Corporate Project Management Toolkit

Outline Business Case

Project Name	A92 Murcar North Active Travel Infrastructure Corridor: Outline Business Case		
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Sponsoring Cluster	Aberdeen City Council – City Regeneration and Environment Service	**Version**	1

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1. Introduction and Project Overview

This Outline Business Case (OBC) sets out the preferred option for the provision of active travel infrastructure along the A92 in Aberdeen from the Murcar Roundabout at Bridge of Don to Blackdog in Aberdeenshire. This option has been identified following an appraisal undertaken in accordance with the principles of Scottish Transport Appraisal Guidance (STAG).[1]

Summary of Aberdeen City Council Committee Instruction

In June 2023, consultants AECOM were commissioned by the Council to identify, develop, appraise and design option(s) for the provision of active travel infrastructure along the A92 between Murcar and Blackdog. Transport Scotland and the Council have a Service Level Agreement to deliver a number of environmental mitigation projects to offset the environmental impact of the Aberdeen Western Peripheral Route (AWPR), which opened fully to traffic in February 2019. Delivery of an active travel route between the Murcar Roundabout and Blackdog is one of the projects which is part of the agreement, with an overall objective to improve conditions for people walking, wheeling and cycling in the area.

An active travel route in the Murcar North area has been in development by the Council for a number of years, with initial design work undertaken in 2015 recommending a 3m shared use path on the east side of the A92. The scheme was then included as a project within the Council's Active Travel Action Plan.

Further design work was undertaken and consulted upon in August 2019, with the then City Growth and Resources Committee approving the detailed design of the path in December 2019. Since this time, there have been a number of changes that have taken place meaning that further work is required, including:

- Publication of updated Cycling by Design Guidance (Transport Scotland);
- Progression of the Ellon Park & Ride to Garthdee Transport Corridor Study; and
- Significant progress with land use developments at Blackdog and Cloverhill.

These changes resulted in the commissioning of the AECOM study in 2023 to take stock of the significant body of work already undertaken by the Council to progress the scheme, but with added opportunity to undertake an objective-led appraisal to support the design of a final proposed option for the active travel link.

2. Executive Summary

Purpose

This OBC sets out the preferred option for the provision of active travel infrastructure along the A92 in Aberdeen from the Murcar Roundabout at Bridge of Don to Blackdog in Aberdeenshire, The aim of the OBC is to support progression of the preferred option to Technical Design (building on the preliminary concept design that has been developed), and, thereafter, implementation.

The outputs of the project are:

[1] A copy of the appraisal is available at:
https://committees.aberdeencity.gov.uk/documents/s154684/Appendix%201%20-%20A92%20Murcar%20North%20Active%20Travel%20Infrastructure%20STAG-Based%20Appraisal.pdf

- the provision of a shared footway / cycle track on the east side of the A92 between Murcar Roundabout and Hareburn Road including a buffer to protect users from motorised vehicles;
- the introduction of a footway along the western side of Hareburn Road;
- crossing improvements for active travel users; and
- updates to traffic signs and road markings.

Strategic fit

The collective vision for Aberdeen (set out in the Local Outcome Improvement Plan (LOIP)) remains '*a place where all people can prosper'*, reflecting the desire of Community Planning partners to help all people, families, businesses, and communities to do well, succeed and flourish in every aspect, regardless of their background or circumstances. Successful delivery of active travel infrastructure will positively contribute to several outcomes and objectives of adopted Council policies and strategies. In particular:

- The Aberdeen City Local Transport Strategy, which is being refreshed in 2024;
- The Sustainable Urban Mobility Plan (SUMP); and
- The Aberdeen City Active Travel Action Plan 2021-2026.

This project will also provide support for the delivery of wider strategies including the Aberdeenshire Local Transport Strategy, the Nestrans Regional Transport Strategy 2040, the National Transport Strategy and the 2018-2032 Scotland Climate Change Plan. In addition, as noted above, the project also forms part of the delivery of environmental mitigation to offset the environmental impact of the AWPR.

Project Objective

The singular OBC objective is:

- *By 2030, increase the level of walking by 10% and cycling five-fold from 2027 for all journey types on the Blackdog to Murcar corridor*

Projects to support delivery of this objective will also be progressed as part of the Ellon Park & Ride to Garthdee Transport Corridor Study, which includes an option for a long-distance active travel route between Ellon and Murcar.

Project Overview

The appraisal of options undertaken in accordance with STAG indicated that the east option, to provide 1.9km of shared footway and 0.6km of footway, should be taken forward for

Technical Design. This option fully supports the study Transport Planning Objective (TPO) to increase the level of walking and cycling for all journey types on the Murcar to Blackdog corridor. It additionally performed well in appraisal against the STAG Criteria and received the greatest level of support as part of the public consultation undertaken in October 2023. Early landowner engagement has also expressed a willingness for collaboration with ACC to enable the scheme to progress. Continued engagement between the Council and landowner will be key going forward. The east option is projected to cost £3.0 million (2023 prices). This includes construction capital costs, preliminaries, site clearance, and land purchase; this is inclusive of optimism bias as well as costs for further design and potential risks associated with drainage, geotechnical and bridge design elements. Inflation and future maintenance have not been accounted for within this estimate. This cost would need to be adjusted to provide a budget estimate (based on a programme for the scheme).

