29: Sensitivity of PVB to Car Parking Provision Equivalent Time Savings

Equivalent time savings	3 minutes	4 minutes	5 minutes	6 minutes	7 minutes
Present Value of Benefits (PVB)	£3,064,637	£3,318,269	£3,571,901	£3,825,533	£4,079,165
Change relative to core scenario (%)	-14.2%	-7.1%	-	+7.1%	+14.2%

There is a linear relationship between equivalent time savings and economic benefits, with each minute of time savings equating to just over £250,000 of present year benefits, an increase of 7.1% per minute. The scheme's economic performance is therefore sensitive to the equivalent time saving value used.

Sensitivity of Rail Trip Purpose Splits

Table 30 shows the sensitivity of economic benefits to the proportions of trips for business, commuting and other purposes, and therefore the values of time derived from such. The core scenario uses local TEMPro data

on trip purpose splits as per section 6.13 (11% business, 46% commuting, 43% other) and these are compared to the TAG Data Book splits (9% business, 50% commuting and 41% other) and the local LENNON data (63% commuting, with business and other purposes rounded down from the TEMPro values proportionally).

Table 30: Sensitivity of PVB to MEC values

Type of benefit	Source of trip purpose split		
	TEMPro	TAG	LENNON
Proportion of trips	11% business 46% commuting 43% other	9% business 50% commuting 41% other	8% business 63% commuting 29% other
Car Park Benefits	£1,961,286	£1,925,317 (-1.8%)	£1,984,807 (+1.2%)
Bus Interchange Benefits	£554,453	£549,162 (-1.0%)	£557,908 (+1.6%)
Pedestrian Facilities Benefits	£171,671	£171,685	£171,661
Cycling Facilities Benefits	£2,391	£2,391	£2,391
Active Appraisal Benefits	£131,870	£131,870	£131,870
Land Value Uplift	£750,321	£750,321	£750,321
Present Value Benefits Total	£3,571,901	£3,530,657 (-1.2%)	£3,598,868 (+0.8%)

Using the TAG data splits instead of the local TEMPro data decreases the number of business trips, and therefore the average value of time for train users, resulting in a loss of around £40,000 (1.2%) of benefits. The LENNON trip purpose splits data reduce the proportion of business trips further but has a much higher proportion of commuting trips relative to other trips, and as the former have almost twice the value of time as the latter this results in a net increase of around £27,000 (0.8%) in benefits relative to the core scenario. Note that the proportion of business and other purpose users have not been directly observed in this test, and any increase in the other trips (and hence decrease in business trips) will reduce benefits.

This demonstrates a relatively low level of sensitivity to changes in values of time associated with trip purpose splits, especially given that pedestrian and cyclist facilities are not affected as there are no willingness-to-pay metrics reliant on values of time associated with them.

Sensitivity of Exogenous Demand with respect to Covid-19 recovery

A sensitivity test was performed in which the level of average annual exogenous demand increase was reduced from 6% to 4.25%, representing the level of recovery of passenger demand (approximately 71%) following the Covid-19 pandemic as reported by the ORR in February 2022. The impact of this sensitivity test is shown in Table 31.

Table 31: Sensitivity of PVB to exogenous demand

Type of benefit	6% exogenous Demand	4.25% exogenous Demand	% change
Car Park Benefits	£1,961,286	£1,885,280	-3.9%
Bus Interchange Benefits	£554,453	£534,581	-3.6%
Pedestrian Facilities Benefits	£171,671	£119,327	-30.5%
Cycling Facilities Benefits	£2,391	£1,642	-31.3%
Active Appraisal Benefits	£131,870	£131,870	N/A
Land Value Uplift	£750,321	£750,321	N/A
Present Value of Benefits	£3,571,901	£3,422,931	-4.2%

The reduction in exogenous demand growth reduces benefits by 4.2%, with walking and cycling benefits falling by over 30%; car parking and bus interchange benefits are also reduced but by a lower proportion (under 4%). This shows that the impact of the scheme is sensitive to the number of station users, which is logical.

Sensitivity of Cost Estimates

The cost estimate used in the economic assessment is a median of expected capital construction costs. Low and high estimates were also generated; the resultant PVCs, NPV and BCR is shown in Table 32.

Table 32 - Sensitivity of cost estimate to NPV and BCR

Metric	Low cost estimate	Median cost estimate	High cost estimate
Present Value of Costs (PVC)	£3,258,384	£3,522,241	£3,786,098
Present Value of Benefits (PVB)	£3,571,901	£3,571,901	£3,571,901
Net Present Value (NPV)	£313,517	£49,660	-£214,197
Benefit to Cost Ratio (BCR)	1.10	1.01	0.94

The low cost estimate reduces the PVC (and therefore increases the NPV) by around £264,000 relative to the median estimate, increasing the BCR to 1.10, while the high estimate is around £264,000 more expensive resulting in a decrease of the BCR to 0.94.

Sensitivity of New Housing Occupation

The proposed 96 dwellings will generate additional demand that will benefit from the scheme. Given the proximity of these dwellings to the station, it is anticipated that all such new trips will walk to the station. The impact of these new trips on the PVB is shown in Table 33, given the following assumptions:

- Those 96 dwellings are occupied by a total of 120 adults;
- 15% of those people commute to the station by walking, slightly above the 12% stated in the 2011 census data for the local area, given their additional proximity to the station.

Table 33 - Sensitivity of PVB to additional demand from new housing

Type of benefit	Core scenario	Additional housing	% change
Car Park Benefits	£1,961,286	£1,961,286	N/A
Bus Interchange Benefits	£554,453	£554,453	N/A
Pedestrian Facilities Benefits	£171,671	£205,765	+19.9%
Cycling Facilities Benefits	£2,391	£2,391	N/A
Active Appraisal Benefits	£131,870	£274,920	+108.5%
Land Value Uplift	£750,321	£750,321	N/A
Present Value of Benefits	£3,571,901	£3,749,136	+5.0%

The additional walking trips generated from these new houses result in around £34,000 of benefits associated with pedestrian MECs and a further £143,000 of active mode benefits, more than double the core scenario. The net benefits are therefore 5% greater than in the core scenario.

Summary of Sensitivity Tests

The sensitivity tests have a range of impacts, but only those with significant deviations from the core scenario (e.g. reducing exogenous demand by two-thirds or adjusting the equivalent time saving for improved car parking by 2 minutes or more) impact the present value of benefits by more than 5%. This shows that the core assessment is robust, with low sensitivity to changes in the demand model.

5.23. Wider Economic Impacts

About 11% of Barry Docks Station demand in 2022/23 is expected to come from the transfer of people parking at or on the streets around Barry or Cadoxton stations. This is about 100 to 200 persons per day. By transferring to Barry Station, parking spaces will become available at or near Barry Town and Cadoxton thereby increasing overall accessibility to the railway. If the spaces filled up and if the same rate of benefits at Barry Docks applied to these newly available spaces, the current BCR would rise.

Wider economic impacts include broader benefits to society. This scheme will enhance and increase sustainable accessibility and connectivity to jobs, services and education and support additional housing and economic development in the Barry area, as discussed in the Strategic Case.

5.24. Environmental Benefits

The station scheme produces Marginal External Cost savings as a result of there being fewer vehicles on the road. These monetary savings in air quality, noise and greenhouse gases are shown above as MECs.

An additional element, not included in the benefit cost calculations, is that relating to the provision of electric vehicle (EV) infrastructure. The expected costs of this are included in the Financial Case above. However, at present there is no guidance on how to value the benefits of EV infrastructure despite there being a strong national drive to increase EV infrastructure in order to support the introduction of EVs and the benefits these will bring. Qualitatively speaking, EV infrastructure will give EV users more choice and convenience with the ability to charge at the station while they commute elsewhere, instead of or in addition to charging at home or existing charging points, reducing the "supply anxiety" faced by EV users.

5.25. Social and Cultural Benefits

The car park and bus interchange will improve access to the railway for a whole range of journey purposes including access to jobs and services in the wider region. They will also support further residential development in the Barry area.

Bus interchange facilities will add to bus journey quality and enhance the quality of multi-modal interchange.

Additional quality parking provision should enhance perceptions over security both in terms of personal security and the security of vehicles.

The MEC savings include accident savings, as shown above.

5.26. Public Accounts

With the bus interchange on the south side the funding requirement (excluding EV costs) ranges from £5,607,149 to £6,533,397.

Public funding will be required for ongoing costs of maintenance and renewal. These have not been factored in as they are expected to be found from within existing the council budgets.

The scheme has a negative impact on indirect taxes. The main impact is from car users transferring to rail requiring less fuel and therefore contributing less to central government in VAT. There is no VAT on public transport. The value of this change can be seen in the MECs above.

There is a small positive impact on road infrastructure. Fewer vehicles mean that road wear and tear is reduced thereby reducing the need for renewals. The value of this can also be seen in the MECs.

5.27. Value for Money Statement

The Benefit Cost Ratio ranges from 0.94 to 1.10 and an NPV of -£214,197 to +£313,517. These calculations each include risk but exclude any costs for EV terminals (ducting, cabling is included) or benefits generated by these. There are a wide range of benefits generated by the Barry Docks Transport Interchange scheme:

- Economy – Economy and Regeneration

  - The measures will encourage and support development and housing in the area.
  - The new facilities (especially the bigger car park) will support improved access rail services which will, in turn, provide additional access to education, jobs and services elsewhere.
  - Improving the area at Barry Docks Station could act as a catalyst to improving the linkages to the town centre and between the town centre and the nearby parts of Barry Waterfront.
  - The facilities will lead to a reduction in traffic congestion and accidents especially on the approaches to Cardiff.
- Environmental – Reductions in emissions
  - Reduced traffic will lead to a reduction in greenhouse gas emissions, noise and improvement in air quality.
- Environmental – Landscape/Townscape
  - The areas surrounding the station could be improved and the scheme lead to an increase in environmental quality of the streetscape in the wider area.
- Social – Security of users
  - The improvements will be designed with personal security in mind and the increased usage will enhance this further

In addition there are a range of further benefits that cannot be quantified or valued for inclusion in the economic appraisal but which will be brought about by the station improvements, including:

- Increased user satisfaction;
- Improved perceptions of safety and security;
- Better access to jobs and services;
- Increased inclusion
- More sustainable communities;
- Improved scope for economic growth
- Improved wellbeing
- Better-connected communities

Alongside this there are also opportunities for income generation created by the improvements not taken at this stage but which may be applied at future development phases. In particular there is currently no charge made for car parking at the station. Introduction of a charge for parking at future stages of development would provide a significant return to off-set the costs of construction.

The provision of an access road to the north of the station unlocks the land in this area for housing and commercial development. Discussion with developers has shown there is significant interest in utilising this to bring about housing, including social housing and commercial development alongside the station. In these circumstances the council, as the planning authority, will seek to establish terms and conditions for the development that will establish Section 106 Developer Contributions to support station infrastructure improvements proposed for future stages of development.

Together the unquantified benefits and potential to off-set costs are significant enough such that, if valued, they would be expected to substantially improve the BCR for the scheme, making this positive in all cases and as a consequence raising the scheme from its current categorisation as low value for money towards and possibly to achieve the status of a medium value for money scheme.

The scheme benefits are summarised in the Appraisal Summary Table below.

Table 34 – Appraisal Summary Table

Appraisal Summary Table	Date produced:	17th May 2022	Contact:

Name of scheme:	Barry Docks Station	Name	
Description of scheme:	Additional parking provision, new bus - rail interchange, on site pedestrian and cycling improvements	Organisation	
		Role	

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £	Distributional 7-point scale, vulnerable groups
Economy	Business users & transport providers	TEMPro forecasts suggest that business use is by a relatively small percentage (11%) of rail passengers in the Barry area. Discounted MECS for all users amount to £1.00m	Value of journey time changes (£)			Moderate benefit	£1.002 million	
			Net journey time changes (£)					
			0 to 2min	2 to 5min	> 5min			
			NA	NA	NA			
	Reliability impact on Business users	Additional car parking will ensure that business users can more reliably get a parking space at as future demand increases.				Slight benefit		
	Regeneration	Spur to wider area economic regeneration especially Barry town centre and that part of the Waterfront near Barry Docks				Moderate benefit		
	Wider Impacts	Potential residential land value uplift				Moderate benefit		
Environmental	Noise	Reduced road traffic.	Value of noise MECs for 60-yr period is shown on right			Slight benefit	£0.006 million	
	Air Quality	Reduced road traffic	Value of air quality MECs for 60-yr period is shown on right			Slight benefit	£0.017 million	
	Greenhouse gases	Reduced road traffic	Change in non-traded carbon over 60y (CO2e)			Slight benefit	£0.138 million	
			Change in traded carbon over 60y (CO2e)					
	Landscape	No impact				Neutral		
	Townscape	Overall scheme will increase the attractiveness of the local area				Slight benefit		
	Historic Environment	No impact				Neutral		
	Biodiversity	No impact				Neutral		
	Water Environment	No impact				Neutral		

Social and Cultural	Commuting and Other users	A new bus interchange, newly designed car parking areas, improved walkways and cycleways will ensure that commuters and others can get overall journey benefits for their train journeys.	**Value of journey time changes (£)**			Moderate benefit	See decongestion benefit above	
			Net journey time changes (£)					
			0 to 2min	2 to 5min	> 5min			
	Reliability impact on Commuting and Other users	Additional car parking will ensure that commuters and others can more reliably get a parking space at the station as future demand increases.				Slight benefit		
	Physical activity	Walkways, cycleways and cycle spaces will ensure more people opting to use sustainable modes and encourage more physical activity.				Moderate benefit		
	Journey quality	Improved facilities will give the users various options to access the station.				Slight benefit		
	Accidents	Reduced traffic accidents	Value of accidents MECs for 60-yr period is on right			Slight benefit	£0.105 million	
	Security	Secure and safe off street car parking provision to cater for additional future demand	Worth about half of the 'time-saving equivalent' benefits calculated above			Slight benefit	£0.634 million	
	Access to services	Additional car parking will help ensure access to the station by car who are travelling to access services elsewhere.				Slight benefit		
	Affordability							
	Severance	Will increase walk and cycle connectivity between the wider town centre and Barry Waterfront				Moderate Benefit		
	Option and non-use values	Non-use value considered to relate mainly to value of decongestion benefits since non-users will benefit from quicker journey times				Moderate benefit		
Public	Cost to Broad Transport Budget		Capital costs currently include risk contingency.				£3.673 million	
	Indirect Tax Revenues	Reduced tax revenues resulting from loss of fuel duty, VAT on fuel etc.	Value of Indirect Taxes MECs for 60-yr period is on right			Slight adverse	-£0.122 million	

6. Financial Case

6.1. Introduction

The Financial Case concentrates on the affordability of the proposal, its funding arrangements and technical accounting issues. It presents the financial profile of the preferred option and highlights any impacts of the proposed deal on funders' budgets and accounts.

6.2. Critical Success Factors

The Financial Case sets out the affordability of the scheme, based on available funds in relation to scheme costs. The Critical Success Factors (CSF) set out below are considered appropriate for the scheme:

- Ensuring the scheme can be delivered within available budgets;
- Can be delivered within the likely capital funding available;
- Revenue liabilities for the preferred option are affordable with current budgets;
- Compliance with public sector procurement regulations (including those affecting investment in the rail sector) for grant funded elements.

6.3. Cost Estimates

Cost estimates and associated risks for the elements that make up the preferred Option 2 are presented in the table below. The total costs for the scheme in real prices (2021) amount to £7,691,813.04 including on-costs, EV charge points and land purchase. In the case of the transport interchange south of the station, costs also include 20% risk, while costs for all other aspects of the scheme include 40% risk, due to slightly greater uncertainty over costs at later delivery stages.

Table 35 - Estimated Scheme Costs for each element (includes all on-costs, fees and risk at 40% except for the bus interchange at 20%).

Scheme Elements	**(£)**	**Notes**
Additional park and ride Capacity (inc access road for vehicular and Active modes, ducting/cabling for EV charging)	2,332,401.33	Inc' 40% risk
Land Purchase	721,000	Inc' 40% risk
Bus and Taxi Interchange (inc ducting/cabling for EV charging)	1,119,017.44	Inc' 20% risk
Improvements to Pedestrian Subway	70,000	Inc' 40% risk
Purchase & Installation of EV Terminals	1,621,540.04	Inc' 40% risk
Other on-costs	£1,827,854.23	
Total	£7,691,813.04	

The costs have been profiled over the time period envisaged from now to delivery, as follows:

Table 36 - Expenditure Profile

Year of Construction	2020/21	2021/2022	2022/2023	2023/2024	2024/2025
			£1,993,189.45	£1,439,048.56	£4,259,575.04

*Compound Interest for year of Construction@ 3.5% is included

The above expenditure profile is based on the delivery programme envisaged, as outlined below:

- Now – Mar 23- Finalise planning approval, complete tender documents, tender/award and build transport interchange south of the station;
- Mar 23 – Mar 24 – Produce tender documents for northern enabling works (relocate slow worms, fencing, demolition, vegetation removal), tender/award and undertake works/site supervision etc);
- Mar 24-Mar 25 – Produce tender documents for northern access road and car park, tender /award and construct/site supervision. (Assumes EV terminals will be installed in this construction phase).

Alongside the funds sought from the CCR Metro Plus, Phase 1, Regional Transport Authority programme, the council has set aside around £250K of Section 106 funding from developments in the area surrounding Barry Docks to support the improvements. There is also funding support envisaged from CCR and TfW for provision of EV taxi and car charging terminals within the interchange, respectively, with both in the process of developing programmes to support this across the region. While not included in the cost of the interchange, wayfinding signage to/from the north of the station is expected to be funded by TfW's Wayfinding Signage programme.

6.4. On-going Scheme Costs (renewals, maintenance, operation)

It is anticipated that the responsibility for operation, maintenance and renewals of any limited on-station elements will be borne by the station owner (TfW). TfW has plans in place already to cover the cost of providing an additional train service and upgrading the trains used on the Vale of Glamorgan line as part of the overall plan for the SE Wales Metro. Therefore, this cost has not been included in the scheme costs.

Essentially, all of the scheme falls outside of the immediate station boundary and will be the responsibility of the council. Provision will be made within existing revenue budgets to cover the ongoing costs of maintaining the improvements, which include the additional car park capacity, bus interchange, taxi interchange and all associated infrastructure.

At this time, it is not intended to introduce a charge for parking at Barry Docks (or other Barry stations), so no income from this is included in the scheme costs.

6.5. Independent Cost Verification

Costs are based on Construction Industry Standards, combined with the consultant's experience of constructing transport infrastructure of this type. Further detail on the breakdown of costs can be provided, if required.

6.6. Risk Assessment

Risk at 20% for the transport interchange to the south of the station platform is based on the expected level of quantified risk at this business case stage, in line with WelTAG/WebTAG guidance. The inclusion of 40% risk for the costs of other scheme elements reflects a higher than normal level of Quantified Risk (QRA) at this stage. This is because these costs are due at a later delivery stage and in particular the current inflationary uncertainties. With QRA being high, Optimism Bias has not been added in the Transport Case.

6.7. Inflation Assumptions

The approach to inflation follows the recommendations as set out in WelTAG.

6.8. Funding Strategy

Funds for this development stage are sought from the CCR Metro Plus, Phase 1, Regional Transport Authority programme and will be matched by Section 106 funds via the council. It is envisaged this will cover all budget/funding requirements for the scheme, including land purchase, post-implementation monitoring and evaluation.

Funds for future development stages will be derived through discussion involving WG, TfW, CCR and the Council, informed by this business case. It is envisaged the bulk of this funding will be invested by developer/s working with the owner of the remaining land to the north of the station and the council.

6.9. Section 151 Officer Letter

Any requirement for this in relation to the Metro programme will be raised with CCR.

7. Commercial Case

7.1. Introduction

The Commercial Case provides evidence on the commercial viability of the proposal and the procurement strategy that will be used to engage the market and procure the necessary services for delivery. It clearly sets out the financial implications of the proposed procurement strategy. This includes evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project and any personnel implications arising from the proposal.

Given that much of the works will be undertaken within the station confines on land surrounding the platforms already owned by the council or that they intend to purchase, the procurement processes will be governed largely by the processes of the council. Consultation over the process has been undertaken with CCR as the primary funder and TfW as the station owner to ensure it also complies with their requirements.

7.2. Critical Success Factors

The Commercial Case establishes how the proposals will be procured. Relevant CSFs for this case are:

- Ensuring that any option can be procured, delivered and operated as required;
- Ensure the scheme can be delivered using current engineering solutions;
- Long-term operational and maintenance liabilities are considered acceptable;
- Ensuring the scheme can be procured through feasible procurement routes;
- Compliance with public sector procurement regulations (including any affecting investment in the rail sector) for grant funded elements.

7.3. Output Based Specification

The output-based specification for the Barry Docks Transport Interchange envisaged is summarised below. This takes account of the preferred option identified and the latest designs for this option.

7.3.1 Additional Park & Ride capacity

Provision of an additional car park to the north of the station offering 67 additional parking bays and accommodating 63 bays relocated from around the Dock Office to make way for the bus and taxi interchange. Within the car park 12 bays will be designated for use by disabled people. There will also be 14 bays designated for EV charging points. A footpath from the car park to the pedestrian subway and via this to the station platforms will be provided adjacent to the car park. This will be signed, marked and well lit. Future CCTV provision will be catered for with appropriate ducting installed to enhance security for all users of the car park.

The car park will be accessed off the highway by a new access road from Dock View Rd. This will include a footpath for pedestrians alongside it, while cyclists will be able to use the carriageway. The road will be signed as an access route to the station and well-lit for security purposes. Signage to the access route and car park will be provided in the immediate area.

Space will be retained to the north of the new road and north west of the pedestrian subway, to enable the housing/commercial development envisaged as a future development stage.

7.3.2 Provision of a new Bus and Taxi Interchange

A bus interchange is recommended to the south of the station platforms in the area in front of the Dock Office (see Figure 31). The bus interchange will provide 4 bus bays for use by all services, including EV charging ducting for all to be so equipped. Bays will be located at the roadside around

the perimeter of the interchange, enabling passengers to board or alight directly onto a new footpath leading directly to/from the pedestrian subway and via this to the station platforms. It will also mean buses are not required to reverse out of the bus bay into the road but can pull up directly into a bay and then exit it, forwards, directly onto the road around the interchange, a much safer manoeuvre. Each bus bay will be provided with a shelter, seating, lighting, cabling for real time service information. The footpath will circumnavigate the entire perimeter of the interchange. A taxi layby/rank will also be provided, accommodating 2 taxis, alongside the bus bays, located close to the access to the pedestrian subway. There will also be a separate bay located outside the Dock Office to accommodate EV taxi charging.

Buses will access the interchange from the existing roundabout on Ffordd Y Mileniwm, alongside other vehicles, before following the access road to the Dock Office which will be retained and circumnavigate this, as now. At the south east corner of the Dock Office buses will turn right into the interchange perimeter road which will be restricted for use by buses and taxis only, and operate one way. Buses will follow the road round the interchange to enter a bus bay then exit back onto the access road, before exiting the interchange via the Ffordd Y Mileniwm Roundabout. A separate, shared access route to the interchange will be provided off Ffordd Y Mileniwm for cyclists and pedestrians, as well as improved access from the roundabout. Sheffield stands for cycle parking will be provided in the central area and cycle lockers will be provided to the front of the Dock Office.

Within the centre of the interchange there will be an area for potential further development to accommodate a range of business, retail and community hubs including a building to house a potential future cycle hub and a café, which will be lined with seating and other facilities suitable for passengers waiting or consuming food/drink. Two informal pedestrian crossings will be provided, to the north and west, to enable users to safely cross the bus and taxi only road to access the facilities, access Dock Office or walk/cycle directly across the central area. The entire area will be landscaped and well lit.

7.3.3 Improvements to the pedestrian subway

The current pedestrian subway is functional but in need of some improvement to make it a more inviting route through to the station platforms. The subway interior will be refurbished and at a later development stage lighting within it will be upgraded to improve its aesthetic, security and the perception of security. CCTV is already installed within the subway and will be retained.

At this time the ramp leading from the subway to the station platforms is just beyond the acceptable gradient for wheelchair users and others with mobility impairments. It is not envisaged this will be altered as part of the proposed Barry Docks Transport Interchange phase. However, how this can be addressed will be considered as part of the longer-term vision for future development to a comprehensive mobility hub.

7.3.4 Pedestrian and Cycle route from Dock View Road

The current pedestrian and cycle route between the pedestrian subway and Dock View Road will be completely upgraded. Pedestrian and cycle access from Dock View Road will be via the new access road. A bespoke pathway will be provided alongside the carriageway for pedestrians. Cyclists will be expected to use the carriageway as vehicle flows along this will be low and a 20mph speed limit will be implemented. Works will ensure a gradient of circa 1:20 between Dock View Road and the pedestrian subway entrance, to meet guidance on the needs of disabled people and others with mobility difficulties. The surroundings to the route will be landscaped and seating, lighting and signage provided. Steps down the embankment from Dock View Road will not be retained, with all pedestrian and cycle users directed down the new route.

7.3.5 External Signage

A separate project is considering the need for wayfinding signage for active travel users on roads leading to stations in Barry and this will include signage for Barry Docks.

7.3.6 Improvements to the tunnel on Subway Rd

The council is expected to adopt Subway Road in the near future to ensure ongoing maintenance and improvements to the road tunnel under the railway will be considered at a later development stage. These may include improvements to its retaining walls as necessary, refurbishment of the interior to improve the aesthetic, refurbishing the road surface, improving the pedestrian and cycle route through the tunnel and upgrading lighting. Consideration will also be given to signalising the entrances to the tunnel to require vehicle traffic through it to only travel in one direction at a time.

