



**Advanced Manufacturing Innovation District Scotland South
– Road & Active Travel Infrastructure
Design & Access Statement**

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1 Introduction

1.1 Purpose

This Design and Access Statement ("DAS") has been prepared by Amey Consulting on behalf of Renfrewshire Council (RC) City Deal and Infrastructure Team, in support of the AMIDS South planning application for the construction of new strategic infrastructure. These links will provide new active travel and vehicle connections, west of Renfrew Road (Gallowhill) and north of Paisley town centre, and its transport hubs via a new crossing of the White Cart Water to Glasgow Airport and the on-going investment at the Advanced Manufacturing Innovation District Scotland (AMIDS) development.



Figure 1: Aerial view from Paisley Town Centre north along White Cart Water to Glasgow Airport and AMIDS with Lighthpark Industrial Estate/Abercorn Transition central in the photograph

The AMIDS South Scheme will maximise on the outcomes being delivered at AMIDS, the ongoing and planned developments in Paisley Town centre, the

wider developments in Renfrew and in Inchinnan while linking to existing and planned active travel routes.

The aim of AMIDS South is to join all the local centres to each other, facilitate better access to employment opportunities for their residents, greater synergy between their businesses and access to leisure and services across all the communities it serves.

This development is being funded through the UK Government Levelling Up Fund but forms a part of a wider package of proposed works by Renfrewshire Council and under the Glasgow City Region City Deal¹.

The DAS has been prepared in accordance with Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006 and the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 and provides supporting information to the planning application. It explains and illustrates the design principles and constraints within the project area which have determined the design and layout of the new north to south, east to west links and new White Cart Water crossing.

The planning application is supported by specimen design drawings for the new bridge, active travel and road infrastructure. In addition, this planning application includes supporting technical documents, namely:

- A Design & Access Statement
- Air Quality Assessment
- Landscape and Visual Assessment

¹ See [City Deal planning applications - Renfrewshire Website](#)

- Noise and Vibration Assessment
- Preliminary Ecological Appraisal
- Climate Impact Assessment
- Population and Human Health Assessment
- Cultural Heritage Assessment
- Flood Risk Assessment
- Water Quality Assessment
- Invasive Species Report and Method Statement, and
- Swept Path Assessment

1.2 Background

Amey Consulting were commissioned in October 2019 by Renfrewshire Council for the AMIDS South project. The assessment methodology used was a bespoke objective based assessment to reflect the problems, opportunities, issues, and constraints specific to the area in particularly the Abercorn Street Transition area and aligned with over-arching AMIDS project objectives to:

- Stimulate increased economic and development activity in Paisley and the wider area;
- Attract and retain an increased working age population in the local area;
- Improve strategic, gateway and local access connections and perceptions between: Paisley Town Centre; Paisley Gilmour Street; AMIDS/Glasgow Airport and the neighbouring communities;
- Improve integration of the area and key institutions (such as West College Scotland): north and south of Paisley Gilmour Street and east and west of the White Cart; and

- Capture the benefits of major infrastructure improvements and associated development for Paisley Town Centre, Paisley, Renfrewshire and reinforce the value of planned investment at AMIDS.

The preferred routes were identified in April 2020, to deliver the infrastructure component parts outlined in Table 1 which shall in turn realise the benefits of the planned developments and maximise outcomes for other planned and ongoing initiatives.

Since the conception of the AMIDS South project, there has been a proposal for a new Secondary School and Community Campus on Renfrew Road. The AMIDS South project will provide new and more direct links to this proposed facility for the communities west of the White Cart water.

Table 1: AMIDS South Infrastructure Components

Component	Description
North to South Route	A 1.7km long active travel and vehicle link between Paisley Town Centre/Paisley Gilmour Street Station and AMIDS/Glasgow Airport by way of upgraded Abercorn Street, Harbour Road, Inchinnan Road and the new White Cart Water crossing at Paisley Harbour.
East to West Route	A 550m long active travel and vehicle link from Renfrew Road, connecting to the Lighthill Industrial Area and directly linking to the north to south route and new White Cart Water Crossing.

AMIDS South also plays a key role in completing RC's proposed network of infrastructure projects (Figure 2) by connecting the town of Paisley (population, circa 77,000), the largest local settlement, by all modes to AMIDS some 3km distance from the town centre and other nearby settlements of Renfrew and Inchinnan (and beyond) and providing direct links to existing and planned active travel routes (ATR).

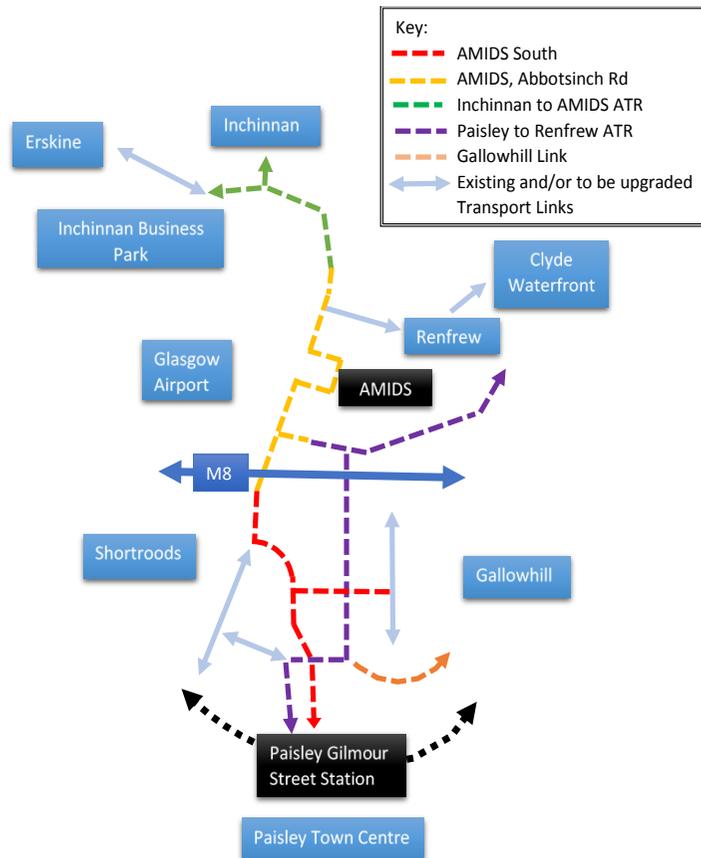


Figure 2 : AMIDS South (red) Connectivity to the Wider Infrastructure Network

It is critical AMIDS South is completed and in place ahead of significant occupation of the development sites if the benefits of AMIDS and surrounding development are to be obtained by local residents and the use of sustainable modes of transport are available from the outset (rather than encouraged to mode shift later). In turn, this is crucial to ensuring the economic growth being pursued takes place, it is sustainable and contributes to carbon

reduction and achieving Net Zero and it also brings about the inclusion and improvements to the environment and quality of life in the area.

1.3 Programme

The project programme identifies the key milestones commencing in 2022 with finalising the specimen design and submission of the planning application in May 2022, progressing to detailed design and construction which will commence during 2023 with completion in 2025 (Table 2)

Table 2: AMIDS South Project Programme

Period	Milestone
	Finalise Specimen Design
	Commencement of Statutory Process (Planning, CPO, etc.)
	Planning Approval
	Ground Investigations
	Detailed Design Package
	Construction Contract Tender
	Completion of Statutory Process
	Award Construction Tender
	Construction Start
	Construction Completion

1.4 Applicant and Agent Details Section

This planning application is being made by Renfrewshire Council (RC), specifically by the Council's City Deal and Infrastructure Team.

This DAS and the application have been prepared by the project team comprising officers of the Council's City Deal and Infrastructure Team and members of the professional consultant team including:

- Amey Consulting – roads, active travel, drainage, utilities, lighting & electrical and environmental;
- Ramboll – structural engineer, bridge and geotechnical design;
- BEAM – structural bridge architects.
- SYSTRA – traffic consultant, and
- Sweco – ecosystem services specialists.



Figure 3: Aerial view South along White Cart and Abercorn Transition area with Renfrew Road (left) and Inchinnan Road (right)

2 Policy

2.1 Overview

The overarching policy, strategic development and planning framework for Scotland is formed by the Scottish Government. In a series of high-level policy and strategy documents they set out the requirements for growth across the country, whilst taking account of the need to increase employment opportunities, improve inclusion and ensure growth is sustainable. The overriding theme of national transport policy is that local transport systems must help deliver inclusive economic growth, whilst reducing inequality, addressing climate change and improving health & wellbeing.

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 play a crucial role in meeting the growth vision. Of particular importance at a regional level are the plans of the Glasgow Combined Authority and within this the Glasgow City Deal and Regional Transport Strategy, being brought about with support from both UK and Scottish Government.

2.2 National

AMIDS South aligns with the National Policies (Table 3) and the Scottish Governments four priorities for infrastructure - delivering economic growth, managing transition to low carbon, supporting delivery of efficient public services and supporting employment opportunity. It will support regeneration across the area it serves by improving sustainable transport links between regeneration sites, residential areas and the amenities in nearby settlements by ensuring inclusion for those living in the most deprived locations.