From Murcar Roundabout, the route follows the eastern side adjacent to the A92 and around the rear of existing properties to tie into Hareburn Road

The **benefits** of this option are:

- The implementation of active travel infrastructure between Murcar and Blackdog would enable consistent active travel provision between Bridge of Don and Blackdog, extending to Balmedie if Aberdeenshire Council progress the shared use path between Taylors Recycling Centre and Blackdog.
- Growing population in the area, brought by developments at Strabathie Village (Blackdog) and Cloverhill (south of Murcar Roundabout) provides a key opportunity to instil new sustainable travel habits. Promoting the use of active travel instead of private vehicles from the outset will drive demand for more sustainable travel.
- Investment in quality active travel infrastructure within the A90 Strategic Growth area is essential to ensure there is an integrated and complete active travel network for residents to use for everyday journeys.
- The generally flat topography in this area will further promote the use of active travel as the route would be easily cyclable and suitable for a variety of different users.
- The relatively short distance between residential areas (Potterton, Blackdog etc.) and key employment areas (Bridge of Don and Denmore Industrial Estates) provides a significant opportunity for active travel to be used for commuting to work.
- From locking in the benefits of the AWPR to supporting wider policy objectives around climate change and health and wellbeing, the development of active travel infrastructure between Murcar and Blackdog aligns strongly with policy frameworks at the national, regional and local levels.
- There is an opportunity for the Murcar to Blackdog active travel route to link with existing recreational paths to provide an integrated active travel network allowing for recreational visitors to travel actively when visiting these locations.
- There is a clear appetite from the general public for this scheme to be implemented to

provide the ‘missing link’ and thus offer a fully integrated active travel route separated from vehicles.

The possible **disadvantages** of this option are:

- Land availability: a key constraint relates to the land available within ACC ownership. On the east side of the A92, there is farmland owned by third parties that would require landowner agreement and land purchase to deliver facilities to a desirable minimum standard outlined in Cycling by Design 2021.
- Gradient: steep gradients are located adjacent to the existing path for sections providing differentiation between ACC and privately owned land – permission would need to be sought from landowners to regrade these for delivery of the scheme.
- Utilities: a utilities search was undertaken as part of the previous work, which outlined a number of existing utilities within the study area. These will require to be taken into account during subsequent stages of design.
- Flooding: there are several watercourses identified in proximity to the study area – there is a high likelihood of flooding in proximity to these areas alongside some areas of surface water accumulation.

Project Costs

The east option Developed Design outline cost estimate total is £3.0 million (2023 prices), not including future inflation and future maintenance. This includes all construction estimates (inclusive of optimism bias of 44%), land purchase, further design, drainage, geotechnical, potential bridge works, placemaking and landscaping, site supervision and project management, traffic management and monitoring and evaluation. This cost would need to be adjusted to provide a budget estimate (based on a programme for the scheme). Revenue and ongoing maintenance costs will also be associated with the scheme – these will be determined at the detailed design stage.

Project Risks

Risk #1: Delivery of the east option is considered to have a moderate negative impact in terms of feasibility. This is because delivery requires third party land.

Risk #1 Mitigation: Further discussions are required as the design process moves forward as confirmation of ownership in the south of the study area is still pending, however, where initial landowner discussions have taken place along the route, these have intimated that third party ownership may not preclude deliverability of this option.

Risk #2: Sections of the route have level differences between the existing carriageway and adjacent fields which may affect constructability and increase land requirements subject to earthworks or alternative routing.

Risk #2 Mitigation: Should additional land not be attainable, Departures from Standard may be required to deliver an eastern active travel facility.

Risk #3: The requirement for third party land, earthworks, and risk to existing utilities may increase overall capital cost requirements (currently estimated at £3.0 million; 2023 prices). The existing gas main pipe in proximity to the proposed works requires further investigation, however, should a diversion be required this will increase capital costs.

Risk #3 Mitigation: The use of the previous A90, existing road network at Blackdog and the existing active travel path from Hareburn Terrace to Blackdog Junction will support mitigation of capital investment.

Planning

There is one section of the proposed scheme routeing behind two houses known as Elm Cottage and Ash Cottage. There is another section that would link from the dual carriageway to the adjacent minor road (Hareburn Road). Neither of these sections of the route would be adjoining an existing road and thus would require planning permission.

Funding

There is sufficient budget remaining from the AWPR Non-Motorised Users fund to proceed with further development work and detailed design should this OBC be approved. There is, however, currently insufficient budget for the project to proceed with the implementation (construction) of the scheme and therefore, should further approval be granted to proceed to delivery, progress will be dependent on the sourcing of additional funding.

Date and Time Constraints

This project will be delivered as part of the AWPR – Non-Motorised User Fund. Assuming this OBC is approved in May 2024, the design element can be progressed during 2024/25 and 2025/26 with a view to preparing a Full Business Case (FBC) in 2026. The most likely time constraint is associated with the agreements required for land acquisition and the associated legal processes.

Project Sponsor

John Wilson, Chief Officer - Capital

3. Strategic Fit

This project supports the LOIP. By creating a key missing link in the active travel corridor along the A92, the project will contribute to:

Prosperous Economy: by promoting an accessible active travel link, people can choose to travel to work sustainably.

Prosperous People: by introducing healthier travel choices for children, young people and adults. With an improved active travel corridor between Murcar and Blackdog, growing communities will be encouraged to travel actively (by walking, wheeling, or cycling) which has many health and wellbeing benefits. This will bring communities together.

Prosperous Place: by promoting mode changes, and in turn, increasing sustainable travel use.

Successful delivery of active travel infrastructure will positively contribute to several outcomes and objectives of other key adopted Council transport policies and strategies – this is detailed in Section 4. This project will also provide support for the delivery of wider strategies including the Aberdeenshire Local Transport Strategy, and key national and regional policies as follows.

National level

At a national level, Scotland's **National Transport Strategy (NTS2) (2020)** provides the national transport policy framework, setting out a clear vision of a sustainable, inclusive, safe and accessible transport system which helps deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. It sets out four key priorities to support this vision: reducing inequalities; taking climate action; helping to deliver inclusive economic growth; and improving health and wellbeing. The NTS supports the adoption of a **Sustainable Investment Hierarchy**; which prioritises investment aimed at reducing the need to travel unsustainably and maintaining and safely operating existing assets ahead of new infrastructure investment; and a **Sustainable Travel Hierarchy**; which promotes walking, wheeling, cycling public transport and shared transport options in preference to single occupancy private car

use). The preferred option would sit at the top of the Sustainable Travel Hierarchy and by reducing the need to travel unsustainably, would therefore sit at the top of the Sustainable Investment Hierarchy.