7.3.7 Consideration of a link to Barry Island

The 96 bus serving the bus interchange will provide a direct link from Barry Docks to Barry Island. It will also continue to be possible for rail users to use the improved access along Ffordd Y Mileniwm to access the heritage railway to Barry Island from near the Tramshed development in the Barry Waterfront . Further consideration will be given to improving this link at future stages of development.

7.4. Procurement Strategy and Sourcing Options

The approach to procurement will take account of any imperatives of the rail industry, as defined by TfW and Network Rail, alongside those of CCR. This will be defined during consultation with each of these organisations due to take place once the FBC is completed but ahead of construction commencing (based on their advice).

Procurement of works beyond the station boundary will be governed by the procurement and sourcing imperatives of the council. Two traditional routes to procurement by the council have been explored, namely;

- Framework Contract; and
- Standalone Competition.

Procurement through a framework may offer benefits in terms of procurement timescale and potential efficiency savings for a programme of similar works (although this scheme is not part of an ongoing programme of work packages). This option could also benefit the project since a contractor could be engaged early to enable the design team to work closely with them, similar to Early Contractor Involvement (ECI), in order to mitigate construction risks early in the process. However, with this approach there is also a risk of excluding a contractor more experienced in managing the key construction risks particular to this scheme.

A standalone procurement process offers a robust tender process that will aim to ensure the most suitable contractor is selected, but will incur greater costs associated with the preparation of the tender documents and administering the tender process. The risk of an unsuitable contractor being awarded the contract is reduced by adopting a restricted tender process.

The table below outlines the advantages and disadvantages of framework and standalone competition routes to procurement.

Table 37 - Routes to Procurement

Procurement Route	Advantages	Disadvantages
Framework	▪ Reduces the procurement process and time which may be advantageous for this scheme ▪ Quality checks have already been carried through a framework tender process, again reducing time and cost ▪ Further benefits are realised where there is a programme of work through efficiency and cost savings, lessons learnt etc. Although this is unlikely to be a significant advantage for this option	▪ May exclude contractors that could potentially offer benefits not offered by the framework contractors ▪ Framework providers may not bid as competitively as those in a standalone contract
Standalone Competition	▪ Competitive tender process provides reassurance that a competitive tender price has been achieved. ▪ Opportunity for a wide range of contractors to be invited to tender. ▪ Tender process provides reassurance that a robust process is followed to select the most suitable Contractor to undertake the work.	▪ Tender process can be lengthy and costly depending on type of contract. ▪ Risk that an unfamiliar Contractor winning the tender based on price but does not deliver to required performance criteria.

Due to its competitive benefits a standalone competition is envisaged.

7.5. Procurement Options

The following procurement options are available:

- Traditional;
- Design and Build (D&B); and
- Early Contractor Involvement (ECI).

A traditional approach will not allow the project to benefit from early contractor input, placing more project risk on the council. Whilst the desired level of build quality may be achieved, this may result in cost escalation due to expensive changes and failure to mitigate key construction risks. Traditional approaches are not recommended on the basis that they do not support an integrated team methodology and collaborative relationships.

A pure D&B contract is a viable procurement option. This procurement option has benefits by transferring all the design and construction risk to the contractor. However, the result of transferring the design risk to the contractor is that the council has far less influence over the design and thus there is greater risk that the quality of the construction suffers as a consequence. The transfer of risk under a D&B contract can also result in unrealistically high tender prices. There is also increased risk of cost escalation as instructed changes can be expensive.

An ECI approach balances risk and provides for good construction risk management by early contractor involvement in the design. However, ECI will involve more upfront costs for early contractor input, although the expectation is that these are adequately recovered through savings in

risk mitigation and value engineering. Contractor design costs can be controlled by implementing a cap. There is also a risk with ECI that the contractor will allocate more risk costs to the works when finalising the prices and this is difficult to assess. This could be addressed by incentivising the contractor to value engineer the design tendered price through a pain/ gain share mechanism during the detailed design. This may also increase the accuracy of risk allowance in the tender prices. ECI may also offer benefits to construction programme optimisation.

It is likely that this scheme could attract a significant number of tenderers through an open competitive tender process. Given the associated project risks, it is important that the most suitable contractor with experience in managing these risks is selected.

Based on this, a restricted tender process is considered the most appropriate to adopt, alongside a standalone competition route.

7.6. NEC 4

An NEC 4, Lump Sum (option A) contract will be used. The NEC 4 is designed to help more successful project outcomes by:

- Reinforcing the ethos of project collaboration;
- Improving the triggers to avoid disputes with more effective identification/management of risk and opportunity and support of innovation through digital advances

NEC 4 includes a number of options for consideration. For this procurement it is intended to use Option A.

Table 38 - NEC 4 Options

NEC Contract options	Option A	Option B	Option C	Option D	Option E
Payment Type	Lump Sum	Lump Sum (remeasured)	Target Cost	Target Cost	Cost reimbursable
Price Format	Activity Schedule	Bill of Quantities	Activity Schedule	Bill of Quantities	Open Book
Interim Payment	upon completion of group of activities (fully complete and defect free)	Rate x Quantity	Paid on defined cost + fee on a monthly basis	Paid on defined cost + fee on a monthly basis	Monthly cost + fee
Notes	Simplified payment terms (no provision for part payment- cash flow need to be considered	Measured items from design drawings and specification Cash flow Flexibility for both parties. Errors in BoQ easily rectified as rates have already been established	Once project is complete the total defined cost is compared to the target cost Defined cost may be higher than Target cost = Financial loss is shared (Pain share), Financial gain is shared (gain Share)	This is not a re-measurable contract Defined cost may be higher than Target cost = Financial loss is shared (Pain share), Financial gain is shared (gain Share)	Not a blank cheque - terms how contractor to be reimbursed should be clearly set out in the contract. Drawback is it is difficult to accurately plan cashflow.

Option A is linked to a contract programme with a schedule of activities where each is allocated a price. These two documents will be prepared as part of the tender. The advantage of using an activity schedule is that it simplifies the administration of the interim payment process. With subsequent interim payments being made against the completion of each activity – so no partial payments.

In each interim assessment, the sum that is due is defined as the total of:

- Each group of completed activities (those without defects);
- Each completed activity not in a group.

Under Option A, the activity schedule is a more important document. This is because of the significant effect on the contractor's cash flow, directly affecting the timing and payment value. Developers will need to consider this if procuring subcontractors.

7.6.1 Programme Management

An accepted programme is a fundamental to any NEC Contract where Option A is attached. Unlike other contract forms, there is a requirement for the contract to be regularly updated as it forms the baseline against which future accepted programmes are measured. The client, contractor and project manager will all play a key part in the acceptance process

The project manager's acceptance of the programme, including any later revisions, is significant under the contract. It represents recognition from the project manager's perspective that the programme is realistic, practical and includes the information required under the contract.

7.6.2 Price Management

Under Option A, the 'activity schedule' needs to be carefully prepared in order for it to be effectively operated. A failure to do so can result in adverse commercial consequences. The following key points are born in mind:

Completed 'activities' only – Contractors are only entitled to be paid for completed activities. In theory, the entirety of the works could be expressed as one singular activity. In which case, the contractor would only be entitled to claim payment after completion of the whole of the works. The contractor will therefore be seeking to ensure that the activity schedule is broken down to maximise their cashflow.

Design services – Design services will be considered when preparing the activity schedule. A contractor will be expected to apportion the price for the design services against specific activities within the activity schedule.

Provisional sums – The NEC does not cater for provisional sums. If an element of the works is incapable of being accurately specified at the outset then it will be described in as much detail as possible in the technical documentation, together with the appropriate assumptions. If the scope of work or assumptions change, they may be addressed by way of the compensation event mechanism.

7.6.3 Summary

The activity schedule is the key fundamental when using NEC Contract Option A. For a client it is beneficial as the contractor cannot claim monies for a work element not satisfactorily complete. Careful consideration is required during tender to ensure the schedule is structured in such way as to best manage cash flow.

In an ideal world, the activity schedule will tally like for like with the project programme. Albeit this will be subject to revision to include for compensation events and weekly programme reviews. Underpinning the successful implementation of NEC Contract Option A is project team and communication flow to ensure the programme and activity schedule is regularly updated

7.7. Payment and Charging Mechanisms and Pricing Framework

It is likely that any works within the station boundary, although not currently programmed, would be commissioned by TfW from their existing delivery partners. All other works, (ie all works envisaged at this stage) will be outside the station boundary and will be commissioned by the council through their existing framework/s. It is also possible through negotiation with TfW that the council take responsibility for commissioning and managing all works, regardless of whether they are within station confines or not.

The payment mechanism will determine how payments to the private sector party likely to be responsible for delivery are calculated and is fundamental to the contract by putting into financial effect the allocation of risk and responsibilities between the commissioning organisation and the private sector party. This will use an output delivery-based structure where payments are based on the delivery of designated deliverables at a pre-determined timescale, as for NEC 4 above. Deductions will be applied where the deliverables are not provided in the time expected and this will be defined within the T&C's of the contract/s established.

7.8. Risk Allocation and Transfer

The risk allocation approach will pass over the construction risks to selected private sector providers, where these can be controlled or managed by these providers, enabling them to price delivery with confidence. This approach helps to achieve value for money as certain private sector organisations have more experience and are therefore better equipped to manage and mitigate certain risks.

The approach towards managing risk is defined in more detail in the Management Case.

7.9. Contract Length and Management

See the programme provided within the Management Case

8. Management Case (Delivery Case)

The Management Case assesses whether a proposal is deliverable. It tests the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

The Management Case sets out a clear and agreed understanding of what needs to be done, why, when and how, with measures in place to identify and manage any risks. It sets out a plan to ensure that the benefits set out in the economic case are realised and will include measures to assess and evaluate this. The project and programme are expected to have a risk management plan, proportionate to its scale.

8.1. Critical Success Factors

The core requirement of the Management Case is to set out how the scheme can be delivered in terms of management, governance, risk management, stakeholder involvement and the realisation of expected benefits. CSFs for this case include:

- Ensuring a sound approach to planning, delivery and risk management;
- Ensuring that any management imperatives set by the rail sector are met; and
- Deliverable within the timescale during which funding is likely to be available

8.2. Overall Approach to Project Management

The council will manage the overall delivery through their existing governance procedures. In doing so they will consult with CCR and TfW regarding their imperatives, including working with TfW and Network Rail on any aspects of the improvements that impinge on rail infrastructure or land, although this is expected to be minimal. In these circumstances the Network Rail GRIP process does not need to be applied.

8.3. Project Governance

As indicated above, the governance of the project will be driven by the council's procedures and ultimately the requirements of CCR and LTF as the primary funding bodies.

8.4. Governance, organisation structure and roles

Delivery of the scheme on the ground will be the responsibility of the council, including the scheme concept and objectives. The scheme sponsor and the funding is sought primarily from the Metro Plus, Phase 1, Regional Transport Authority (RTA) Programme.

An overview of the governance structure which stems from the responsibilities is provided by the figure below.

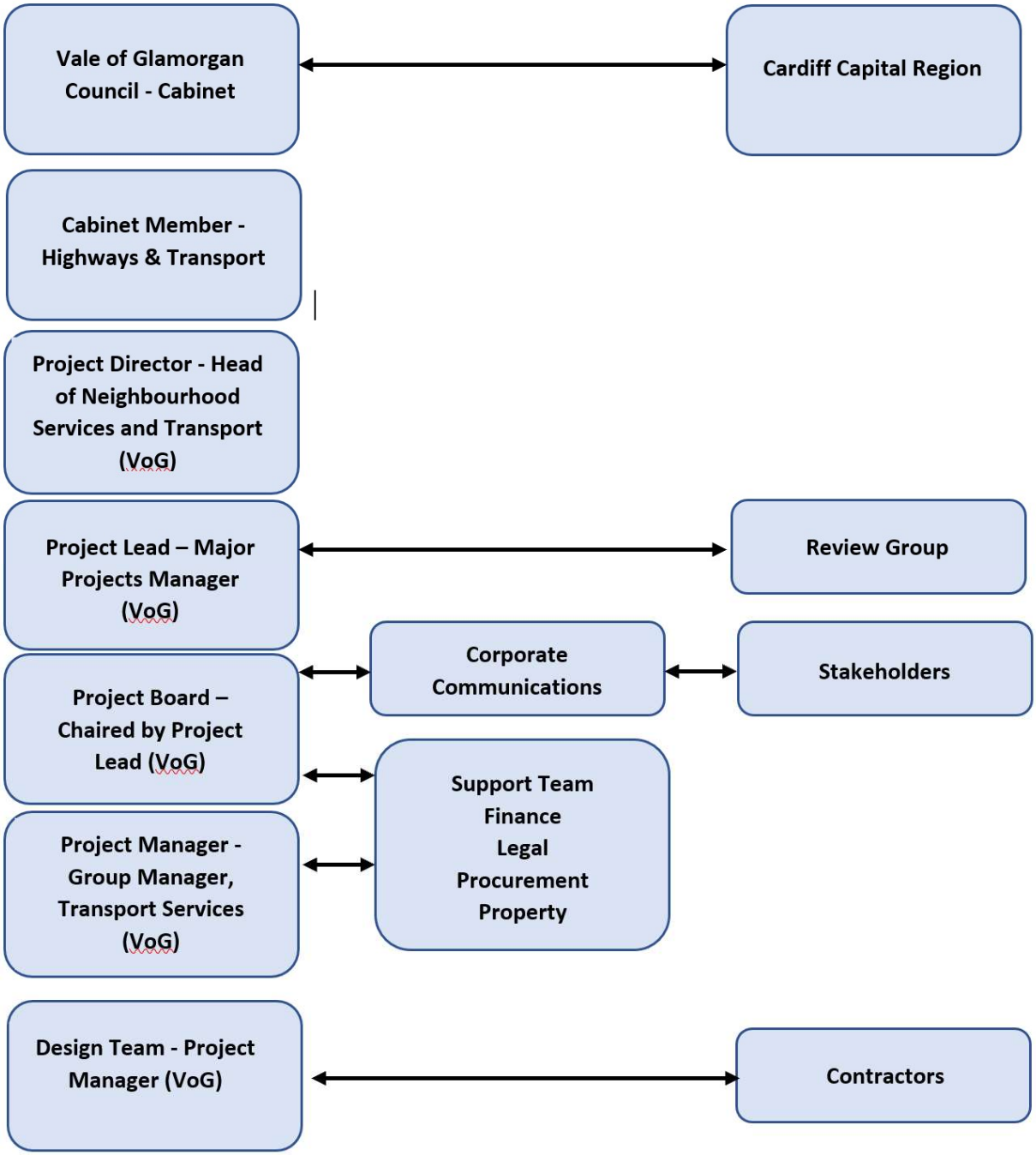


Figure 33 - Project Management Structure

8.5. Programme and Project Reporting

An overall project programme will be prepared, through discussions between the council, CCR, LTF, TfW and Network Rail, to implement and monitor delivery of the project and this will be reviewed and updated on a regular basis by the project manager. Regular progress meetings will be held as the scheme develops, with progress reports prepared in advance for review with the client.

8.6. Programme of Scheme Delivery

The delivery programme is subject to a number of unknowns, making it difficult to prepare a detailed plan at this time, especially for the later delivery stages. An initial programme, commencing with submission of this business case and running to March 2025 is provided below.

- Now – Mar 23- Finalise planning approval, complete tender documents, tender/award and build transport interchange south of the station;
- Mar 23 – Mar 24 – Produce tender documents for northern enabling works (relocate slow worms, fencing, demolition, vegetation removal), tender/award and undertake works/site supervision etc);
- Mar 24-Mar 25 – Produce tender documents for northern access road and car park, tender /award and construct/site supervision. (Assumes EV terminals will be installed in this delivery phase).

8.7. Assurance and Approvals Plan

A planning application for the scheme has been submitted to the council.

At a practical delivery level, the council and their agents will be responsible for project assurance and approvals and this will be managed in accordance with their standard processes and guidance.

In relation to the approvals for the project to go ahead, this lies with the CCR and is governed by its assurance framework and WelTAG guidance.

8.8. Contract Management

An NEC 4 (A) approach and software will be utilised for contract management (see section 7.6, above)

8.9. Risk Management Strategy

An active approach towards risk management will been taken, based on the normal processes and procedures of the council and its partners.

8.10. Purpose and Approach

The Risk Management Strategy is designed to identify the risks associated with the proposed scheme, mitigate these as far as possible and to put in place risk pricing and contingency mechanisms to address remaining risks.

8.11. Risk Management Procedure

The overarching responsibility for risk management in terms of delivery lies with the council and is based on their normal corporate management standards. The processes to be applied are as follows:

8.11.1 Identifying risks

Risks are identified through risk workshops held as part of the design process, informed by stakeholder engagement. Risks are identified as 'generic' (i.e. relating to the project as a whole) or 'specific' (applicable only to one or more of the specific interventions).

8.11.2 Assessing risks

Impact and likelihood of risks is established through the risk workshops, using a matrix which identifies impact (high, medium, low) and likelihood both without and with mitigation. Risks assessed as remaining 'high' or 'medium' following mitigation on the basis of this combined ranking are detailed within the risk register and will be actively managed throughout and following implementation of the scheme.

Where such remaining risks are quantifiable, they are subject to quantified risk assessment and taken into account in the costs of the scheme.

Unquantified costs (e.g. political risks to funding) are managed on a non-quantified basis as part of the overall project management arrangements.

8.11.3 Planning Risk Action

Risks will be continually reviewed as the project progresses, via the project team, who will recommend actions to the project board and monitor outcomes.

8.11.4 Implementing Actions

Actions to be taken to address risks identified will be the responsibility of the project team and relevant project manager (director, lead, etc, as appropriate).

8.12. Communication of Risks and Attendant Actions

Communication of risks will be managed through the structure set out in Figure 33 - Project Management Structure. Any additional communication with stakeholders will be determined by the project board.

8.12.1 Records

Recording of risks (and maintenance of the recording) is through the risk register, the current version of which is provided below. Maintenance of these records is the responsibility of the project manager.

8.12.2 Reporting

Risk management reports, based on the updated risk register, will be through the structure detailed in the project management structure.

8.12.3 Timing of Risk Management Activities

Risk management will be undertaken as part of the general project management activity. Reports on risk will be a standing component of reports to theproject board.

8.12.4 Roles and Responsibilities

The designated project manager for the scheme as a whole is responsible for identifying and reviewing risks and incorporating these into the risk register and reports to the project board.

The project team is responsible for reviewing reports from the project manager/s and reviewing the risk register to identify and report any issues requiring action by the project board.

The project board is responsible for authorising any actions outside of the project manager's remits, including onward communication to stakeholders.

8.13. Risk Budget

The risk budget relating to the scheme delivery has been calculated using a QRA process compliant with WelTAG/WebTAG and is incorporated within the scheme costs set out in the Financial Case.

8.14. Contingency Plans

The project board is responsible for developing, initiating and managing any contingency plans to address risks which the risk management process identifies as requiring such action.

8.15. Planning Powers and Consents

A planning application for the scheme has been submitted to the council.

8.16. Communications and Stakeholder Management

8.16.1 Stakeholder Consultation Framework

A Stakeholder Consultation Framework has been established and is appended to this business case. The stakeholders consulted on the scheme as it has progressed and with whom consultation will continue through to delivery, can be classified in the following categories:

- Primary Stakeholders – Organisations / individuals that have both direct and high impact / interest on the outcome / delivery of the project. These organisation / individuals are also directly impacted by the construction works; and
- Secondary Stakeholders – organisations / individuals who are not directly impacted and have medium / low interest in development of the project. However, these organisations may have a high impact on the outcome. These include statutory environmental bodies (SEBs), such as the Environment Agency and bodies such as Network Rail, who will have a high influence on the scheme approvals, but do not have any direct impact or involvement.

This approach helps to prioritise stakeholders, third parties and other interested parties, based on their impact and likely contribution to the project, hence allowing a more effective and focused approach when addressing issues. Many of the risk items identified in the project risk register will only be mitigated or closed through continued dialogue with key stakeholders.

Due to the potential impact of the scheme on local residents there is a risk of objections. In order to mitigate this early stakeholder engagement was necessary. A range of communication techniques were used to engage with all stakeholders, the local community and interested parties. These included:

- Virtual meetings;
- Telephone consultation;
- Email and social media; and
- Online public consultation survey.

A high level of community engagement has been sought to understand the current activities of those represented by stakeholders so we are aware of the potential interactions between these and the station and can contextualise comments made. Where appropriate this has included establishing current levels of use of the station, any barriers to this and the potential for the scheme to remove these and/or increase demand. We have also established any future development or change to current activities envisaged by stakeholders in order to identify the impact this may have on patterns of demand. We have explored the specific views of stakeholders on the proposals for a transport interchange. This included seeking their views on the three options for the locations of the infrastructure proposed, their thoughts on the infrastructure itself, including the form this should take and the need for any complimentary infrastructure or supporting services to encourage take-up. Finally, we explored the implications of Covid-19 both for current activities and future development plans, including the timeline stakeholders are working to for returning to a 'new normal' and what they thought a 'new normal' might look like, where this was known.

When introducing the consultation, each stakeholder was informed of the timeline Amey had been asked to work to and that this encompassed two WelTAG stages; ie an Outline and Full Business Case. Each was also made aware that the work was intended to support a funding bid to the CCR Metro Plus, Phase 1, Regional Transport Authority Programme. On completing one to one consultation, scheme designs were made available to both key stakeholders and the general public for comment, via a public consultation survey.

The public consultation received 107 usable responses. In addition, a substantial number of different organisations have been contacted for one to one, virtual consultation. Feedback from this consultation is summarised below.

8.16.2 Consultation Feedback

Cardiff Bus

Cardiff Bus is the administrator for Plus Bus in Barry. Based on ticket sales they are aware that very few people currently arriving by rail at either Barry Docks or Barry Town transfer to bus to continue their journey. Their current services to Cardiff do compete to some extent with the rail service. However, the choice of whether to use bus or rail often depends on where people live or work in relation to the route or station, while cost is also an issue for some. Cardiff Bus would like to see a bus interchange provided closer to the town centre, alongside other bus priority improvements. In terms of the scheme options, they would prefer the interchange located to the south, in the area alongside the Docks Offices. They thought this location offered the better scope to build and develop an interchange in the form and of the scale proposed. It was also considered that an interchange here may encourage services to extend from Morrisons to the station. However, Cardiff Bus have concerns about their current services using it as the time penalty for doing so will impact schedules. Any interchange will require good facilities for passengers, including shelters, seating, lighting, information, etc and should be built in such a way as to minimise the need for buses to reverse and to ensure passengers can alight/board safely. Were an interchange provided to the south of the station then priority access would be required for buses, to ensure they did not get caught up in car traffic accessing the site to park, causing service delays. Up to 4/5 bus bays within the interchange would be adequate.

New Adventure Travel (NAT)

Within Barry, NAT provide the 304 service which is inter-worked with the 303 to provide a service from Cardiff through Barry residential areas and via the town centre and Morrisons to Bridgend. The service is partially subsidised by the council. The service passes Barry Town (but not Barry Docks) Station where it is accessed by a relatively small number of rail users seeking destinations, primarily beyond the town (Hospital, Rhoose, Cardiff, etc). The service also passes Cardiff International Airport, although few passengers currently use it to access this. NAT do not regard the service as competing with the rail service to Cardiff or the Airport as running times are significantly greater than rail. NAT would much prefer to see a bus interchange located to the south of Barry Docks Station. Were the interchange provided here NAT would extend the (partially subsidised) 304 bus from Morrisons to serve it, at least for a trial period and given the council's permission to do so. NAT believe the interchange should include all standard infrastructure (shelters, seating, lighting, safe pathways, CCTV, RTI, etc). They would also be keen to see toilet facilities provided (for both drivers and passengers) and noted that seating within bus shelters can attract anti-social behaviour and would wish to see consideration of how this could be addressed. NAT would prefer bus bays at the interchange not to require buses to reverse into or out of them, for safety reasons. Hybrid buses are used to provide the 304 and electric buses are operated elsewhere in the group so EV charging at the interchange would be welcomed, although the distance of the 303/304 route may prohibit use of electric buses on this until the range of these can be improved. If a bus interchange were to be provided north west of the station NAT would not run the 304 into this, as it would divert the service away from the residential areas (to the north) it currently serves, resulting in reduced patronage.

Greenlinks

Greenlinks currently provides an entirely subsidised, door to door service throughout Barry and the rural vale, alongside two subsidised demand responsive services:

- G1 - Monday to Friday, St Athan to Cowbridge and Bridgend via villages, based on demand;
- G4 - Thursdays only, Rural Vale to Cardiff.

Services focus on meeting the needs of those that have limited or no access to a bus due to their location or a mobility impairment. The majority of passengers are from the Rural Vale which is sparsely served by conventional bus, and are mostly older people seeking access to health, shopping or organisations/groups. Only the door to door service currently serves Barry town and within this area most passengers have a mobility impairment. Requests for journeys to/from the station are rare. However, Greenlinks would use any interchange at the station provided and requested by door to

door users. They would also be prepared to consider extending the G1 and/or the G4 to serve the station.