Table 3: National Policy and Vision

National Policy	Policy Vision / Strategy / Outcomes
Scottish Planning Policy (SPP3)	seeks a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

Scottish National Planning Framework 3 (NPF3)	Provides the spatial context for the Economic Strategy and aspirations for placemaking and sustainable economic growth across the Country.
National Performance Framework	Outlines Scottish Government priorities for strategic investment
National Transport Strategy (NTS2)	Sets out the transport vision to reduce inequality, take climate action, help deliver inclusive economic growth and improve health & wellbeing.
Strategic Transport Projects Review (STPR)	Highlights the importance of connectivity and the role that transport infrastructure investment can play in maximising potential and reducing disparities.
Strategic Transport Projects Review 2 (STPR2)	8 Thematic priorities for intervention
Infrastructure Investment Plan (IIP)	Drive economic growth, reduce carbon emissions, provide effective public services and support employment opportunities
Climate Change Act and Scotland's Low Carbon Economy	Aims to encourage environmentally sustainable development and supports the implementation of low emission transport connectivity
Creating Places	Policy statement on Architecture and place for Scotland, describes the six qualities of positive placemaking as: Distinctive, Safe and Pleasant, Easy to move around and beyond, Welcoming, Adaptable, Resource Efficient.
Green Infrastructure, Design & Placemaking	This Advice & Guidance note sets out the principles and advantages gained from careful consideration of landscaping, public realm, active travel infrastructure and supporting "blue" infrastructure.

2.3 Regional

Table 4: Regional Policy and Vision

Regional Policy	Policy Vision / Strategy / Outcomes
Clydeplan: The Glasgow & Clyde Valley Strategic Development Plan (SDP)	Focuses on improving the viability of town and city centres, enhance place making, boost economies, provide low carbon infrastructure and implement effective urban regeneration
Regional Transport Strategy (RTS)	Provide reliable and low emitting transport, improve connectivity and ensure transport access for all

These policies recognise the integration of land use and transport is critical to achieving sustainable economic growth as is modal shift and increasing the levels of active travel across the city region. Specifically, AMIDS South will both improve the sustainable transport links to AMIDS, Glasgow Airport and the Clyde Waterfront from those settlements closest to these developments and unlock regeneration opportunities within the settlements along the corridors it serves to ensure the long-term economic competitiveness of the City region.

2.4 Local

Table 5: Local Policy and Vision

Local Policy	Policy Vision / Strategy / Outcomes
Renfrewshire Local Development Plan (LDP)	Outlines the strategic development ambitions for the local authority including key investment areas.
Renfrewshire Council Local Transport Strategy (LTS)	Targets local economic regeneration, a healthy and sustainable environment, improved safety / security, enhanced connectivity and integrated services

Renfrewshire Economic Framework (REF)	Assess Renfrewshire’s economy to prioritise strategies to grow the local economy and take advantage of the emerging wider economic context.
Paisley Town Centre Action Plan (TCAP)	The Plan provides a regeneration strategy for Paisley Town Centre over the next 20 years. It aims to re-established Paisley as Renfrewshire’s primary town centre
Renfrewshire Economic Strategy 2020 – 2030 (RES)	Sets out a range of actions and interventions aimed at ensuring sustained and inclusive economic growth.

The focus of development is on previously used sites, concentrating on existing built-up areas and key redevelopment sites to facilitate sustainable development and a low carbon economy.

To the north of Paisley Town Centre, the LDP identifies the corridor between White Cart Water and Renfrew Road as an Economic Transition area. The Council has prepared a development framework for the Abercorn Transition Area to facilitate the comprehensive redevelopment with AMIDS South playing a key role in unlocking development alongside the White Cart.

AMIDS South will make a significant contribution to the LDP proposals by completing the link between Paisley Town Centre and AMIDS and Glasgow Airport. It will improve access, including by sustainable modes, to jobs for Paisley residents at AMIDS and the surrounding developments.

It will also provide an attractive link between the Airport and Paisley that will encourage visitors to the town and in this context support proposals to improve the towns cultural, hospitality and retail offer. Within Paisley it will strengthen links to the key transport hub at Gilmour Street Gateway and to the town.

It will open up the area alongside the White Cart for regeneration and as a resource for leisure. In turn this will facilitate aesthetic and environmental improvements alongside the river making for a much more attractive approach to the town, encouraging walking and cycling via the corridor alongside this and improving the local environment for residents and visitors.

3 Site and Context Appraisal

3.1 Location

The boundary of AMIDS South is taken as Old Sneddon Street near Gilmour Street Railway Station in Paisley town centre in the south, to the roundabout between Sanderling Road, Abbotsinch Road and Inchinnan Road in the north. The eastern extent of the project is Renfrew Road and the western extent Inchinnan Road (Figure 4).

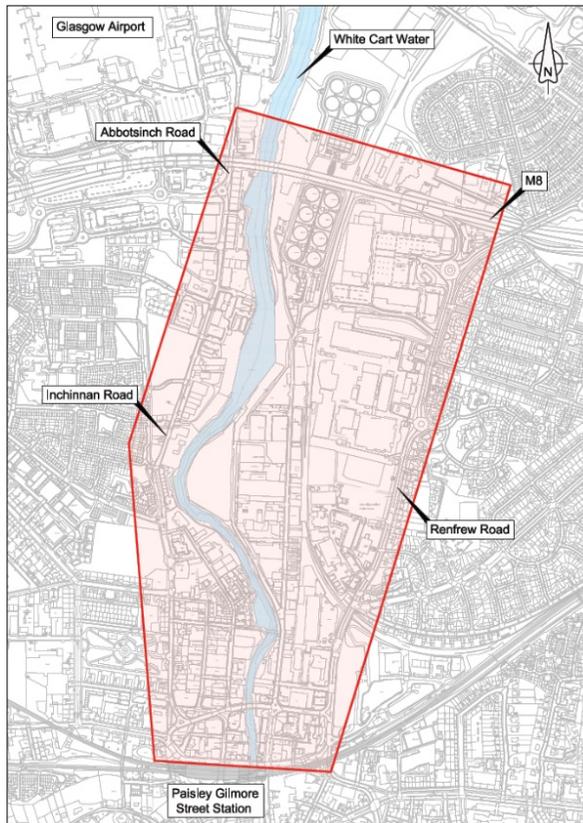


Figure 4: AMIDS South Scheme Extents

3.2 Overview

The area immediately north of Paisley Town Centre accommodates a mix of low quality industrial, business and dispersed residential development. For several decades, the barrier created by the elevated rail line, poor quality environment, poor connectivity and lack of pedestrian permeability has constrained land values and limited private sector investment. While some development has progressed on Old Sneddon Street recently, the rate of progress is slow and small in scale. Despite being within 2 to 3 minutes' walk of Paisley Town Centre and Scotland's 4th busiest train station, several parcels of land in this area are included in the vacant and derelict land register.

Much of the area covered by the project and the areas immediately adjacent are, noted within the 2020 SIMD survey as being in the top 10% of the most deprived areas in Scotland. Any intervention that can help to address the aspects which contribute to this statistic is considered a priority and is in line with Renfrewshire Council's placemaking strategy.

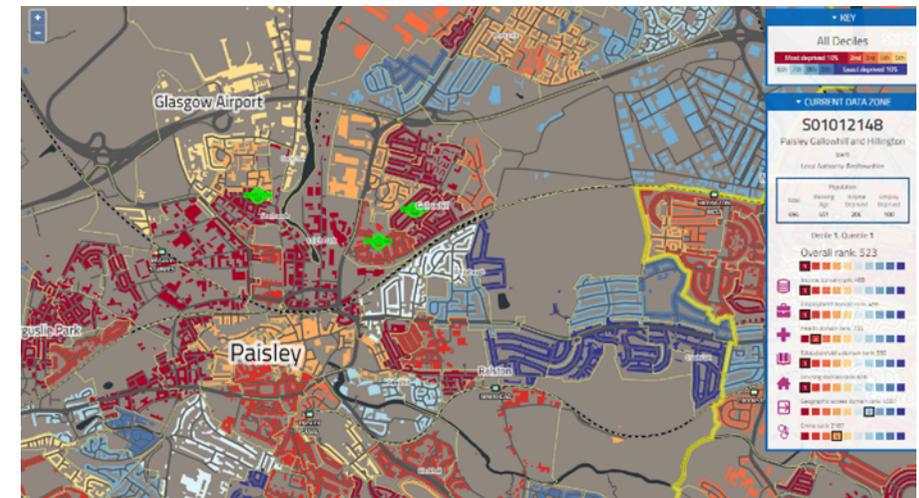


Figure 5: Deprivation in Paisley (SIMD 2020)

The White Cart Water traverses this area and is a potential focus for public interest and private investment. However, with the current limited riverside access or areas of open space, its potential is not readily apparent. As most business operations face away from the riverside, access is not exploited.



Figure 6: White Cart Water looking north to Paisley Harbour

Communities and businesses near White Cart Water are poorly connected in the absence vehicular river crossings towards the north around Paisley Harbour and congested traffic conditions on adjacent roads. The recently refurbished White Cart Bridge at Carlile Place provides pedestrian and cyclist connection from NCR route 7 and the Paisley to Glasgow Airport Cycleway via New Sneddon Street and Carlile Place to Abercorn Street/Laighpark Industrial Area. Riverside footways and cycleways are currently of short length and disconnected.

Love Street and Inchinnan Road to the west of the White Cart serves as a key gateway route into Paisley and is the principle direct route from Glasgow Airport and key adjacent economic sites including Inchinnan Business Park and AMIDS. The quality of the public realm along this gateway route and the poor pedestrian environment associated with high traffic flows is not fit for purpose. The historical tenement properties constrain effective intervention to improve the area for residents and as a gateway route.

Renfrew Road currently acts as a key route to Paisley, although it does not directly connect to the AMIDS area nor Glasgow Airport. Proposals for redevelopment of West College Scotland and the potential for a new secondary school on the former Chivas site, create both challenges and opportunities for Renfrewshire, it is clear however, that improving the connectivity of these two important sites to the skills development and employment opportunities at AMIDS, will improve the outcomes delivered by both these developments.