Delivery of the NTS2 will be supported by an accompanying NTS Delivery Plan, the **Climate Change Action Plan 2018-2032.** In the Climate Change Plan Update, The Scottish Government sets out a commitment to develop and implement a coordinated package of policy interventions to support the reduction of car kilometres by 20% by 2030. It is noted that the Scottish Government is committed to exploring options around encouraging remote working in order to support this reduction and is committed to developing a Work Local Programme which will work to drive the establishment of 20-minute neighbourhoods.

Delivery of NTS2 will also be supported by the **Strategic Transport Projects Review (STPR2)**. STPR2 is a whole-Scotland, evidence-based review of the performance of the strategic transport network across all transport modes and makes recommendations for potential transport investments for Scottish Ministers to consider as national investment priorities in an updated 20-year (2022-2042) Infrastructure Investment Plan for Scotland. The work undertaken to develop Nestrans' Regional Transport Strategy 2040 (RTS2040) fed into the development of STPR2, thus ensuring key issues for the North East are represented at a national level.

Regional level

At the regional level, the Nestrans **Regional Transport Strategy** (**RTS) 2040** sets the long-term vision and direction for transport in the North East for the next 20 years. The key transport priorities within the RTS are linked to the priorities in the NTS2 and include improving journey efficiencies to enhance connectivity; reducing carbon emissions to support net-zero targets; and creating a step change in public transport and active travel allowing for a 50:50 mode spilt. The RTS includes an action to *upgrade existing routes and develop a network of high quality and safe active travel routes across the region*. Delivery of the Murcar North scheme will support the development of this network.

The Nestrans **Active Travel Action Plan (AcTrAP)** was developed as part of a commitment during the refresh of the previous RTS, with the aim of encouraging increased levels of active travel across the region. Its vision is to: "*create an environment and culture in which walking and cycling are convenient, safe, comfortable, healthy and attractive choices of travel for everyday journeys*." The Murcar North scheme will improve the attractiveness of active travel for everyday journeys.

Planning context

The preferred option, at its southern most end, will pass alongside OP1: Murcar which is zoned as Strategic Reserve Employment Land (27 hectares) for the period 2033-2040. Therefore, the route may allow for further future connections to employment areas.

The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended) sets out the works that can be carried out by local authorities and roads authorities without the need to obtain planning permission.

For this project, delivered by the Council, Class 31 of this Order only allows for works, without the need for planning permission, that are –

"(a) on land within the boundaries of a road, of any works required for the maintenance or improvement of the road, where said works involve development by virtue of section 26(2)(b) of the Act; or (b) on land outside but adjoining the boundary of an existing road of works required for or incidental to the maintenance or improvement of the road".

There is one section of the proposed scheme routeing behind two houses known as Elm Cottage and Ash Cottage. There is another section that would link from the dual carriageway to the adjacent minor road (Hareburn Road). Neither of these sections of the route would be adjoining an existing road and thus would require planning permission.

4. Business Aims, Needs & Constraints

ACC is the sponsoring organisation, and acts as highway authority, with responsibility for the development of active trave projects. The scheme will be delivered by the Roads Projects team, with support from the Transport Strategy & Programmes team.

As noted above, successful delivery of active travel infrastructure will positively contribute to several outcomes and objectives of other key adopted Council transport policies and strategies. In particular:

- The **Aberdeen City Local Transport Strategy**, which is being refreshed in 2024, and will cover the period to 2030 – the Murcar North scheme will complement the walking, wheeling and cycling policies and actions set out in the LTS;
- The **Sustainable Urban Mobility Plan (SUMP),** which identifies the need to improve connectivity both within and to the city of Aberdeen. These objectives are aimed at locking in the benefits of the AWPR and preventing the erosion of these benefits, as would be anticipated should traffic be allowed to continue to grow to fill the additional road capacity that has been created; and
- The **Aberdeen City Active Travel Action Plan 2021-2026**, which aims to identify policies and design principles that ACC will abide by over the next five years (and in some cases beyond) and contains a series of actions and interventions that will be pursued in order to increase the proportion of journeys undertaken actively. The Plan aligns with the Nestrans Active Travel Action Plan.

Describe the purpose of the project, why it is needed, establishing a compelling case for change based on business needs, e.g. demand for services, deficiencies in existing provision etc. Where are we now and where do we need to get to.

This OBC is objective-led, with the goal of providing safe access for active travel users along the A92 corridor. The section under consideration, between Murcar and Blackdog, is a key missing link in the active travel network, which is preventing the completion of a long-distance active travel route to the north of the city and is likely to act as a constraint on the uptake of walking, wheeling and cycling within the study area for long-distance journeys as well as shorter trips (i.e. between Blackdog and nearby Industrial Estates in Aberdeen City) and recreational journeys. The missing link prevents people from making a range of active travel journeys, including for commuting, for leisure purposes and exercise, and to access shops and services at Murcar. Consultation feedback indicated that many local people currently drive short journeys because there is not adequate and safe provision to allow them to undertake such journeys actively. The scheme is one of the routes identified in the AWPR Service Level Agreement as a Strategic Cycle Project, and it will assist in compensating for the various moderate severance and other impacts of the AWPR in the north of the city.

Identify any constraints, e.g. timing issues, legal requirements, professional standards, planning constraints. What assumptions have been made, and any linkages and interdependencies with other programmes and projects should be explained, especially where the proposed project is intended to contribute to shared outcomes across multiple Clusters.

While this project is independent of other projects, the Ellon Park & Ride to Garthdee Transport Corridor Study incorporates the area between Murcar and Blackdog – as part of this study, there is a proposal for a longer distance active travel route between Ellon and Murcar (to be developed at a later date). There will be a need to take cognisance of any proposals that develop from this study in the future, as well as any further active travel schemes in this area taken forward by Aberdeenshire Council.