Greenlinks thought it wouldn't make a significant difference to them whether a bus interchange was located to the north or south of the station. There was potentially a case to suggest that locating the interchange to the south would be best as there was existing access to the site and greater space to build an interchange. However, from Greenlink's perspective it was simply important it could readily access the interchange and that it included facilities to enable safe unloading and to address the mobility impairments of their passengers. In particular, this should include a bay for Greenlinks use, suited to unloading passengers as close as possible to station access routes and away from other buses. (Bearing in mind wheelchair lifts are located at the rear of Greenlink's vehicles.) Any bay should also enable vehicles to drive through rather than having to reverse to exit the bay. The bay would not need to be allocated exclusively for Greenlinks' use and could be either a bay also used by other buses or by taxis/PHV's.

Important facilities required alongside this include clearly marked and well-lit safe footways to the station platforms that are suitable for wheelchair users, a reduced gradient to the ramp between the subway and station platforms to bring this within DDA standards and toilet facilities. It was noted that Greenlinks had in the past been based at the Docks Offices to the south of the station, before it moved to the Alps, its current base. Also, that purchase of an electric minibus was under consideration for future use. With provision of EV charge points being a key consideration for the station it was possible a return to the Docks Offices base could be beneficial to both Greenlinks and the station upgrade.

Taxi Association

Current taxi services focus on schools, airport, train stations (circa 10%) and the town centre, including two ranks there. Also, some demand for commuters to Cardiff, especially when other (rail/bus) services become crowded and for access to key events (ie rugby, concerts, etc). The representative consulted mentioned that the previous park and ride improvements had enhanced access to Barry Docks, but Dock View Road access is not great due to the narrow road and many bends. Taxi operators encourage passengers to use the southern entrance, but this increases client costs (by plus 1/2 mile maybe). Barry Docks and Barry Town are the two stations they serve most often.

The association suggested their preferred choice for the location of a taxi interchange would be the northern access route off Subway Road (near the garage and BT office) as this gives customers the best and closest option for access to the station. MM noted the steps are closed/boarded off now and no longer in use, so this access would need to be improved. In terms of infrastructure for a taxi interchange at Barry Docks, taxi operators would like the council to take into consideration that taxi drivers want to drop off people as close as practically possible, with minimum fuss due to the town being a relatively congested area in terms of transport (in some times more than others i.e. rush hour). The most important factor is the ease of access. Overall, the taxi interchange vision is no different to a bus interchange: A shelter where people can wait safely shielded from the weather, and so their vehicles can get in and out easily. No telephone is needed as most bookings are either via mobile or app (30%) and phone booths tend to invite vandalism etc. It was important to have signage from the station to where the bespoke taxi rank is, information at the shelter to provide phone numbers of companies/name of station/ taxi rank number, etc/maps, for practicality. The association would very much like to work with the council in relation to any type of incentive which is mutually beneficial – ie joint ticketing.

There are no electric vehicles in the taxi fleet at present. The association has had discussions with providers of EV vehicles – which flourish in Cardiff, but the perception is that EV vehicles don't work well with Barry's gradient/hilly nature. The taxi representatives said that they were all for technology but it needs to be affordable and meet daily requirements for a taxi (circa 200/300 miles).

Keolis Amey

Keolis Amey had no strong preference for the interchange options under consideration. As the current car park was always full (pre Covid), an increase in car park/park and ride capacity was essential for future growth regardless of where the interchange was located. Alongside this, provision for EV charging points was considered important, not only for cars but also buses and taxis. The bus and taxi interchanges proposed would also help in generating increased rail demand for journeys to and from Barry. Access for active travel modes will be equally important, especially post Covid. Keolis Amey has no funds available to support improvements at Barry Docks. The station is regarded as functional and little other additional station infrastructure is considered necessary although a 'pop up' café would be useful. It was noted that it would be important to improve access for disabled people via the ramp from the subway to the station platforms. This would be preferable to and less costly than considering a footbridge from Dock View Rd to the station. Keolis Amey also mentioned it would be supportive to the business case to include developments, such as 'Milk and Sugar' meeting hubs at the station both in general and to address the situation post Covid. Were a 'Cycle Hub' to also be provided these might usefully be accommodated within this.

Vale of Glamorgan Council, Town Centre Regeneration Officer (TCRO)

In the overall vision for regeneration of Barry, Barry Docks is regarded as one of two key gateways to Barry town. The other being the Gladstone Road regeneration area (western gateway) which is currently in the process of being developed. The availability of the CCR Metro Plus, Phase 1 Regional Transport Authority programme provides the opportunity to progress the Barry Docks element (eastern gateway). This process of identifying funding sources that can advance different elements to bring about the overall vision for Barry is necessary across the town. In this context there are some elements of development that will link to Barry Docks for which funds are available, such as that for development of the Quays at the Waterfront. Other elements are aspirational and do not yet have funding identified that can support them - such as improved active travel links from Barry Docks to the town centre or residential areas surrounding it - although recent provision of the Thompson Street footbridge provides a part of this. Together with the Quays, its provision also demonstrates the council's desire to link the town centre to the Waterfront development, which the proposed improvements to Barry Docks can facilitate both through improved active travel links via the pedestrian subway and vehicular links via Subway Rd.

Vale of Glamorgan Council, Public Transport Manager (PTM)

The Vale of Glamorgan PTM believed the bus interchange should include all the normally expected infrastructure (stops, shelters, seating, lighting, RTI, safe walkways, etc). The need for buses to reverse within the interchange should be minimised. An initiative to provide a flexi/demand responsive bus service to/from Newport station in place of the current conventional timetabled bus was highlighted as a potential initial response to Covid capacity considerations for public transport. It was thought a similar initiative might be tested in Barry. It was also noted that it was always envisaged that the Next Bike scheme currently being trialled between Penarth and Cardiff could be extended to Barry Docks, once the pilot is complete.

Cardiff Airport

Prior to Covid-19 the airport had been experiencing significant growth in patronage (up to 1.7m passengers p.a) and released a Masterplan in 2018 outlining plans to extend the airport and also diversify their activities into cargo, training and other areas. In turn this is aligned with further development proposed for the area around the airport in the form of the Bro Tathan Business Park and Gateway Development Zone, including the Giga Battery Plant which is expected to employ 3,000/4,000 people, and a new site for Vale College focussed around vocational training.

Most passengers and employees currently travel to the airport and surrounding developments by car, either their own or receiving a lift from a friend/relative, taxi, etc. The airport would like to encourage greater use of public transport but current links are considered limited (1 train/hr from Barry/Bridgend, T9 express bus between Cardiff Airport and Cardiff with limited stops, and the 303/304 Cardiff/Bridgend service). The additional rail service proposed by TfW from 2023 will address this to some extent. They would also like to see improved active travel links to the airport from

surrounding areas, in particular Rhoose, although this would realistically only be relevant to employees and at present there are no specific plans for what such a network may look like.

Vale College

The current campus is on Colcot Road approximately 1.4 miles / 30 min walk from the train station and an entirely uphill route. The catchment for students extends from Cardiff to Bridgend. There are plans for two new campuses to replace the above - one for the southern IQ quarter on the Waterfront (proposal for college campus and a primary school), and the second site just to the north of Cardiff Airport (within the Enterprise Zone). The former will have a more academic and the latter a vocational focus. Part of the reason for the move, in particular to the Waterfront site, is to improve access. Improvements to Barry Docks and, in particular, locating the interchange to the south of the station, will facilitate this.

The deadline for delivery will be 2023 or early 2024 assuming everything goes according to plan for both sites. The college would welcome any transport improvements to the airport as these would also serve the airport campus which will be located just at the entrance to the terminal. At present there are no travel plans in place or transport plans for the two proposed campus sites. Students don't tend to walk from trains to the current college site in Colcot Road, primarily due to the steep gradient between the two. In general students tend to use buses more so than rail. Bus links to the current site are regarded as poor, with limited service frequency being a particular issue. It is thought that most students (circa 75/80%) currently travel to the college by car, some catch a bus but very few cycle or walk unless they live locally.

That improvements to Barry Docks will also improve access between residential areas to the north and the Waterfront to the south will also encourage greater use of active travel modes by students living in the town. A potential future cycle hub at the station offering cycle hire (bike and e-bike to address issues of the gradient) would be welcome. Taxis are also an attractive option for students, especially where taxi sharing ca be facilitated. Cost is a barrier to rail use by students with no discounted tickets or travel card available for students in Wales or via the TOC. The college currently provides eligible students with a pass for use on bus services and would like to be able to offer similar for rail use.

Job Centre Plus

Barry Town's Job Centre noted that Cardiff and the Airport, including St Athan Enterprise Zone and Aston Martin centre are the main sites for employment for the area. Barry town is also relevant but not as significant for employment and training as the above. The rail link is considered very important to the Job Centre and its clients. In the context of the rural vale the availability of park and ride from the station is also key and for job centre clients it is important this remains free of charge. Train services to Cardiff are frequent from Barry but only once an hour from the surrounding area, meaning connections can be limited. Off peak services are also limited, affecting options for take up of shift work opportunities. However, with little difference in cost and rail offering a faster journey time, this is generally the favoured public transport mode for access to employment/training outside of Barry.

British Cycling Wales

British Cycling Wales considered the routes around the station reasonable, with the NCN on Millennium Way to the south; good routes around Waterfront and on a segregated path. The gradient to residential areas north of the station was recognised as a barrier to cycling in these areas and routes to the town centre from Barry Docks are considered narrow/tight for combined cycle and vehicular use. There was little preference between the three options for the location of the transport interchange from a cycling perspective.

Barry Ramblers Society

Barry Ramblers had no preference as to the siting of the bus interchange. However, they offered the comments below:

- The current council car park is often full, so any new parking should also be for visitors or workers at the Docks Offices, not just train users;
- The new parking area should be larger than any space lost in the current council car park;
- The bus interchange and car park need to be on the same level.

Transport for Wales

Most bus routes serving Barry terminate at Morrisons or in the town centre and are commercial. Many of the routes run through to Cardiff and are scheduled accordingly, but there may be little scope to extend even (for example) the relatively short distance from Morrisons to the Docks Station without the additional running time impacting on the schedules to the extent that additional buses are required to maintain the timetables. The other downside is the impact on existing passengers. However, in principle the provision of a bus interchange at Barry Docks will be welcome and locating this to the south of the station will be preferable to locating it to the north. TfW had discussions a few months ago with Cardiff Bus about multi modal ticketing. They are developing a pilot with Stagecoach in Caerphilly, for a bus / train ticket which will be based on ITSO smart cards (aimed at weekly / monthly tickets) and are keen to do similar on mobile ticketing. Discussing this with Cardiff Bus they suggested there may be opportunities to pilot this at Barry stations.

Barry Town Council

A consultation was arranged with the members of Barry Town Council Planning Committee. In general, the committee supported the proposed improvements to Barry Docks, considering the location of an interchange to the south of the station the preferred option. Committee members were keen to see active travel routes improved both for access to the station and to improve the link between residential areas and the Waterfront to the south. They also sought assurance that what is provided would not distract from the Grade 1A* listed status of the Docks Offices and the views of this from the town.

An email received following the consultation from one of the committee members, who is also a member of the council, highlights some further issues for consideration at FBC stage, including:

- The priority for Barry Docks Station is to operate as a gateway to Barry – getting people to the town and around the town;
- Need for environmental improvements in and around Barry Docks Station to make passengers feel valued and safe. Currently the station feels run-down and abandoned, particularly in the dark and later at night;
- This requires integration of rail/bus services serving the whole of Barry. Consideration of bus coverage and frequency is required. Shift Morrisons bus 'terminus' eastwards to Barry Docks Station;
- Any development (including housing) should not obscure views of Barry Dock Office from the town and be in proportion with views of the town from the Waterfront or Barry Island. The original building was a central focus which dominated the landscape, and should continue to do so;
- The interchange within the grounds of the southern car park will give an impression of a hub area being in use from early morning until late at night, as well as serving both travellers and Dock Office staff;
- Introduction of parking north of the railway station and south of the railway station may give the area a vehicle-heavy 'vibe';
- Likely to fit well with cycle travel along the south of Barry, but not so well integrated with areas further north;
- Requires prominent signage for town centre for pedestrian and cycle users, including upon reaching Dock View Road.

Alzheimer's and Autistic Society

The three options for location of a bus interchange were discussed, however, the location was not of concern. The key issues in terms of disability were in ensuring good access for with those with limited ability and wheelchairs. In term of things important to those with both Alzheimer's and autism it's about consistency, reliability and that they are not faced with the unexpected or sudden changes. It would be useful if the station could be 'manned', although it was recognised this is unlikely for the near future due to the size of Barry. Access for all was the key – ie if services were made accessible to those with disabilities then they would also be good for all others to use. In the case of autism, this required consideration of the needs of those lacking confidence to ask, those who might struggle to communicate, those with sensory issues, good signage, speaker announcements/ RTI display boards etc - clarity of next train coming, where go and what train will do, if something goes wrong; where the bus comes from and where to get it from if/when trains are cancelled were all important.

Over 50'S Forum

The forum representatives consulted believe a bus interchange at Barry Docks will help older people to use the train and its location was less important than it being made available. An interchange near the town centre and residential areas, north/north east, would be favourable (ie to the north west of the station) although to attract existing bus routes an interchange to the south might be better. It would be very important the interchange included good quality shelters for people to wait, proper seating (not slanted), real time information and bus/train timetables, and good quality lighting. The representatives mentioned that the pedestrian subway can be off-putting, and this is why their members don't use rail to travel at night. The general appearance and lighting at Barry Docks needs to be improved.

It was noted that wheelchair capacity on buses is limited and as a consequence most wheelchair users take a taxi to a station. A taxi interchange nearer to the station would be useful. Similar to the bus interchange, it should also include a shelter, seating, lighting, etc. In terms of pedestrian and cycle routes, they thought some would walk/cycle especially due to the number of residents in the nearby area, including older people. A gradual ramp up to the station platforms would be more useful. Currently there are no landings, but there is a useful handrail. More signage and markings would be helpful to set out safe walking and cycle routes. The forum strongly asked for no signs to be obviously directed at "older" people (i.e. old lady/man with a stick sign) as this offends some. Instead, perhaps a generic warning sign for crossing/indication of appropriate routes, that would address the needs of all.

Sight Cymru

Consultees supported the interchange proposals. Whether the bus and taxi interchange were located to the north or the south of the station was of little consequence. However, wherever it was it should offer easy, well signed, lighted, safe and secure access to the station. All infrastructure and access routes within the station confines should be accessible to those with disabilities and if this is achieved it will ensure access for all. The current pedestrian subway does not offer a particularly welcoming or attractive environment and that you have to turn at a right angle from this to go up the ramp to the station platform can pose particular difficulties for those with sight difficulties. Better lighting within the subway will be important as will signage to indicate where you need turn to access the ramp. For those with sight difficulties this could include the use of brail signage or marking (arrows) on walls and textured paving at the bottom of the ramp and access points to the subway.

It's also notable that there are no disabled parking bays available in the current car park and that to get to the platform from the park and ride area it is necessary to walk down a ramp at its entrance/exit, to then turn through 180 degrees in order to access the subway and then turn right to go up the ramp to the platform. Again, this route is circuitous and not signed currently and this should be addressed. The current access from Dock View Rd also needs significant improvement. The steps down from the road are steep and have recently been closed off, preventing their use. The road down past the old BT building is poorly surfaced and foliage is overgrown, creating hazards that someone with a sight difficulty may not spot. There is no signage from Dock View Rd to indicate the route takes you to the station or repeat signage that can be followed to lead you to the platforms or vice versa. A pedestrian crossing (Pelican Crossing) directly opposite the station access point would

also be useful. This should include facilities at eye level for use by those with sight difficulties. Furthermore, there needs to be clear indication of the steep slope that needs to be negotiated to get from the station to these areas.

Within any new interchange, information provision will be critical. This should include real time information for both buses and trains (on vehicle and at stops), including audible as well as written information displays. There is a need for seating, lighting, help points, clearly marked out safe pedestrian and segregated cycle routes. Colour contrasted signage and brightly coloured arrows (on road or walls) indicating routes from the platform to destinations both north and south would also be helpful.

Tourist Information and Barry Sense of Place

Both consultees welcomed the potential improvements to Barry Docks Station, although neither had a particular preference for the location of the bus/taxi interchange. It would be important in constructing the interchange that its impact on the Docks Offices, as a grade II* listed building, was considered. The Interchange should not interrupt the view of the building or distract from it in any other ways.

With both consultees being from the local area they were of the opinion that TfW misunderstood the role of Barry Docks as the main station for the town, noting that when rail services encountered delays TfW would often choose to miss out Barry Docks and stop trains (from Cardiff or Rhoose) at Barry Station only. This was believed to frustrate many passengers who would then need to walk further than they would from Barry Docks to access the town centre or its surrounds where they lived. It was also noted that information and signage from Barry Docks to the town centre was poor. This was not an issue for local people, however, for visitors it was difficult to identify the best route to where they might like to get to and improved signage would address this. It was considered that alongside signposting parks and heritage sites from the station there should be signage to Kings Square, the Library and Holton Rd as the main shopping street. The most obvious route using Thompson Rd was not the best route to these locations. Other through routes should be improved.

There is some work being undertaken by the Town Centre Regeneration Officer to consider wayfinding and signage, focussing on all four stations in Barry and pedestrian movements to/from these. Funding is thought to be available to provide improvements and it will be guided by the design tools being produced by the Sense of Place programme. In particular, this proposes use of standard colours, fonts and background graphics to denote common routes, attractions, sites, etc and thus ensure continuity of design across the town. This toolkit should be considered for use in the design of signage, etc at Barry Docks.

In general, it was considered that the town required greater provision of bus services, with consultees noting that more services were available in the past. An interchange at Barry Docks was considered a step towards this. It could be useful to have a shuttle bus to run between the interchange, the town centre and Barry Island that would also connect users to other buses in the centre/Kings Square.

8.17. Risk Register

A summary of the key risks within the current risk register (14/05/2022) for the scheme is provided below. This is divided into two tables the first indicating the risk and the second its potential mitigation.

A more detailed risk register can be provided if required.

Table 39 – Summary Risk Register

Risk Ref	Risk Status (Open/ Closed)	Risk Description	Risk Proximity	Early-warning Indicator	EW Ref.?	EW Ref.	Corporate Risk Ref.	Risk Originator	Risk Owner	Risk Actionee (Role)	Date Identified	Date Revised	Risk Category	Risk Type	Risk Response	Unmitigated Impact	Unmitigated Likelihood	Unmitigated Score	Unmitigated Score Rating
R-1	OPEN	Covid-19 affecting delivery	within the project	-		-	-	JJH	VoG/ Amey	SE	06/12/2021	16/05/2022	Time	Threat	Reduce	4-High	4-Probable	R-16	R
R-2	OPEN	Detailed design not completed during reduced timescales to fit project in with funding allocation window.	within the stage	-		-	-	JJH	Amey	SE	06/12/2021	16/05/2022	Time	Threat	Fall-back	4-High	3-Possible	R-12	R
R-3	OPEN	Technical Approval not given by required approving bodies within project funding window i.e. SAB/ Sc.278/38/ Sc104	within the stage	-		-	-	JJH	VOG/Amey	TC/JD	06/12/2021	16/05/2022	Time	Threat	Accept	4-High	3-Possible	R-12	R
R-4	CLOSED	Purdah - Local Government Elections Wales May 2022	within the project	-		-	-	JJH	VoG	SE	06/12/2021	16/05/2022	Time	Threat	Accept	4-High	3-Possible	R-12	R
R-5	OPEN	Delegated powers for authority to progress to let tender not given by cabinet.	within the project	-		-	-	JJH	VoG	JD	06/12/2021	16/05/2022	Time	Threat	Accept	4-High	3-Possible	R-12	R
R-6	OPEN	Referral of detailed planning application decision to committee.	within the project	-		-	-	JJH	VoG	JD	06/12/2021	16/05/2022	Time	Threat	Accept	4-High	3-Possible	R-12	R
R-7	CLOSED	Change in client structure	within the project	-		-	-	JJH	VoG	SE	06/12/2021	13/04/2022	Time	Opportunity	Enhance	3-Medium	3-Possible	R-9	A
R-8	CLOSED	Change in Highway design team	within the project	-		-	-	JJH	Amey	SE	06/12/2021	13/04/2022	Time	Opportunity	Enhance	2-Low	3-Possible	R-6	A
R-9	OPEN	Wales Procurement Policy Statement and NPS threshold regulations.	within the project	-		-	-	JJH	VoG/ Amey	SE	06/12/2021	16/05/2022	Cost	Threat	Accept	2-Low	3-Possible	R-6	A
R-10	OPEN	Construction duration for Interchange element Works under estimated in programme or unforeseen construction delays.	within the project	-		-	-	JJH	VoG/ Amey	SE	06/12/2021	16/05/2022	Time	Threat	Reduce	3-Medium	3-Possible	R-9	A
R-11	OPEN	Interchange element Works Construction to be undertaken over winter period.	within the project	-		-	-	JJH	VoG/ Amey	SE	06/12/2021	16/05/2022	Time	Threat	Accept	3-Medium	4-Probable	R-12	R
R-12	OPEN	Statutory Undertakers Equipment Connection/ Relocations/new supply cost and programme implications	within the project	-		-	-	JJH	VoG/ Amey	SE	14/12/2021	16/05/2022	Time	Threat	Accept	4-High	4-Probable	R-16	R
R-13	OPEN	Northern Land Purchase fails	within the project					TC	VOG	JD	16/05/2022	16/05/2022	Time	Threat	Accept	5-V High	3-Possible	R-15	R
R-14	OPEN	Northern enabling works budget not secured	within the project					TC	VOG	JD	16/05/2022	16/05/2022	Cost	Threat	Accept	5-V High	3-Possible	R-15	R
R-15	OPEN	Northern enabling works-delays in agreeing land boundary, methodology of working with Network Rail	within the project					TC	Amey/VOG	TC/JD	16/05/2022	16/05/2022	Time	Threat	Reduce	4-High	4-Probable	R-16	R
R-16	OPEN	Northern works (access road and car park) budget not secured	within the project					TC	VOG	JD	16/05/2022	16/05/2022	Cost	Threat	Accept	5-V High	3-Possible	R-15	R
R-17	OPEN	Northern Works construction delivery- takes longer than anticipated due to presence of rock	within the project					TC	VOG	JD	16/05/2022	16/05/2022	Time	Threat	Accept	4-High	3-Possible	R-12	R

Risk Ref	Phased Mitigation	Mitigated Impact	Mitigated Likelihood	Mitigated Score	Mitigated Score	Contingency Budget Estimate (GBP)	Probability of Risk occurring	Minimum Cost £	Maximum Cost £	Prob x Min £	Prob x ML £	Prob x Max £	Most Likely Cost £	Notes
R-1	Follow Government guidance and react accordingly. Unplanned site visits not anticipated during this design stage and WELTAG reporting. As far as practically possible all design work to be completed from offices and WFH communicating with statutory bodies via Teams/ Phone/	4-High	3-Possible	R-12	R	R-0	2 low	R-0	R-0	R-0	R-0	R-0	R-0	
R-2	Fall back position to be identified early in the detailed design stage to inform the WELTAG 3 report and steer the procurement route to deliver the project within funding	3-Medium	3-Possible	R-9	A	R-0	2 low	R-0	R-0	R-0	R-0	R-0	R-0	
R-3	Technical approvals can become protracted and add delay to the project. Tender process may have commenced at risk of agreed works not being approved for construction, leading to CE's with the Contractor due to changes in agreed design let at tender. Will require Client Lead to advise various internal teams of VOG scheme/programme and try to ensure review periods can be as efficient as possible to reduce risk of delay etc..Designer happy to discuss in advance to help process.	3-Medium	3-Possible	R-9	A	£ 30,000.00	R-3	£ 10,000.00	£ 30,000.00	£ 30,000.00	£ 30,000.00	£ 90,000.00	£ 10,000.00	
R-4	Purdah period and awaiting new Local Government appointments may lead to project delays or change of direction without delegated powers to continue project.	3-Medium	3-Possible	R-9	A	R-0	R-0	R-0	R-0	R-0	R-0	R-0	R-0	
R-5	If delegated powers are not given to officer level current planning decision programmed falls with Purdah/ New local government appointments which may introduce delays to delivery.	3-Medium	3-Possible	R-9	A	R-0	R-0	R-0	R-0	R-0	R-0	R-0	R-0	
R-6	If delegated powers are not given to officer level current planning decision programmed falls with Purdah/ New local government appointments which may introduce delays to delivery.	3-Medium	3-Possible	R-9	A	R-0	R-0	R-0	R-0	R-0	R-0	R-0	R-0	
R-7	Currently assumed that the Client PM to become agency staff in New Year, and continue to PM scheme for client. New processes and approvals may become relevant to reduce risk of additional time / delay in responses.	2-Low	2-Unlikley	R-4	G	R-0	2 low	R-0	R-0	R-0	R-0	R-0	R-0	
R-8	Unlikely, but will be reviewed if issue arises going into new year.	2-Low	2-Unlikley	R-4	G	R-0	2 low	R-0	R-0	R-0	R-0	R-0	R-0	
R-9	Revised thresholds published by NPS and have increased from previous EU thresholds. Estimated works unlikely to exceed threshold if agreed phasing is continued with.	1-V Low	1-Negligible	R-1	G	R-0	R-0	R-0	R-0	R-0	R-0	R-0	R-0	
R-10	To fit in with funding window, construction timescales have been reduced from 6 months to 5 months based on the assumption phasing by a contractor could be proposed within these timescales. Agreed with client that the existing car park will be closed to the general public so the Contractor has whole site under their control to maximise effeciency / output of the workforce.	3-Medium	3-Possible	R-9	A	R-0	2 low	R-0	R-0	R-0	R-0	R-0	R-0	
R-11	Programme dicated by funding body so construction has to be completed by March 2023. Design work and original programme also affected by funding delay so no opportunity to accelerate design process and commence construction earlier.Geotechnical site work undertaken so ground conditions reasonably well understood but weather cannot be mitigated against. Designer and client have agreed to hand over virtually the whole car park area so the contractor can maximise the effiicency of his workforce and maximise output to hopefully shorten the duration to minimise risk of bad weather.	3-Medium	3-Possible	R-9	A	£ 240,000.00	3 medium	£ 60,000.00	£ 240,000.00	£ 180,000.00	£ 180,000.00	£ 720,000.00	£ 60,000.00	Used estimated monthly contractor's costs for max amount, based on £1.2M tender price and 5 month duration = £240k. Min cost used 1 weeks figure
R-12	Statutory undertakers diversion and relocations etc to be addressed ASAP in Jan 22-Update-site meetings held in March 22 and 11KV supplies neeed diverting and a gas main capping off-awaiting costs back from Stats Companies (W&W, WP &Associated Ports)	4-High	5-Almost Certain	R-20	R	TBC	4 High	TBC	TBC	TBC	TBC	TBC	TBC	2No. 11KV cables to be diverted-on southern side of access road under existing footway off the roundabout and a gas main to be capped off at Dock View Road end as it crosses the whole site north-south direction (it is abandonned)
R-13	Design Team and client have kept the land agent informed throughout the project and have a good working relationship. Negotiations currently underway and funds available.	3-Medium	3-Possible	R-9	A	£ 515,000.00	2low	£ 515,000.00	£ 515,000.00	£ 515,000.00	£ 515,000.00	£ 515,000.00	£ 515,000.00	Client advised to allow £515,000.00 for land purchase and fees.
R-14	Client and Designer have discussed and agreed this piece of work is required. Designer has provided estimated cost and Client to actively seek funding within Council or Funding bids going forward to try and secure March 2023 - Mar 2024 delivery.	4-High	3-Possible	R-12	R	£1,400,000.00	3 medium	£1,400,000.00	£1,400,000.00	£1,400,000.00	£1,400,000.00	£1,400,000.00	£1,400,000.00	
R-15	Designer has contacted various NR contacts to open dialogue on the Northern element of the Works so that it can be discussed and agreed prior to Mar 2023 start date.	3-Medium	3-Possible	R-9	A	R-0	R-0	R-0	R-0	R-0	R-0	R-0	R-0	
R-16	Designer has estimated the cost and advised the Client, who will review potential funding streams in due course (works anticipated Mar 2024-Mar 2025)	4-High	3-Possible	R-12	R	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	£ 4,500,000.00	
R-17	Designer has undertaken Geotechnical site works to confirm rock depth, drainage runs have to be installed within extents of rock layer in some areas due to key control levels within parts of the site. Designer will where possible tilt design levels	4-High	3-Possible	R-12	R	£ 50,000.00	3 medium	£ 25,000.00	£ 100,000.00	£ 75,000.00	£ 150,000.00	£ 300,000.00	£ 50,000.00	

8.18. Statutory Undertakers

Where necessary, statutory undertakers will be engaged as early as possible in the design process in order that any potential risks to programme and cost can be minimised.