Figure 7: Aerial view looking northeast Paisley Harbour

The Abercorn Transition area located east of White Cart Water provides vehicular and pedestrian access to the Laighpark Industrial Estate, the Wastewater treatment works to the north and Harbour Road. The area is a dead end with all traffic including large industrial vehicles accessing solely from the south via the town centre one-way gyratory system adding to congestion and air quality issues. The area is served by the public roads of Abercorn Street and Harbour Road and these vary in terms of road width and quality as illustrated in Figures 8 to 11.



Figure 8: Abercorn Street looking north at Hamilton Street



Figure 10: Aerial looking east to junction of Abercorn Street/Harbour Road and newly refurbished foot/cycle bridge to right linking to Carlile Place



Figure 9: Aerial looking northwest to My Easy Park, Harbour Road and White Cart Water



Figure 11: Looking West along Harbour Road

3.3 Non-Motorised Users (NMUs) Existing Routes

The main footway and cycle provision is the public road network around the town centre, the one-way gyratory system, Renfrew Road and Inchinnan Road as shown Figure 12.

The area is dominated by vehicle use, creating a poor environment for walking and cycling. Connectivity from the west, Shortroods to Gallowhill requires pedestrians and cyclists to travel south to Niddry Street and then back north on Renfrew Road. As shown, White Cart Water and Laighpark Industrial Estate/Abercorn Transition area create a barrier to east to west movement, with access to this area only directly from the south via Niddry Street/Gyratory.

3.4 Pedestrians

For pedestrians the main factors creating barriers to walking are a combination of:

- Overall quality of routes – footway widths and condition (Figure 13)
- The length and directness of walking routes e.g. Gallowhill to:
 - Paisley Gilmour Street Station/Abercorn Street, 20-25 mins
 - Laighpark Industrial Area, 25-30 mins
 - Inchinnan Road (Air Motel area) and onto Shortroods – 40-45 mins
- Conflicts with existing accesses, junctions and lack of dedicated controlled crossing points with major junctions requiring multiple stages for pedestrians to cross e.g. new Wallneuk development junction with Renfrew Road/Niddry Street

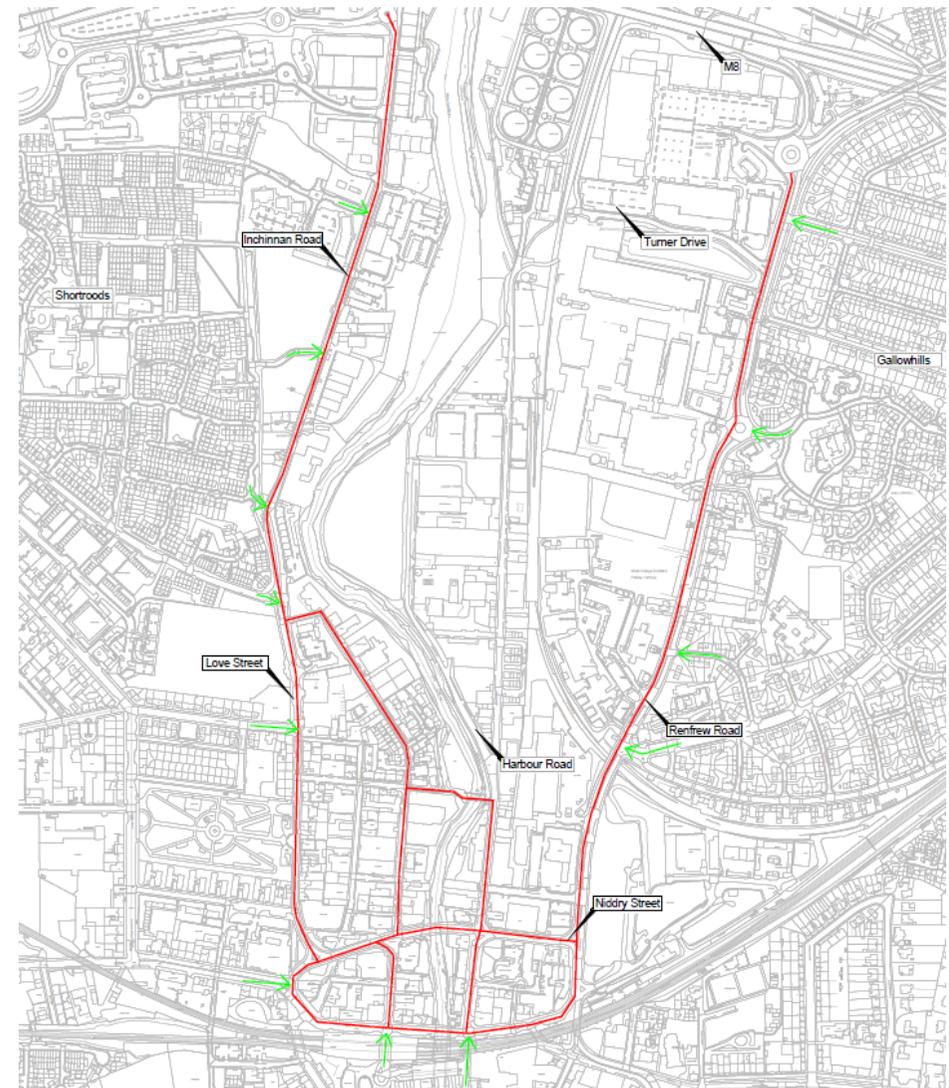


Figure 12: Existing Routes (red) for Gallowhill to Inchinnan Road/Shortroods

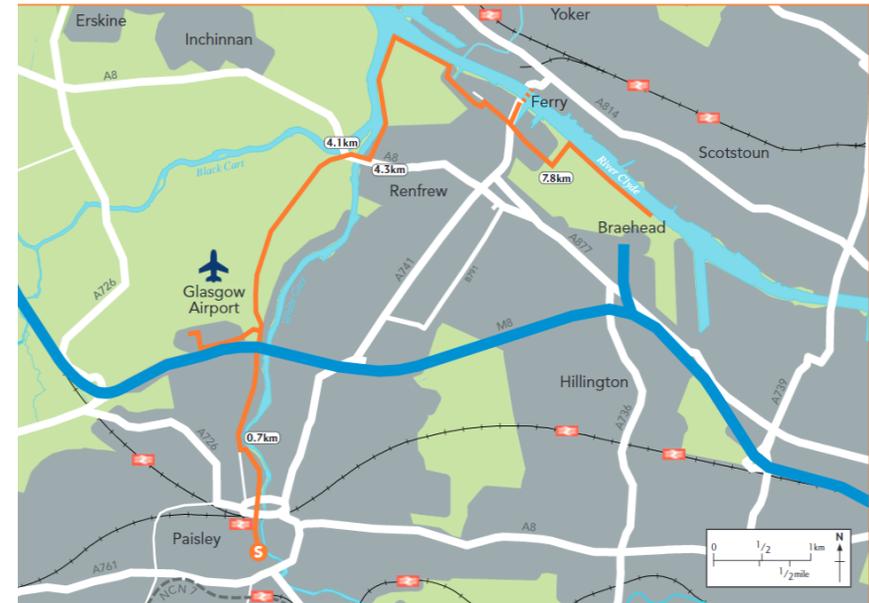


Figure 13: Typical footway provision- Inchinnan Road

3.5 Cyclists

The area between the town centre and Glasgow airport and onto Renfrew and beyond is served by one cycle route, referred to as the Airport Cycle Route, shown in orange in Figure 14. This starts from County Square/Paisley Gilmour Street and heads north along New Sneddon Street and onto Inchinnan Road before connecting with the recently upgraded shared footway/cycleway on Abbotsinch Road and onto Glasgow Airport and AMIDS. The level of provision varies and apart from a short 100 metre length of segregated cycleway on New Sneddon Street at the start of the route, the remainder is on road interspersed with short sections of shared footway/ cycleway before connecting with the active travel route on Abbotsinch Road. Therefore overall, it presents a poor environment for cycling with a route lacking in cohesive provision, signing and presents a barrier other than for the more confident and competent cyclist to negotiate (Figure 15).

This route also connects to the National Cycle Route 7 at Paisley Canal Station with cyclists utilising existing roads and shared footway/cycleways through the town centre.



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Figure 14: Paisley to Renfrew "Airport Cycle Route"

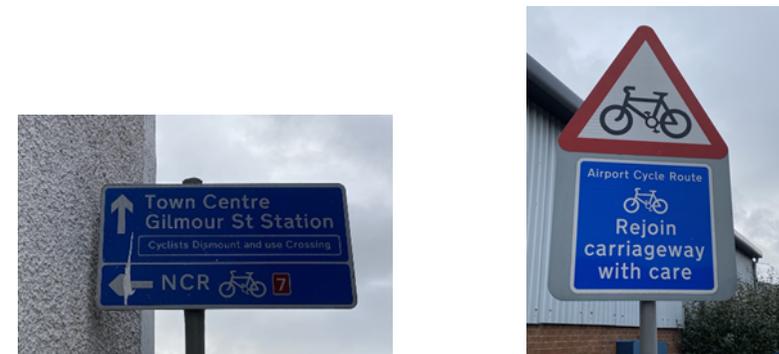


Figure 15: Examples of Signing along Cycle Route

Cyclists from Gallowhill, like pedestrians, have to route via Renfrew Road and Niddry Street before connecting with the Airport Cycle Route if travelling north to Shortroods and onto Glasgow Airport and AMIDS. The main barrier is not distance with Gallowhill to the town centre and onto Shortroods and Inchinnan Road (being accessible within 10-15 minutes cycling) it is the quality of the route which has limited provision of dedicated cycleways, conflict with existing accesses and lack of dedicated crossing points at major junctions. With sections on road it presents a poor environment for cycling.