Constraints affecting the project include:

Funding: There is sufficient budget remaining from the AWPR Non-Motorised Users fund to proceed with further development work and detailed design should this OBC be approved. There is, however, currently insufficient budget for the project to proceed with the implementation (construction) of the scheme and therefore, should further approval be granted to proceed to delivery, progress will be dependent on the sourcing of additional funding.

Land availability: a key constraint relates to the land available within ACC ownership. On the east side of the A92, there is farmland owned by third parties that would require landowner agreement and land purchase to deliver facilities to a desirable minimum standard outlined in Cycling by Design 2021.

Gradient: steep gradients are located adjacent to the existing path for sections providing differentiation between ACC and privately owned land – permission would need to be sought from landowners to regrade these for delivery of the scheme.

Utilities: a utilities search was undertaken as part of the previous work, which outlined a number of existing utilities within the study area. These will require to be taken into account during subsequent stages of design.

Flooding: there are several watercourses identified in proximity to the study area – there is a high likelihood of flooding in proximity to these areas alongside some areas of surface water accumulation.

State what impact the project will have on business as usual, e.g. temporarily reduce capacity or divert resources.

This OBC is consistent with the overall vision of the Local Transport Strategy. Therefore, the project aligns with normal business function. There is an opportunity cost to be noted in that delivering this project may potentially impact on resource/ability to deliver other priorities, however this is not a major issue given the relatively small size of the project.

5. Objectives

By 2030, increase the level of walking by 10% and cycling five-fold from 2027 for all journey types on the Blackdog to Murcar corridor.

Projects to support delivery of this objective will also be progressed as part of the Ellon Park & Ride to Garthdee Transport Corridor Study, which includes an option for a long-distance active travel route between Ellon and Murcar.

6. Scope

This OBC sets out the preferred option that delivers active travel infrastructure along the eastern side of the A92 between Murcar and Blackdog.

Developed Design has been undertaken as part of the OBC development. Further engineering assessments and Technical Design will follow with the Full Business Case, subject to approval of the OBC, and will provide further information on benefits, risks and challenges of delivering the preferred option.

The outputs of the project are:

- the provision of a shared footway / cycle track on the east side of the A92 between Murcar Roundabout and Hareburn Road including a buffer to protect users from motorised vehicles;
- the introduction of a footway along the western side of Hareburn Road;
- crossing improvements for active travel users; and
- updates to traffic signs and road markings.

Success criteria

The study TPO identifies the need to provide active travel infrastructure to facilitate an increase in the level of walking and cycling for all journey types on the Blackdog to Murcar corridor. Success will be measured by modal shift from car to active travel (walking and cycling) for all journey types on the corridor by 2030:

- Increasing level of walking by 10%.
- Increasing cycling five-fold.

6.1 Out of Scope

Not applicable.

7. Options Appraisal

As noted in previous sections, the appraisal of options indicated that the east option should be taken forward for Technical Design. This was the result of an objective-led assessment of three route options, undertaken in accordance with STAG. The three route options considered during the appraisal stage were as follows:

West – From Murcar Roundabout, the route follows the western side adjacent to the A92 and then alongside Tarbothill Farm Cottages. Options then exist to cross to the east side to provide connection into Blackdog or continue north to Blackdog Junction.

Central – Routes along the A92 carriageway via redistribution of carriageway space. Dependent on the alignment, this could tie into Blackdog via a new path link to Hareburn Road or at Blackdog Junction.

East – From Murcar Roundabout, the route follows the eastern side adjacent to the A92 and around the rear of existing properties to tie into Hareburn Road.

West	Central	East
From Murcar Roundabout, the route follows the western side adjacent to the A92 and then alongside Tarbothill Farm Cottages. Options then exist to cross to the east side to provide connection into Blackdog or continue north to Blackdog Junction.	Routes along the A92 carriageway via redistribution of carriageway space. Dependent on the alignment, this could tie into Blackdog via a new path link to Hareburn Road or at Blackdog Junction.	From Murcar Roundabout, the route follows the eastern side adjacent to the A92 and around the rear of existing properties to tie into Hareburn Road.
		

Route Options

The STAG seven-point scale was used to determine the impacts of the above options against the TPO and the five STAG Criteria (Environment, Climate Change, Health, Safety and Wellbeing, Economy and Equality and Accessibility). The scale of impact ranges from:

- Major positive impact (+3);
- Moderate positive impact (+2);
- Minor positive impact (+1);
- Neutral impact (0);
- Minor negative impact (-1);
- Moderate negative impact (-2); and
- Major negative impact (-3).

The appraisal of the options also considered their impact in terms of the Implementability Criteria (Feasibility, Affordability and Public Acceptability, with the latter informed by consultation undertaken by consultants AECOM in late 2023).

7.1 Option 1 – West	
Description	From Murcar Roundabout, the route follows the western side adjacent to the A92 and then alongside Tarbothill Farm Cottages. Options then exist to cross to the east side to provide connection into Blackdog or continue north to Blackdog Junction.

Expected Costs	The requirement for third party land, earthworks, and risk to existing utilities may increase overall capital cost requirements (currently estimated at £3.6m). The use of Tarbothill Farm Cottages Road will support mitigation of capital investment. Level differences in proximity to Murcar Roundabout and Blackdog Junction are considerable and as such, will require works which will increase capital investment costs. There may also be a risk to utilities in proximity to the proposed works and while further investigation is necessary, should any diversions be required, capital costs will increase.
Expected Benefits/ disbenefits	The west option is considered to have a moderate positive impact on the study TPO. Implementation of a dedicated active travel route between Murcar and Blackdog would support an increase in the level of walking and cycling for all journey types. However, the west option would require users to cross over the A92 carriageway adjacent to Hareburn Road or continue north to Blackdog Junction to access residential areas in the east. The crossing of the A92 at Hareburn Road may discourage some potential users due to safety concerns, whilst crossing at Blackdog Junction would not be convenient for those travelling to/from the southern part of Blackdog. While further appraisal work would be needed to assess the full extent of the environmental impacts associated with this option, the west option could result in detrimental impacts against multiple sub-criteria including biodiversity and habitats and geology and soils while there are ongoing concerns about the potential flood risk area and ecological impacts on the surrounding watercourse. The west option would provide benefits due to the provision of a dedicated active travel facility (improving active travel network coverage) but has some safety concerns associated with crossing the A92.
Risks Specific to this Option	The west option is considered to have a major negative impact in terms of feasibility. Delivery of this option would require third party land. Discussions with landowners would be required to understand the full risks to deliverability of a western alignment option, including the potential requirement for compulsory purchase orders. Sections of the route have considerable level differences between the existing carriageway and adjacent fields, which may affect constructability and increase land requirements subject to earthworks or alternative routeing. This is particularly relevant in proximity to Murcar Roundabout and Blackdog Junction. Should additional land not be attainable, Departures from Standard may be required to deliver a western active travel facility.