8.19. Benefits Realisation Plan

The benefits stemming from the scheme itself are relatively straightforward, relating to the provision of improved facilities for rail users, providing in turn journey quality benefits. When combined with the planned train service improvements, this will entail a significant overall improvement in the rail services available. This is shown in the Causal Chain and the Logic Map provided in the Strategic Case.

Whilst the realisation of the direct benefits stems only from the scheme itself, the benefits from the train service improvements are not within the gift of the scheme. Achieving these complementary and synergistic benefits requires the actions of TfW. Further benefits linked to housing/commercial development are reliant on developers and businesses, although land value uplift obtained solely as a result the station improvements is captured in the Transport Case.

The following benefits realisation management plan provides details of how the benefits process will be applied to the scheme. It describes the tasks, resources, time frame and approach to each step of the framework.

8.20. Benefits Management – Seven Phase Approach

In defining and preparing the BRP, we have used a seven-stage approach which is integrated with the development of the business case as a whole.

8.21. Business Case Benefits Reconciliation

Within this part of the process, the following steps have been taken:

- Definition of scheme objectives, the benefits which stem from these and how these link to stakeholder requirements (as set out in the Strategic Case);
- Categorisation of scheme inputs, deliverables, benefits and impacts as inputs, outputs, outcomes and wider impacts, as set out in the Logic Map;
- Reconciliation of scheme benefits with the development of the business case and the five cases, especially the Transport Case and the modelling being undertaken to quantify the benefits;
- The outcome of this reconciliation process will be reported in the detailed tables of inputs, outputs, outcomes and wider impacts in the Monitoring and Evaluation Framework (MEF).

The key category in relation to benefits is the 'outcome' level – ie what the scheme achieves in itself, along with 'wider impacts' which reflect the enabling role in relation to economic development.

8.22. Benefits Ownership

Assignment of benefits ownership will be as follows:

- The directly attributable benefits (outcomes) should be owned entirely by the council, as set out in the MEF;
- Wider impacts should be managed and owned by the council, as set out in the MEF.

8.23. Benefits Activity Plan

8.23.1 Outcome Benefits

Table 40 - Outcome Benefits Activity Plan

Benefit	Rationale	Five Case Model Categories	Link to MEF
Higher user satisfaction	The provision of the new facilities is expected to provide a measurable improvement in satisfaction. However, this will be improved further through the implementation of improved train services, requiring co-ordination of the two aspects	Reflected in the Transport Case as part of the cost benefit calculation	This will be measured before and after the implementation of the scheme.
Improved safety and security	The scheme is expected to improve both perceived and actual safety and security for station users	Reflected in the Transport Case as part of the cost benefit calculation	This will be measured before and after the implementation of the scheme.

Better access to jobs and services	The provision of the new facilities is expected to provide measurable improvements in accessibility. However, this is only in relation to the 'journey quality aspects for the scheme itself. This will be improved further through the implementation of improved train services, enabling accessibility mapping tools to demonstrate the combined improvement	Quantified in the Transport Case and detailed in the Strategic Case	These changes will be measured using GIS-based accessibility mapping tools and potentially through user surveys.
Increased rail use	The scheme in itself is expected to generate more rail use although this complemented by train service improvements.	Reflected in the Transport Case	Will be measured through TOC LENNON/MOIRA data

8.24. Wider Impacts and Complementary Actions

The wider impacts which are supported or enabled by the scheme cannot be delivered, measured or reported in isolation. They are part of wider programmes linked to the development plans for the area, the broad regional strategic growth strategy and wellbeing strategies.

The benefits stemming from these can only be achieved through partnership working. The table below indicates how such benefits can be realised.

Table 41 - Wider Benefits Activity Plan

Benefit	**Rationale**	**Five Case Model Categories**	**Link to MEF**	**Complementary Actions to Achieve Benefits & Other Factors**
More sustainable communities	The availability of good train services, complemented by rail station improvements, will encourage people to seek employment and services in the wider area, improving the local economy, whilst also encouraging the use of environmentally	Part of Strategic Case. Not directly taken into account in the BCR calculations in the Transport Case but contributes to the final VfM category	This will not be measured directly as part of the scheme monitoring but would be tracked as part of the wider network efficiency monitoring	Other local highway schemes Strategic highway schemes Public transport investment Growth (jobs and housing) Sustainable travel plans Cycle network development

Benefit	Rationale	Five Case Model Categories	Link to MEF	Complementary Actions to Achieve Benefits & Other Factors
	sustainable travel modes			
Housing and economic growth	The scheme is designed to make travel more attractive and subsequently to make housing developments more attractive, as well as encouraging engagement in wider area jobs and services.	Part of Strategic Case and taken into account in the BCR calculations in the Transport Case	This will not be measured directly as part of the scheme monitoring but would be tracked as part of the wider CCR monitoring plan	Developments in the area Planning consents granted
Improved wellbeing	Improved travel opportunities will improve access to jobs, training, services (including healthcare) and social opportunities – providing a contribution towards employment and wellbeing.	Part of Strategic Case. Not directly taken into account in the BCR calculations in the Transport Case but contributes to the final VfM Category	This will not be measured directly as part of the scheme monitoring but would be tracked as part of the wider monitoring by the council	All social, economic (including education and training), environmental and healthcare initiatives
Well-connected communities	Increased rail services with improved access will significantly increase the range of destinations, and therefore opportunities for residents	Part of Strategic Case. Not directly taken into account in the BCR calculations in the Transport Case but contributes to the final VfM Category	This will be measured and reported through GIS-based accessibility mapping and potentially passenger/user surveys	Integration, including bus, taxi and cycle, as well as walking routes to the stations

8.25. Baseline Measures

These will be detailed within the MEF, encompassing input, output, outcome and wider impacts elements

8.26. Benefits and Wider Change

The delivery of station improvements in themselves will not trigger significant economic or social change, however, they will lend significant support to bringing about this change and alongside the placemaking function of Barry Docks Transport Interchange will facilitate ongoing housing and economic development.

8.27. Go Live Activities

The nature of rail station improvements indicates that in general, customers are tolerant of inconvenience when they understand that this is part of a positive change. Clear communication before, during and after the change is essential. Once implemented, user satisfaction will improve, and patronage will rise over time. This will continue as train services improve. This will be reviewed as set out in the MEF.

8.28. Post Implementation Benefits Tracking

These are set out in the monitoring and evaluation plan

8.29. Monitoring and Evaluation

Monitoring will take place at predefined intervals upon successful delivery of the scheme, notably:

- 1 year post scheme opening;
- 3 years post scheme opening; and
- 5 years post scheme opening.

8.29.1 The following Monitoring and Evaluation Framework (MEF) has been drawn up and will be completed at appropriate stage of monitoring.

What does the project aim to deliver?		What is the change you expect to see?				How do you plan to measure this change?	
Objective	**Input**	**Output**	**Outcome**	**Impact**	**Indicator**	**Method**	**Frequency**

9. Conclusion

Based on the work undertaken to produce this business case, it is proposed Option 2 for the Barry Dock Transport Interchange should be taken forward for delivery, including housing/commercial development to the north of the station as a later development phase.

Appendix A: Policy & Strategy Context

National Context

Environmental (Wales) Act 2016

The international Paris Accord 2015 seeks to keep global temperature increases well below two degrees.

The IPPC (Intergovernmental Panel on Climate Change) - In their Climate Change 2021 report, conclude that:

- There is still time to limit the worst effects of climate change;
- Stabilising the climate will require the globe to reach net-zero CO2 emissions by 2050;
- Human activities have already caused around 1.1°C warming;
- The planet's climate is warming faster than anything experienced before;
- Every part of our planet is already seeing multiple and increasing changes in their climate systems;
- Global warming is very likely to reach 1.5°C by 2040;
- Climate change is intensifying the water cycle affecting rainfall patterns;
- Coastal areas will see continued sea-level rise throughout the 21st Century;
- Further warming will amplify impacts on frozen regions;
- The ocean is warming and acidifying.

In 2019 the UK Government amended the Climate Change Act 2008 by increasing the target for reducing greenhouse gas emissions in the UK to at least 100% lower than 1990 levels by 2050. This is otherwise known as the net zero target.

The Environment (Wales) Act 2016 supports finding ways to secure healthy, resilient and productive ecosystems for the future whilst still meeting the challenges of creating jobs, housing and infrastructure.

Welsh Government has set out its legal commitment to achieve net zero emissions by 2050, but is pushing to "get there sooner". It recognises that climate change will impact us all, but the stark reality remains our most vulnerable communities will be hit the hardest. Welsh Government recognises that transition towards a Net Zero Wales must be fair and just, in order to achieve a green and clean future with good quality jobs and leave no communities behind.

Wales Spatial Plan, 2008

The 2008 version of the Wales Spatial Plan updates that originally adopted in 2004 and is the overarching planning framework for Wales. Barry Docks Station is located in the South East Wales region (Capital Network) for which the plan outlines the following vision:

'An innovative skilled area offering a high quality of life – international yet distinctly Welsh. It will compete internationally by increasing its global visibility through stronger links between the Valleys and the Coast and with the UK and the rest of Europe, helping to spread prosperity within the area and benefiting other parts of Wales.'

Three priorities are identified for the region:

- The area will function as a networked city region, on a scale to realise its international potential, its national role and to reduce inequalities;
- A fully integrated high-quality transport system is necessary for this to happen. Over the 20 Year horizon of the Wales Spatial Plan, all the Area's key settlements should be linked to Cardiff or Newport by suitable high capacity public transport;
- The success of the area relies on Cardiff developing its Capital functions, together with strong and distinctive roles of other towns and cities.

Improvements to Barry Docks Station will contribute directly to the proposals for a fully integrated, high quality transport system in the form of an interchange hub. It will also help to achieve the priorities by better linking the station and its surrounding areas to the wider Vale of Glamorgan and Cardiff Capital Region, including Cardiff, Newport and the Valleys.

Planning Policy Wales (Edition 10, Dec 2018)

Planning Policy Wales, Edition 10 (2018) has been developed specifically to take account the Well-being of Future Generations (Wales) Act 2015 and incorporate its objectives into the planning process.

To support the delivery of the Wellbeing goals, Planning Policy Wales Edition 10 focuses on four key themes that contribute to Placemaking. These four themes and their deliverables are summarised in the table below

Table 2 - Planning Policy Wales - Key Themes

Key Theme	Deliverables
Strategic & Spatial Choices	Good Design Promoting Healthier Places The Welsh Language Sustainable Management of Natural Resources Strategic Planning Placemaking in Rural Areas Managing Settlement Form
Active & Social Places	Transport Housing Retail & Commercial Centres Community Facilities Recreational Spaces
Productive & Enterprising Places	Economic Development Tourism The Rural Economy Transport Infrastructure Telecommunications Energy Minerals Waste
Distinctive & Natural Places	Landscape Coastal Areas Historic Environment

	Green Infrastructure Biodiversity Water, Air, Soundscape and Light Flooding De-risking

Five outcomes are also identified, which highlight the sustainable features to be used as a starting point for plan makers and decision takers and therefore, considered at the earliest possible opportunity:

- Creating and Sustaining Communities;
- Growing Our Economy in a Sustainable Manner;
- Making Best Use of Resources;
- Maximising Environmental Protection and Limiting Environmental Impact; and
- Facilitating Accessible and Healthy Environments.

This study considers the transport hierarchy and appraises several options for each element of the Barry Docks Station infrastructure proposed. All options shortlisted meet one or more of the wellbeing goals (see below) and take account of the five ways of working the Wellbeing Act promotes. In this context, they will also help to achieve the key themes and outcomes sought by Planning Policy Wales Edition 10. For example, improved public transport routes will contribute to the transport and transport infrastructure deliverables of the Active & Social Places and Productive & Enterprising Places themes, respectively and in turn to the outcome of Facilitating Accessible and Healthy Environments.

Planning Policy Wales (Edition 11, February 2021)

Planning Policy Wales was updated with the publication of Edition 11 by WG in February 2021. This builds on Edition 10 and in particular adds a section on Placemaking. This highlights Placemaking Wales as an initiative to support the implementation of placemaking in Wales. The project is being led by the Placemaking Wales Partnership – a multi-disciplinary group representing professions and organisations involved in shaping the built and natural environment in Wales.

A Placemaking Wales Charter has been developed to reflect the collective and individual commitment of these organisations to support the development of high-quality places across Wales for the benefit of their communities (dcfw.org/placemaking/placemaking-charter/).

The Charter includes six placemaking principles that those who sign-up agree to promote as part of their support for placemaking.

People and community

The local community are involved in the development of proposals. The needs, aspirations, health and well-being of all people are considered at the outset. Proposals are shaped to help to meet these needs as well as create, integrate, protect and/or enhance a sense of community and promote equality.

Location

Places grow and develop in a way that uses land efficiently, supports and enhances existing places and is well connected. The location of housing, employment and leisure and other facilities are planned to help reduce the need to travel.

Movement

Walking, cycling and public transport are prioritised to provide a choice of transport modes and avoid dependence on private vehicles. Well designed and safe active travel routes connect to the wider active travel and public transport network and public transport stations and stops are positively integrated.

Mix of uses

Places have a range of purposes which provide opportunities for community development, local business growth and access jobs, services and facilities via walking, cycling or public transport. Development density and a mix of uses and tenures helps to support a diverse community and vibrant public realm.

Public realm

Streets and public spaces are well defined, welcoming, safe and inclusive with a distinct identity. They are designed to be robust and adaptable with landscape, green infrastructure and sustainable drainage well integrated. They are well connected to existing places and promote opportunities for social interaction and a range of activities for all people.

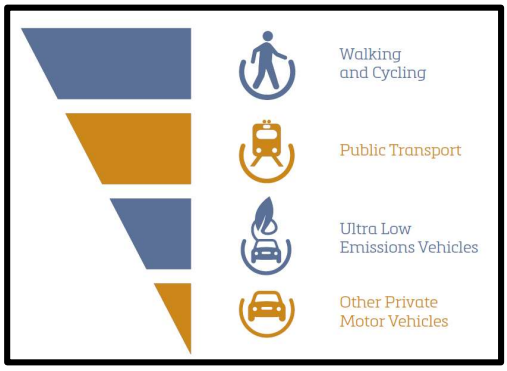
Identity

The positive, distinctive qualities of existing places are valued and respected. The unique features and opportunities of a location including heritage, culture, language, built and natural physical attributes are identified and responded to.

A Placemaking Guide has also been published with further guidance on the principles of placemaking and how they can be applied in practice (dcfw.org/placemaking/resources/).

In relation to transport the new guidance outlines how the planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. It suggests that by influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution.

It also identifies the Sustainable Transport Hierarchy for Planning, placing sustainable transport modes ahead of the use of private motor vehicles, as follows:



The Wales Transport Strategy is identified as providing the strategic policy framework for transport related activities in Wales, with a new Wales Transport Strategy currently being developed and expected to be published in 2021. This will set out the long-term vision for transport over the next 20 years, as well as five-year priorities.

Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act aims to improve the social, economic, environmental and cultural well-being of Wales and ensure those working to do so take a more joined

up approach. The Act requires public bodies such as local authorities, health boards and government agencies to place long-term sustainability and quality of life at the forefront of their thinking, and to work with each other, key stakeholder organisations and the general public to prevent and tackle the problems they face.

The Act was established following an extensive consultation, led by WG, known as the National Conversation and passed into law in April 2015. It puts in place a number of statutory duties that the bodies referred to in the Act must undertake. This includes a requirement for publishing a Wellbeing Statement, Annual Reporting and Responding to the Future Generations Commissioner. The Act also establishes Public Services Boards (PSBs) for each local authority area in Wales, each of whom must undertake a wellbeing assessment of their area and prepare and publish a plan (The Local Well-being Plan) setting out their objectives and the steps they will take to meet them. That the duties are met is overseen and supported by the Auditor General and the Future Generations Commissioner for Wales.

To create a more sustainable Wales, public bodies must work towards seven Well-being Goals and enact the five Ways of Working listed below.

The seven well-being goals are:

1. A globally responsible Wales;
2. A Wales of vibrant culture and thriving Welsh Language;
3. A Wales of cohesive Communities;
4. A more equal Wales;
5. A healthier Wales;
6. A resilient Wales; and
7. A prosperous Wales.

The Act puts in place a 'sustainable development principle' which tells organisations how to go about meeting their duty under the Act. In the Act, any reference to a public body doing something "in accordance with the sustainable development principle" means that they must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. The five ways of working identified by the Act to underpin this principle are:

1. Integration;
2. Involvement;
3. Collaboration;
4. Long Term; and
5. Prevention

As all infrastructure improvements under consideration for this study aim to support sustainable and/or active travel, in some form, they all positively address the Wellbeing of Future Generations Act goals and in particular goals 3 to 7. The five ways of working are also addressed, as follows:

Long Term – any option shortlisted for Barry Docks Station will address long term aims through its appraisal against future trends and wider issues. For example, the emerging impact of the removal of the Severn Bridge tolls and the new Local Development Plans for the study area have been considered, as have future technologies that may be widely adopted;

Prevention – each chosen option aims to address one or more of the current problems occurring or prevent them getting worse. A number of problems accessing Barry Docks Station have been identified and the objectives and interventions established are specifically designed to mitigate these.

Integration – At WelTAG Stage 1 (Strategic Outline Case), the focus is on the strategic context for the improvements proposed and how interventions can be packaged to support this, including consideration of the MCC Wellbeing Objectives. At WelTAG a Stage 2 (Outline Business Case) other organisations' wellbeing objectives and the impacts upon these will need to be considered.

Collaboration – Key Stakeholders from a number of different bodies, including the County Council Review Group and TOC's, have been engaged during the course of this Stage 1 WelTAG process to ensure that collaboration on addressing the identified problems is achieved and each shortlisted intervention addresses a range of stakeholders needs.

Involvement – Key Stakeholders, including rail passengers using Barry Docks Station, have been engaged both in order to identify the problems of accessing Barry Docks Station and to identify potential solutions. This engagement will continue and expand to others at future WelTAG stages to provide feedback on the shortlisted options.

Prosperity for All: The National Strategy, 2017

The National Strategy sets out four key themes:

1. Prosperous and Secure

- Support people and businesses to drive prosperity;
- Tackle regional inequality and promote fair work; and
- Drive sustainable growth and combat climate change.

2. Healthy and Active

- Deliver quality health and care services fit for the future;
- Promote good health and well-being for everyone; and
- Build healthier communities and better environments.

3. Ambitious and Learning

- Support young people to make the most of their potential;
- Build ambition and encourage learning for life; and
- Equip everyone with the right skills for a changing world.

4. United and Connected

- Build resilient communities, culture, and language;
- Deliver modern and connected infrastructure; and
- Promote and protect Wales' place in the world

The improvements proposed for Barry Docks Station will support theme 1 by enabling sustainable growth and combatting climate change whilst also addressing regional inequality and promoting fair work by enhancing opportunities to access employment. The active travel initiatives included within the proposals will promote good health and wellbeing for users and as all proposals relate to sustainable modes all will contribute to healthier communities and better environments.

Theme 4 is supported by proposals aiming to improve access to rail services serving the station, delivering modern and connected infrastructure. These rail services offer direct connections to key employment, retail and service centres including the Cardiff Capital Region to the west, Bristol and the West of England combined authority region to the east and Gloucester and its surrounds to the north west.

Prosperity for All: Economic Action Plan: 2017

The National Strategy is underpinned by an Economic Action Plan also produced by the Welsh Government (WG). This has the aim of growing the economy inclusively, spreading opportunity and promoting well-being within Wales. Its stated vision is 'inclusive growth, built on strong foundations, supercharged industries of the future and productive regions'.

Reflecting the National Strategy, the Economic Action Plan focusses on the following objectives:

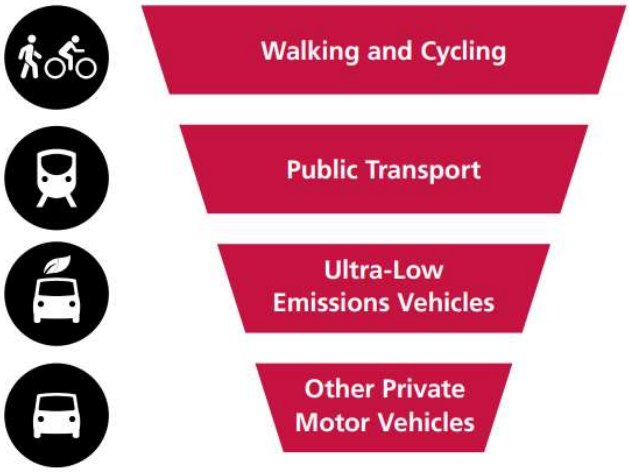
- Supporting people and businesses to drive prosperity;
- Tackling regional inequality and promoting fair work;
- Driving sustainable growth and combating climate change;
- Building ambition and encouraging learning for life;
- Equipping everyone with the right skills for a changing world;
- Delivering modern and connected infrastructure; and
- Promoting and protecting Wales' place in the world.

The interventions proposed for Barry Docks Station will support the economic plan in much the same way as the National Strategy by improving access to the station and the rail services it offers, for all. Inequality and fair work will be addressed by improved access to employment. Sustainable growth and combatting climate change will be supported by the increased use of sustainable transport modes generated and modern and connected infrastructure will be provided by the proposed initiatives and their integration. By linking the communities of south east Wales and Southwest Gloucestershire to the station and through its services, to economic development in Cardiff, Bristol, Gloucester and their surrounds, the scope for people and businesses to drive prosperity in the region will be enhanced.

Llwybr Newydd - The Wales Transport Strategy 2021
Llwybr Newydd - The Wales Transport Strategy 2021 sets out the Welsh Governments vision on how the transport system can help deliver priorities for Wales helping to put Wales on a *"pathway to creating a more prosperous, green and equal society."*

The strategy takes account of the Welsh Governments Well-being ambitions and the Five Ways of working and places an emphasis on these priorities when considering bus schemes, active travel, rail schemes, road, streets and parking with the aim of delivering an accessible, sustainable and efficient transport system.

The strategy proposes the following transport hierarchy:



The strategy focuses on the Welsh Governments duties under the Well-being of Future Generations (Wales) Act 2015, current and future commitments to decarbonisation, the governments duty as the Highway Authority within Wales and the duties set out for Government within the 2010 Equality Act.