Figure 16: Typical cycling provision Inchinnan Road- Shared surface to on road

3.6 Public Transport

Paisley Gilmour Street train station currently provides the closest rail access to Glasgow Airport and AMIDS, with a bus (McGill's 757) running from the station, via residential communities west of the White Cart (Shortroods) to the airport 7 days a week between 06:00 (07:00 Sundays) and 23:00, on a 15/20 minute frequency in the morning peak and 30 minute frequency for the remainder of the day.

There is currently no direct bus route from Gallowhill to Glasgow Airport/AMIDS with passengers using the no. 64 route from Netherhill Road and changing in the town centre to route nos. 66 and 757 to head north.

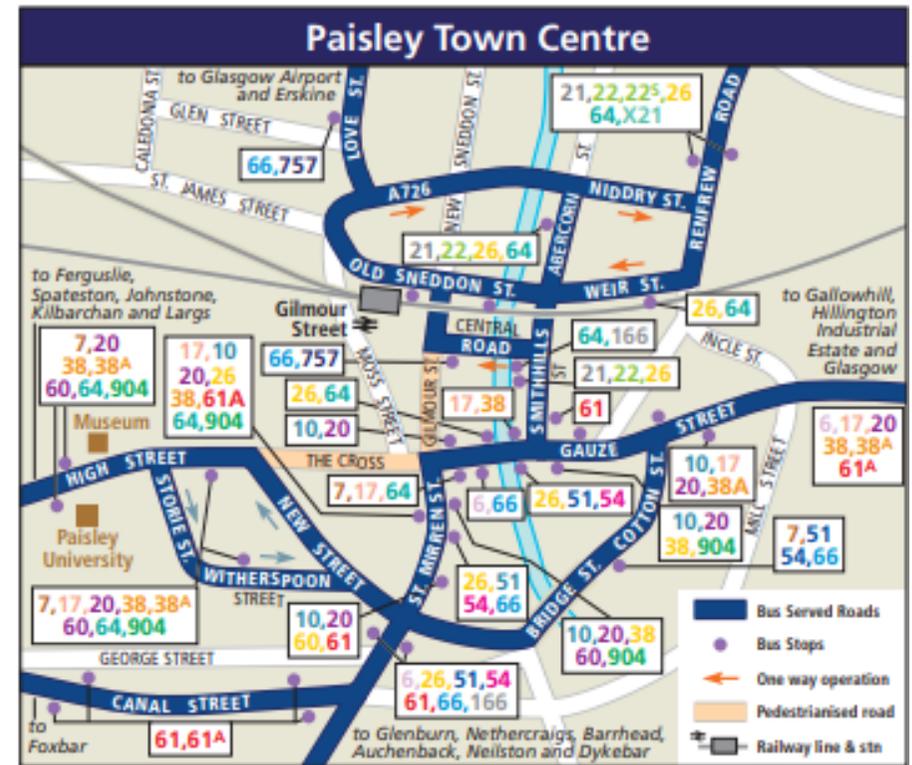


Figure 17: Current bus routes and services (McGills)

3.7 Motorised Vehicles

Currently, the only direct route available between Paisley and AMIDS runs to the west of the White Cart Water, from the A726, along Love Street and Inchinnan Road. This results in all Paisley businesses and residents located east of the river who wish to access AMIDS by sustainable means (bus or active travel) having first to travel into the town centre to cross the river before they

can then travel north to AMIDS, adding significantly to their journey time and to congestion and air quality issues in the town. An alternative vehicular access is available by using Renfrew Road, to the east of the river, to travel north to junction 27 of the M8 and then via junction 28 to access AMIDS. This is a significantly more circuitous and hence time-consuming route, while the former also adds to the weight of traffic on the motorway network, see Figure 19.



Figure 18: Love Street Looking North

Similarly, in the opposite direction, any AMIDS staff or businesses can only access Paisley directly along Inchinnan Road and Love Street. Together with traffic flows in the opposite direction, over time this will create increasingly greater traffic along this route leading to significant congestion issues along its length. With many commercial sites in Paisley located to the north of the town centre and east of White Cart Water, again those businesses and staff from AMIDS seeking access to these by sustainable modes will need to travel into the town centre and then out again. Vehicular access will require the same or the use of more circuitous routes to then access Paisley via Renfrew Road. In either case, again, this will add significant distance and hence time to their journey, as well as to congestion in the town.

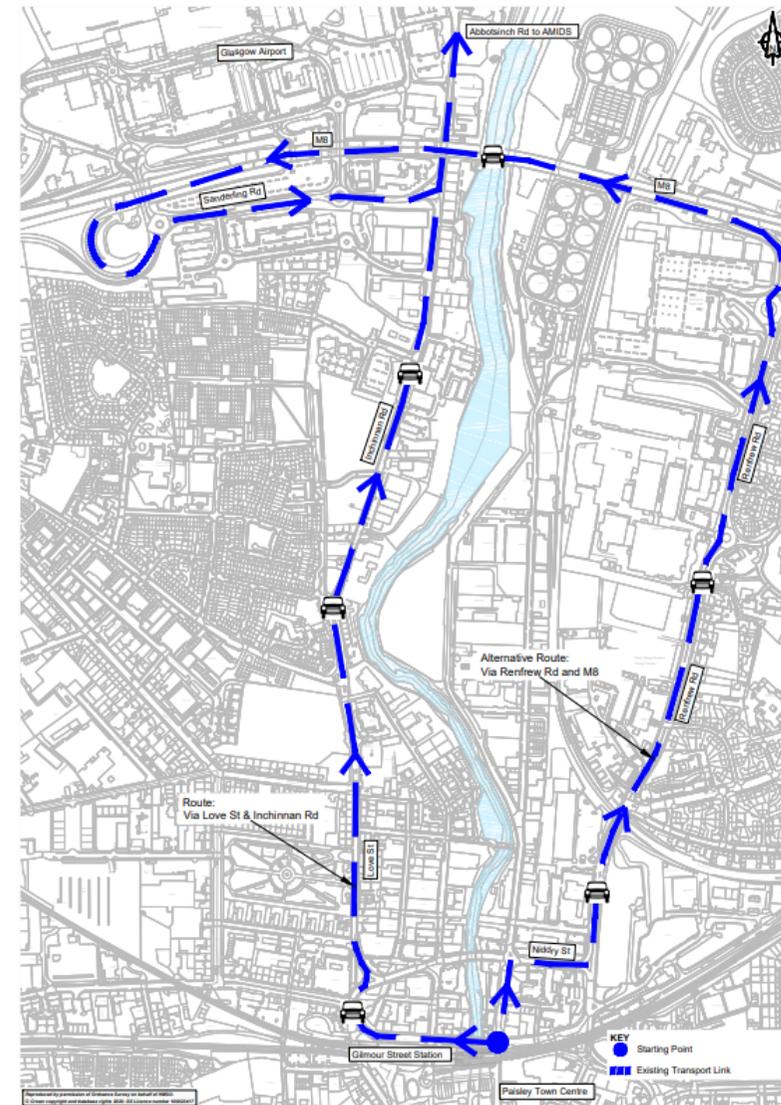


Figure 19: Current Vehicular Routes Paisley Town Centre to AMIDS



Figure 20: Renfrew Road Looking South at former Chivas Site

4 Design Principles, Analysis & Constraints

4.1 Preferred Route Selection

The assessment methodology used to select a preferred route for the scheme was a bespoke objective based assessment, that followed the broad principles and best practise of document TD 37/93: Scheme Assessment Reporting of the Design Manual for Roads and Bridges and Scottish Transport Appraisal Guidance.

The main stages of the appraisal were:



- **Corridor Options** – identification and appraisal of corridor option sections and associated connections with the existing road network;
- **Route Alignment Options** - development of end-to-end alignment options from the better performing corridor option sections identified from the previous stage;
- **Preferred Alignment Option** - outline design of preferred options and production of Options Appraisal Report; and
- **Outline Business Case** - Review of Outline Design and appraisal process with discussion on the expected schemes costs and production of supporting information for submission of OBC.

The first stage was to develop Corridor Options, with common node points. A total of 16 options were identified for the North to South link, including five White Cart Water crossings, and 12 options were identified for the East to West link.

Each individual section was then appraised qualitatively against 15 Scheme Objectives, agreed in advance between Renfrewshire Council and the project team, and reflecting the objectives set out in the Strategic Business case.

Each section was considered by assessing their environmental, engineering, traffic and economic advantages, disadvantages, and constraints. The aim being to identify and sift out the poorer performing sections, thereby identifying the better performing Corridor Options that, when combined, formed end to end Route Alignments.