Advantages & Disadvantages	**Advantages** During consultation undertaken in late 2023, of those indicating a preference for the west option, respondents noted the greater potential for connection with existing infrastructure to the south of Murcar and enhanced connections for communities in the west, including Potterton. **Disadvantages** Consultation highlighted the view that the west option has limitations, including a lack of cycle priority between communities. During online engagement, only 4% of survey respondents agreed that the west option should progress as the preferred option. There are sections of the west route alignment that are more remote from the carriageway, which could generate some security concerns, particularly for more vulnerable people travelling alone. Furthermore, it is possible that landscaping would be introduced to create a barrier between the active travel route and vehicles on the A92, which could further contribute to the route feeling more remote and lacking in natural surveillance.
Viability	As noted, there are a number of feasibility risks associated with this option. The option is also generally lacking in public and stakeholder support.
Other Points	None.

7.2 Option 2 – Central	
Description	The central option routes along the A92 carriageway via redistribution of carriageway space. Dependent on the alignment, this could tie into Blackdog via a new path link to Hareburn Road or at Blackdog Junction.
Expected Costs	Capital costs for this option are expected to be high (currently estimated at £4.9m) due to carriageway reconfiguration works alongside the active travel facility. Potential earthworks requirements at the northern and southern extents may increase capital costs dependent on whether a north or south carriageway lane is to be reallocated to active travel. There may also be a risk to utilities in proximity to the proposed works and while further investigation is necessary, should any diversions be required, capital costs will increase.

Expected Benefits/ disbenefits	The central option is considered to have a moderate positive impact on the study TPO. Implementation of a dedicated active travel route between Murcar and Blackdog would support an increase in the level of walking and cycling for all journey types. However, the central option would require users to travel on the A92 carriageway alongside fast-moving vehicles. Whilst appropriate segregation and a buffer would be in place, this may act as a barrier for some potential users of the facility, particularly less confident users. While further appraisal work would be needed to assess the full extent of the environmental impacts associated with this option, the central option, which would require redistribution of the carriageway (including the removal of one lane for general traffic) would be anticipated to result in some congestion on the route, with associated negative impacts on air quality and noise pollution. This could also generate increased journey times for users as a result. The central option would provide benefits due to the provision of a dedicated active travel facility (improving active travel network coverage) but has some safety concerns due to the relative proximity to vehicles on the A92.
Risks Specific to this Option	The central option is considered to have a moderate negative impact in terms of feasibility. Whilst third party land would not be required for delivery of this option, redistribution of the carriageway would be required, which increases the feasibility risk due to the scale of construction works that would be required. Furthermore, delivery of this option would require removal of a lane for general traffic, which could cause traffic congestion on the corridor. Departures from Standard may need to be considered at pinch points along the route. These primarily exist where the new infrastructure would tie in at the northern and southern extents and would vary based on the chosen alignment.
Advantages & Disadvantages	**Advantages** The central option could bring both physical and mental health benefits to its users, particularly those who shift from car travel to active travel, with several physical and mental health benefits associated with walking, wheeling and cycling. **Disadvantages** During consultation in undertaken in late 2023, no online survey respondents indicated a preference for the central option. As this option would require users to travel on the A92 carriageway alongside fast moving vehicles, some users may perceive there to be an accident risk (although appropriate segregation and a buffer would be in place). Removal of one lane for general traffic would be anticipated to result in some congestion on the route.
Viability	As noted, there are a number of feasibility risks associated with this option. The option also has no significant evidence of public and stakeholder support, based on engagement activities undertaken in late 2023.
Other Points	None.

7.3 Option 3 – East	
Description	From Murcar Roundabout, the east option follows the eastern side adjacent to the A92 and around the rear of existing properties to tie into Hareburn Road.
Expected Costs	The requirement for third party land, earthworks, and risk to existing utilities may increase overall capital cost requirements (estimated at £2.8m in the Outline Cost Estimate, prepared prior to the Developed Design[2]). The use of the previous A90, existing road network at Blackdog and the existing active travel path from Hareburn Terrace to Blackdog Junction will support mitigation of capital investment. The existing gas main pipe in proximity to the proposed works requires further investigation, however, should a diversion be required this will increase capital costs.
Expected Benefits/ disbenefits	The east option is considered to have a major positive impact on the study TPO. Implementation of a dedicated active travel route between Murcar and Blackdog would support an increase in the level of walking and cycling for all journey types. This option supports a consistent, direct and safe route and will have a profound positive impact on providing an alternative active travel mode choice to the private vehicle. While further appraisal work would be needed to assess the full extent of the environmental impacts associated with this option, the east option would require farmland and/or verge space and therefore, could result in detrimental impacts against multiple sub criteria including biodiversity and habitats and geology and soils while there are ongoing concerns about the potential flood risk area and ecological impacts on the surrounding watercourse. The east option would provide benefits due to the provision of a dedicated active travel facility (improving active travel network coverage) and performs stronger than the other options in terms of equality and accessibility as the majority of the study area population is located to the east of the A92.
Risks Specific to this Option	The east option is considered to have a moderate negative impact in terms of feasibility. Delivery of this option would require third party land. Initial landowner discussions have intimated that third party ownership may not preclude deliverability of this option. However, further discussions are required as the design process moves forward as confirmation of ownership in the south of the study area is still pending and this may raise feasibility risks that are unclear at this time. Sections of the route have level differences between the existing carriageway and adjacent fields, which may affect constructability and increase land requirements subject to earthworks or alternative routeing.