The strategy's priorities for transport focus on providing sustainable options for people and business, placing Walking and Cycling at the top of their Sustainable Transport Hierarchy followed by Public Transport. The following three key priorities are identified within the strategy:

- Priority 1: Bring services to people in order to reduce the need to travel.
- Priority 2: Allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure.
- Priority 3: Encourage people to make the change to more sustainable transport

The Strategy sets out to deliver its vision through a number of action plans. From a national perspective the National Transport Delivery Plan (NTDP) will develop a detailed five-year plan setting out the specific transport interventions financed by the Welsh Government. The plan will identify expenditure based on the priorities in Llwybr Newydd, including the delivery of projects that are already underway. The Statement of Funds Available (SoFA) set out the funds available to provide more certainty over each funding period, identifying what can be spent on transport services, maintenance and projects.

At a regional level the strategy sets out that Regional Corporate Joint Committees will prepare Regional Transport Plans for transport in their area, shaped by Llwybr Newydd and aligned with Future Wales – the National Plan 2040 and the emerging regional development plans.

Finally the strategy will promote the delivery of mini plans for each mode of transport including for rail, buses and active travel. In relation to each mode the strategy identifies a specific vision and long list of priorities. The vision outlined for Rail, Bus and Active Travel is identified below:

- Rail - We want to achieve the efficient and accessible passenger and freight rail services that people and businesses in Wales need, in order to better support our wider well-being ambitions;
- Bus - A stable and coherent network of bus services that are fully integrated with other modes of public transport, that are reliable, affordable, flexible, easy to use, low-carbon and that encourage more people to use the bus rather than their cars;
- Active Travel - In line with the Active Travel (Wales) Act we want walking and cycling to become the normal choice for shorter journeys, because active travel is better for our health, our environment and the economy

The proposals for Barry Docks Transport Interchange support the overall vision and three key priorities of Llwybr Newydd - The Wales Transport Strategy 2021. They will also support the specific

visions identified for each mode and within this the priorities outlined for the NTDP, CJCs and the mini plans to come.

Network Route Study, Network Rail, March 2016

Every 5 years Network Rail (NR) undertakes a review of potential future demand for rail services and based on this sets out its 5 year and longer-term aspirations for the network. It last undertook this exercise for services in Wales and between Wales and the rest of the UK in 2016. The subsequent route study report identifies those services Network Rail would like to see increased in order for others to consider how funds might be sought to bring about the service improvement/s.

The review is an evidence-based study, focussed on existing rail lines and developed collaboratively with the railway industry, with funders and with stakeholders. It assesses how demand for rail will grow in response to changes in the economy, socioeconomic changes, environmental considerations, sustainability, social value and value for money; i.e. macro-economic factors, such as distribution of employment, income and homes, micro economic factors, such as the cost of travel by car and rail, car ownership, and competition between modes, demographics, such as population, age of population and household composition, consumer tastes, such as the use of travel time and travelling alternatives and the supply of travel opportunities, such as rail generalised journey times and punctuality. Overall strong growth in demand is forecast reflecting both the fact that patronage in Wales has almost doubled over the past 10 years and that economic and housing development going forward is expected to continue to drive this trend.

As an exemplar of this growth, the study highlights increasing patronage on the Valley lines and the Cardiff/London line which is expected to experience the most growth in patronage between 2013 and 2023 (34%) and the 2nd greatest growth between 2023 and 2043 (142%). The report also forecasts growth for commuting into Cardiff City Region will increase by 68% by 2023 and 144% by 2043. This will support plans to upgrade the station at Barry Docks to facilitate the increase in demand at the station and the Valley lines in general.

Overall, the Network Route Study, clearly confirms, on the basis of detailed quantitative analysis (albeit not Barry Docks Station specific), the expected development growth and resulting increase in rail patronage envisaged for SE Wales by the national and regional policy and strategy documents summarised above and below. It also confirms that there are medium, and long-term rail aspirations to 2030 to accommodate the proportion of this growth that will arise at Barry Docks Station, with a new bus interchange with rail. The proposals for infrastructure improvements at Barry Docks Station are a necessary part of the improvements needed to facilitate this increased rail patronage in a timely and sustainable manner.

Active Travel (Wales) Act (2013)

The Active Travel (Wales) Act was passed by the National Assembly of Wales in 2013 and aims to secure new and enhanced active travel routes and facilities, improving provision for walkers and cyclists across Wales. The Act requires Local Authorities to map existing active travel routes and regularly monitor active travel facilities / routes to review where improvements and/or new routes are required. Part of this process requires Local Authorities to provide annual reports outlining how much routes are used.

WG ministers have identified those built-up areas with a population greater than 2,000 people in which the Active Travel Act will apply. In Barry the council have produced an Integrated Network Map for Active Travel as required by law, which is approved by Welsh Government. Investment in delivering the infrastructure improvements proposed for Barry Docks Station will complement and enhance the local Active Travel network.

Regional Context

The Cardiff Capital Region (CCR) City Deal is a £1.28 billion programme expected to achieve a 5 percent uplift in the region's GVA by delivering a range of programmes to increase connectivity,

improve physical and digital infrastructure and improve regional business governance. The 'deal' covers all 10 local authorities within south east Wales, including The Vale of Glamorgan.

One of the key aspects of the deal is the improvements to connectivity within the region and support for new infrastructure that it offers. It includes a commitment to spend £1.2 billion on the Capital City Region infrastructure, levering in up to 25,000 new jobs and an additional £4 billion of private sector investment. Both the UK and Welsh Government are contributing £500 million to the Capital City Region Investment Fund respectively, while the ten local authorities will contribute a minimum of £120 million over the 20-year duration of the Fund.

Within Barry, the CCR City Deal has proposed new employment sites connecting Barry to other areas in and around the Vale, such as the St Athans Enterprise Zone, of which Barry residents are likely to want access to via rail. Furthermore, the creation of a Housing Investment Fund entitled 'Homes for all the Region' is set to bring forward up to 2,800 homes for the region, with at least 50 per cent of the fund targeted at the areas of lowest economic competitiveness. This will attract residents to employment opportunities at economic developments in Barry, of which an integrated transport system will greatly support – such as the proposals at Barry Docks Station.

To achieve improved transport connectivity one of the main priorities is the delivery of the South Wales Metro. £738million of the City Deal fund has been pre-allocated for the project, split between the Valley Lines Electrification programme and the wider South Wales Metro scheme. The Metro is regarded as the "cornerstone" of the City Deal and a Regional Transport Authority has been set up to manage its implementation.

The south east Wales Metro includes proposals for improvement to the public transport network across south east Wales. As part of the Wales and Border Franchise, KeolisAmey, the train operating company (TOC) are tasked with implementing the Metro proposals.

Cardiff Capital Region, City Deal in collaboration with Welsh Government and Transport for Wales has identified a proposed £50 million programme of local transport schemes to support the implementation of the South Wales Metro. Phase 1 of this 'Metro Plus Regional Transport Authority (RTA) Programme' will see each Local Authority within South East Wales receive, on average, a £3m share to implement schemes in their area.

The programme of schemes proposed include:

- The creation of 'interchanges' that incorporate all modes of transport, acting as key hubs for travel;
- Enhanced park and ride facilities, complete with electric charging points; and
- New and extended Metro networks that will open up and enable improved access to new and existing activities for work, training, education, culture, retail and leisure.

Phase 1 of Metro Plus will see a £15m investment from Cardiff Capital Region City Deal, with a potential co-investment of £15m from Welsh Government. The remaining £20m will be sourced through local developer contributions, private sector investment and other contributions such as council capital funds (in the form of match funding). Programme delivery will commence in 2019 and be complete by 2022.

Various schemes are proposed as part of Phase 1 of Metro Plus across the ten local authorities including the subject of this study, the Barry Docks Interchange – which includes the development of a new bus and rail interchange at Barry, complete with bus bays, provision for taxis and an extension to the existing park and ride site.

Transport for Wales (TfW) is a not for profit company owned by Welsh Government, established to oversee operation of the passenger line franchise throughout Wales and is the brand used by Keolis Amey as the TOC contracted to provide the services. The Operator and Development Partner

(ODP)Agreement between the two, established through the recent tender process, includes an action plan for the service and station improvements sought by 2024.

Proposed improvements relevant to SE Wales include:

Services

2019

- New train assembly starts at factory in Newport.
- Provide ticket machines at all South Wales Metro stations by April 2019.

2020

- Start of new fare initiatives, including half price for 12 to 18-year-olds.
- Pay-as-you-go scheme launched for South Wales Metro (rolling out further in 2021).

2021

- First of the 148 new trains start being rolled out.
- Free Wi-Fi for trains and stations.

2022

- Passengers will be able to board on the same level as the train on the Cardiff Valley Lines (CVL).

2023

- An additional service from Cardiff to Bridgend, via Barry is proposed, running Monday to Saturday.
- More Sunday services introduced.
- Metro services on Cardiff City line.

2024

- An additional service on Sundays on the Cardiff to Bridgend line via Barry.
- First class introduced on Swansea to Manchester service.
- Target of 100% for secure station accreditation.

Stations

The ODP is committed to the delivery of a significant investment programme in stations, to improve standards and facilities for customers, enhance the condition of the estate and increase the operational performance and reliability of the station estate. This includes:

- Full condition survey of every station across the network.
- Creation of a station asset information model to inform decision making on investment plans and investment in station asset management systems to improve central knowledge and information on station assets.
- Creation of a new Station Asset Management Plan and align/enhance processes to ensure ISO 55001 accreditation.
- Design and delivery of a Station Improvement Plan (STIP) delivering nearly £200m of station enhancements, comprising an improvement plan for every station across the network, including:

- Monitored CCTV at every station.
- Enhanced CIS and new digital information screen.
- Improved station facilities including additional/refurbished waiting rooms, platform shelters and toilets.
- Minimum of 1,500 new car parking spaces and additional cycle shelters to improve customer access.
- Improved station commercial retail.
- Improved accessibility through more step free station schemes.
- Projects at key hub and interchange stations to improve ticket offices, customer facilities and accessibility.
- Community based projects (including three Community Rail Partnerships) with funding to bring disused station space back into use.
- Rebranding all stations.
- A Green Stations and Art Work fund.

It is understood that Barry Docks Station is considered out of scope for the Station Improvement Programme (STIP)

Local Context

The Vale of Glamorgan Local Development Plan, 2011 to 2026

The Local Development Plan (LDP) provides a framework for sustainable development within the Vale of Glamorgan up to 2026, which will guide the growth of the Vale of Glamorgan over a fifteen-year period. The LDP identifies the infrastructure needs of the communities within the Vale of Glamorgan, in terms of employment, facilities and services needed to support that growth.

The LDP demonstrates the essential role that the Vale of Glamorgan plays in the success of the wider City-Region Area and highlights the use of Barry Docks as a key transport interchange and gateway to the town. Alongside this, the council has identified an integrated and phased approach to the redevelopment and improvement of Barry Dock Station.

Initial phases have resulted in the upgrading of the station platform and the construction of a new strategic footbridge linking Thompson Street to the Holton Reach site on Barry Waterfront. Supported by the Welsh Government and the South East Wales Transport Alliance. A park and ride site has also been completed at Barry Docks station, comprising the upgrading of the Barry Dock Office car park and provision of approximately 220 park and ride spaces.

Overall, the LDP Strategy will seek to promote new development opportunities in the 'South East Zone' of the county, which is inclusive of Barry. Whilst Barry Docks Station upgrade scheme will complement the public transport routes and provision of new facilities for walking, cycling and rail surrounding the station, it will also further integrate Barry Town with the surrounding area. For example, the station will link Barry's economic assets such as MoD St Athan and Barry Town to the proposed housing developments in areas such as Barry Waterfront, Llantwit Major, Dinas Powys and the Rural Vale; key employment sites within Barry, Cowbridge and Penarth; retail developments in Barry Town Centre and Cardiff International Airport and its surrounding enterprise zone.

It will also provide improved sustainable transport access from Barry to an increasing range of employment opportunities being developed in the wider Cardiff Capital region. In particular increased park and ride capacity at the station will encourage greater use of rail services to access this employment and in turn reduce congestion on the 3 key road corridors between Barry and Cardiff.

Many existing and emerging employment sites are located adjacent or close to the rail network. While CCR's plans for the South East Wales Metro will enhance the rail services and infrastructure available to improve the experience of rail users over the next 5 years. This includes extending provision on the Vale of Glamorgan line serving Barry from 4 trains an hour to 5 trains an hour on weekdays by 2023 and including Sundays from 2024.

It is envisaged that the development proposed for Barry will help to provide new and improved community services and facilities and create new local affordable housing and employment opportunities during the LDP period. In order to ensure the successful delivery of the LDP Strategy, specific area objectives have been identified for the key settlement of Barry. These objectives provide a framework for Managing Development and Growth in the area.

Objectives for Barry include:

- Create new employment, training and learning opportunities to support existing businesses and encourage appropriate economic development and inward investment to further the regeneration of Barry;
- Provide new opportunities for enhanced community services, facilities, public realm and infrastructure to support the important role of Barry, both locally and regionally, as a key settlement;
- Improve the existing housing stock through continued investment in area-based renewal and promote a range and choice of new housing, particularly affordable housing given the high level of need identified in Barry;
- Support the Welsh Government's Tackling Poverty agenda through 'Communities First' working with residents, community organisations, business and other key agencies, leading to the long-term sustainability and wellbeing of communities;
- Improve access to and within Barry, through strategic and local highway improvements and a range of sustainable transport measures, which will support regeneration whilst at the same time effectively managing congestion on the town's main arterial roads;
- Improve walking and cycling links between the town centre, the Waterfront and Barry Island;
- Promote continued investment and environmental enhancement in Barry's retail centres, particularly Holton Road and High Street to reinforce their vitality, viability and attractiveness, whilst at the same time encouraging the beneficial use of retail premises upper floors;
- Promote Whitmore Bay and Barry Waterfront as all year-round attractive tourism and leisure destinations by encouraging a range of high quality serviced accommodation, all weather attractions, improved visitor facilities and event led tourism; and
- Favour development proposals which assist the long-term viability of Barry's Port to facilitate the efficient and reliable movement of freight by sea.

Vale of Glamorgan Corporate Plan, 2016 to 2020

The Vale of Glamorgan's corporate plan sets out a programme of activity for the four years spanning 2016-2020, prioritising the short, medium and longer term needs of the Vale. The plan shapes a vision for 'strong communities with a bright future', which considers the achievements from the previous corporate plan, local needs, available resources, what staff are suggesting, the views of partners and residents, the importance of working in partnership, and the requirements of the Well-being of Future Generations (Wales) Act 2015.

This includes a number of objectives which support the council's well-being aims. The well-being aims include: an inclusive and safe vale; an environmentally responsible and prosperous Vale; an Aspirational and Culturally Vibrant Vale; and an Active and Healthy Vale.

The upgrade for a transport interchange hub at Barry Docks station compliments these aims by supporting the delivery of transport improvement schemes associated with the Cardiff Capital Region Metro, improving accessibility, road safety, air quality, reducing congestion and encouraging active travel in the area.

The council have developed a draft of the next Corporate Plan from 2020 to 2025. This plan will set out the new Well-being Objectives and frame how the council will contribute to the national Well-being goals and deliver its vision for Strong Communities with a Bright Future.

2016-2020 The Vale of Glamorgan Local Transport Plan, 2015 to 2030

The Transport Act 2000, as amended by the Transport (Wales) Act 2006, introduced a statutory requirement for local transport authorities to produce a Local Transport Plan (LTP) every five years and to keep it under review. In May 2014 Welsh Government published new guidance requiring all local authorities in Wales to produce an LTP for submission in January 2015. The guidance stated that LTPs should be used to update the schemes and priorities identified in the previous plans and integrate with WG's National Transport Plan.

The Vale of Glamorgan LTP identifies the key transport issues relevant to the county, the high-level interventions needed to address these and the specific priorities for the local authority, including the transport infrastructure required to support the current LDP. The stated aim of the current LTP is to facilitate and support the development of a modern, accessible, integrated and sustainable transport system for South East Wales, which increases opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport, and sustainable freight provide real travel alternatives.

The LTP includes a prioritised five-year programme of projects the council wishes to see delivered between 2015 and 2020 as well as medium, and longer-term aspirations up to 2030.

Specifically, in relation to Barry Docks Station access & interchange improvements, the programme states that the council believes rail journey times and frequency enhancements, as set out in the South East Wales Integrated Transport Task Force report and in line with draft NTP (3.23.8 and interventions IT6, RS2, CCRM10 and CCRM13) are required to achieve the wider economic, social and environmental priorities of the LTP and LTP guidance. The proposals include improved bus, cycle and pedestrian access, station information provision and signage, cycle storage, expansion of park & ride site and construction of a new link road.

Vale of Glamorgan, Staff Healthy Travel Charter, 2019 to 2022

The Vale of Glamorgan, Staff Healthy Travel Charter is signed by eight leading public sector organisations from across the County including Cardiff and Vale University Health Board, Cardiff Airport, South Wales Fire and Rescue Service, South Wales Police, HM Prison and Probation Services, Welsh Government and Welsh Ambulance NHS Trust. Its aim is to help staff and visitors travel to their sites in a sustainable way.

Through 14 ambitious actions, the charter promotes walking, cycling, public transport and ultra-low emission vehicle use.

The actions include establishing a network of sustainable travel champions within each organisation, developing targeted communications campaigns for staff, offering and promoting the cycle to work scheme and increasing the availability of video-conferencing for meetings to reduce the number of journeys staff need to make.

Between them, the organisations will commit to reducing the proportion of journeys commuting to and from work made by car and increase the proportion of vehicles used during the day which are plug-in hybrid or pure electric. By working together, the organisations aim to increase the proportion of journeys made to and from workplaces which are sustainable.

The public sector in the Vale employs over one in four working adults, over 15,000 people, so this commitment can have a significant positive impact on the environment as well as associated health benefits. The Charter states the intention of each is to:

- Reduce the proportion of journeys commuting to and from work made by car; and
- Increase the proportion of vehicles used during the day which are plug-in hybrid or pure electric

The proposed improvements to Barry Docks Station will add to the tools available for them to use.

Project Zero and Climate Change Challenge Plan, 2021 to 2030

Project Zero is the Vale of Glamorgan Council's response to the climate change emergency. It brings together the wide range of work and opportunities available to tackle the climate emergency, reduce the council's carbon emissions to net zero by 2030 and encourage others to make positive changes.

In July 2019, the Council joined Welsh Government and other local authorities across the UK in declaring a Climate Emergency in response to the United Nations' Intergovernmental Panel on Climate Change report into the impact of global warming. Since then, the council has continued to make changes across the organisation and to embark on ambitious projects to reduce carbon emissions and send a clear message that all must work together to adapt to and mitigate the effects of climate change. At the time the council made the following commitments:

- Reduce the council's carbon emissions to net zero before the Welsh Government target of 2030 and support the implementation of the Welsh Government's new Low Carbon Delivery Plan;
- Make representations to the Welsh and UK Governments, as appropriate, to provide the necessary powers, resources and technical support to Local Authorities in Wales to help them successfully meet the 2030 target;
- Continue to work with partners across the region;
- Work with local stakeholders including councillors, residents, young people, businesses, and other relevant parties to develop a strategy in line with a target of net zero emissions by 2030 and explore ways to maximise local benefits of these actions in other sectors such as employment, health, agriculture, transport and the economy.

The effects of climate change are well documented and if the planet's temperature continues to increase the linked impacts of rising sea levels and extreme weather conditions will be felt around the globe. Through Project Zero the council identified 18 challenges they believed need to meet as part of an effective response to the climate emergency. These are outlined in their Climate Change Challenge Plan 2021-2030 under three key themes:

- Demonstrate Strong Leadership;
- Fulfil our Responsibility to Current and Future Generations; and
- Make a Difference Now

The challenge to establish more sustainable forms of transport is explicitly recognised within the theme to 'Fulfil our Responsibility to Current and Future Generations'. Within the Climate Change Challenge Plan the aim of this challenge is identified to "*Achieve a modal shift away from cars to more sustainable forms of transport with an increase in walking, cycling and the use of less polluting transport*".

To this end a number of specific actions are identified:

- Work within the Cardiff Capital Region to improve public transport options for the region and implement taxi charging points as well as a future network of car park and bus charging points;
- Work with developers to ensure new business, leisure and housing developments plan appropriately for transport needs and encourage behaviour change;

- Increase active travel (walking and cycling) and improve the transport infrastructure in the Vale through the use of Welsh Government grants to improve access, safety and the joining up of the active travel network;
- Expand the Nextbike e-cycle hire scheme into other parts of the Vale following on from the implementation of the scheme in the Penarth area;
- Work with all schools to ensure they have green travel plans and adequate cycling facilities;
- Establish a network of electric vehicle charging points and support projects which promote alternatively fuelled vehicles.

The improvements proposed for Barry Docks Station will contribute directly to addressing this challenge.

Appendix B: Stakeholder Consultation Framework

Introduction

The Stakeholder Management Strategy is an essential part in developing the business case for the Barry Docks Interchange scheme. The approach to stakeholder management is a key element of the Strategic Case, although all elements of the business case should be linked to stakeholders at appropriate points.

Consultation undertaken to date has focussed on the overall regeneration of Barry rather, than Barry Docks specifically. However, for WelTAG stage 2 bespoke consultation is required with a wide range of organisations and at WelTAG stage 3 should include public consultation.

Some stakeholders will need to receive information on the scheme as a whole at key stages of its development, whilst others will have an active role in developing all or part of the programme. As a consequence, the requirements for engagement will vary as the design process is refined and we move through WelTAG stage 2 and WelTAG stage 3. However, he main focus of the consultation framework at this stage is on the requirements for WelTAG stage 2.

Below we set out our suggested approach to stakeholder management, defining who to involve, when and how. This includes:

- Identifying and categorising stakeholders;
- The details of individual stakeholders and their role; and
- The approaches to be used to engage stakeholders, taking account of the current Covid 19 emergency.

Stakeholder Identification and Categorisation

The aim, going forward, is to establish how to extend consultation to all stakeholders regardless of how major or minor they are. This will avoid the possibility that stakeholders are omitted, and their issues not identified and addressed but instead become evident at some point during the project's lifecycle, introducing delays or other obstacles to the project's success.

The following criteria have been used to determine if an individual or group will be included as a stakeholder:

- Will the person or their organisation be directly or indirectly affected by this project?
- Does the person or their organisation hold a position from which they can influence the project?
- Does the person or their organisation have an impact on the project's resources (material, personnel, funding)?
- Does the person or their organisation have any special skills, capabilities or knowledge the project will require?
- Does the person or their organisation potentially benefit from the project or are they in a position to resist this change?

Any individual or organisation that meets one or more of the above criteria has been identified as a stakeholder. Stakeholders from the same organisation may be grouped in order to simplify communication and stakeholder management.

Key Stakeholders

Key stakeholders are those who potentially have the most influence over the project or those who may be most affected by the project. In order to help identify these key stakeholders, a review of the potential project stakeholders has been carried out to map their likely level of interest in the Mobility Hubs scheme and to determine the level of influence that they may have over its development and implementation, as illustrated in the figure below.

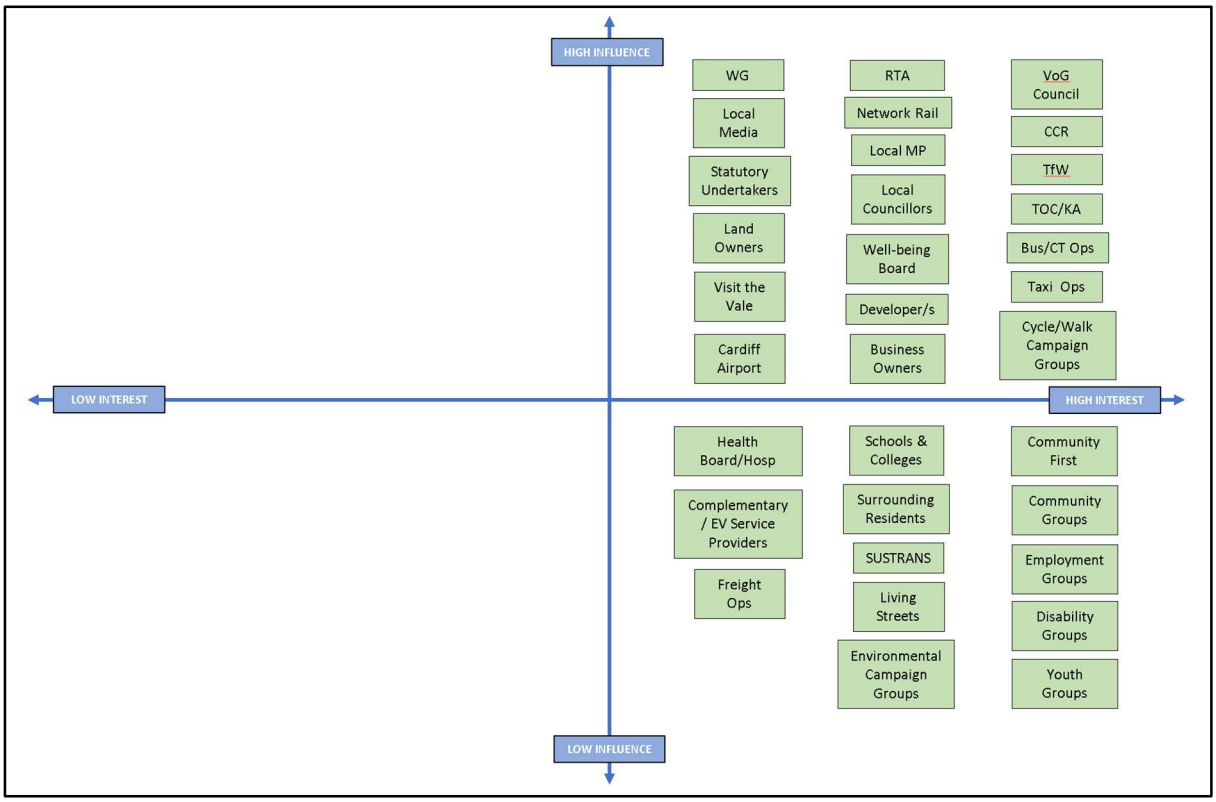


Figure 34 - Key Stakeholders

These key stakeholders are those who will require engagement and management at each stage of development. Some stakeholders have interest in and/or influence over the scheme as a whole; others will have a more specific interest in one or more component investment packages. As plans develop and at different stages, some key stakeholders may be regarded as more critical than others. Therefore, at WelTAG stage 3 this categorisation exercise will be repeated, and the mapping amended to reflect changing priorities and interests. Any significant issues arising as a result of changes will also be reflected in the project risk register.