Table 6: AMIDS South Scheme Objectives

Obj. Ref.	Description
SO1	Provide a visually attractive Gateway corridor between Paisley town centre/Paisley Gilmour Street station and the AMIDS/Glasgow Airport
SO2	Improve road and public transport connections between Paisley town centre/Paisley Gilmour Street station and AMIDS/Glasgow Airport
SO3	Improve non-motorised user connections between Paisley town centre/Paisley Gilmour Street station and the AMIDS/Glasgow Airport
SO4	Improve road and public transport connections between areas of Paisley east of the White Cart Water and the AMIDS/Glasgow Airport
SO5	Improve non-motorised user connections between areas of Paisley east of the White Cart Water and the AMIDS/Glasgow Airport area
SO6	Seek to maximize opportunities to open up the White Cart corridor as an attractive destination and development location by improving accessibility
SO7	Seek to maximize opportunities to improve the public realm along the A741 Renfrew Road as a result of the Renfrew Road link

SO8	Minimise any adverse traffic impacts and seek, where possible to re-route traffic away from residential areas such as Love Street and the south end of Inchinnan Road
SO9	Deliver a scheme that supports planned developments and minimises impact on existing businesses in the area between the White Cart Water and Renfrew Road, including West College Scotland, the Chivas site, and the Abercorn Street transition area
SO10	Limit negative impacts on the White Cart Water, its biodiversity and habitats, and its flood plain
SO11	Limit negative environmental impacts in terms of air quality, noise/vibration, landscape, geology, soils, cultural heritage, landscape and visual amenity
SO12	Deliver a scheme that is feasible in terms of buildability (including cost timescale or deliverability risks)
SO13	Deliver a scheme that is feasible in terms of maintainability (including the cost of scheme operation and maintenance)
SO14	Deliver a scheme that satisfies the STAG criteria for Public Acceptability
SO15	Deliver an affordable scheme with a positive Transport and Economic Efficiency (TEE) performance in terms of Net Present Value (NPV) and Benefit to Cost Ratio (BCR)

In total six North to south sections were sifted out mainly due to impact on contaminated land, existing or future land use and the impact on the major trunk sewer associated with the Wastewater Treatment Works. This left 10 better performing sections which, when combined formed two end to end Route Alignment Options with two alternative White Cart crossing locations and two different access points onto Inchinnan Road.

For the East to West options, a total of six sections were sifted out primarily due to impact on existing and future land use, contaminated land and the engineering feasibility of access from Renfrew Road. This left 6 sections that combined formed 3 East to West Route Alignment Options. (Figure 21).

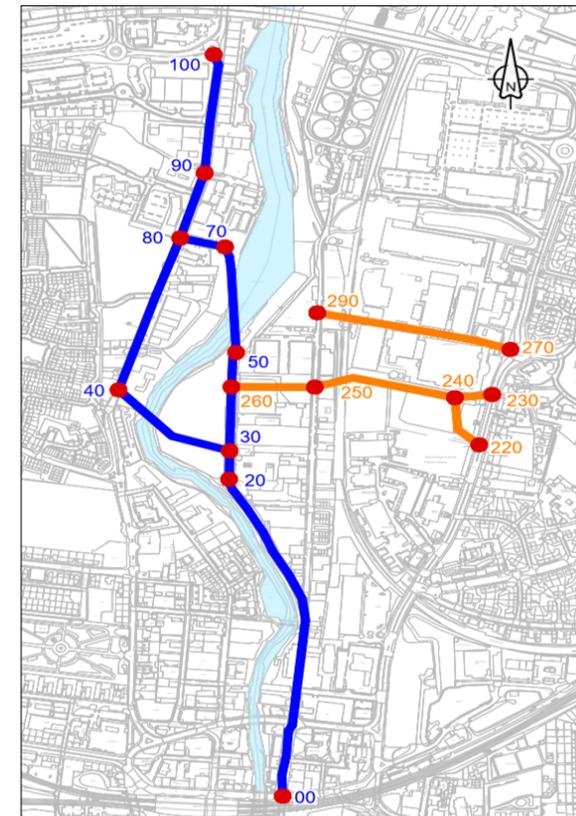


Figure 21: Shortlist of Route Alignments

Each end to route alignment option was issued to the Engineering, Environmental and Traffic disciplines to appraise using a mixture of qualitative and quantitative information including traffic, active travel, cost and environmental data to analyse each option in greater detail. The two north to south links were then assessed against each other to determine the best performing route. This was repeated for the three east to west links and the preferred routes identified are shown in Figure 22.

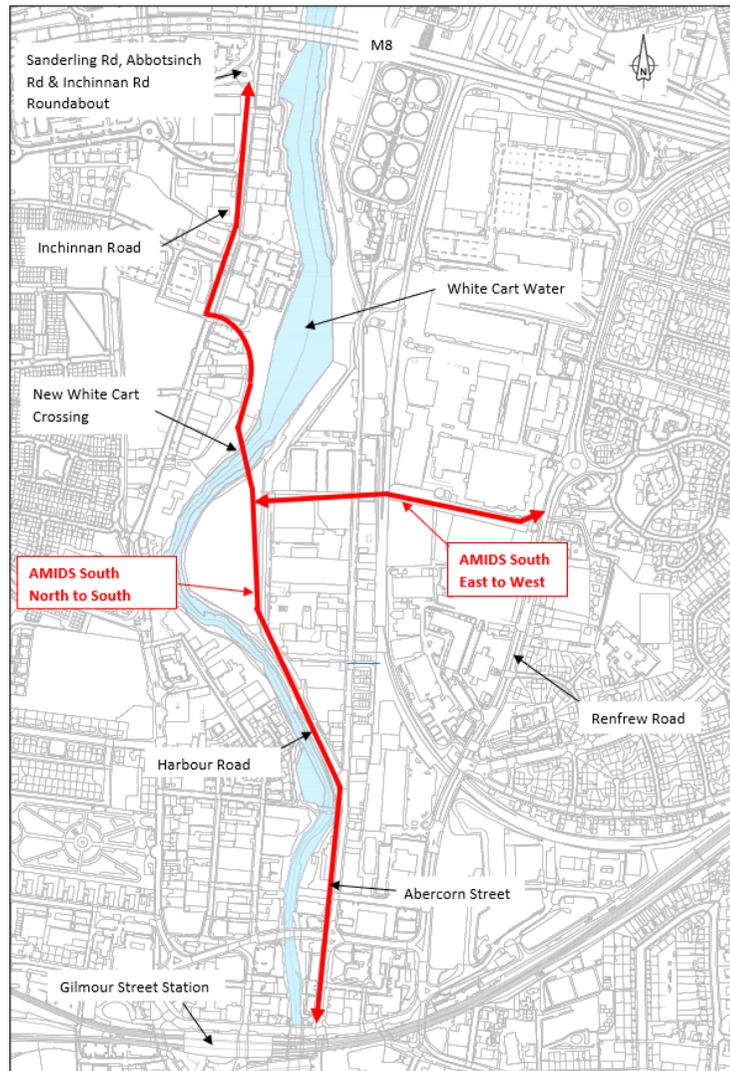


Figure 22: Preferred Route Plan

4.2 North to South Route

Overview

The preferred option is approximately 1.7 km long and connects Paisley town centre to the roundabout junction of Inchinnan Road, Sanderling Road and Abbotsinch Road that accesses Glasgow airport and the AMIDS site. This is a combination of upgrades and/or widening of sections of existing Abercorn Street, Harbour Road and Inchinnan Road coupled with new road infrastructure and a structure to cross White Cart Water.

This option provides opportunities for a drainage strategy to maximise the use of existing connections and outfalls combined with a Sustainable Drainage System to both treat and attenuate the runoff prior to discharge to the water environment.

Due to the urban nature of the area, an extensive number of underground and overhead utilities are located throughout, although all are considered at this stage to be manageable during construction. Importantly, the preferred route has the least conflict with major utilities and minimises interaction with the main trunk sewer (2.1m diameter) that runs beneath Harbour Road.

The proposed bridge crossing of White Cart Water is located at the northern section of Harbour Road and former My East Park site, immediately south of Paisley Harbour. This provides the opportunity for the shortest span structure at approximately 90 metres, given the extent of floodplain and tidal variance in this area, and the approach alignment from the south also minimises the extent of floodplain to be crossed.

Non-Motorised Users

With the provision of a new river crossing the route significantly improves accessibility and connectivity to the White Cart Water area, the Abercorn Street Transition Area and the AMIDS development to the north. Approximately 2,500 people from the Shortroods residential area are now within 15 minutes walking

time to the Abercorn Street Transition area, which represents 53% of this area's population.

For pedestrians and cyclists coming from the town centre, there is negligible change in overall distance compared to the existing routes. However, there is significant opportunity for enhancement of facilities with dedicated shared pedestrian/cycleways and improved crossing facilities particularly at the major junctions on the one-way system at the town centre. The quality of the journey on the Gateway route for NMUs will be improved with a reduction in the number of major junctions, side roads and accesses required to be crossed. Overall, this represents a 47% decrease in the number of junction conflicts compared to the existing route.

Motorised Vehicles

The analysis undertaken on the traffic model created demonstrates that the route shall attract sufficient levels of traffic to offer a measured reduction of traffic on Love Street by as much as 50% during peak times. Potential benefits were also observed from reduced delays on the one-way system at Old Sneddon Street due to an overall reduction in traffic flow, this mainly due to the East-West link and the junction improvements at Abercorn Street and Niddry Street and redistribution of traffic due to the north south link.

4.3 East to West Route

Overview

The preferred route is predominately new construction of approximately 500 metres in length through currently vacant land and existing industrial sites with limited use of existing roads. The route utilises the former Chivas site car park, upgrading the existing car park entrance with Renfrew Road to an all-movements traffic signal junction incorporating pedestrian crossing facilities. Thereafter the alignment follows the existing car park and offers scope to achieve a wider cross-section, maximising opportunities for NMU facilities while retaining the development potential of both the Chivas site and West College Scotland estate. With fewer restrictions on available width, there is greater potential to include Sustainable Urban Drainage measures for surface water collection and treatment.