[2] The east option, which subsequently progressed to Developed Design, has an outline cost estimate total of £3.0 million.

Advantages & Disadvantages	**Advantages:** During consultation undertaken in late 2023, this option was described as having the greatest potential in terms of connecting to existing infrastructure and connecting to Balmedie whilst helping to improve safety by taking the link away from the carriageway. Increasing population from housing developments could be an opportunity for an increase in younger users along with better east/west connections to support school accessibility. **Disadvantages** 12% of survey respondents in 2023 said the east option would not encourage them to travel actively between Murcar and Blackdog due to concerns about proximity to A92 (volume and speed of traffic), the length of time to purchase land and the value for money.
Viability	While delivery of this option would require third party land, initial landowner discussions have intimated that third party ownership may not preclude deliverability of this option. However, further discussions are required as the design process moves forward. Overall, the east option is the strongest performing option against the appraisal criteria and has the highest level of public and stakeholder support.
Other Points	None.

7.4 Scoring of Options Against Objectives

The template below has been adapted to show how each option performs against the TPO, and how it then performs against the five STAG Criteria. The STAG seven-point scale was used to determine level of impact, with the scale of impact ranging from:

- Major positive impact (+3);
- Moderate positive impact (+2);
- Minor positive impact (+1);
- Neutral impact (0);
- Minor negative impact (-1);
- Moderate negative impact (-2); and
- Major negative impact (-3).

Objectives	Options Scoring Against Objectives							
	West	Central	East					
TPO	+2	+2	+3					
Environment Criteria	-1	-1	-1					
Climate Change Criteria	0	-1	0					
Health, Safety and Wellbeing Criteria	+1	+1	+2					
Economy Criteria	0	-1	0					
Equality and Accessibility Criteria	+1	+1	+2					

Recommendation

Using evidence based on the options appraisal and the objectives scoring, clearly articulate the recommended option, showing the best fit against the project's stated objectives, and balancing cost, benefits and risk. Note, if an option fails to deliver any essential objective then it must be discounted as unsuitable. The recommendation should not be made on objectives scoring alone but the table can be used to eliminate those options that score poorly as a first stage, with the second stage being a more detailed analysis of the remaining options. Bear in mind:

- Investment Appraisal
- Assumptions
- Constraints
- Dependencies

Following consideration of all three options and their appraisal performance, the east option was recommended to be progressed as the final preferred option in a Developed Design (forming part of the work concluded in January 2024), with the option then promoted further in this Outline Business Case (OBC). The summary of the option appraisal was as follows.

East: selected

Based on the appraisal, it is recommended that the east option is progressed to Technical Design. This option is considered to fully support the study TPO, supporting an increase in the level of walking and cycling for all journey types. It also performs well against the STAG Criteria, particularly in terms of Health, Safety and Wellbeing and Equality and Accessibility. Furthermore, this option is associated with the least Feasibility and Affordability risks and it received widespread support as part of the consultation undertaken in October 2023.

West: rejected

Based on the appraisal, it is not recommended that the west option is progressed to Technical Design. Whilst this option supports delivery of the study TPO and STAG Criteria to an extent, the west option would require users to cross over the A92 carriageway adjacent to Hareburn Road or continue north to Blackdog Junction to access residential areas in the east. The crossing of the A92 at Hareburn Road may discourage some potential users due to safety concerns, whilst crossing at Blackdog Junction would not be convenient for those travelling to/from the southern part of Blackdog.

Central: rejected

Based on the appraisal, it is not recommended that the central option is progressed to Technical Design. Whilst this option supports delivery of the study TPO and STAG Criteria to an extent, the central option would require users to travel on the A92 carriageway alongside fast moving vehicles. Whilst appropriate segregation and a buffer would be in place, this may act as a barrier for some potential users of the facility, particularly less confident users. Furthermore, there are significant public acceptability risks with this option

associated with the loss of a lane for general traffic. This may lead to congestion and delays for general traffic, which is likely to lead to driver frustration. No respondents indicated a preference for the central option as part of the online survey undertaken in October 2023.

8. Benefits

8.1 Customer Benefits

Benefit	Measures	Source	Baseline	Expected Benefit	Expected Date	Measure Frequency
Increased modal share of walking and cycling on the A92 between Murcar and Blackdog	Number of people walking (and wheeling) and cycling on the corridor	An increase in the proportion of adults walking and cycling as their main mode of travel to work (Scottish Household Survey (SHS)). An increase in the proportion of children walking, cycling and scooting as their main mode of travel to school (Hands Up Survey). An increase in the proportion of adults walking more than a quarter of a mile as a means of transport and for pleasure or to keep fit in the previous seven days (SHS). Pedestrian and cycle counts along the corridor can monitor changes in those travelling actively	To be benchmarked during Technical Design stage	Increase in numbers walking and cycling along the corridor (with associated health and wellbeing benefits)	2030	Annual

8.2 Staff Benefits – N/A

Benefit	Measures	Source	Baseline	Expected Benefit	Expected Date	Measure Frequency
Improvement to the quality of active travel connections from the north into Aberdeen. Potential to improve commuting	An increase in the proportion of staff cycling to work.	Staff Travel Survey	Cycle to work – 4%	Increase in the proportion of staff	At scheme completion	Biannually

journey and increase staff health benefits.				cycling to work		

8.3 Resources Benefits (Financial) – N/A							
Benefit	**Measures**	**Source**	**Capital or Revenue?**	**Baseline (£'000)**	**Saving (£'000)**	**Expected Date**	**Measure Frequency**
Not applicable							

9. Costs

Cost information is provided below. Revenue and ongoing maintenance costs will also be associated with the scheme – these will be determined at the detailed design stage.