Some key stakeholders may be found who are resistant to the change represented by the project. These key stakeholders may require more communication and management throughout the project's lifecycle and will be identified through the early consultation processes.

Based on the feedback obtained, it may be prudent to involve some stakeholders on steering committees, focus groups, gate reviews, or other project meetings or milestones.

Thorough communication with key stakeholders is necessary to ensure all concerns are identified and addressed, that resources for the project remain available and that services proposed meet current and latent demand.

High-level assessment

The stakeholders identified above can be further classified according to the categorisation table below.

Table 42 - Stakeholder Categorisation

Category	Detail
Beneficiary	Stakeholders which will receive some direct or indirect benefit from the scheme
Affected	Stakeholders which are directly affected by the scheme in terms of its construction or operation
Interest	Stakeholders with some interest in the scheme though not affected directly by its construction or operation
Statutory	Stakeholders with a statutory interest in the scheme, its construction, operation or wider impacts
Funding	Stakeholders involved in the funding of the construction or operation of the scheme

Engagement approaches

Not all engagement approaches normally used can be adopted in the current Covid 19 emergency. This may change as current restrictions on social distancing and movement are eased over time. However, at this time the approaches proposed are based on the current restrictions. These are summarised and then detailed further in the two tables below:

Table 43 - High Level Engagement

Category	Detail
Intensive consultation	Stakeholders who are directly affected by the scheme and whose agreement is required in order for the scheme to progress - Consultation throughout design and implementation
Consultation	Stakeholders who are affected by the scheme and can contribute to the success of its design, construction or operation - Consultation at key stages
Information	Stakeholders with some interest in the scheme or its use - Information to be provided at appropriate stages

Table 44 - Stakeholder Communication Mechanisms

Communication Methods	Detail
Statutory authorities & boards	• Member/councillor briefing sessions • Cabinet meetings & reports • Senior officer meetings • Transport authority meetings • One-to-one stakeholder meetings (telephone/online)

External Communications & Media	• The council website/microsite • CCR Website • Social Media (Twitter, Facebook, etc) • Email, E-Bulletins • Press releases
Statutory Undertakers & Land Owners	• One-to-one stakeholder meetings (telephone/online) • Briefing notes • Site Visits & Surveys (within Covid 19 Guidelines)
Transport Providers	• One-to-one stakeholder meetings (telephone/online) • Email • Briefing notes
Developers & Business Owners	• Chamber of Commerce/Business meetings & presentations (online) • One-to-one stakeholder meetings (telephone/online) • Email • E-Bulletins • Briefing notes
Health Bodies, Training organisations & Educational establishments	• Local Forum (online) • One-to-one stakeholder meetings (telephone/online) • Briefing notes • Email, E-Bulletins
Community Organisations, Special Interest & Campaign groups	• Local Forum (online) • One-to-one stakeholder meetings (telephone/online) • Briefing notes • Email, E-Bulletins
Bespoke Surveys (within Covid 19 Guidelines)	• Geo Environment/Geo Tech /SUDS/ Embankment/ Heritage/Structures/ Environmental & ecology/Field • Car Park count • Traffic/Access count
Public Meetings and Forums (@ WelTAG stage 3, Covid 19 restrictions dependant)	• Residents' meetings & presentations • Community group meetings & presentations • Environmental/Cycle/Walk Forum meetings & presentations • Public meetings, workshops & consultation events

Considerations

In current circumstances the views of organisations and members of the public will be sought through online consultation rather than surveys. Some surveys may be pursued where these can be achieved within the Covid 19 guidelines. However, it's likely that it will be necessary to rely on historic data in most cases.

Although upgrading Barry Docks to a station interchange will provide benefits to a wide range of stakeholders, some aspects of the design of the individual components will affect specific groups. This will require specific consultation geared to the scheme elements in isolation or in combination.

Consultation designed to address these scheme-specific issues should be undertaken using the mechanisms set out in Table 44. Examples include the involvement of neighbouring businesses, cycling and pedestrian groups (eg Cycle Forum, Sustrans, Living Streets) and service delivery.

Appendix C: Barry Docks Public Consultation Survey Results

Barry Docks Public Consultation Survey Results

Contents

1. Respondent Demographics

The majority of survey respondents currently live in Barry (68%). Another 17% of respondents said that they live in the Rural Vale, including the immediate are surrounding Barry. The remaining 15% stated that they live elsewhere (Figure 1).

Figure 35: Location of Residence of Respondents

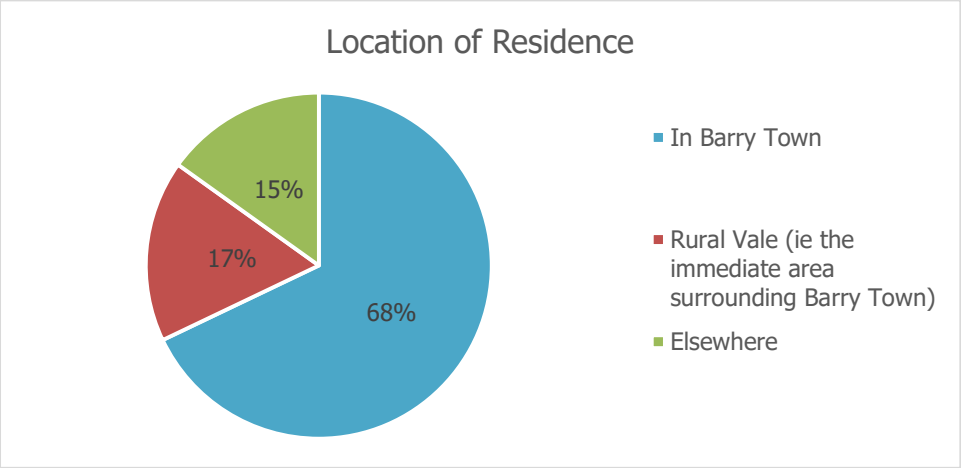
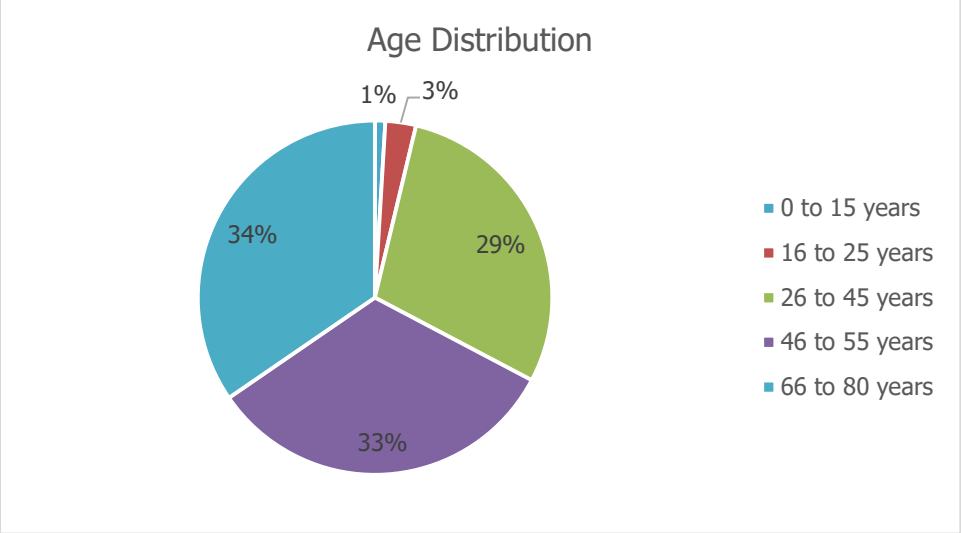


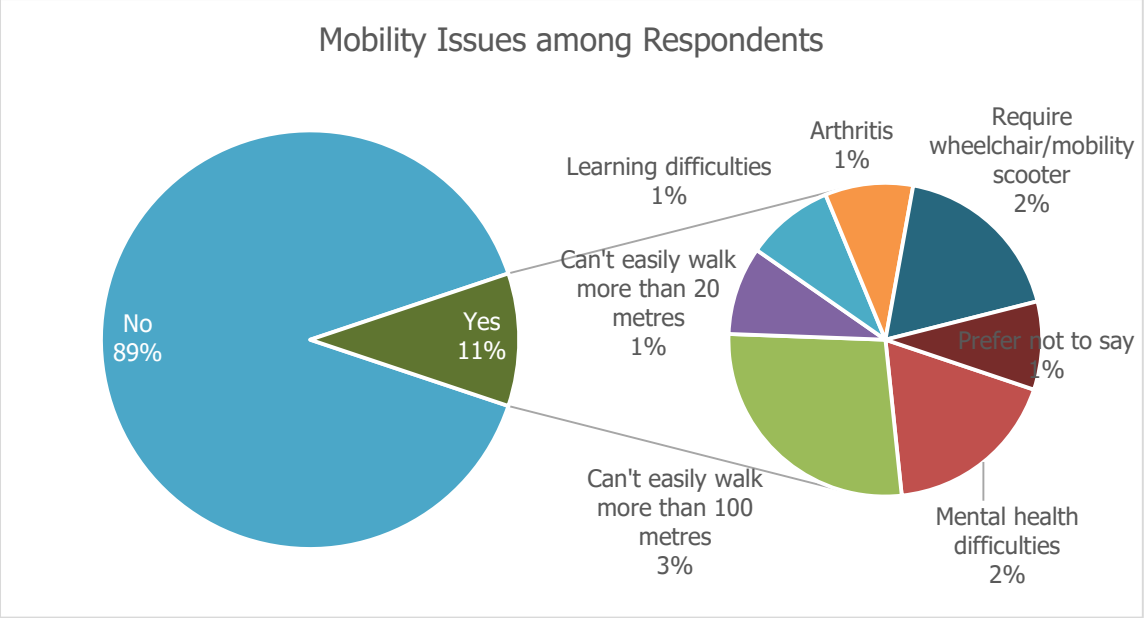
Figure 2 shows the age distribution of respondents. Only one respondent was under 16 years old. Only 3% of respondents were between 16 and 25 years old. 29% said that they were between 26 and 45 years, 33% were between 46 and 65 and 34% were between 66 and 80 years old.

Figure 36: Age Distribution of Respondents



89% of respondents stated that they had no mobility issues (Figure 3). The remaining 11% stated that they had issues limiting their mobility. These include arthritis (1%) or mental health difficulties (2%) for example. There were 3% of respondents who stated that they could not easily walk more than 100 metres, and a further 1% stated they could not easily walk more than 20 metres.

Figure 37: Mobility Issues among Respondents



2. Station Usage Patterns

A total of 107 respondents gave information about their usage of Barry Docks station. 73 said that they were currently using the station, while 34 stated that they were not currently using the station (Table 1).

Table 45: Respondents using Barry Docks station

	N	Percentage
Yes	73	68.2
No	34	31.8
Total	107	100.0

Only 4% of respondents that stated they used the station use the station 'very often' or on a daily basis. 15% then said that they used the station 'quite often', meaning two or three times a week. A further 26% of respondents stated they use the station 'fairly often', which means up to once a week or every two weeks. The largest part of respondents (34%) claimed to use the station 'occasionally', meaning around once a month or once every couple of months. The remaining 21% said they used the station 'very occasionally' or a few times per year (Figure 4).

Figure 38: Usage Frequency of Current Users of Barry Docks

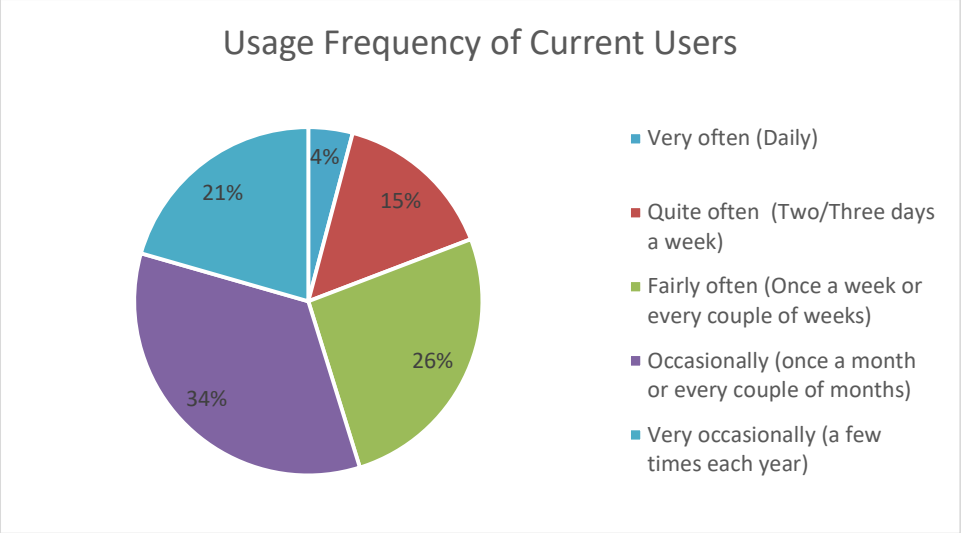


Table 2 shows whether respondents use another train station in Barry. Over 38% of respondents who use Barry Docks do not use another train station in Barry. However, this also means that nearly 62% of Barry Docks users also travel from another train station. Over 34% of respondents also use the Barry Town station. A further 16% use Cadoxton and 11% use the Barry Island station.

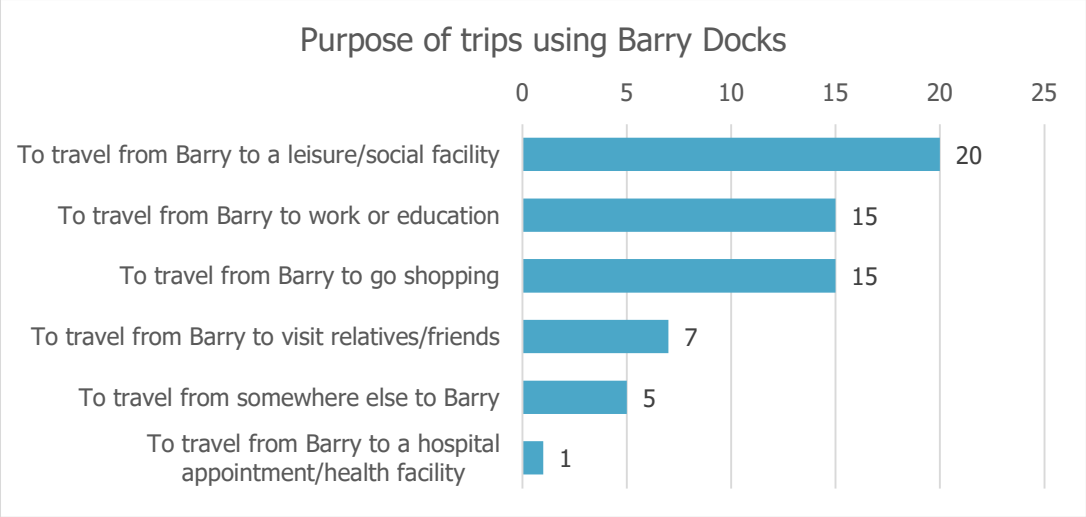
Of the users who do not use Barry Docks, just over 47% also do not use any of the other train stations in Barry. 26.5% of respondents who do not use Barry Docks use Barry Town instead, and 20.6% use Cadoxton. Nearly 6% of non-users use Barry Island.

Table 46: Use of other stations among users and non-users

Use of Barry Docks	Use of other stations	N	Percentage of Users/Non-Users
Yes	Barry Town	25	34.2
	Barry Island	8	11.0
	Cadoxton	12	16.4
	No, I do not	28	38.4
No	Barry Town	9	26.5
	Barry Island	2	5.9
	Cadoxton	7	20.6
	No, I do not	16	47.1

Figure 5 shows the purpose of trips of Barry Docks users. The most common trip purpose was to travel to a leisure or social facility, as this was mentioned by 20 respondents. There were 15 people who used the rail service to travel to their place of work or education and there were also 15 people that used it to access the shops. A total of 7 users travel from Barry to visit relatives or a friend and 5 users travel into Barry from a different place. Finally, one person travels from Barry to a hospital appointment or health facility.

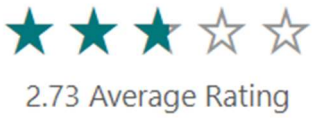
Figure 39: Purpose of trips using Barry Docks



3. Access to the Station

3.1. Access Rating

When asked to rate the current access to or from Barry Docks on a scale from 1 to 5, respondents gave it an average rating of 2.73.



10 respondents said that they found it difficult to access the station by foot and another 7 respondents said they found it difficult accessing the station by bus. 6 users found it difficult to access the station by car and 5 found it difficult to access by bike.

Respondents were then asked to rank the accessibility within the station area, such as the car park, station access, and the pedestrian subway. This received a rating of 2.64, slightly lower than the wider accessibility rating.

There were 50 respondents who said they had safety and security concerns when moving around the station area, these being the difficulties that were identified by the most respondents. Poor lighting was a concern to 41 respondents and a lack of toilet facilities was a difficulty for 31 users. Other difficulties received under 20 mentions, but include the lack of a bus stop nearby, the difficulty of finding a parking space, and using the ramp to access the station platforms, as those mentioned most among these issues.

3.2. Current Access Modes

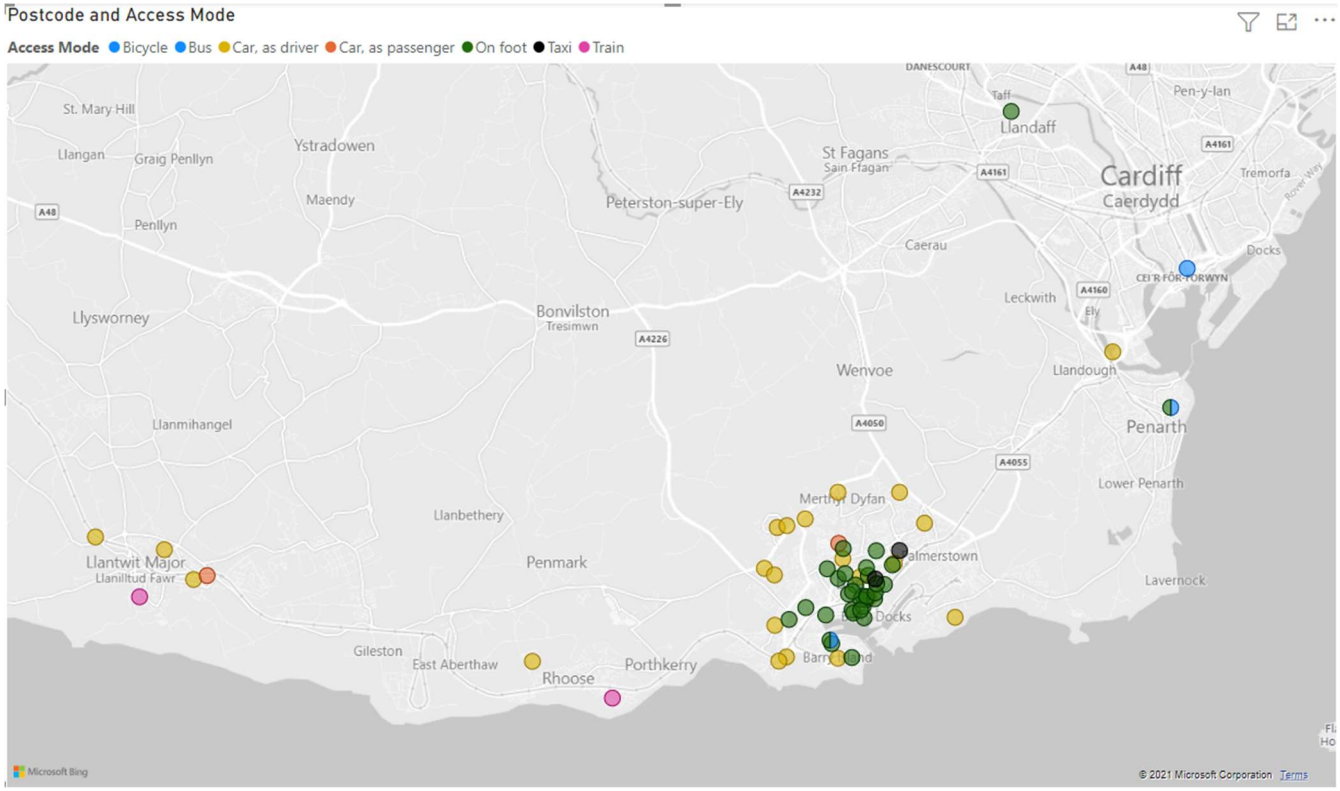
From the total number of complete responses to the survey (n=106), some basic access patterns to the Barry Docks station can be extracted. Out of the respondents currently using the station, over 51% (n=37) arrive at the station on foot. A further 36% (n=26) arrive by car, either as a driver or as a passenger. Access by other modes of transport achieved significantly fewer responses, with up to 3 responses per category.

The map below shows how current users are accessing the station, according to their mode of access and postcode.

As could be expected, most users who arrive on the station by foot live in Barry and in proximity to the station. Users arriving by car are more likely to live on the outskirts of Barry or in neighbouring communities. It should be noted that some respondents claimed to access the station on foot or by cycling even though they live a considerable distance from Barry. Some of these respondents stated that their reason for using Barry Docks station was to travel to Barry from somewhere else, meaning that they are likely to walk or cycle to their final destination once they have arrived in Barry Docks.

Other survey responses appear more conflicting. For example, two users stated that they live in Barry but their main purpose for using Barry Docks was to travel to Barry from somewhere else. Conversely, five users living closer to Cardiff indicated that they travel to their destination from Barry Docks station. As this is not intuitive and it was not possible to choose 'train' as an access mode within the survey, it is possible that some respondents might have referred to their mode of transportation once they have arrived in Barry by train.

Figure 40: Location of current users and access mode



3.3. Future Access Modes

If the works proposed at Barry Docks went ahead, 89 people or 84% of all respondents indicated that they would then use the station. This represents an increase in 23.6% over respondents indicating they are currently using the station.

When asked about how they would access the station if the improvements were made, 43% (n=38) stated that they would access the station on foot. While this represents a slight decrease in the proportion of users arriving on foot, it still results in a net gain in total users arriving this way.

Table 47: Summary of Current and Future Modes of Station Access

	Current Mode	Future Mode	Difference
On foot	37	38	+1 (+2.7%)
Bicycle	3	7	+4 (+133.3%)
Car, as driver	24	30	+6 (+25%)
Car, as passenger	2	3	+1 (+50%)
Taxi	2	3	+1 (+50%)
Train	2	3	+1 (+50%)
Bus	2	5	+3 (+150%)
Not using the station	34	17	-17 (-50%)
TOTAL	106	106	

Nearly 8% of all future users state that they would access the station by bicycle. This represents an increase in both proportion and total numbers of cyclists. Number of users arriving by car, either as a driver or as a passenger, are increasing as well and are now representing 37% of all users.

Respondents stating that they would use the bus in the future have increased to a total of 5, representing 5.6% of all users of Barry Docks station.

Table 4 shows the crosstabulation of the responses on current and futures modes of station access. It indicates where certain modes could potentially lose or gain users switching modes. The table also shows that 62 of the 72 (86%) existing users would access Barry Docks Station in the future with the same mode they are currently using.