Non-Motorised Users

In conjunction with the north to south route, the east to west route provides substantial improvements to accessibility and connectivity between the communities of Shortroods and Gallowhill with pedestrian journey time improvements of around 13 minutes possible. In addition, approximately 2,600 people from the Gallowhill area are now within 20 minutes walking time to the Transition Area, White Cart Water and Inchinnan Road which represents 45% of this area's population.

The route provides significant opportunity for enhancement of facilities with dedicated shared pedestrian/cycleways and improved crossing facilities. The proposed traffic signal junction at Renfrew Road is particularly well placed to provide a new crossing point approximately halfway between Brabloch Crescent and the Tesco filling station, improving accessibility for NMU movements between the Lochore Avenue area and amenities on the west side of Renfrew Road.

The quality of the journey on the East to West link for NMUs through the Abercorn area and onto AMIDS, is improved due to the significantly reduced number of major junctions, side roads and accesses required to be crossed. Overall, this represents an 81% decrease in the number of junction conflicts compared to the existing route (refer to Section 3.4, Figure 12).

Motorised Vehicles

The east to west route significantly reduces journey times for Renfrew Road traffic to the Transition Area and AMIDS due to reduction in journey length and rerouting traffic from the A726 one-way system. Modelling predicts the east to west route traffic flows are around 550 to 650vph (two way) in AM peak hour and around 400 to 500vph (two way) in PM peak. There are resultant minor reductions on Renfrew Road flows, south of the new junction, in both peak hours of around 100vph.

Due to the new all movements traffic signal junction at Renfrew Road, there are additional benefits of reduced delays on the one-way system at the town centre due to redistribution of traffic heading to and from the Abercorn Transition Area, particularly heavy goods vehicles.

4.4 Key Constraints

A number of constraints and engineering physical features were identified and considered during the alignment design process:

- The existing local road network namely Abercorn Street, Harbour Road, Inchinnan Road and Renfrew Road;
- Commercial and industrial development across the study area;
- Designated Local Development Plan sites;
- White Cart Water and its floodplain, which flows south to north through the study area towards the River Clyde;
- Public utility and sewerage infrastructure;
- Environmental constraints
- Areas of known contaminated land

4.5 Design approach to Land take & Property Impacts

The preferred routes were selected as they maximised use of existing public road infrastructure i.e. Abercorn Street, Harbour Road and Inchinnan Road (Figure 23). They also avoid direct impact on existing buildings, avoid requirement for any residential occupied land and, where possible, potential impacts on existing commercial and industrial businesses and communities by minimising the requirement for third party land. Existing junctions and accesses that connect directly were identified to ensure access is maintained.

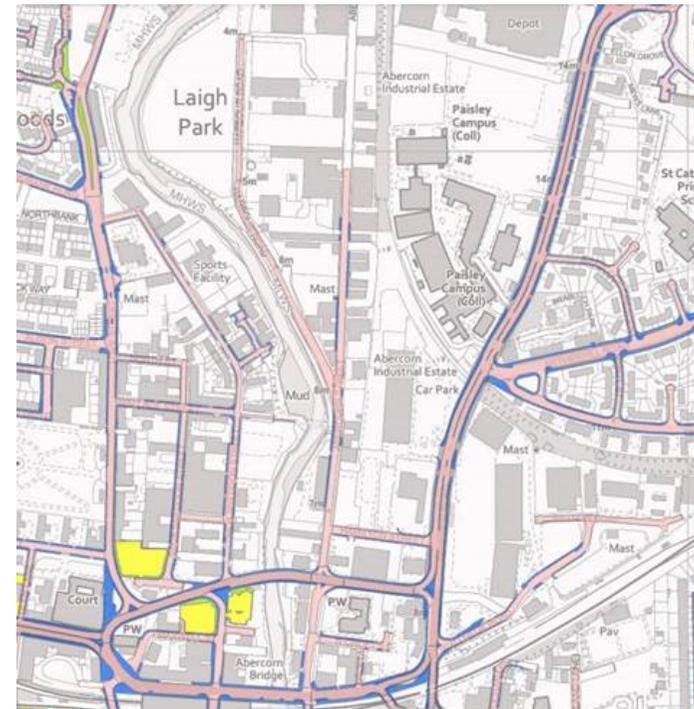


Figure 23: AMIDS South Area Public Road Adoption

Where the Council does not own the land required for the proposed development, the Council will seek to acquire the land, and any interests, through negotiation and voluntary agreement. However, it is necessary to ensure that the Council is able to secure all land required for the proposed development, and to remove all interests in that land. Consequently, and in line with Scottish Government guidance, the Council will seek to make a Compulsory Purchase Order in parallel with negotiation with landowners.

4.6 Design Standards

The specimen design road alignments for the North to South and East to West links have been designed in accordance with the National Roads Development Guide produced by Society for Chief Officers of Transport in Scotland (SCOTS)

with reference to the regional variations of Renfrewshire Council. The guide contains design parameters for the widths, minimum and maximum gradient, crossfall and the vertical and horizontal curves of carriageways and cycleways.

A meeting was held with Renfrewshire Council Roads Department in February 2022. The clear preference expressed by the council at this meeting was to avoid 'car-centric' alignments. This confirmed the design standards selected as appropriate rather than the more onerous Design Manual for Roads & Bridge.

In terms of active travel design standards, Roads for all: Good Practice Guide for Roads and Cycling By Design 2021 by Transport Scotland were utilised.

4.7 Non-Motorised Users

The following design principles have been applied in relation to Non-Motorised Users (NMUs):

- Provide a minimum segregated shared provision for pedestrians and cyclists to both sides wherever possible.
- Develop NMU provision taking into account the requirements of the Equality Act 2010 and Transport Scotland's "Roads for All (Good Practice Guide for Roads 2013)" and "Cycling By Design 2021"
- Remove conflicts at junctions to provide NMUs with safe places to cross
- Improve NMU connectivity between communities, particularly Shortroods and Gallowhill on the west and east sides of White Cart Water respectively and Paisley Town Centre to AMIDS
- Facilitate connections to existing and future dedicated NMU routes

4.8 Design Development of Specimen Design

Applying the design approach outlined the preferred routes were developed to produce a specimen design. This aim to develop and fix the alignment both vertically and horizontally to enable assessment of the design by engineering,

traffic and environment in support of this planning application. The key considerations were:

- Signalised junction layouts at:
 - Abercorn Street/Niddry Street
 - Proposed junction of Renfew Road / Est to west route
 - Inchinnan Road North to south route
- Updated flood modelling utilising the recently updated Clyde Flood model (January 2022)
- Drainage - Initial consultations have been undertaken with SEPA and Scottish Water
- Public Utilities and Diversion Works - Obtain C3 (SA10/05) notifications to utility providers to identify diversions and protection works required

5 Design Proposal

5.1 Overview

The proposed scheme consists of a new a bridge over the White Cart Water, circa 1km north of Paisley Gilmour Street Station, with a connecting north to south link via upgrades to existing road infrastructure through Abercorn Street, Harbour Road and Inchinnan Road. In addition, the scheme will provide a new offline link running east to west linking Renfrew Road to the new bridge and north to south route.

Starting at Paisley Gilmour Street Station, the scheme runs north up Abercorn Street before turning to the northwest on Harbour Road. After following Harbour Road, directly adjacent to White Cart Water, the alignment moves off Harbour Road and enters the former My-Easy-Park site. The alignment passes through the former My-Easy-Park site going northwards, to cross over the White Cart Water and land on its western banks. The alignment continues generally northwards through rough ground by the river before curving west to connect to Inchinnan Road, through an existing car park, forming a junction between Motel Air and Consult Lift Services properties. The continuation of the scheme is to the north along Inchinnan Road where it terminates at Sanderling Road Roundabout.

The East-West Link commences immediately south of the former Chivas site and forms a new signalised junction on Renfrew Road. The alignment runs directly west, following the boundary with the former Chivas site closely, and forms a new crossroads junction with Abercorn Street. Thereafter the road continues west to connect and form a junction with the north – south route just south of the new river crossing, in the former My-Easy-Park site.

This chapter discusses the design proposals, summarises the key locations along the scheme and level of provision for pedestrians and cyclists.