9.1 Project Capital Expenditure & Income[3]											
(£'000)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Total**
Staffing Resources	50	50	32	18	18	18	22				208
<Add cost items under each heading>											
Land Acquisitions			72								72
New Vehicles, Plant or Equipment											
Construction Costs			48	900	900	872					2720
Capital Receipts and Grants											
Sub-Total	**50**	**50**	**152**	**918**	**918**	**890**	**22**				**3000**

9.2 Project Revenue Expenditure & Income[4]											
(£'000)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Total**
Staffing Resources											
<Add cost items under each heading>											
Non-Staffing Resources											
Revenue Receipts and Grants											

[3] High Level cost estimates. To be fully identified during detailed design.
[4] No costs associated at this stage, to be identified during detailed design.

Sub-Total											

9.3 Post- Project Capital Expenditure & Income[5]											
(£'000)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Total**
Staffing Resources											
<Add cost items under each heading>											
Land Acquisitions											
New Vehicles, Plant or Equipment											
Construction Costs											
Capital Receipts and Grants											
Sub-Total											

[5] No costs expected, to be confirmed during detailed design.

9.4 Post- Project Revenue Expenditure & Income[6]											
(£'000)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Total**
Staffing Resources											
Add cost items under each heading											
Non-Staffing Resources											
Revenue Receipts and Grants											
Sub-Total											

[6] No additional costs expected, to be confirmed during detailed design.

10. Key Risks[7]	
Description	**Mitigation**
Delivery of the east option is considered to have a moderate risk in terms of feasibility. This is because delivery requires third party land, which may present challenges to acquire.	Further discussions are required as the design process moves forward as confirmation of ownership in the south of the study area is still pending, however, where initial landowner discussions have taken place along the route, these have intimated that third party ownership may not preclude deliverability of this option.
Sections of the route have level differences between the existing carriageway and adjacent fields which may affect constructability and increase land requirements subject to earthworks or alternative routing.	Should additional land not be attainable, departures from standard may be required to deliver an eastern active travel facility.
The requirement for third party land, earthworks, and risk to existing utilities may increase overall capital cost requirements (currently estimated at £3.0 million; 2023 prices). The existing gas main pipe in proximity to the proposed works requires further investigation, however, should a diversion be required this will increase capital costs.	The use of the previous A90, existing road network at Blackdog and the existing active travel path from Hareburn Terrace to Blackdog Junction will support mitigation of capital investment. There is, however, currently insufficient budget for the project to proceed with the implementation (construction) of the scheme and therefore, should further approval be granted to proceed to delivery, progress will be dependent on the sourcing of additional funding.
There is one section of the proposed scheme routeing behind two houses known as Elm Cottage and Ash Cottage. There is another section that would link from the dual carriageway to the adjacent minor road (Hareburn Road). Neither of these sections of the route would be adjoining an existing road and thus would require planning permission.	Application for planning permission to progress these route sections.

11. Procurement Approach
The design element can either be progressed using internal staff or by external consultants procured through the Scotland Excel Framework Agreement. For the delivery of the scheme, the Council may choose to tender using one of six competitive procurement procedures including Open, Restricted, Competitive Dialogue, Competitive Procurement with Negotiation,

[7] A copy of the appraisal (detailing key risks) is available at: https://committees.aberdeencity.gov.uk/documents/s154684/Appendix%201%20-%20A92%20Murcar%20North%20Active%20Travel%20Infrastructure%20STAG-Based%20Appraisal.pdf

Innovative Partnership or Negotiated Procedure without prior publication. Of these, the most appropriate option available to the Council is a 'Restricted Procedure'. This reflects there is likely to be a number of suppliers interested in the opportunity and will enable the procurement approach to limit the number of bidders at the invitation to tender (ITT) stage to those with the best capacity and capability to meet the contract requirements. This seeks to ensure unnecessary time and resource is not wasted by the bidder and the Council in completing and assessing the tender responses.

12. Time

12.1 Time Constraints & Aspirations

Following completion of this OBC, a programme will need to be developed for consultation, Technical Design, procurement and construction. Indicative milestones are set out in 12.2.

12.2 Key Milestones

Description	Target Date
OBC	May 2024
Design and Land Acquisition	March 2026
Procurement	March 2027
Construction	March 2030

13. Governance

Role	Name	Service
Project Sponsor	John Wilson	Chief Officer – Capital – City Regeneration and Environmental Services
Project Manager	Alan McKay	Team Leader – Roads Projects – City Regeneration and Environmental Services

14. Resources

Task	Responsible Service/Team	Start Date	End Date
Roads Design	CR&ES/Roads Projects	2024	2030
Procurement	Corporate Services/Commercial and Procurement Services	2024	2030

Legal Advice	Corporate Services/Governance	2024	2030
Communication	Corporate Services/Customer - External Communications	2024	2030
Project Management	CR&ES/Capital	2024	2030

15. Environmental Management

Environment
The scheme would require farmland and/or verge space and therefore, could result in detrimental impacts against multiple environmental criteria including biodiversity and habitats and geology and soils while there are ongoing concerns about the potential flood risk area and ecological impacts on the surrounding watercourse.

The scheme may encourage modal shift from car to active travel, however, it is not anticipated that numbers would be significant enough to result in a notable improvement in air quality or noise pollution. Further appraisal work would be needed to assess the full extent of these environmental impacts.

Greenhouse Gas Emissions – It is expected that improved walking, wheeling and cycling infrastructure would generate a degree of modal shift from car to active travel, thus leading to reduced levels of greenhouse gas emissions.

Vulnerability to the Effects of Climate Change – There are some concerns about flooding within the immediate vicinity of the proposed route which may increase over time as the effects of climate change become more pronounced.

Potential to Adapt to the Effects of Climate Change – It is not anticipated that the scheme would have a significant impact on Potential to Adapt to the Effects of Climate Change.