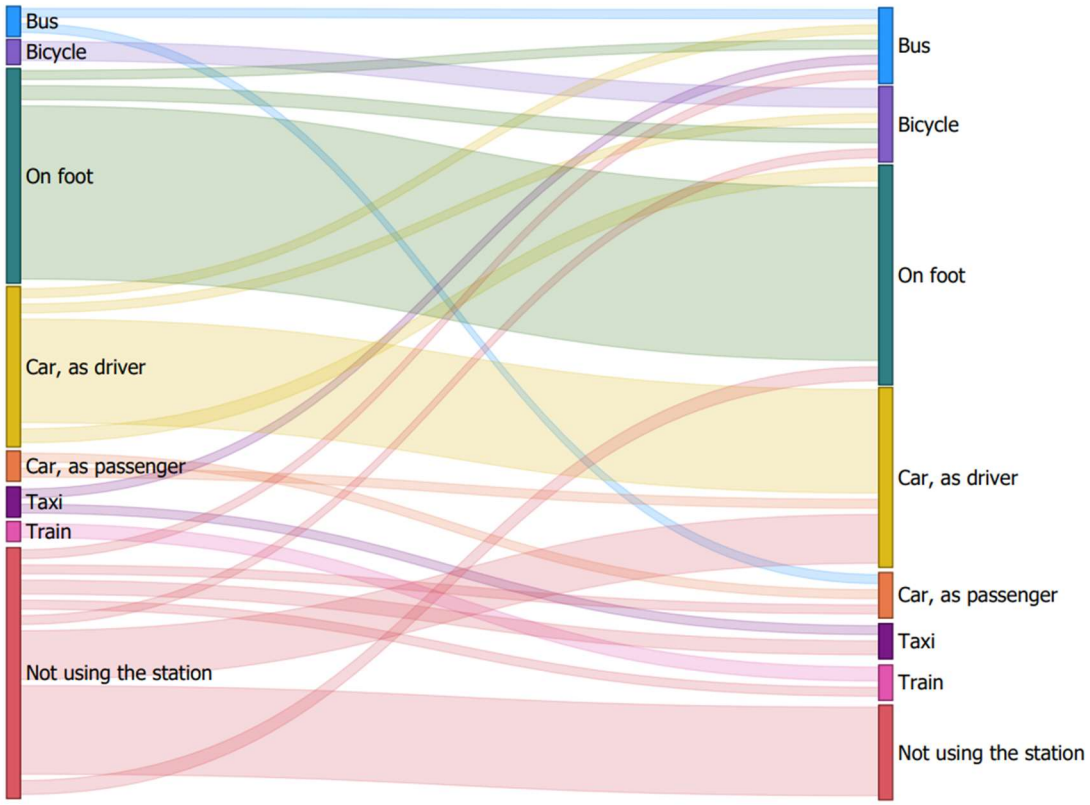
While the biggest user groups are shown to choose the same access modes to the station, such as users coming on foot or as a car driver, some changes can be observed. Furthermore, the users that stated they would use the station in the future are more likely to access the station as a car driver (53% of this group).

Table 48: Crosstabulation of Current and Future Modes of Station Access

Future Mode / Current Mode	On foot	Bicycle	Bus	Taxi	Car, as driver	Car, as passenger	Train	Not using station
On foot	34	2	1					
Bicycle		3						
Bus			1			1		
Taxi			1	1				
Car, as driver	2	1	1		20			
Car, as passenger					1	1		
Train							2	
Not using station	2	1	1	2	9	1	1	17

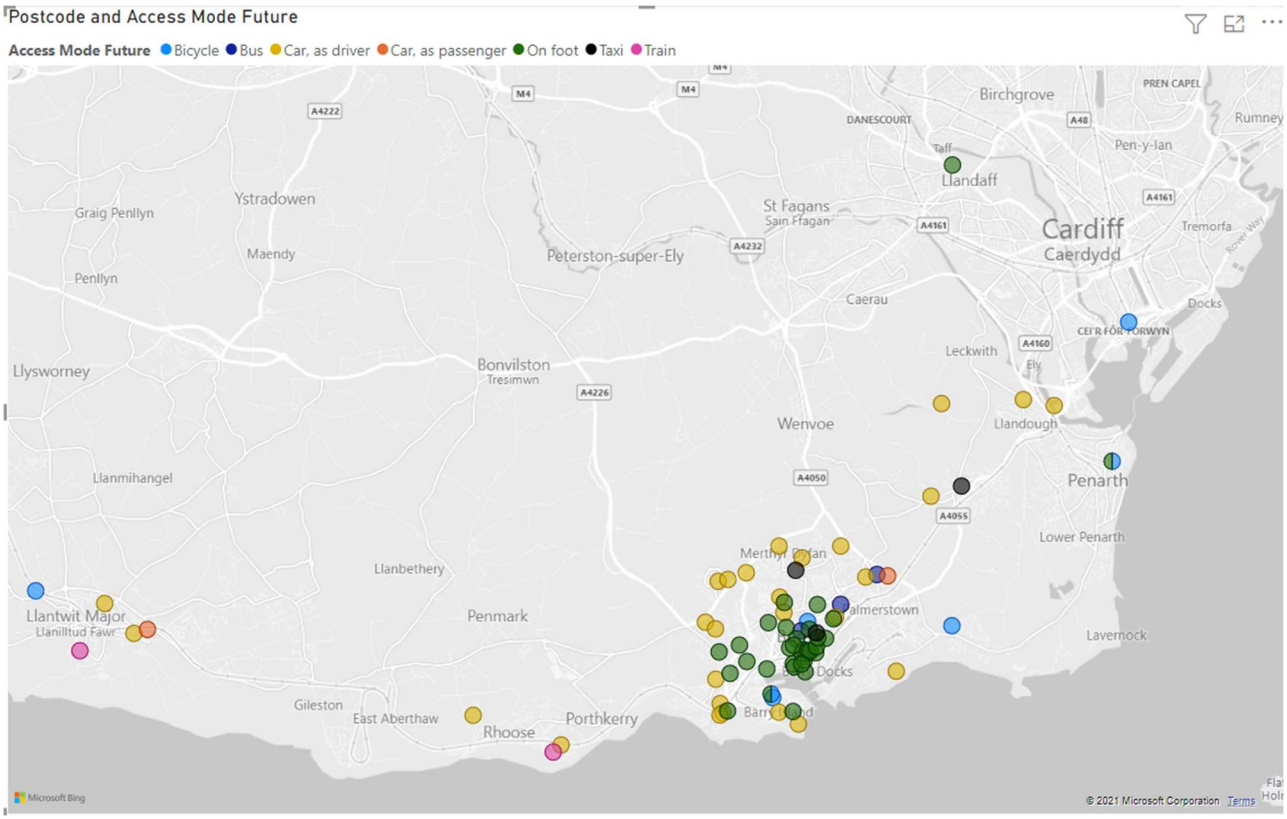
Figure 7 shows the results of the crosstabulation in a more readable format and presents where certain modes might gain or lose certain users.

Figure 41: Flow between Current and Future Modes of Station Access



The map below shows how users of the station would access it after the improvements. Similar to the points made above, it is possible that some users refer to their mode of transportation after arriving in Barry Docks from somewhere else.

Figure 42: Future Users and Access Modes



4. Patronage Estimate from Survey Responses

4.1 Current Usage Estimate

The total trips taken to Barry Docks by survey respondents can be estimated by multiplying the frequency of trips in a year by the number of users in each category. As can be seen from Table 5, most respondents indicated that they use the station occasionally or fairly often. This results in a total of 3,499 yearly trips taken by the survey respondents.

This would equate to approximately 48 trips, annually, for each respondent that stated they were using the station. When including the respondents who indicated that they were not using the station, this results in approximately 33 trips per respondent. This number could be used to estimate total station usage numbers when applying it to the catchment area of the station.

Table 49: Yearly Trips per Frequency

Frequency	Yearly Factor	Users	Trips per Frequency
Very often	253	3	759
Quite often	130	11	1430
Fairly often	50	19	950
Occasionally	12	25	300
Very occasionally	4	15	60
TOTAL		73	3499

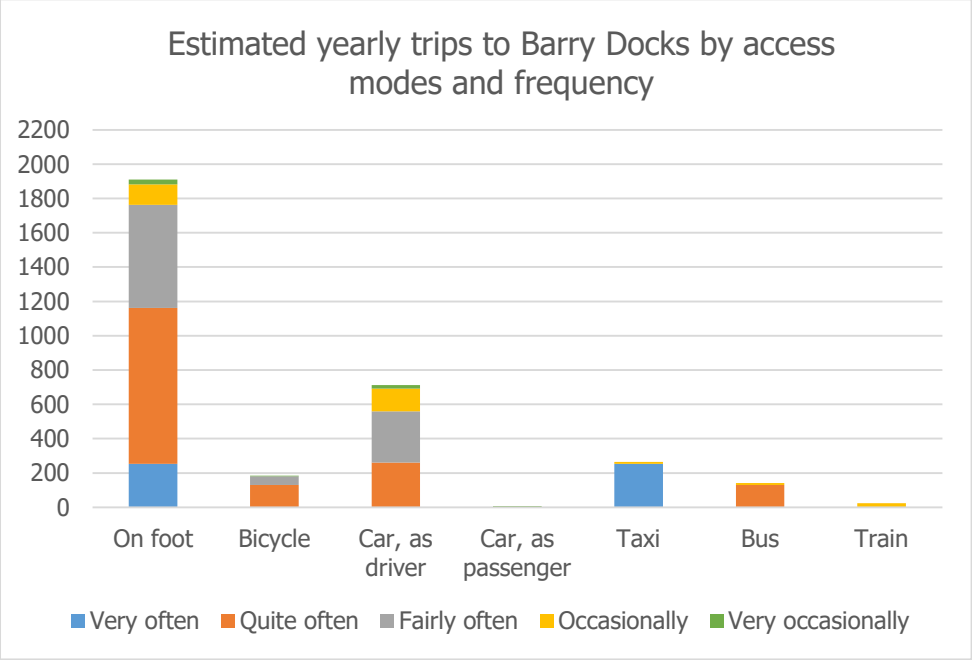
The table below splits up the total trips by frequency and mode. The majority of total trips to the station are undertaken by walking (55%), followed by driving a private car (20%).

Table 50: Yearly trips by Frequency and Mode

Frequency / Mode	Very often	Quite often	Fairly often	Occasionally	Very occasionally	TOTAL
On foot	253	910	600	120	28	1911
Bicycle	0	130	50	0	4	184
Car, as driver	0	260	300	132	20	712
Car, as passenger	0	0	0	0	8	8
Taxi	253	0	0	12	0	265
Bus	0	130	0	12	0	142
Train	0	0	0	24	0	24
TOTAL	506	1430	950	300	60	3246

The bar chart below shows the estimated number of trips taken by respondents by frequency and mode.

Figure 43: Bar Chart showing yearly trips by Frequency and Mode



4.2 Future Usage Estimate from Frequency Responses

17 people indicated that they would use Barry Docks in the future and stated how they would access the station. Furthermore, a number of respondents would access the station differently, as stated above. This would therefore change the total number of trips the residents generate. For this

exercise, it was assumed that existing users would use the station at the same frequency as they did previously, and new users would use the station 'occasionally'.

One user was excluded from both calculations, as they stated 'various' as their access modes.

When taking into account the new users of Barry Docks, this produces a total of 3,703 yearly trips taken by the respondents. This is an increase of 6.2% compared to existing trips. On average, this would equate to 41 trips for each user that indicated using the station in the future, and 35 trips across all respondents.

Table 51: Future yearly trips by Frequency

Categories	Yearly Factor	Users	Trips per Frequency
Very often	253	3	759
Quite often	130	11	1430
Fairly often	50	19	950
Occasionally	12	42	504
Very occasionally	4	15	60
TOTAL		90	3703

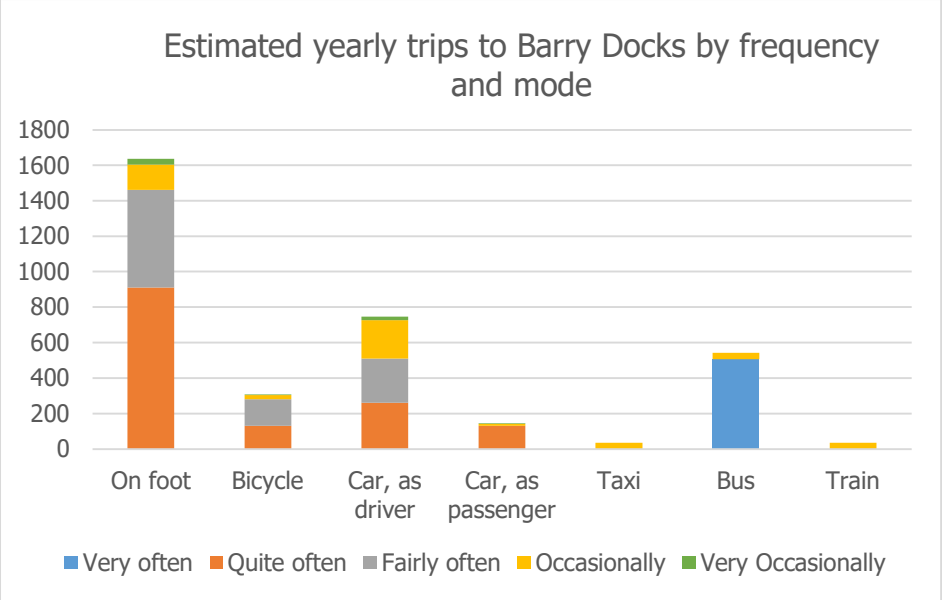
Of the total trips to Barry Docks, 47% are made on foot, and 22% are made driving a private car.

Bus trips increased from 142 trips per year to 542. This is driven especially by two users who previously used a different mode 'very often' and said they would switch to using the bus if there was a bus service.

Table 52: New yearly trips by Mode and Frequency

Frequency / Mode	Very often	Quite often	Fairly often	Occasionally	Very occasionally	TOTAL
On foot	0	910	550	144	32	1636
Bicycle	0	130	150	24	4	308
Car, as driver	0	260	250	216	20	746
Car, as passenger	0	130	0	12	4	146
Taxi	0	0	0	36	0	36
Bus	506	0	0	36	0	542
Train	0	0	0	36	0	36
TOTAL	506	1430	950	504	60	3450

Figure 44: Bar Chart showing future trips by Frequency and Mode



5. Dedicated bus service to town centre

33 people indicated that they would like to see a dedicated bus service connecting Barry Docks station to the town centre. Of these people, 10 currently access the station on foot, and no respondent accesses the station via bus.

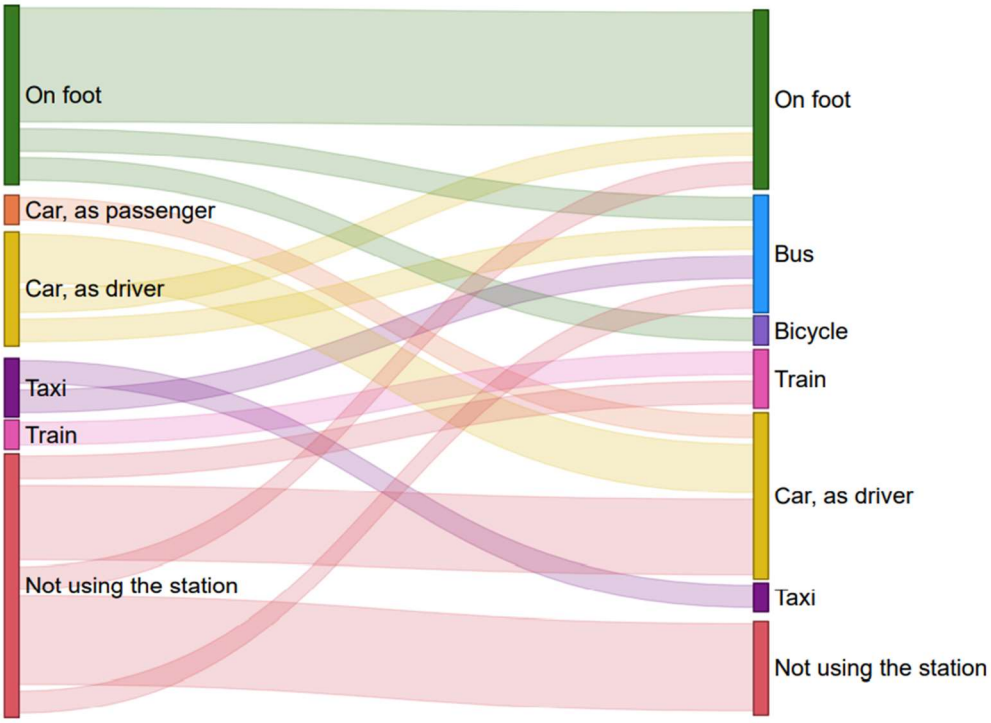
Figure 45: Current and Future Mode of Access

	Current Mode	Future Mode	Difference
On foot	10	10	±0
Bicycle	0	1	+1
Car, as driver	5	9	+4
Car, as passenger	1	0	-1
Taxi	2	1	-1
Train	1	2	+1
Bus	0	4	+4
Not using the station	14	6	-8

If the changes are implemented, 8 additional people would use the station, and 4 would use the bus to reach it. It could be noted that 4 out of the 5 people who said they would travel by bus in the future (Table 3) mentioned the dedicated bus service to the town centre. It is unclear whether these respondents assumed that there would be a bus serving Barry Docks in the future or if these users would be willing to walk from an existing bus stop in the future.

The figure below shows that users willing to use a bus in the future are currently using a variety of other modes to reach the station. One user arrives on foot, one as a car driver, one via taxi, and one currently does not use the station.

Figure 46: Flow between Current Future Modes of Access for Respondents indicating Need for Bus Link



6. Difficulty travelling by Bus

In total, 7 respondents stated that they currently find it difficult to reach Barry Docks by bus. Two of these do not use the station, and 3 reach the station on foot. If the improvements went ahead, all of these respondents would use the station and 4 of them stated that they would use the bus.

Table 53: Station Access by Respondents finding it difficult to access the station by bus

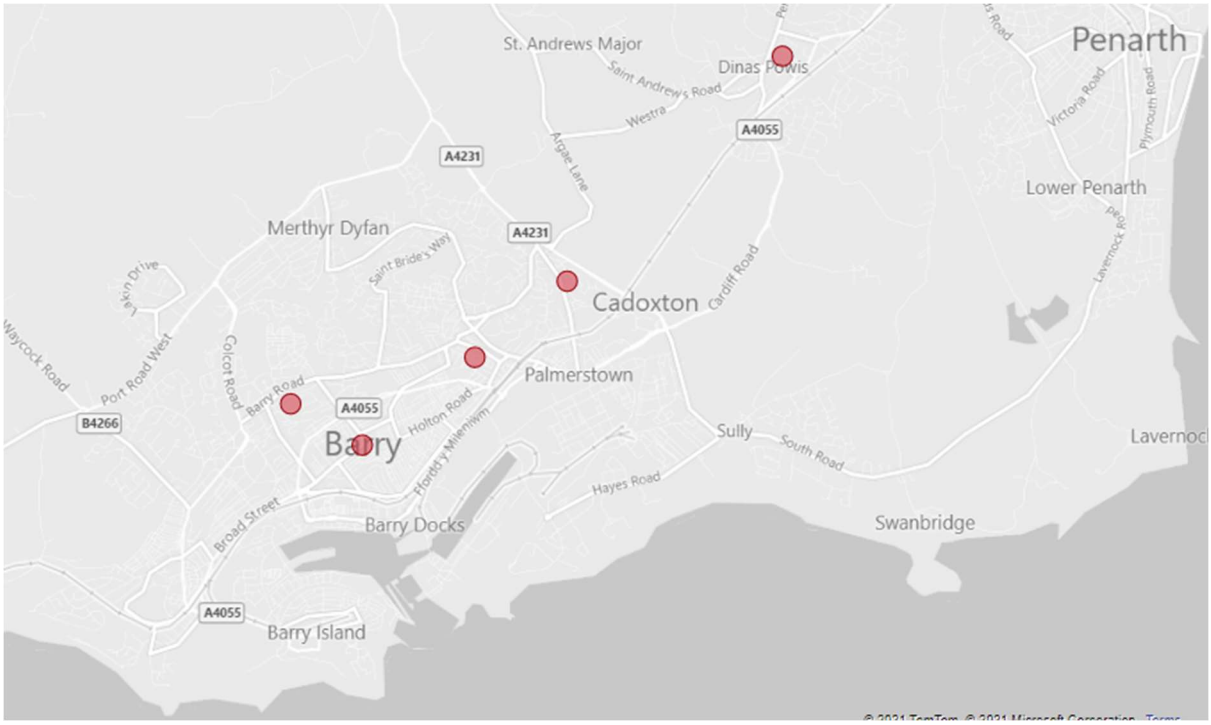
	Current Mode	Future Mode
On foot	3	2
Taxi	1	1
Bus	1	4
Not using the station	2	0

Six out of the 7 stated that they do not have any mobility issues, and one person stated that they have mental health problems limiting their mobility. However, all of these users said one of the factors that is most difficult when travelling within the station area is that no bus stop is located close the station.

One of the users mentioned that they would like to see a shuttle bus from the station to the Northern parts of Barry, such as Barry Hospital or Pencoedtre High School for example.

The figure below shows the location of users who find it difficult to access the station, where their post code was available.

Figure 47: Map of Users finding it difficult to access Barry Docks



7. Qualitative Comments made by Respondents

7.1 Safety and Security Concerns

The most comments were received on safety and security concerns. 13 respondents mentioned safety in their additional, qualitative, comments at the end of the survey. Most of these comments referred to overgrown paths, lack of visibility, insufficient lighting, and lack of CCTV. One of the respondents stated:

"Despite it being our closest station I prefer to pick my wife up at Barry or Cadoxton because of the better lighting and security."

However, one respondent finds that better lighting, alone, wasn't sufficient to make pedestrian access to the station safer. Most responses focused on the walkway from Dock View Rd, rather than the access from the existing car park, for example:

"The current walkway from Dock View Road doesn't feel very safe. Even better lighting wouldn't go far enough to make the walkway feel safer."

Two comments mentioned the potential to have staff at the train station as this would help give the station a safer feeling. Furthermore, respondents stated that they feel the station would benefit from better or new CCTV equipment. One respondent stated:

"I don't believe there is currently CCTV in this area, I would like this installed to ensure the safety of people, particularly young females, in this area."

7.2. Impact on Residents and Local Businesses

Some respondents (n=4) voiced concern around the plans for social housing and a larger car park within the development proposal. They are mostly concerned about issues surrounding crime and anti-social behaviour they believe would arise from these plans. Furthermore, several residents (n=3) think that there should be more commercial and employment opportunities in the area and that retail opportunities could be improved.

"There is currently no café or even take away for coffee/lunch near the station or Dock Office, so if there were an opportunity for this service in the commercial development that would be useful."

Two respondents voiced their concern about the future of Hinds Garage, which is a local business that might be impacted by the current plans. They stated that the business should be allowed to remain in its current location. One respondent also indicated that the Dock office council building is worth protecting and its appearance shouldn't be impacted by the proposed works.

In addition, there are concerns about the car park overspilling into the adjacent residential streets. Some respondents (n=2) therefore argued that there should be resident permits for parking on these streets to prevent park and ride users from using local roads as additional parking spaces. Residents seemed concerned about the additional traffic this will generate on Dock View Road and at the junction with Kingsland Crescent. They believe that the road is currently already congested and that a four-way junction will worsen this problem.

"All sounds good on paper but not practicable as there is insufficient space and already problems for traffic on that stretch of road, as a main through route for residents and tourists."

"We are too congested now. This will make it worse. Millennium Way and Cardiff Road are frequently unusable due to the volume of traffic now."

7.3. Car Park Concerns

Several comments (n=5) regarding the current car parking capacity note that the car park is sometimes full, and it might deter some residents from using the train station. One user noted that this is an issue at other train stations in the area as well:

"Normally I would prefer to go to Barry Station but there are never any spaces available in the car park or surrounding areas."

Regarding the proposed car park, two users noted that this facility should be reserved for commuters and should not be used by council employees working in the Docks Offices. Furthermore,

there should be sufficient spaces for blue badge holders and the car park should have enough spaces for people who have no other choice but to travel to the station by car.

Finally, one user made comments about the need for improved EV charging infrastructure. They note that the provision of this infrastructure should be rolled out to all spaces eventually:

"(T)here may be a need to place more emphasis on EV charging points at all available parking spaces over time, perhaps a phased introduction of more charging points up until 2030."

7.4. Accessibility

Most respondents were enthusiastic about the proposed improvements to the accessibility of the station and within the station. Several respondents (n=7) noted that the gap between the platform and train was too large and therefore dangerous for people with limited mobility including adults travelling with young children.

"Access to the trains towards Cardiff are difficult for pushchairs given the distance between the platform and the train as a result of the bank. My mother also struggles with the gap as an older lady so easier access would be desirable."

Furthermore, two respondents stated that the ramp to the platform was too steep. Similarly, one person noted that the footpath towards Dock View Rd was too steep and narrow for some users to navigate.

7.5. Station Access

Aside from the safety issues already mentioned above, some respondents made suggestions regarding the improvement of Subway Rd. One user described the existing issues:

"The adoption of Subway Road so it can be properly maintained to enable safe access the station via this route without encountering hazards such as potholes, lack of lighting and fly tipping"

Furthermore, several residents (n=5) mentioned the need for improved bus services towards Barry docks station. Residents referred to more diverse bus routes, the potential for a hub at Barry Docks, and better overall links to the Rural Vale area. One respondent also commented that the existing hub in the town centre causes congestion as there is not enough space for waiting busses.

"The integration of bus services will only work if the operator is reliable, punctual, and frequent. The operator must commit to meeting the needs of passengers and not profit."

Several respondents made suggestions for potential future bus routes. These included a direct bus to the airport, and an additional bus route serving the North of Barry, including Barry Hospital and the Pencoedtre High School. However, one user mentioned some concerns with regards to the existing bus services:

"I am concerned on disruption to existing bus services. There is no reference to what services would use the interchange and how they would be diverted from current routes"

Two respondents voiced their concern around cyclists not using the existing infrastructure and cycling on the road. Most comments received around cycling infrastructure however relate to the need for better cycling paths and lanes around the station, and especially on Millenium Way. Two comments noted that cycling demand is currently supressed in the area, as existing infrastructure is disjointed and doesn't give cyclists sufficient priority over vehicles.

"There should be a direct route to/from Millennium Way by bicycle, given priority over car access (alongside safe pedestrian access) - otherwise this is prioritising less sustainable modes of transport first."

Most comments received on pedestrian infrastructure around the station comment on safety aspects already covered above. Two respondents also noted that better pedestrian access to the North side of the station is needed.