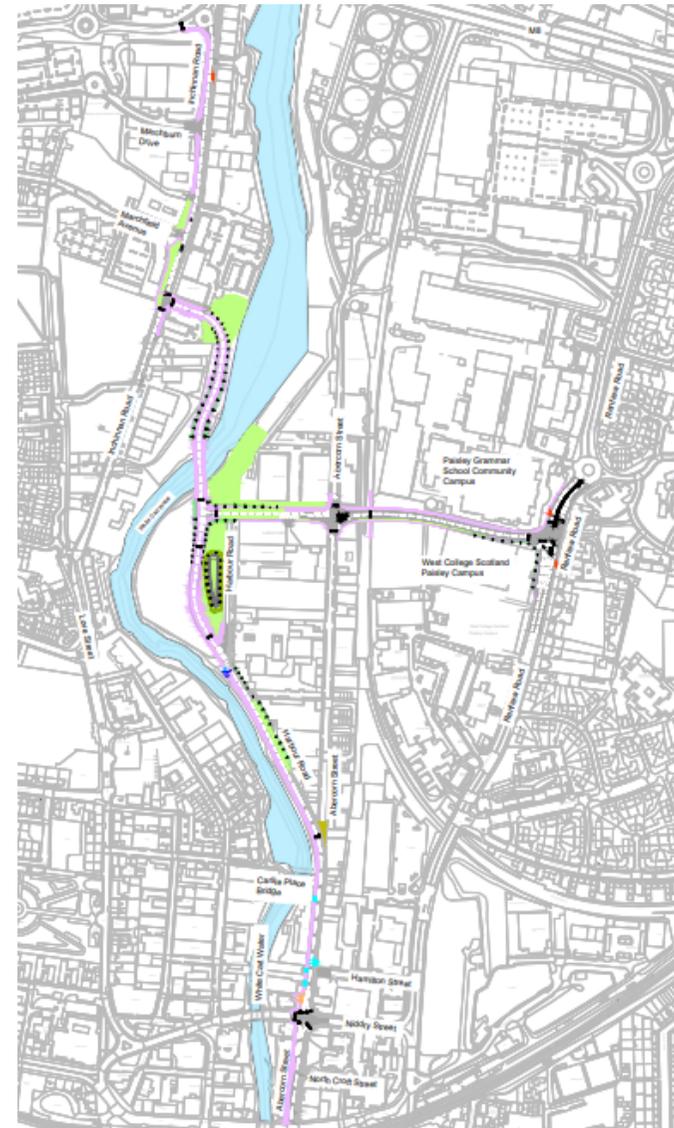


Figure 24: Proposed Scheme Layout

5.2 Public Consultation

The project was initially consulted with the public as part of the wider Glasgow Airport Investment Area Projects in 2016 \ 2017 where 3 sets of public consultation events were held at 5 venues within Renfrewshire. At each event, the proposals were presented on exhibition boards and summarised in leaflets which were available to take away and for download on Renfrewshire Council’s website. Topics covered included project objectives; current position of the Design Team; timescale for completion; next steps; and project costs.

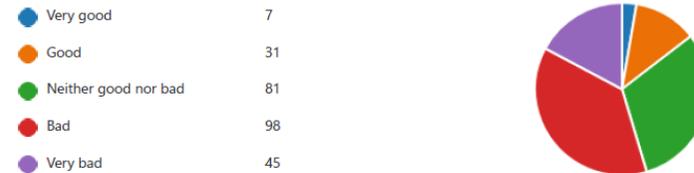
Due to surpassed time period and development of the project it was considered appropriate to undertake a further public consultation in April 2022 using updated scheme information focussing solely on the AMIDS South project, specifically the North-South route from Gilmour Street to Inchinnan Road and the East-West Link from Renfrew Road.

An online public consultation commenced on 4th April 2022 and was hosted on the Renfrewshire Council website for a period of 4 weeks. During this time the project team channelled the public to this consultation via a series of letter drops and social media posts. The consultation consisted of a number of scheme plans and visualisations and also a questionnaire which was designed to understand the level of public support for the project, their views on existing traffic and NMU movements and to enable to Design team to incorporate ideas from the public into the final design solution. In total 262 questionnaires were completed during this consultation period with key outcomes and messages summarised below:

Public opinion of existing route to AMIDS from Paisley town centre:

From Paisley town centre

How would you rate the current route for pedestrians, cyclists and vehicles travelling between Paisley town centre and the area around Glasgow Airport and AMIDS?



Between Paisley town centre, Glasgow Airport and AMIDS

Our project will create a more direct route for pedestrians, cyclists and vehicles between Paisley town centre and the area of Glasgow Airport and AMIDS, along Abercorn Street, Harbour Road, over a new bridge crossing at Paisley Harbour and connecting onto Inchinnan Road.

Would you consider using this new route?



The above questions and responses gave clear demonstration that the public were supportive of the new layouts with more than half of the responses describing the existing north-south routes as either Bad or Very Bad. The questionnaire asked the public their thoughts on how this route should be improved.

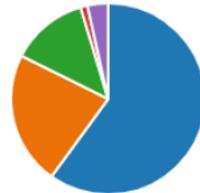
Public opinion of the proposed new east-west route

Between Renfrew Road and Inchinnan Road

This project will create an east-west link route for pedestrians, cyclists and vehicles, from Renfrew Road, at the former Chivas site, to the bridge crossing at Paisley Harbour over to Inchinnan Road. The route includes connections into the new Paisley Grammar School Community campus and to Abercorn Street.

How would you rate your support for this?

Very good	157
Good	59
Neither good nor bad	34
Bad	3
Very bad	9



Walking and cycling link

We are developing a walking and cycling link from Gallowhill to Inchinnan Road using the new east-west link route. Pedestrians and cyclists would be segregated from vehicles and safe crossing points introduced along the route. We estimate it would reduce the walking time between Gallowhill and Glasgow Airport from 45 minutes to around 25 minutes.

Would you consider using this route?

Yes	195
No	67



The responses again showed support for the east-west link and in particular the active travel provisions to better link the community of Gallowhill and Shortroads with 74% of respondents confirming they would consider using the new route.

Particular emphasis was given in the feedback that walking and cycling routes should be remote from vehicular routes to promote safety and enjoyment of using the route with many recognising the benefit of a safe and direct link to access the proposed Paisley Grammar School Community Campus.

Public opinion on improvements of accessibility to the White Cart Water and new public amenity area

White Cart waterfront enhancements

Alongside enhancing access to and along the White Cart river, as part of our project we will clear debris and help enhance the riverside biodiversity.

Would this make you more likely to walk or cycle here for recreation?

Yes	226
No	22
Don't know	14



Once this project is complete, we want to consider facilities and amenities which could be introduced along the river to make the most of the enhanced waterfront access.

What public facilities would you like to see along the river?

Tick all that apply.

Children's play area	141
Landscaped areas	207
Seating and picnic areas	227
Direct access to the water for L...	163
Other	61



The responses confirmed support for creating improved access to the White Cart and the creation of public amenities adjacent to the White Cart. The responses

provided useful suggestions for direct access points to the water, recreation areas and landscape / picnic areas. The Design team utilised the feedback from these responses to finalise the landscaping and public realm areas adjacent to the White Cart. These concepts will be further developed during the detailed design stage of the project.

The table below summaries the actions resulting from public feedback on the project:

Opinion	Action
Desire for safe walking and cycling routes	All new routes shall provide walking and cycling routes compliant with current standards.
Concerns around the current traffic congestion in one-way system	Undertake a comprehensive Traffic Modelling assessment utilising current traffic flows to understand the benefits and then optimise traffic signal timings on one-way system to account for change in demands
Accessibility of Glasgow Airport and AMIDS from Paisley town centre	Provision of new vehicular and non-vehicular links to make the journey more direct and accessible
Desire to provide improved active travel access to Fountain Gardens on Love Street and make this more of a tourist destination	Undertake assessment on anticipated traffic reduction on Love Street and create improved public realm spaces and active travel routes to enable enhanced use of Fountain Gardens

Table 7: Actions Resulting from Consultation

5.3 Local Business Consultation

During 2021 and 2022 the Design Team and Renfrewshire Council have met with a number of local businesses who will be directly impacted by the project with

information provided to demonstrate the land take and intended changes adjacent to or on their land. This has enabled useful feedback to be given on access constraints and operational issues of these businesses which will later inform Accommodation Works design.

5.4 Section Layouts

Section 1 – Abercorn Street to Harbour Road

Proposed works along the Abercorn Street section shall comprise of resurfacing/reconstruction road works, realignment of kerb line and relocation of street furniture. Some junction widening is necessary to accommodate the anticipated traffic flow at the junction of Abercorn Street and Niddry Street. The junction shall be widened by way a northbound lane, currently the on-street parking immediately south of the existing junction, into the Little Learners Private Nursery. The lane will continue through the derelict site immediately north of the nursery before tying back into the existing road alignment, just south of Hamilton Street. The widened junction allows for two lanes from the north and south arms to turn eastbound onto Niddry Street.

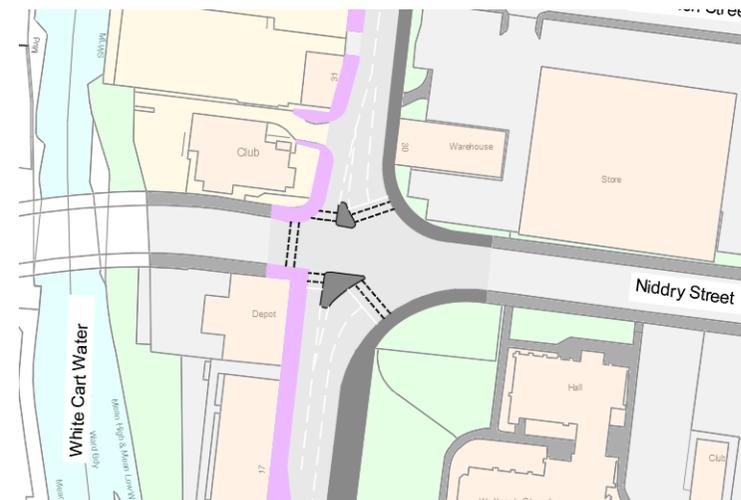


Figure 25: Abercorn and Niddry Street Junction

A minimum of 3.0m wide shared surface provision shall be provided on the west side of Abercorn Street up to the junction with Harbour Road. The footway on the east side of Abercorn Street shall retain its existing width with access maintained to existing properties.