Drainage
Existing drainage provision consists of filter drains along the length of the carriageway. The creation of additional hard spaces will increase the volume of surface water run-off draining to the existing highway drainage system. The buffer space proposed will provide the opportunity to provide additional storage and / or attenuation capacity for the surface water run-off associated with both the carriageway and proposed active travel facilities. At this stage, it is not anticipated that the requirements will change significantly due to the proposed designs. Cognisance will also be taken of the drainage requirements of any affected landowner.

Ecology and Landscaping
Ecological and landscape impacts require assessment to ensure any potential negative impacts are mitigated for the proposed design. An ecological review will be required prior to construction to understand any possible impacts of introducing the proposed shared footway facility. The proposals will affect the existing verge space which takes the form of grass primarily, with sections of trees and hedgerow which may form habitats for some species.

Geotechnical
It will be necessary to carry out a Geotechnical and Geo-Environmental Desk Study to gather and assess geotechnical and geo-environmental data for the site. This will summarise anticipated ground conditions, site history including historical contaminative land use and identify any site sensitivities within the area, potential current and historical contamination sources and any issues that could potentially introduce constraints to the proposals. An Envirocheck or Groundsure Report should be purchased to inform the desk study. This would be used to produce a preliminary Conceptual Site Model (CSM) for the route in addition to informing any requirements for intrusive ground investigation and sampling exercises.

Intrusive ground investigation will be required to investigate the existing geotechnical and geo-environmental conditions along the proposed route. This will be necessary to inform the Technical Design including formation conditions, embankment widening, suitability of re-use of site won material, inform the likely waste classification for any material required for off-site disposal and to investigate any potential contamination sources identified within the desk study review. Ground investigation should be undertaken in accordance with the recommendations of Eurocode 7 and the ICE UK Specification for Ground Investigation, 3rd Edition.

If peat or soft soils are recorded as present at the location of proposed widening of the A92 embankment this would present geotechnical design challenges. In addition, Transport Scotland should be consulted to determine if Geotechnical Certification of the scheme is required in accordance with CD 622 Managing Geotechnical Risk.

Is a Buildings Checklist being completed for this project?	**Yes**	**No**
	☐	☒

If No, what is the reason for this?

Project does not involve the construction of a new building

16. Preserving Our Heritage

No impacts on heritage are anticipated.

17. Stakeholders

The following stakeholders have an interest in the project:

- Elected members;
- Landowners potentially affected by the proposals (e.g. landowners at Tarbothill Farm) – confirmation of ownership in the south of the study area is still pending;
- Local cycle stakeholders and special interest groups; and
- Members of the public and businesses along the route including Community Councils.

A Stakeholder Engagement Plan was developed by consultants AECOM in July 2023 to guide the programme of consultation on the appraisal study. This should be referred to and refreshed as the project moves to the next stage.

18. Assumptions

Civil Works
The civil works sub-total contains the estimated cost for the construction works. Examples of the types of costs accounted for, but not limited to, are site clearance, fencing, road restraint

systems, drainage, earthworks, pavements, kerbs, footways and paved areas, traffic signs and road markings.

Preliminaries
Allowances for preliminaries have been estimated at 10% applied to the construction works sub-total. This is to account for a range of indeterminable factors relating to on site specific overhead costs such as traffic management and the erection of offices.

Contingency Factor
Optimism Bias is added to cover (to an extent) the costs for potential works which we cannot realistically estimate currently based on the stage at which the scheme is at. A figure of 44% has been attributed to the civil works and preliminaries in line with Green Book Supplementary Guidance Optimism Bias (Table 1, Capital Expenditure, Upper OB) Caveats. The cost estimates outlined attempt to portray realistic estimates from all available information, with costs extracted from industry standard construction rates (SPONS Civil Engineering and Highway Works Price Book). It would be prudent to note that the figures quoted are based on limited information and high-level concept stage proposals. There are several unknowns related to the schemes, namely the exact location/depths of buried services with the potential requirement for diversion, ground conditions, drainage/flood risk, environmental impacts, land ownership, structures/retention, accommodation works and traffic management procedures.

19. Dependencies

While this project is independent of other projects, the Ellon Park & Ride to Garthdee Transport Corridor Study incorporates the area between Murcar and Blackdog – as part of this study, there is a proposal for a longer distance active travel route between Ellon and Murcar (to be developed at a later date). There will be a need to take cognisance of any proposals that develop from this study in the future, as well as any further active travel schemes in this area taken forward by Aberdeenshire Council.

20. Constraints

With regards to construction, the following constraints apply:

- Land availability;
- Gradient;
- Utilities; and
- Flooding.

Over and above the project specific constraints identified in Section 4 above, the following issues could create constraints for the implementation of the project:

Traffic regulation orders and road consents: all appropriate consents must be in place before construction work can commence.

Planning permission: There is one section of the proposed scheme routeing behind two houses known as Elm Cottage and Ash Cottage. There is another section that would link from the dual carriageway to the adjacent minor road (Hareburn Road). Neither of these sections of the route would be adjoining an existing road and thus would require planning permission.

Material availability: road surfacing materials and lighting materials must be obtained for use in the project construction phase. The Council should also ensure that these materials can continue to be sourced into the future as and when replacement work is required. The materials used should be consistent where possible with those used elsewhere in the city to limit future inventory costs.

Workforce: The Council and its contractor will need to ensure that sufficient workforce is available to deliver the project within the planned timescales.

21. ICT Hardware, Software or Network infrastructure		
Description of change to Hardware, Software or Network Infrastructure	**Approval Required?**	**Date Approval Received**
None		

22. Change Controls Issued by the Project – N/A			
Date	**Change Ref ID**	**Approval Route**	**Change Description**

23. Support Services Consulted
All relevant support Services have been consulted.

24. Document Revision History			
Version	**Reason**	**By**	**Date**
2			
3			
4			

25. Decision by Capital Board	**Date**
Approved	24/04/2024