7.6. Other services

Two users stated that the toilet facilities at the station need to be improved. Furthermore, one respondent noted the need for a waiting room with the possibility to buy refreshments, and newer accessible ticket machines.

Furthermore, three respondents stated that signage for pedestrians needs to be improved, especially when travelling onwards to the town centre.

7.7. Other comments

Two users noted that the removal of the green space to the North of the station could result in habitat loss for wildlife. One of the respondents suggested planting trees to mitigate the effect.

"The proposed car park removes a huge amount of wildlife habitat, which does not appear to be mitigated for elsewhere on the proposals. This is a huge concern given the biodiversity crisis the country finds itself in"

Finally, three residents voiced their concern over building new housing close to the incinerator.

Appendix D: Scheme option drawings

Options 1, 1a, 3

BDI-AMEY-001-00-D
R-C-003 Option 1.pc

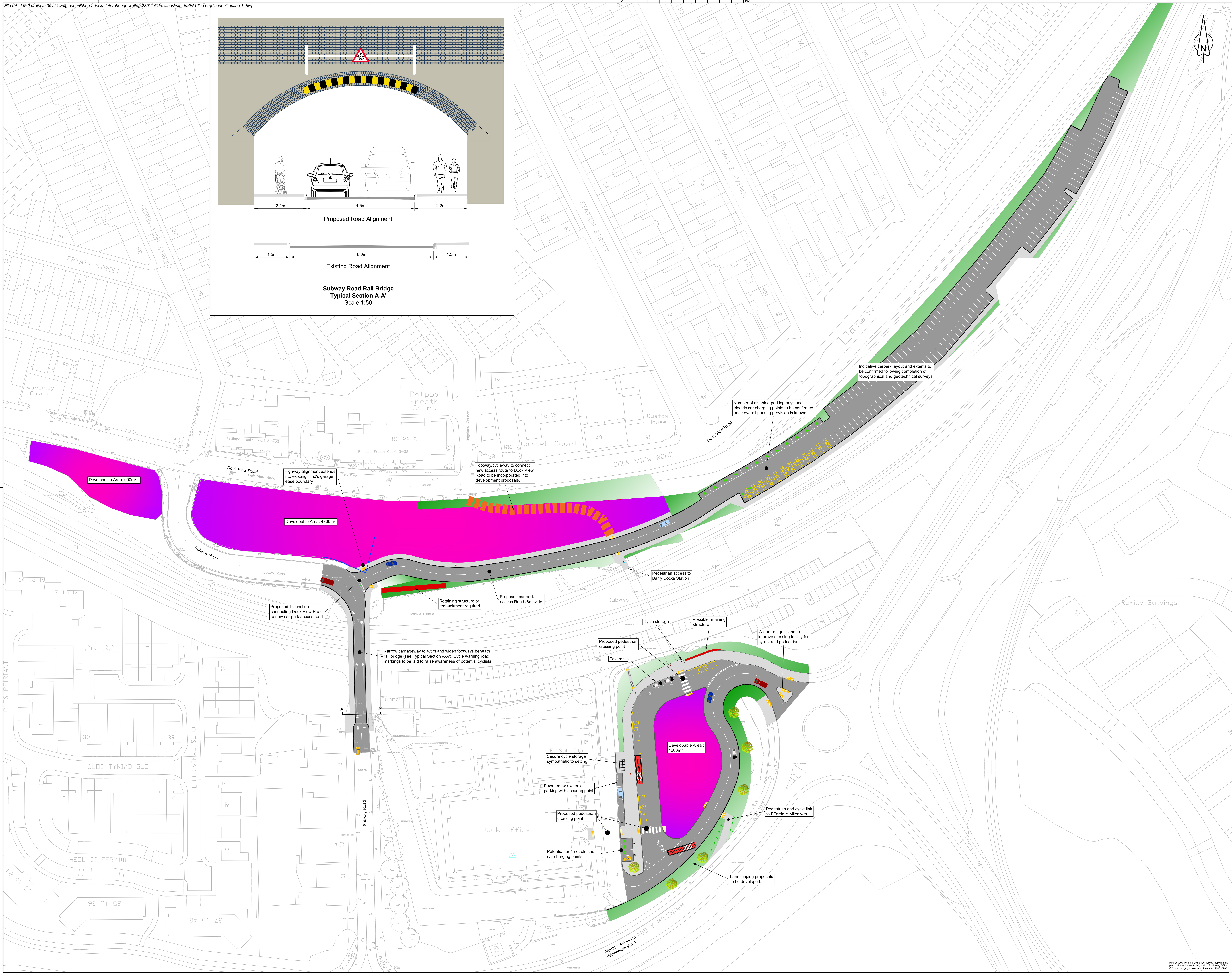
BDI-AMEY-001-00-D
R-C-004 Option 1a.p

BDI-AMEY-001-00-D
R-C-006 Option 3.pc

Option 2-Preferred option & interchange General Arrangement drawing

BDI-AMEY-001-00-V
S-Z-001 Revised Opt

BDI-AMEY-S1-ZZ-DR
-C-002 General Arra



File ref - I:\2.0 projects\0011 - vofg council\barry docks interchange weltag 2&3\2.5 drawings\wip drafts\1 live drgs\council option 1.dwg
Proposed Road Alignment
2.2m
4.5m
2.2m
1.5m
6.0m
1.5m
Existing Road Alignment
Subway Road Rail Bridge
Typical Section A-A'
Scale 1:50
Developable Area: 900m²
Developable Area: 4300m²
Developable Area : 1200m²
Highway alignment extends into existing Hind's garage lease boundary
Footway/cycleway to connect new access route to Dock View Road to be incorporated into development proposals.
Indicative carpark layout and extents to be confirmed following completion of topographical and geotechnical surveys
Number of disabled parking bays and electric car charging points to be confirmed once overall parking provision is known
Pedestrian access to Barry Docks Station
Proposed car park access Road (6m wide)
Retaining structure or embankment required
Proposed T-Junction connecting Dock View Road to new car park access road
Narrow carriageway to 4.5m and widen footways beneath rail bridge (see Typical Section A-A'). Cycle warning road markings to be laid to raise awareness of potential cyclists
Cycle storage
Possible retaining structure
Widen refuge island to improve crossing facility for cyclist and pedestrians
Proposed pedestrian crossing point
Taxi rank
Secure cycle storage sympathetic to setting
Powered two-wheeler parking with securing point
Proposed pedestrian crossing point
Potential for 4 no. electric car charging points
Pedestrian and cycle link to FFordd Y Mileniwm
Landscaping proposals to be developed.
Dock View Road
Subway Road
DOCK VIEW ROAD
FRYATT STREET
CORONATION STREET
STATION STREET
ST MARY'S AVENUE
Philippa Freeth Court
Cambell Court
Custom House
Barry Docks (Station)
Romilly Buildings
Dock Office
CLOS TYNIAD GLO
HEOL CILFFRYDD
Ffordd Y Mileniwm (Millennium Way)
A
A'
N

NOTES

1. Electric bus charging and bus shelters not shown for clarity
2. Northern car park extents and layout to be confirmed once topographical and geotechnical surveys have been completed

Rev	Revision details	Drwn	Chkd	Appd	Date

Designed: .	Date: .
Drawn: .	Date: .
Checked: .	Date: .
Approved: .	Date: .

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Client: VALE of GLAMORGAN / BRO MORGANNWG

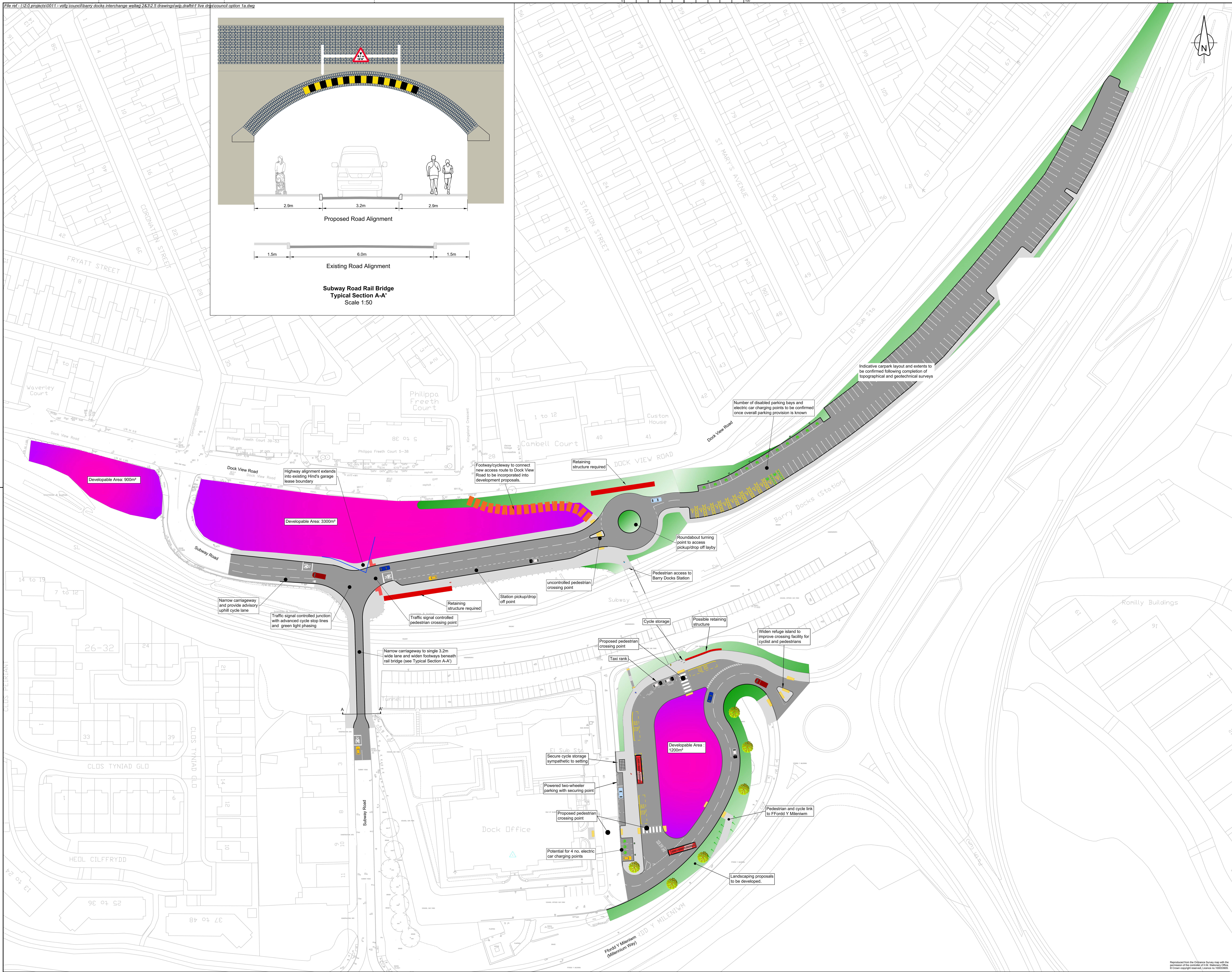
Project Name
Barry Docks Interchange

Drawing Title
Highway Alignment Option 1

Original Drawing Size : A0	Scale : 1:500
Dimensions : m	

Drawing Status	Suitability
SHARED	S3

Drawing No	Rev
BDI-AMEY-001-00-DR-C-003	P01.1



File ref - I:\2.0 projects\0011 - vofg council\barry docks interchange weltag 2&3\2.5 drawings\wip drafts\1 live dngs\council option 1a.dwg
Proposed Road Alignment
2.9m
3.2m
2.9m
Existing Road Alignment
1.5m
6.0m
1.5m
Subway Road Rail Bridge
Typical Section A-A'
Scale 1:50
Developable Area: 900m²
Developable Area: 3300m²
Highway alignment extends into existing Hind's garage lease boundary
Footway/cycleway to connect new access route to Dock View Road to be incorporated into development proposals.
Retaining structure required
Number of disabled parking bays and electric car charging points to be confirmed once overall parking provision is known
Indicative carpark layout and extents to be confirmed following completion of topographical and geotechnical surveys
Roundabout turning point to access pickup/drop off layby
Pedestrian access to Barry Docks Station
uncontrolled pedestrian crossing point
Station pickup/drop off point
Retaining structure required
Traffic signal controlled pedestrian crossing point
Narrow carriageway and provide advisory uphill cycle lane
Traffic signal controlled junction with advanced cycle stop lines and green light phasing
Narrow carriageway to single 3.2m wide lane and widen footways beneath rail bridge (see Typical Section A-A')
Cycle storage
Possible retaining structure
Widen refuge island to improve crossing facility for cyclist and pedestrians
Proposed pedestrian crossing point
Taxi rank
Developable Area : 1200m²
Secure cycle storage sympathetic to setting
Powered two-wheeler parking with securing point
Proposed pedestrian crossing point
Potential for 4 no. electric car charging points
Pedestrian and cycle link to FFordd Y Mileniwm
Landscaping proposals to be developed.
Dock View Road
Subway Road
Ffordd Y Mileniwm (Millennium Way)
DOCK VIEW ROAD
STATION STREET
ST MARY'S AVENUE
CORONATION STREET
FRYATT STREET
Barry Docks Station
Dock Office
Romilly Buildings
Philippa Freeth Court
Cambell Court
Custom House
Waverley Court
CLOS TYNIAD GLO
HEOL CILFFRYDD

NOTES

1 Electric bus charging and bus shelters not shown for clarity
2 Northern car park extents and layout to be confirmed once topographical and geotechnical surveys have been completed

Rev	Revision details	Drwn	Chkd	Appd	Date

Designed: .	Date: .
Drawn: .	Date: .
Checked: .	Date: .
Approved: .	Date: .

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Client: VALE of GLAMORGAN / BRO MORGANNWG

Project Name
Barry Docks Interchange

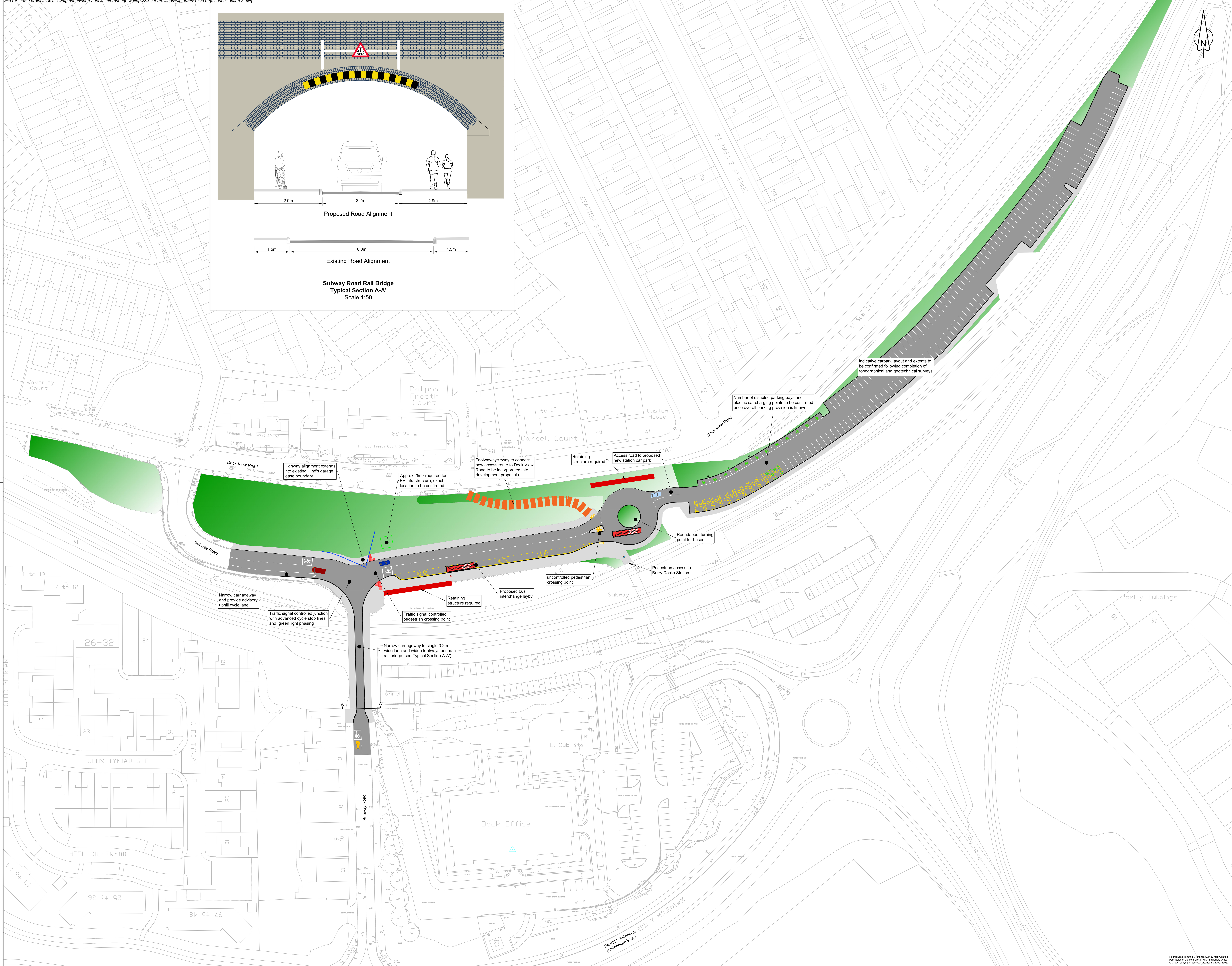
Drawing Title
Highway Alignment Option 1a

Original Drawing Size : A0	Scale : 1:500
Dimensions : m	

Drawing Status	Suitability
SHARED	S3

Drawing No	Rev
BDI-AMEY-001-00-DR-C-004	P01.1

File ref - I:\2.0 projects\0011 - vofg council\barry docks interchange weltag 2&3\2.5 drawings\wip drafts\1 live drgs\council option 3.dwg



Proposed Road Alignment
2.9m
3.2m
2.9m
Existing Road Alignment
1.5m
6.0m
1.5m
Subway Road Rail Bridge
Typical Section A-A'
Scale 1:50
Indicative carpark layout and extents to be confirmed following completion of topographical and geotechnical surveys
Number of disabled parking bays and electric car charging points to be confirmed once overall parking provision is known
Dock View Road
Highway alignment extends into existing Hind's garage lease boundary
Approx 25m² required for EV infrastructure, exact location to be confirmed.
Footway/cycleway to connect new access route to Dock View Road to be incorporated into development proposals.
Retaining structure required
Access road to proposed new station car park
Roundabout turning point for buses
Pedestrian access to Barry Docks Station
uncontrolled pedestrian crossing point
Proposed bus interchange layby
Retaining structure required
Traffic signal controlled pedestrian crossing point
Narrow carriageway and provide advisory uphill cycle lane
Traffic signal controlled junction with advanced cycle stop lines and green light phasing
Narrow carriageway to single 3.2m wide lane and widen footways beneath rail bridge (see Typical Section A-A')
Subway Road
Dock View Road
FRYATT STREET
CORONATION STREET
STATION STREET
ST MARY'S AVENUE
Philippa Freeth Court
Cambell Court
Custom House
Barry Docks Station
Romilly Buildings
Dock Office
CLOS TYNIAD GLO
HEOL CILFFRYDD
Ffordd Y Mileniwm (Millennium Way)

NOTES

1. Electric bus charging and bus shelters not shown for clarity
2. Northern car park extents and layout to be confirmed once topographical and geotechnical surveys have been completed

Rev	Revision details	Drwn	Chkd	Appd	Date

Designed: . Date: .
Drawn: . Date: .
Checked: . Date: .
Approved: . Date: .

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Client: VALE of GLAMORGAN / BRO MORGANNWG

Project Name: Barry Docks Interchange

Drawing Title: Highway Alignment Option 3

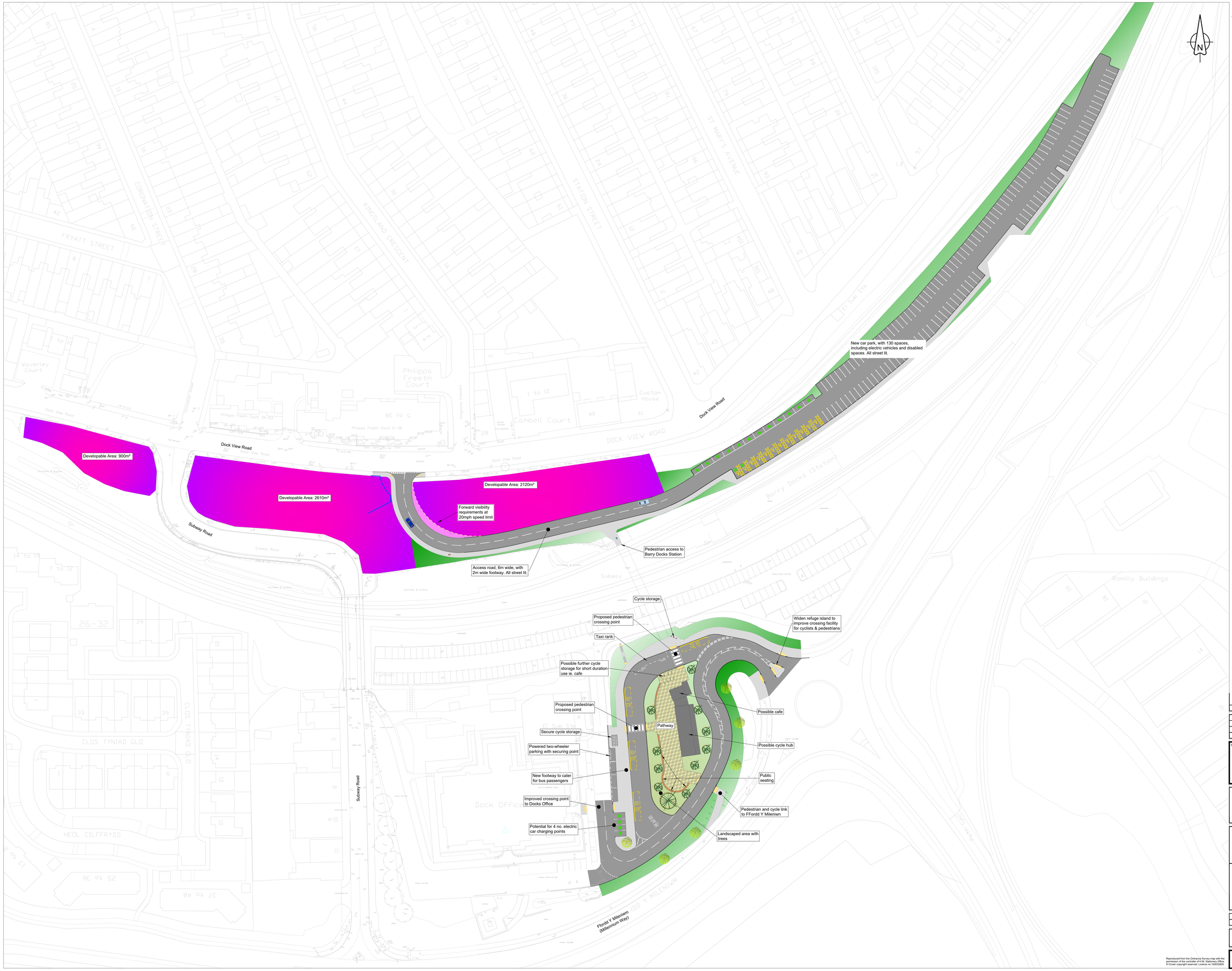
Original Drawing Size: A0 | Scale: 1:500
Dimensions: m

Drawing Status: SHARED | Suitability: S3

Drawing No: BDI-AMEY-001-00-DR-C-006 | Rev: P01.1

NOTES

1 Electric bus charging and bus shelters not shown for clarity



Rev	Revision details	Drwn	Chkd	Appd	Date

Designed:	AC/Turley	Date:	22/09/2021
Drawn:	AC/Turley	Date:	22/09/2021
Checked:	-	Date:	-
Approved:	-	Date:	-

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Client: VALE of GLAMORGAN / BRO MORGANNWG

Project Name
Barry Docks Interchange

Drawing Title
Highway Alignment Option 2

Original Drawing Size : A1	Scale : 1:500
Dimensions : -	

Drawing Status	Suitability
SHARED	S3

Drawing No	Rev
BDI-AMEY-001-00-DR-C-005	

File ref - I:\2.0 projects\0011 - vofg council\barry docks interchange weltag 2&3\2.5 drawings\wip.drafts\1 live drgs\dd site 1 - bus station\planning drawings\bdi-amey-s1-zz-dr-c-002 general arrangement.dwg

0 100

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KEY:

- Proposed Block paved footway
- Proposed bituminous footway
- Proposed coloured asphalt footway
- Proposed carriageway
- Proposed green space/landscaped area
- Litter Bin
- Street lighting column
- Ensign Bollard with incorporated cycle signage
- Road Sign

Rev	Revision details	Drwn	Chkd	Appd	Date

Designed:	HH	Date:	24/02/22
Drawn:	HH	Date:	24/02/22
Checked:	TLJ	Date:	24/02/22
Approved:	TC	Date:	24/02/22

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Client: VALE of GLAMORGAN BRO MORGANNWG

Project Name: Barry Docks Transport Interchange

Drawing Title: General Arrangement

Original Drawing Size : A1	Scale : 1:250
Dimensions : m	

Drawing Status: FOR PLANNING	Suitability: S2
Drawing No: BDI-AMEY-S1-ZZ-DR-C-002	Rev: P01.1