Figure 26: Abercorn Street Design Layout

Section 2 – Harbour Road to White Cart Crossing

The existing Harbour Road provides narrow road with to the north of Abercorn Street which naturally follows the meandering nature of the White Cart Water. The proposed new route road widens out into the riverside area to the west and/or the landward side on the east as necessary in order to provide an overall cross section as follows:

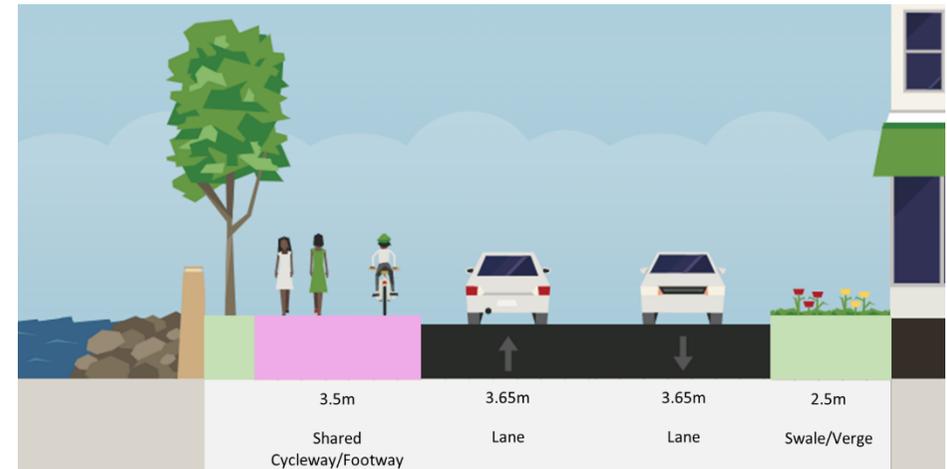


Figure 27: New Harbour Road Cross Section

A dry swale is proposed to provide treatment for surface water runoff, on the section of the route on Harbour Road, where the width allows. Where insufficient width is available, a series of gullies connected to a carrier pipe shall convey surface water runoff to the dry swale and outfall into White Cart Water.

The new road section through the former My-Easy-Park site connects to the new bridge crossing and the East-West Link Road. The road alignment in this section is mainly dictated to by the preferred location and crossing angle of the structure to optimise visibility, bridge span and minimise land constraints on the west side of the river. The alignment also connects Harbour Road and the East-West Link and a location which balances the land constraints, and visibility requirements, for each section providing a safe junction layout.

Active travel provision continues to follow parallel to the alignment on the west side of the north to south route with and an additional shared surface introduced on the east side of the alignment through the former My-Easy-Park. Three crossing locations are provided, to cater for pedestrians, around the East-West Link Road tie-in near the structure. This facilitates active travel routing and allow users to efficiently link up between the north to south and east to west links.

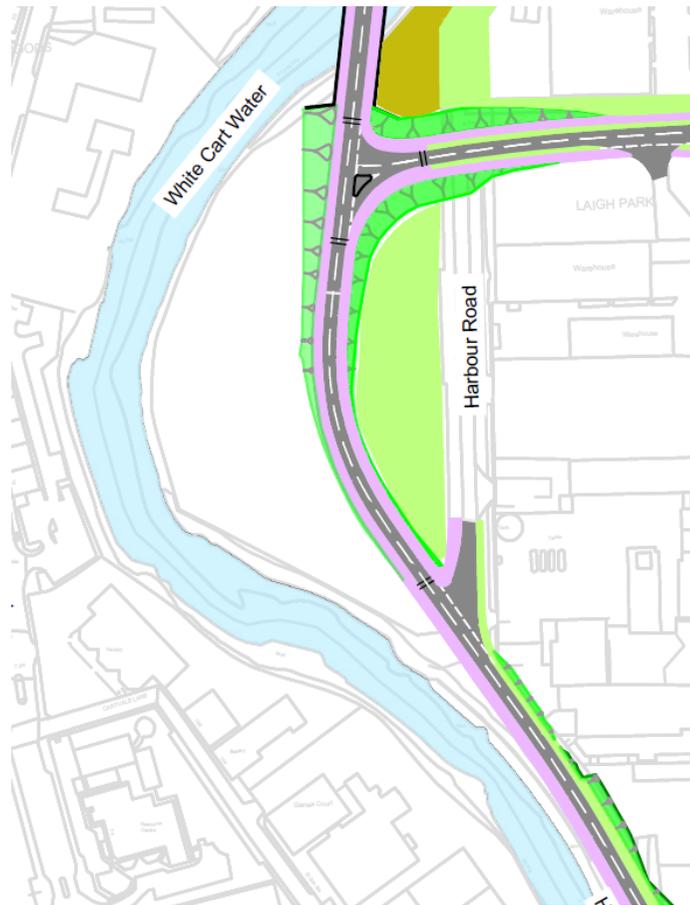


Figure 28: Harbour Road

requirements, level of pedestrian and cyclist provision and aesthetic values within its surroundings.

The proposed White Cart Crossing takes the form of a 'Basket Handle' Bowstring Arch bridge with an overall clear span of 90m and cross section width of circa 19m which is dictated by multiple constraining variables, namely: highway alignment, carriageway width, footway and cycleway width, location of vehicle restraint system and structure free zone around the angled hanger connections. The arch consists of two inclined steel arch beams reaching a maximum height of 21m above the concrete deck level with hangers connecting to the tie-beams.

This alignment and bridge span places both abutments, and in particular the north-east and south-west wingwalls, within close proximity of the existing river banks. The abutments and wingwalls are located at the top of the embankment slopes. As the design is currently proposing a piled substructure solution there are no stability issues due to the proximity of the river banks. The bridge design gives appropriate considerations to the outcomes of the Flood Risk Assessment with the soffit level providing 0.5m freeboard from the 1 in 200 year flood level with additional allowance for climate change impacts.

The proposed route through the west bank is constrained by the existing buildings/boundary wall on one side and the harbour wall on the other side of the alignment. The alignment follows an optimised route positioned between these constraints before curving to tie into Inchinnan Road in the form of a signalised T-junction.

Section 3 – White Cart Water Crossing and West Riverbank

The crossing angle, cross section and structural form of new bridge has undertaken a number of iterations in order to provide an optimised solution which considers demand for materials, environmental impacts, maintenance



Figure 29: Visualisation Showing Alignment Through the Former My-Easy-Park site, the crossing structure and the west bank of White Cart Water

Section 4 – Inchinnan Road

As with Abercorn Street, the main works over the Inchinnan Road section of the scheme comprise of resurfacing and reconstruction of the existing road. The existing kerblines remain in place where possible on the east side, with widened footways on the west side, where required. Street furniture will be relocated to facilitate improved pedestrian and cyclist routing.

A new 3.5m wide shared footway is provided on the west side which runs adjacent to the road, while on the east side, the existing footway width of 2.0m is maintained.

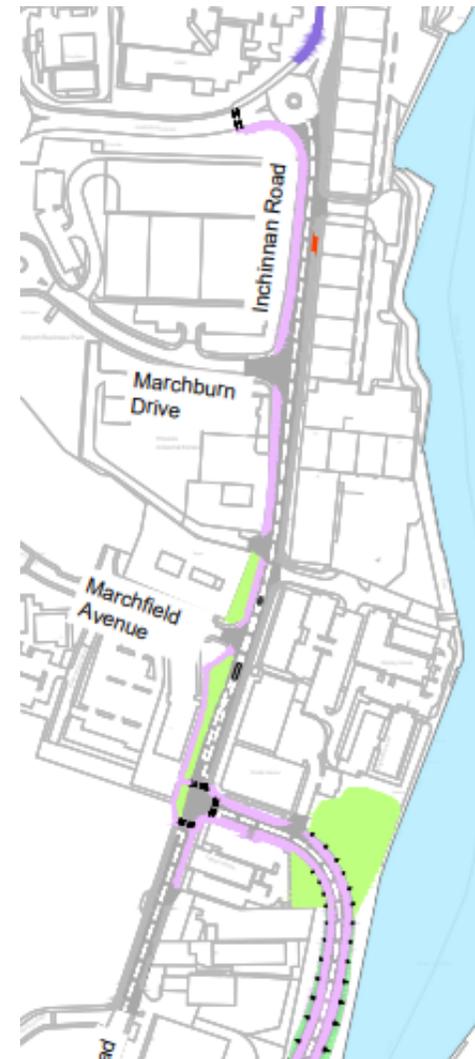


Figure 30: Inchinnan Road

Section 5 – East – West Link Road

Access to the new East-West Link Road is created by a newly formed signalised junction on Renfrew Road. The new junction provides dedicated turning lanes from Renfrew Road northbound and southbound to the East-West Link. Improved pedestrian crossings is provided north and south of the junction to enable safer access to the new route from the Gallowhill area.

From Renfrew Road the proposed alignment runs west along the southern side of the former Chivas site and through the disused railway before meeting the existing Abercorn Street, where it forms a perpendicular, 4-arm signalised junction. Thereafter the alignment continues generally westwards to form a connection and junction with the north-south link within the former My-Easy-Park site. The alignment aims to minimise impacts on existing land and structures throughout its length and as such, influences the locations of the proposed junctions it adjoins.

On both sides of the road, there is active travel shared provision of 3.0m, which is separated from the road by a 2.0m wide swale. Crossing points are provided in and around junctions to facilitate improved pedestrian and cyclist connections from Renfrew Road to Paisley Town Centre. Connection is also made to the new Paisley to Renfrew Cycle route running north to south on the former railway.

Drainage is provided, by way of swales, on the length of East-West Link between the Renfrew Road junction and the new bridge. At sections where the swales meet junctions, the surface water is transported through carrier pipes beneath the road.



Figure 31: Proposed East-West Link from Renfrew Road

6 Conclusions

Overall the proposals represent a scheme that is appropriate to the setting of the site which brings considerable benefit to both motorised and non-motorised users. The finalised scheme design provides an optimal layout which minimises land take and impacts on businesses and existing infrastructure.